

**The Role Of Web 2.0 (Social) Technologies In Leadership  
Within The Organisation: Through The Analytical Lens Of  
The Actor-Network Theory.**

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## **Declaration**

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## **Dedication**

To you Michelle, my best friend and my dear wife, here's to all the time you had to be alone while I burn the midnight oil these past four years. Thank you for being there. You are my world.

## Abstract

We live in an increasingly technological age in which ubiquitous technologies permeate nearly every aspect of life in contemporary organisations. One such group of technologies is what are referred to as Web 2.0 (social) technologies manifesting in applications like social media for online interactions. In this study, Google+, a social technology, is deployed by Drugster, a Fortune 500 organisation for internal communication among organisational members.

The study investigates how this technological actor became an integral part of the network of relations in the organisation and how it intermediates the manager-employee leadership relationship. By following actors – both human and non-human – as they implement the technology, the study uses interviews, observations, and netnography as methods of inquiry to understand how this new technological entrant influences the practice of leadership inside the organisation.

The study finds that in the digital space, managers, employees and technology all enact relational practices that devolve leadership in a zone of heterogeneous relations. In network construction, the study finds that actors deploy strategies that make them stand *in relation with* the interests of, and *in relation to* the actions of those they seek to influence. Here, leadership is argued as a relational enactment of influence in a heterogeneous network in which evolving social order and change are constructed, sustained, and or constrained through intermediations that seek to (de)stabilise the network. The findings also uncover unintended consequences that emerge as a result of the deployment of this technological actant for the manager-employee leadership relationship.

Using the analytical lens of the actor-network theory, the study contributes to relational leadership literature by proposing a network perspective that embraces emergent, ambiguous, relational and heterogeneous properties of the manager-employee-technology relationship – what it refers to as a *technologized* manager-employee relationship.

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## Glossary of terms and abbreviations

<b>Actor/actant</b>	an effect that is generated by intermediations among heterogeneous materials in a network of relations; that which undergoes or performs an act(ion).
<b>Ally</b>	a (non-)human actor that is enrolled towards a particular end, usually in a bid to advance a controlling actor's interests.
<b>ANT</b>	actor-network theory
<b>Controlling actor</b>	an actor seeking to build or advance or (de-)stabilise a network through translation.
<b>Delegate</b>	a (non-)human representative of another or of a group of actors that is engaged for network (de-)stabilisation.
<b>Enrol(ment)</b>	to assign specific roles to actors in an emerging network of relations.
<b>GDPR</b>	general data protection regulation (of the European Union).

- Heterogeneous** that which constitutes both human and non-human (in this thesis, technological) intermediations.
- Interesse(ment)** to impute one's interests; to advance how a particular solution solves a challenge for actors being influenced.
- Intermediary** anything or an actor that passes between other actors thereby defining the relationship between them or describing the network they constitute.
- Intermediator** a mediator having the capacity to translate its transmissions among actors in all directions.
- Mediator** an intermediary that possesses a transformative power, thus exercising agency, over what it is transmitting to.
- Mobilisation** to rally all enrolled actors with an aim to (de-)stabilise a network.
- OPP** obligatory passage point; this is when an actor makes itself or the solution it proposes for a problem indispensable in the network.
- Problematisation** to define and explore the nature of a problem that an actor wishes to promote as having a particular solution.
- Punctualisation** an (un-)helpful process of simplification in which a (large) network is considered as a single actor working as (only) one entity.
- Translation** transmissions in a network of relations among actors in order to bring transformations desirable to actors that are actively involved in the translation process.
- Zone of heterogeneous relations** the online social technology space in which human actors are engaged with themselves and the technology in relational practices.

# Chapter One

## Introduction

### How is knowledge on the topic structured and organised?

*'Organizing is what you do before you do something, so that when you do it, it is not all mixed up.'*

- A.A. Milne

#### 1.1 Introduction

A qualitative study of this kind, particularly one involving the actor-network theory (discussed later in Chapter Three), can be messy (Garrety, 2014). In order to organise the arguments made in this thesis, a framework based on Hart (1998) is followed. This framework suggests a structure by asking questions, which when answered guides conversations surrounding the literature. At the same time, it shapes the general organisation of the thesis in a meaningful way (Callahan, 2014).

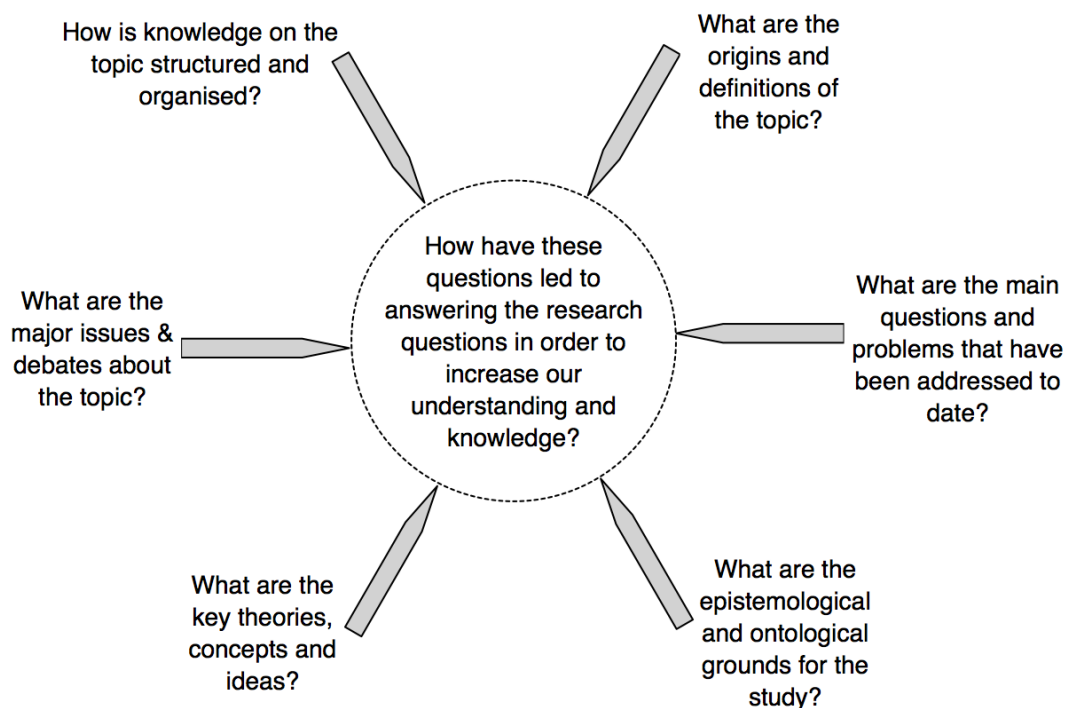


Figure 1: Framework guiding the organisation of the thesis; based on Hart (1998).

However, organising the thesis around a framework presumes a pre-determined grid, which arguably violates an actor-network approach. Nonetheless, I would argue that compromises of this nature do not necessarily betray one's loyalty to a worldview. In this case it is only an instrument that is adopted to help draw a boundary around the conversations needed to answer the research questions without drowning in the sea of ideas that this topic evokes in a technological age. Moreover, a doctoral-level thesis is largely expected to be structured in a meaningful way (Fisher, 2010; Petre and Rugg, 2010). Accordingly, the adoption of a framework absolves this thesis as I seek to conform to general expectations while also remaining true to the underlying philosophy.

## What are the origins and definitions of the topic?

### 1.2 A Background

Even though outcomes of research on the impact of technology in organisational life identify various factors, they also present a problematic in how the phenomenon is conceptualised and analysed. For instance, the idea that research even seeks an understanding into technology's role in organisational practices is itself an implicit acknowledgement that technology actually *does* something (Latour, 2005). However, in many leadership studies (as an area of focus), the analyses have largely neglected how such impacts of technology are generated (Grint, 2005a). Moreover, the advent of Web 2.0 technologies (explained below) deepens this need and raises our curiosity about its impact on relational practices in leadership studies (Dutta and Fraser, 2009). This is because with these technologies, social interactions are now de-linked from localised physical communities to networks that cross the physical into the digital realm (Castells, 2001).

This research aims to understand the relational leadership practices that emerge as managers deploy a Web 2.0 technology in the organisation. Furthermore, it recognises that because a new (digital) environment is created in the organisation by these technologies, there are many unknowns. Accordingly, the study also seeks to explore the unintended consequences that emerge as a result of the deployment of these

technologies in the organisation. Using actor-network theory (Law, 1992; Latour, 2005; Law, 2009), the study *follows the actors* as they implement Google+ (pronounced **Google Plus**) a Web 2.0 technology (defined below) in the organisation. By following actors as they construct a network of relations, the study unpacks how the technology influences the practice of leadership, as it becomes a *participant* in the manager-employee relationship. The study uses interviews, observation, and netnography as methods of inquiry to trace the trajectory of actors in the heterogeneous network all the way to the digital spaces enabled by the technology in order to understand the phenomenon. Here, the unit of analysis is the heterogeneous network of relations made up of the technology, managers, employees, company documents, smartphones, legacy technology systems, as well as the researcher. Before detailing the research problem and the study's significance, the 'working definitions' of the concepts of technology, Web 2.0, and leadership, which surround discussions in this thesis, are offered.

### 1.3 What is technology? A synopsis.

Defining technology is a tall order. This is because this concept of technology remains a nebulous one without an agreement in the literature (Marx, 2010). However, considering various definitions of the concept allows one to understand how it has now become interwoven with the organisational concept of leadership. This is not to say that technology is itself not an organisational concept; in fact, technology has always been part of organisational life (Orlikowski and Baroudi, 1991; Zammuto *et al.*, 2007; Orlikowski and Scott, 2008). A widespread and popular definitional approach taken on technology is that it is a tool, a means to achieving an end, which may include changing the behaviour of the human upon whom a technology is directed (Kipnis, 1993). As a tool, technology is made an integral part of human activity. This is what Heidegger (1977) critiques as the instrumental or anthropological definition of technology. He then problematizes technology as 'a mode of revealing', transforming the human condition, unlocking new capacities in the human, unveiling what was before concealed, and in the process surfacing new problems to challenge. Here, technology does not necessarily separate ends from the means, but rather is a process of 'being'.

Heidegger's (1977) position distances technology from itself. In fact, one of his popularly quoted arguments is that, 'the essence of technology is by no means anything technological' (p.4). On the contrary, other definitional claims continue to centre on the technological, almost imputing it with omnipotence and sole causality for the progress of the human. Marx (2010) laments this latter position in what he cautions as a hazardous conceptualisation of technology, an idea he continues to push since the 1990's (see also Marx, 1997). For Rauner, Rasmussen and Corbett (1988), a compromise would be to see technology as 'always a union of the technologically possible and the socially desirable' (p.48). This view is one found among scholars of the social shaping of technology, which still assumes it as an instrumentality, only this time, it is one that is subject to a 'shaping' process by humans (more on this later). A further idea to this conundrum of defining technology is one that problematizes the very composition of the social (Latour, 1992, 1995, 2005). Here, technology is considered a player, or an actor in a network of relations with the human. In other words, sociality cannot be distanced from technology as it is a network and an actor in this network is a generated effect of that relational network of *heterogeneous* materials – i.e. the human, the technology, as well as other constituting materials of the network (Law, 1992; Latour, 2005). For a 'working definition' of technology in this thesis, it is this positioning of technology that is adopted. Further justification for this choice is provided in the following chapter where the concept of technology in organisations is given a lot more attention. The other concept surrounding discussions in the thesis is 'Web 2.0' which is explained below.

#### **1.4 What is Web 2.0? A synopsis.**

The term 'Web 2.0' suggests there must be a 'Web 1.0'. Indeed, the nature of the Internet in which a user approaches it as a source of all things to be 'received' characterise a Web 1.0 era. Here, a user goes to the Internet to receive, not to give or to participate. S/he visits a webpage to read, or download, or see, or buy, or accept whatever the Webmaster has prepared for the day. In a Web 1.0 era, the Internet is a space to visit and obtain what one needs, rather, whatever is passed down. This is the defining nature of the dot-com era of the 1990s where many 'concluded that the web was overhyped' (O'Reilly, 2007, p. 17).

Web 2.0 was born with the bursting of the dot-com bubble in 2001 and the Internet began to take a more participatory form in comparison to the Web 1.0 era (O'Reilly, 2007). Here, the Internet is not only a place to visit and receive all that a Webmaster passed down, it is also a place to give and to participate or co-create content. The user can now write, upload, (co-)create, change content, take exactly what one needs as against receive whatever is on offer from a Webmaster, and so on (O'Reilly, 2007; Newman *et al.*, 2016). In Web 2.0, software applications that are available engage the user(s), giving Web 2.0 a 'social' label in that it now extends beyond just the technology to a set of practices among individuals (Skaržauskienė, Tamosiūnaitė and Žalėnienė, 2013; Faci *et al.*, 2017).

Web 2.0 thus becomes synonymous with the term 'social technologies' as a broad concept. These technologies include applications such as wikis, social media, social bookmarking, blogs, really simple syndication (RSS) feeds, online video chats, podcasts, etc. (Newman *et al.*, 2016). With this technological shift, most contemporary organisations take advantage of these Web 2.0 technologies to remain competitive (Bughin, Chui and Miller, 2009; Andriole, 2010; Beer and Burrows, 2010). In this thesis, the term 'Web 2.0' or 'social technologies' do not encompass the totality of all technologies that make up this concept; this is just simply impossible. Instead, the term is used as a defining feature of the specific technology – Google+ – a Web 2.0 platform (similar to Facebook), which is the technological actor in this study. The next concept that surrounds arguments in this thesis is 'leadership' and this is explained below in Section 1.5.

### **1.5 What is leadership? A synopsis.**

Leadership is a nebulous concept and a heavily contested phenomenon for which it is assessed that 'there are almost as many definitions of leadership as there are persons who have attempted to define the concept' (Stogdill, 1974, p. 259). From more individual-led perspectives, research has advanced an understanding to the concept of leadership having gone through much iteration from a focus on a leader's personality (Judge *et al.*, 2002), to the context of leadership (Hersey and Blanchard, 2012), to leadership behaviours (Shamir and Ben-Ari, 1999; Zaccaro, 2007; Liu, Zhu and Yang,

2010), as well as the psychoanalytic dimensions of leadership (Gooty *et al.*, 2010; Eberly and Fong, 2013) among others. Group-led perspectives also advance an understanding into leadership as a collective phenomenon in which all participate with no single individual as a heroic figure (Gronn, 2002; Carson, Tesluk and Marrone, 2007; Gronn, 2008). Scholars also pay attention to the concept of followership in that followers make a leader so that without followership there is no leadership (Meindl, 1995; Grint, 2005b; Shamir, Bligh and Uhl-Bien, 2007).

In this study, leadership is examined as a relational concept in that leadership occurs in relationships which also in turn generate leadership (Graen and Uhl-Bien, 1995; Uhl-Bien, 2006; Cunliffe and Eriksen, 2011). As the position taken for this thesis, relational leadership is examined in detail in Chapter Four. It also forms part of the area of leadership where this thesis makes a contribution as is later shown in the study's findings and discussion chapters. It argues that the concept of relationality in leadership in a Web 2.0 environment comprises not only of humans in relationship, but humans in a heterogeneous relationship with technology. Here, all actors in the relationship (with technology also being an actor) influence one another, as the relational practices that emerge in the leadership relationship are unique to this Web 2.0 technological environment. As is shown in the next section, the entry of technology into the leadership relationship evokes many ideas that also leave a gap for further exploration. The next section examines this further and then states the research questions that also drive the study.

## **What are the main questions and problems addressed to date?**

### **1.6 The research problem**

According to Turkle (2005), 'the utopian vision of the computer culture that animated many of its 1980s pioneers was that computers would lead to unprecedented opportunities for participation in every area of social and cultural life' (p.13). Arguably, such conception is only a futurological prophecy, which Castells (2001) argues is based on simplistic extrapolation of technology's social consequences. Nonetheless, the ubiquity of information systems and their associated technologies like Web 2.0 in



organisations today shows that one cannot ignore the role these technologies play in organisational practices (Vodanovich, Sundaram and Myers, 2010; Balsamo, 2011), which also include leadership (Erskine, 2009; Venters, Green and Lopez, 2012). Contrarily, even though leadership studies have progressed through, or centred on different theoretical conceptualisations of the phenomena, little work on the role of technology in leadership practice has occurred in the literature. For instance, from trait theories that assume that 'leadership quality is immutable and, therefore, not amenable to developmental interventions' (Zaccaro, 2007, p. 6), to behavioural and contextual factors in practising leadership (Hersey and Blanchard, 2012), with followership as a determinant of leadership (Grint, 2005b; Shamir, Bligh and Uhl-Bien, 2007), to leadership being a relational concept (Uhl-Bien, 2006), the role of technology has been largely ignored.

However, there is an emerging work in the literature that opens up some understanding into leadership in a technological epoch (Avolio, Kahai and Dodge, 2000; Avolio and Kahai, 2003; Grint, 2005a; Avolio *et al.*, 2014), and more importantly for this study with what are termed social technologies (Web 2.0). In this body of work (i.e. leadership with respect to technology), a rethink to leadership as a result of technological mediations is offered. Avolio, Kahai and Dodge (2000) posit leadership in the technological era as 'e-leadership', that is, a model of leadership that is mediated by advanced information technologies. The authors perceive that this kind of leadership is practised *in* and *through* the technology. In a later work, Avolio and Kahai (2003) advance the concept as a way in which leadership could achieve outcomes similar to those conditions in which the technology was absent (like in face-to-face situations). The inference here is that, technology is a means to an end, a tool to be deployed by leadership. This same notion is implicitly held in Bilgram, Brem and Voigt (2008) who discuss how people's online activities over Web 2.0 platforms can be used to identify any leadership roles they play. Elsewhere, technology can be deployed by leadership to exert influence over followers (Kipnis, 1993) even though such claim is often an overestimation of the effect of technology as a tool (Leonardi, Neeley and Gerber, 2012). In other works, these technologies (Web 2.0) are not just mere tools for leadership practice but are an indication of a new social structure in which leadership must now be enacted through

networks and not through hierarchies (Dutta and Fraser, 2009; Iverson and Vukotich, 2009; De Hertogh, Viaene and Dedene, 2011).

However, these works present two commonalities. First, there is recognition of technological interventions in organisational practices, especially leadership. This demonstrates a shift from the 'traditional' leadership theories earlier mentioned in which technology is largely ignored. However, technology is conceptualised as a structural mechanism within which leadership can be enacted (Avolio, Kahai and Dodge, 2000) but also as a tool for leadership practice (Kipnis, 1993; Avolio and Kahai, 2003), a dualism that lacks understanding. That is, it is not clear how technology changes (or not) the practice of leadership in the new environment it has engendered in the organisation. Additionally, such lack of clarity about leadership when it comes to technological mediations opens up questions about what unintended consequences potentially emerge. In fact, these gaps also stimulated discussions about how to understand leadership in a *virtual* world at the Academy of Management's annual meeting in 2008 (Erskine, 2009). Second, the units of analysis have remained at the level of individuals when technology is now intricately a part of organisational life. Such analytical posture unwittingly separates objects from humans or 'nature' on one side and 'society' on the other when both constitute the social (Latour, 1993). This argument raises ontological concerns about agency, practice, and sociomateriality (Latour, 1993, 2005; Pierides and Woodman, 2012). The following research questions are therefore raised:

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager-employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

By alluding to *heterogeneity* in the research questions above, I have adopted a Latourian approach, an ontology that considers the *social* as constituting both human and non-human agency (Latour, 1987; 1992; 1993; 1995; 1996; 2005). Here, all actors (including

non-humans) in the social have a role to play as they act on one another in ways that (seek to) influence others in the direction of the one doing the 'influencing'. This ontological position refuses to privilege some actors or even social structures as above other actors in the social, rather, all actors are considered as analytic equals (Law, 1992). This is further explicated in ANT (see Chapter Three) and its methodological outworking stated in Chapter Five.

## 1.7 Significance of the study

This study is at the intersection between technology and organisational practices which continue to challenge our thinking. Authors have thus identified the need to better understand the changing role of technologies in today's work organisations (Zammuto *et al.*, 2007; Orlikowski and Scott, 2008; Cascio and Montealegre, 2016; Colbert, Yee and George, 2016) and for Web 2.0, the argument has been that while it is technological, 'its effects are sociological and little short of revolutionary in their implications for business' (Berthon *et al.*, 2012, p. 262). In fact, the Web 2.0 phenomenon for organisations is a leadership conundrum that has caught the attention of not only managers in business organisations (Andriole, 2010; Faci *et al.*, 2017), but also those in policy making bodies and governments so that any well supported insight is invited. Dutta and Fraser (2009) in the OECD Observer for instance reckon that

'If there is one lesson we have learned in the past year of economic crisis, it is that leadership in both business and government has suffered a severe erosion of credibility, trust and legitimacy. We need a new leadership model.

**Could Web 2.0 provide one?'** (Dutta and Fraser, 2009, p. 35, Emphasis added).

Here, Web 2.0 is thought of as offering potential insights that might produce a new leadership model. This underscores the importance of a study like this. For Bennis (2013), Web 2.0 necessitates a new approach to leadership in the digital age because managers cannot ignore the new digital environment that these technologies engender in the organisation. Furthermore, International Data Corporation (IDC) has projected over three thousand per cent increase in compound corporate expenditure on social technologies between 2017 and 2019, topping \$85 billion (IDC, 2017). As corporate expenditure on Web 2.0 (social) technology rises, it becomes increasingly important that

we examine how these technologies are influencing organisational practices of which leadership (as a concept) is a part (Carroll, Lester and Richmond, 2008).

As its contribution, this study therefore throws some light into how managers, employees and a Web 2.0 technology relate and/or influence one another in a way that generates and enhances the practice of leadership. Other specific contributions to ANT as well as methodology are also stated below. The study argues that

- In the digital space, managers, employees and technology all enact relational practices that devolve leadership in a zone of heterogeneous relations;
- Actors deploy strategies that make them stand *in relation with* the interests of, and *in relation to* the actions of those they seek to influence;
- Leadership is a relational enactment of influence in a heterogeneous network in which evolving social order and change are constructed, sustained, and or constrained through intermediations that seek to (de)stabilise the network;
- There is a network perspective to relational leadership that embraces emergent, ambiguous, relational and heterogeneous properties of the manager-employee-technology relationship – what it refers to as a *technologized* manager-employee relationship;
- Relationality is an *intermediation* among *selves, things, processes, trials, assemblages*, and *practices* that constantly create, sustain, advance, or dissolve the network;
- Relational leadership in the digital space occurs as a function of an actor's engagement over (multiple) technological platforms alongside the actor's engagement on the platform(s) with those s/he seeks to influence;
- The absence of an OPP triggers a cycle of re-problematisation until interessement is strong enough to advance a network of relations;
- Auto-interessement can result in organic network growth when individuals are self- motivated for network advancement;
- Data classification, memoing, analytic coding, contextual positioning, searching for themes, evaluating with further data, and reporting outcomes are iterative analytic steps that are necessary for making sense of netnographic data.

Following, the aims and objectives of the study are stated in order to ground the direction of the research undertaking.

### **1.8 Research aims and objectives**

This study aims

- 1) to expand the ontological basis for current leadership thinking with a unit of analysis that goes beyond a purely human phenomenon;
- 2) to understand manager-employee relational practices in a Web 2.0 (social) technology environment;
- 3) to explore the (usually not considered) unintended consequences of the deployment of these technologies in the organisation.

Accordingly, specific objectives of this study are

- 1) to apply the theoretical resources of the actor-network theory (explained later in Chapter Three) to analyse leadership as a heterogeneous network of relations;
- 2) to advance an understanding into unintended consequences of the deployment of the technology for leadership;
- 3) to contribute to the emerging area of leadership research that argues for the inclusion of praxeological family of theories.

By asking the research questions (see Section 1.6 above), these aims and objectives underpin the theoretical and methodological choices made in order to arrive at an answer. Following, these aims and objectives are revisited at the end of the thesis to evaluate how they have been met (in Chapter 8). Additionally, the next section presents a personal motivation, which also drives this study.

### **1.9 Personal Motivation**

I have been intrigued by the concept of leadership for the past nineteen years during which I found myself in many leadership positions at church, at school, and at work. I have thus always sought a way to better understand how I could improve on my own leadership. What has complicated this for me is that, although I consider myself as

someone who practises leadership, I am at a complete loss about how leadership works in the digital space. This is because I fell in love with all things digital from the very first day I touched a laptop computer at the age of 15 in Ghana, West Africa, and have lived with this newly found love ever since. This love for technology has led me to self-learn computer programming (something I have now forgotten!) at 19, build websites, and more recently make an iPhone catch fire, literally! (while attempting to do my own repair!). Following, social technologies became of interest to me although I approached them, particularly social media, cautiously. This was because I was not sure of its long-term effects on my social life.

Eventually I joined Facebook and LinkedIn in 2011, but continued to stay away from other social media. These two social media were a new world to me and I knew I had to understand them more deeply. With two passions – leadership and (social) technology – I knew I was ready for a deep dive. While studying at Lancaster University, I developed a passion for actor-network theory, which was partly fuelled by Professor Brian Bloomfield, an expert in the field, who also supervised my Master of Research dissertation. I have since remained faithful to this passion for which I have now dedicated the past four years to understand the world of leadership and (social) technology through the lens of this theory.

#### **1.10 Structure of the dissertation**

In terms of the structure of this thesis, Figure 1 is an illustration of the logic used. Chapter One (this chapter) introduces the research problem. It answers two of Hart's (1998) questions in how the research is organised and what the origins of the topic are. Chapter Two addresses the major debates and issues surrounding technology and its implications for leadership. Chapters Three and Four then discuss the key concepts and theories that underpin the study, which are the actor-network theory and relational leadership theory. Chapter Five answers Hart's (1998) question of the epistemological and ontological grounds for the study while also providing the methodology. Chapters Six and Seven answer Hart's (1998) question of how our understanding and knowledge have been increased by providing the research findings and discussion respectively. Chapter Eight concludes the thesis by evaluating whether the aims and objectives set

out from the start are met. It also states the contributions made as well as the study's limitations that also present avenues for further study. Figure 2 below provides the structure of the thesis in a visual format.

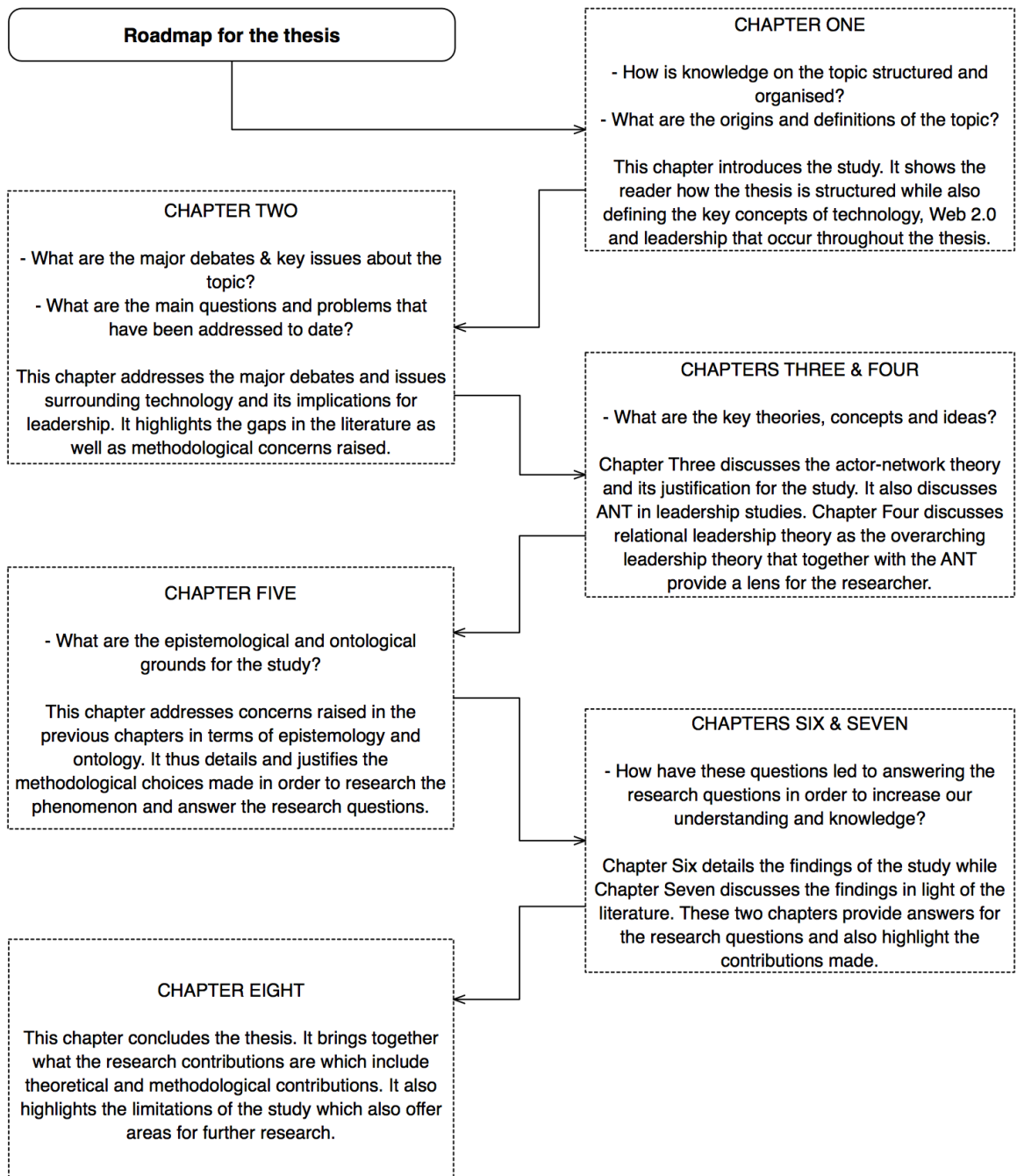


Figure 2: Diagram showing how the thesis is organised.

# Chapter Two

## The Major Debates and Issues

*'In all debates, let truth be thy aim, not  
victory, or an unjust interest.'*  
— William Penn

### 2.1 Introduction

This chapter explores the literature as the researcher *familiarises* himself with a range of perspectives about the topic under investigation (Easterby-Smith, Thorpe and Jackson, 2012). Monippally and Pawar (2010) argue that 'the literature review should acquaint the reader with the relevant literature and the argument or conversation so far around the topic' (p.153). Accordingly, the literature review involves,

'the selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data, and evidence written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed' (Hart, 1998, p. 13).

With that expectation, this review of the literature begins with asking what the major debates and issues surrounding the topic are. It explores the major arguments around technology's conceptualisation and how the various ideas raise issues for the practice of leadership in the organisation. The materials used are found after following search terms – technology, social technology, Web 2.0, leadership, relational leadership, manager-employee relationship, and actor-network theory – at both the Henley Business School's academic research centre and the University of Reading's library portal. The materials found are then enrolled<sup>1</sup> as allies as the journey into the literature begins.

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<sup>1</sup> To *enroll* is an actor-network terminology, which is given a much deeper understanding in Chapter Three.



## 2.2 What Are The Major Issues And Debates About Technology and Leadership?

### 2.2.1 Background

In Zuboff's (1988) ethnographic study of the deployment of a technological system at a pulp mill (detailed in her book, *In The Age of the Smart Machine*), she argues the transformative *impact* of information technology in organisations. Kallinikos (2011) recognises the importance of Zuboff's work by acknowledging how even after two decades, Zuboff's study, 'as perhaps every great work, holds out remarkably... [having] ...rapidly gained recognition across a wide spectrum of social science disciplines, including management and organization studies, information systems, social psychology, and sociology, and has been debated and quoted extensively' (p.1). Zuboff (1988) thus serves as a good starting point to advance arguments on some major debates this field of study has generated over the years. Even more importantly, Kallinikos (2011) argues that despite the era of the publication of Zuboff's work, 'key insights' the author advances concerning the impact of information technologies on organisational practices remain useful for the analyses of phenomena such as current technological advancements that were not yet present at the time she conducted her study (ibid).

In that study, she argues that information technology fundamentally restructures our material world, resists the magnetism of past ways of working, delivers innovative possibilities, and compels new decisions within the organisation. Being such a revealing study of how individuals felt about the transformation of their work vis-à-vis the technology, as well as the changing dynamics of managerial control, the call for how information technology *impacts* the organisation could not be any more pressing. However, Zuboff (1988) is indicative of how importance is placed on technology creating a path for the organisation and its leadership, with only little thought on how individuals have participated in shaping or constructing this *impact* of technology on themselves. In addition, Zuboff (1988) expounds how the technology, which is originally intended to automate work, simultaneously generates data that triggers a new set of reflexive processes that informed different leadership behaviours and actions within the organisation. For her, the technology does not only automate work, rather, it also

reflexively 'informat' the organisation's leadership consequently eliciting corresponding leader behaviours. From this school of thought, a passiveness of leadership in its relationship with technology is implied that even an unintended consequence of technology determines how leadership is enacted within the organisation. That said, how has this capacity of technology to 'informat' evolved into today's digital environment of what is known as Web 2.0 technologies? To this end, Zuboff's (1996) later analysis on the need for a new kind of leadership in the information economy may be instructive.

In this later analysis, Zuboff (1996) argues that this *impact* of technology on organisations is not benign. For instance, even though its transformative power in the organisation cannot be overlooked, technology has nonetheless compelled leaders to pursue ways of improving organisational efficiency that has become detrimental to the **moral** fabric of the organisation. That is, its 'informing' capacity has engendered an evolutionary mechanism in which low-skilled workers are no longer employable for the organisation (ibid). Such is the moral dimension, she posits. That is, exploiting this new 'informed' organisation by leadership demands

'opening up the information base of the organization to members at every level, assuring that each level has the knowledge and skills to productively engage with that information, and endowing all members with the authority to express and ultimately act on what they can know. It implies a new social contract that redefines who people are at work, what they can know, and what they can do' (Zuboff, 1996, p.16).

The choice of 'who people are' in this 'informed' organisation as it were, the author argues, now becomes a moral burden for leadership. From Zuboff's (1996) quote above, opening up of the information base within the organisation may be parallel to today's Web 2.0 technologies in organisations, but this presents the reader with a conundrum when notions of morality are presented as the author contends. However, although arguments of morality are out of scope for this study, it is still indicative of how such power and agency is attributed to information technology in the organisation that it is able to lure leadership into a contested zone of moral dilemma. For this, Zuboff (1996) asserts there is the need for a 'kind of moral leadership that can articulate new values' (p.17) proactively, or risk their organisations' imminent extinction in an information economy. What this 'moral leadership' is, she fails to elaborate, however, the call for

**proactive** action by leadership in this 'informed' organisation becomes contradictory. This is because information technology is presented earlier as dictating the pace for leadership action while at the same time calls are made for leadership to be proactive in the changing organisation. Arguably, Zuboff's (1996) argument constitutes many twists of thought provoking phenomena especially when juxtaposed with recent developments of information technology in organisations today; that is, in this era of Web 2.0 technologies. From that background, that is, whether organisations are passive actors in their relationship with information technology, or rather (pro)active in their connection with technology, implications for leadership cannot be taken for granted. This is because leadership is attributed to organisational success or failure (Turner and Müller, 2005; Müller and Turner, 2010; Pisarski *et al.*, 2011; Nixon, Harrington and Parker, 2012) even though that is itself a contested phenomenon in some cases (Grint, 2005b; Yukl, 2010). That said, some major debates in the literature that overarch this role of technology in organisations and hence leadership form basis for arguments below as this will further deepen the nature of conversations around the topic under investigation (Monippally and Pawar, 2010).

### 2.2.2 Technological Determinism

Do organisations have a choice in how they organise or reorganise themselves in the face of their (new) technologies? This is a question that potentially undermines or challenges the role of leadership depending on one's worldview on the subject of technological determinism in organisations. Determinism is the idea that there is an inevitable path for progression in society determined by some factor (Smith and Marx, 1994, 1998). Philosophically, William James identifies in the old classic, *Essays in Pragmatism*, what the notion of determinism acknowledges. For him, determinism

'professes that those parts of the universe already laid down absolutely appoint and decree what the other parts shall be. The future has no ambiguous possibilities hidden in its womb: the part we call the present is compatible with only one totality. Any other future complement than the one fixed from eternity is impossible' (James, 1948, p. 40).

The philosophical argument here is that the universe, according to determinists, is one complete whole whose many parts must fit into their respective places in order to conform to a predetermined actuality. Here, the direction taken by events becomes an

issue of the will (or its imprisonment) thereof; that is, no other possibilities exist except those necessitated of things preceding them, all other possibilities are rendered imaginary and cannot be reified. In Smith and Marx (1994/1998), the possibilities that exist in organisational practices are necessitated by the dictates of technology, which the authors argue dates back to the industrial revolution in which scholars believed that technological advancements drove change in society more than any other factor. Smith (1998) for instance provides an analysis of the historical development of the idea of technology driving social progress. In his evaluation, technological advancements assumed a place of dominance in American culture while artists and writers touted technology as a force that could deliver the promise of American life. 'Such technocratic pitches constituted a form of technological determinism that embedded itself deeply in popular culture' (Smith, 1998, p. 14). While providing detailed documentary evidence for such claim, what is obvious is Smith's focus on the wider social *impact* of technology leaving out intra organisational dimensions. However, in using Mumford's 1964 *The Myth of the Machine* and Ellul's *The Technological Society*<sup>2</sup> to bolster his analysis, Smith (1998) draws out the strength of technology asserted by these authors and their possible impact in organisations. That is, we could not have power over technology in the organisation because the organisation must survive by its dictates (that is, technology's), eventually behaving like a machine; perhaps becoming mechanistic and non-flexible in its structure like in Burns and Stalker's (1994) characterisation of a 'mechanistic' organisation although this characterisation may not be a direct implication of technology. Implicitly, what these arguments suggest is that, the boundaries between the social and the technological are now blurred or probably non-existent that technology forces its way into the equation by its imperatives. A logical implication then is that, leadership in organisations is itself subject to the directives of technology within the organisation.

Even though social constructivists (Pinch and Bijker, 1987, 1989; Bijker, 1995) reject the postulates of technological determinism, Lawson *et al.* (2007) argues, questions of

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<sup>2</sup> Ellul's classic, *The Technological Society*, is a provocative one that reduces the human to a 'slug inserted into a slot machine' (p.135). Even though the human is seen as a moral entity able to decide either good or evil, it nonetheless possesses no power over 'technique' – technological advancement. Rather, technology exercises its autonomy by dominating the human with its advancing spheres. The human could only stand aside or become technology's servant, according to Ellul.

technological determinists are still pertinent and therefore must not be overlooked. Drawing from Smith (1998), Lawson (2007) admonishes that technological determinism although an under-theorised phenomenon invariably becomes irresistible and researchers will find it difficult to repel its dangerous charm. Perhaps this is because 'the central point is that technology itself is not neutral. Everything is sucked up into the technological process and reduced to the status of a resource that has to be optimised in some way' (Lawson, 2007, p.35). A methodological implication for this argument is that, the technology being used in the organisation must also form part of the unit of analysis. This is because, if the imperatives of technology in organisations cannot be ignored, as technological determinists would have us believe, then leadership within the organisation cannot be spared from the dictates of technology either. However, as mathematical and radical as that may sound, the non-coherence of theories of technological determinism in the literature, in itself, causes a rethink of its underlying ideologies. For instance, in *Does Technology Drive History?*, a collection of arguments by Smith and Marx (1994/1998) on the dilemma of technological determinism, a close examination reveals two divergent views. First, views of such contributors as Heilbroner and Perdue that connote technology as the instrument dictating change; these are characterised as *hard* technological determinists. For this research for instance, hard technological determinists would view Web 2.0 technologies as solely *impacting* the organisation or its leadership in a **specific** manner, which the researcher must investigate. Second, those arguments as presented by Hughes, Bulliet, and Marx that introduce an element of the 'social' into the idea of technological determinism. For these, social change or *impact* is as much a product of other factors like economics and social behaviours, as it is the technological artefacts. In other words, the direction in which events move is not just a matter of the force of technology but also of socio-economic/cultural influences. It therefore suggests that the attribution of the degree of agency to technology must be weighed against those of other social influences as well (Hughes, 1998). The implication therefore is that, in an organisational context, the social shaping or construction of how the technology *impacts* the organisation and therefore its leadership must also be explored. Here, arguments for *hard* technological determinism seem to be diluted with a *soft* approach on how the phenomenon is or should be construed.

Methodologically, the *soft* account suggests the inclusion of social constructivist perspectives (Hughes, 1998). But this idea of *soft* technological determinism that incorporates social influences is argued to be fallacious if the very terminology is considered at face value (Bimber, 1994). To that end, Bimber (1994) argues that the term, *technological* determinism, better not be used at all. This is because, he argues, it is impossible to consider the social as being a component of ‘technological’ determinism and equally difficult to classify any author as technologically determinist in its purist sense. On the contrary, Williams (2000) could not resist the reality of technology’s (deterministic) impact at Massachusetts Institute of Technology (MIT) in what she terms the ‘the irony, and the poignancy, of MIT’s history’ (p.645) by revealing that her ‘MIT colleagues are convinced it [that is, technological determinism] is simply true’ even though historians largely condemn it as a fallacy (p.649). Williams (2000), who narrates technological change at MIT with its corresponding cultural changes, problematizes the idea of technological determinism using her personal experiences of tensions created as a result of the deployment of new technologies. These tensions, she admits, were those in which technology usually won when trade-offs needed to be made. Implicit in Williams’<sup>3</sup> narrative is a frustration about the power technology exudes in an organisation in different directions that leadership has no control over it, having to literally chase and address resultant challenges. Methodologically, Williams’ (2000) analysis implies a thorough consideration of the lived experiences of those involved with technology in order to pass any judgement about how their lives have (or have not) been *impacted* by the technology. Her approach may sound contradictory since technological determinists are not so much interested in whom (or what) technology impacts as they are in the technology that causes the impact. Wyatt (2008) thus identifies a methodological concern with technological determinism raised by Heilbroner (1994) and Edgerton (1999) in which it is not the lived experiences of social actors that matter, but the technologies available to them that are of consequence. In other words, the object of analysis of any research involving technology must be the technology itself (either in use or just available to actors) and not the lived experiences of those using the technology. However, Wyatt (2008) later acknowledges that we

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<sup>3</sup> Rosalind Williams is a historian of technology and a one-time dean of students and undergraduate education at Massachusetts Institute of Technology (MIT). This paper was published in 2000 when she resigned her administrative post to focus on research and teaching. Her experiences as well as those of others when she was leader make up the core of her paper, probably a good example of a leader’s personal frustration with information technology.

cannot ignore the relevance of technological determinism to real life experiences, suggesting that dismissing it will be akin to ignoring a thundering herd of elephants. Such non-coherence in arguments with technological determinism thus makes it necessary to examine other sides of the general debate of how technology partakes in organisational and social life. This will make it possible to ground the general arguments in the literature concerning the topic of research under investigation (Hart, 1998). The next section therefore explores the idea of the social shaping of technology in contrast with technological determinism.

### 2.2.3 Social Shaping of Technology

One divergent view from the idea of technological determinism is the concept of the social shaping of technology (MacKenzie and Wajcman, 1999). As argued in the previous section, *soft* technological determinism introduces an element of the social by asserting that technology alone cannot be attributed agency when it comes to social change, instead, other factors like culture, politics, economics, and so on, make up a plethora of influences on the social in addition to technology. The social shaping of technology (SST) also seems to carry notions similar to those of *soft* technological determinism as recognised by MacKenzie and Wajcman (1999). They argue that technological determinists tend to focus on the *impact* or *effects* of technology and therefore fail to acknowledge how social and organisational processes are themselves constitutive of technology. In other words, technology does not necessarily influence an organisation from without but is itself intricately shaped by the organisation. However, these authors do not completely rule out technology's impact on organisations. What their assertion generates methodologically is that, we need not only ask how individuals *adapt* to the technology, rather, we must also find out how individuals *shape* these technologies either for political or other organisational reasons. This is because SST argues that in shaping technology, certain political dynamics are deployed, which may make the technology favourable for one group but unsavoury to others whom Winner (1993) for instance laments become 'irrelevant' social groups (Winner, 1993; MacKenzie and Wajcman, 1999). For example, the 1920s to the 1970s saw Robert Moses as the master builder of New York; he was contracted to build roads, bridges, parks, and other public places. Winner (1986) tags Moses as being a racist, reporting that Moses built bridges to

Long Island so low that only car-owning whites of 'upper' and 'comfortable middle' classes could have access (Winner, 1986). The bridges thus excluded the poor racial minority who mainly used public transport buses. On the surface, the bridges were meant to transport automobiles; nonetheless they were also designed and built to serve Moses' racial prejudice as Winner (1986) argues. It is however worth noting that this evidence is disputed in Joerges (1999) who refutes any such attribution of racism to Robert Moses by Winner (1986).

According to Winner (1986), this example is an indication of controversies about technology and society that technical things possess qualities built into them that reflect the desires of certain groups of individuals. Rauner, Rasmussen and Corbett (1988) for instance assert that technology is always a dialectical union of the technologically possible and the socially desirable for which there is a translation of certain human intentionality into technological artefacts. Consequently, one implication of the SST approach for this research is that, the adoption of Web 2.0 technologies in the organisation must not be seen as merely a technological input. In other words, the technology also embodies specific forms of power and authority within the organisation thus having implications for leadership (Subašić *et al.*, 2011). However, the notion of inbuilt political intensions in technology or artefacts like Moses' bridge earlier mentioned makes the argument problematic. It presupposes that technology is a static object whose inbuilt determinate aims would effect the desired change for which others must comply (Akrich, 1992). This then brings one back to technological determinism, only this time with a focus on implicit human commands. Orlikowski (2000) thus raises epistemological concerns on how the researcher can obtain knowledge of these inbuilt politics. She argues that rather than view technology as an embodiment of certain 'structures' – 'rules and resources instantiated in social practice' (p.406) – it must be considered as an enactment of **emergent** social practices. She asserts,

'use of the technology involves a repeatedly experienced, personally ordered and edited version of the technological artifact, being experienced differently by different individuals and differently by the same individuals depending on the time or circumstance' (Orlikowski, 2000, p. 408).

The implication of Orlikowski's (2000) argument above is that, how individuals deploy the technology within the organisation may be shaped by factors that were not



originally anticipated in the adoption of the technology. However, it is only when individuals actually use the technology in the organisation that it can be said to shape their actions (ibid). Here, the idea of 'sociomateriality' – which considers the relationship between individuals and technology as an entanglement and not as distinct entities – is raised (Orlikowski and Scott, 2008). This isolates a leader or an individual who may not be directly using a particular technology within the organisation.

So far, SST arguments have posited technology as not only *impacting* the organisation; instead, technology is constitutive of certain social practices, is politically shaped by some privileged individuals, engenders emergent practices, and is intimately entangled with individuals within the organisation. Methodologically, these arguments suggest that the researcher examines at the 'micro' level, how individuals are interacting with the technology in order to understand fully its social shaping effects (Orlikowski, 2000). This shift from a focus on the technology itself to the social gets even more radical with the idea of the social construction of technology, discussed in the next section.

#### 2.2.4 Social Construction of Technology

The social construction of technology (SCOT) is an argument that rejects the ascription of certain organisational *impacts* or influences to some technological logic (Bijker, 1995). Rather, SCOT argues a *construction* of the technological artefact by people within the organisation based on the meanings that the technology has for them (Pinch and Bijker, 1989). Here, it is not just a *shaping* of what technology is already there but a question of *how* and *why* the technology came to be used and now taken for granted (Latour, 1987). Pinch and Bijker (1989) argue that there are 'relevant social groups' that are involved in negotiating what a technology means for them. These groups of individuals may differ in their views of how the technology may be appropriated, a notion the authors refer to as 'interpretative flexibility' – that is, to one group the technology may be useful in a particular way and to another group, nonsensical. This lack of uniformity on what a technological artefact means for individuals in an organisation, Pinch and Bijker (1989) argue receives 'closure' when a common interpretation becomes agreed upon. Consequently, it suggests that individuals may be

ambivalent towards the implementation of new technologies as they negotiate<sup>4</sup> their different meanings. Bijker (1995) for instance argues that *facts* about technology are always a matter of different interpretations of the relevant social groups, which Winner (1993) argues must also involve the 'irrelevant' social groups – that is, those that seem to be marginalised. Klein and Kleinman (2002) also point out a limitation of SCOT, being its lack of consideration for the wider social, cultural and political milieu in which technology is developed. Consequently, implicit in SCOT is the notion that negotiations about what technology to adopt (and for what purpose) within an organisation are intertwined with tensions which raises methodological implications.

Methodologically, what SCOT suggests is that the researcher needs to identify what 'relevant' social groups were involved in the adoption of the technology within the organisation (Bijker, 1995) but also seek to find what the 'irrelevant' social groups were in the adoption of the technology (Winner, 1993). Understanding what meanings these different groups of individuals in the organisation make of the technology may be instructive in appreciating how the technology has influenced their organisational practices. However, Klein and Kleinman (2002) critique the notion of social groups, arguing that it is problematic to conceptualise society as composed of groups when in reality, many different views occur with power asymmetry both between and within groups. To identify these 'relevant social groups' Bijker (1995) suggests a snowball technique, which Klein and Kleinman (2002) find challenging. In the 'snowball' method, 'the researcher interviews a few actors at the start, asking them to identify relevant groups, and in this way eventually builds up the set of all groups' (Klein & Kleinman, 2002, p.32). It still risks exclusion of other social actors, or becoming so big a 'snowball' that it becomes almost impossible for any meaningful analysis (ibid). While critiquing Bijker's (1995) methodological propositions in SCOT, Klein and Kleinman (2002) argue a 'structural' approach to conceptualising and investigating 'closure' of a social group's construction of technology. They argue that structures such as the group's political resources, economic resources, culture, and so on must be considered as influential indicators in examining how a particular technology came to be socially constructed.

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<sup>4</sup> That is, how the different social groups finally come to agree to a common interpretation of what the technology in the organisation means for them. In Bijker (1995), this negotiation process could be just a rhetorical process of managing the disputes, thus lacking detail on how in reality, commonality of meaning is reached with regards to the technology.

However, just as Pinch and Bijker (1989), Bijker (1995), and Pinch (1998) all emphasise technological design as an underpinning outcome of SCOT, Klein and Kleinman's (2002) wider socio-structural approach also seems to be only concerned about the *design* of technology, and not the *adoption* of the technology into a new or different setting. Consequently, implications for SCOT in organisational settings are ignored since most organisations tend to *adopt* and not design from scratch a particular technology for use (McCabe, 2007; Saldanha and Krishnan, 2012).

Furthermore, what is common with SCOT scholars as argued so far is the shift from the technological artefacts themselves as the units of analyses, to the social dynamics that engendered the final acceptance and use of any particular technology. Winner (1993), who also disagrees with turning to the technologies themselves as the objects of analysis (cf. Heilbroner, 1994; Edgerton, 1999), looks for an alternative approach from social constructivists (like Pinch and Bijker, 1989). However, he expresses disappointment on the fact that social constructivists only tend to focus on the origin of technology but the consequences of technology are seldom a focus of study. He argues, 'what the introduction of new artifacts [technology] means for people's sense of self, for the texture of human communities, for qualities of everyday living, and for the broader distribution of power in society – these are not of explicit concern' (Winner, 1993, p.368). Moreover, the interpretive behaviours of individuals on whether the adoption of certain technologies in an organisation is of value or not, cannot be taken for granted (Orlikowski and Gash, 1994; Leonardi, 2009). Additionally, one cannot also neglect the unintended consequences of the deployment of technology in the organisation even though the literature only implicitly alludes to it. This gap is further explored vis-à-vis Web 2.0 technologies for organisational leadership in the next section.

Overall, a 'holistic' approach to this dilemma of the role of technological actors in organisational practice demands that any methodological approach incorporates arguments from these three schools discussed so far in the literature. Here, the utility of the actor-network theory, as shown in the next chapter, becomes pertinent to this research undertaking. The following subsection now discusses the issue of unintended consequences that have remained a gap in the literature with regards to leadership and

technology, particularly Web 2.0 technologies, after which the research's theoretical underpinnings are argued in detail.

### **2.2.5 Web 2.0 Technologies and their Unintended Consequences for Leadership in Organisations**

#### **2.2.5.1 Introduction**

Whereas technology is acclaimed as having the capability to drive change (Zuboff, 1988; Grübler, 2003), shape outcomes in organisational practices (Tushman and Murmann, 2003), offer flexibility in work processes (Lucas Jr and Olson, 1994; Valcour and Hunter, 2005) where flexibility is defined as the ability to adapt to new and changing requirements from external market forces (Lucas Jr and Olson, 1994), some unintended consequences have also been identified in the literature with implications for leadership. For instance, Church *et al.* (2002) argue that the relevance of technology in organizational development and change initiatives, though evident, engenders an over-reliance on the technology, which in turn increases the potential for unintended consequences. In a study of PepsiCo's Web-based career management platform in which the organisation wishes to encourage a new culture of collaboration and open communication, Church *et al.* (2002) identify that threats to adequate representation, decreased participation rates of employees, issues about employee confidentiality, lack of faith, and technical hiccups tend to potentially threaten the integrity of the whole developmental process. The authors find that the ability of technology to drive organisational development has at the same time revealed potential threats. This paradox is also seen in Lucas Jr and Olson (1994) who argue that technology in an organisation enhances organisational flexibility by removing constraints on *where* and *when* work is accomplished, accelerating the processing of information thus affecting the pace of work, and allowing the organisation to respond quickly to market demands. They however concede that technology itself is inflexible, that is, significantly increasing costs, time and effort to change technological systems, being hard to maintain, and in many cases making it difficult to modify workflows and organisational structure for which the organisation can become stuck in such inflexibility over time. Thus,

technology carries with it unanticipated consequences as the organisation becomes dependent on its imperatives.

Similarly, technologies that are deployed for communication among individuals, manifest in applications like electronic mailing and Web 2.0 platforms, have also not escaped scrutiny when it comes to unintended consequences. Electronic mailing for instance, some have argued can become a symbol of stress for individuals in the organisation (Duxbury *et al.*, 2007; Murray and Rostis, 2007; Barley, Meyerson and Grodal, 2011) although this assertion is a disputed conclusion elsewhere (Chesley, Moen and Shore, 2003; Renaud, Ramsay and Hair, 2006; Phillips and Reddie, 2007). However, while electronic mailing is a technological means for communication and collaboration (Tyran, Tyran and Shepherd, 2003), it is not classically categorised among Web 2.0 technologies (O'Reilly, 2007). Communication via electronic mailing is largely asynchronous (Barley, Meyerson and Grodal, 2011); Asynchrony is the idea that the technology allows individuals to send messages at anytime without expecting feedback immediately as would have been the case in for instance, telephone conversations in which communication is a two-way activity – this would rather be termed 'synchronous' (Barley *et al.*, 2011). In Web 2.0 platforms, however, collaborative engagement in which individuals dynamically and openly communicate with others is what is observed, be it synchronous or asynchronous (O'Reilly, 2007).

But what is known about unintended consequences of Web 2.0 technologies in organisations today, especially when it comes to the concept of leadership? Here, Chui, Dewhurst and Pollak (2013) argue that leaders in organisations tend to focus on the external uses of Web 2.0 technologies that they lose sight of internal possibilities these technologies can engender within the organisation. As a result, the **true** impact that these social technologies bring to organisations remains to be seen. The implication is that, unanticipated outcomes are not ascertained either. For Chang and Kane (2013), however, the side effects that arise from the deployment of these technologies in organisations are the legal implications in which leadership is placed in a dilemma of '*damned if you do, and damned if you don't*' situation. That is, if managers choose to act on employees' online activities, it can potentially infringe on established workplace protections and the converse is true even if managers choose to ignore what happens on

Web 2.0 platforms (like ignoring illegal online activity by employees on work computers or during work hours). This dichotomy is perhaps not only a paradox of technology (Lucas Jr and Olson, 1994) but also a characteristic of the evolution of a virtual world alongside our physical world facilitated by Web 2.0 technologies (van Wamelen and de Kool, 2008). Additionally, the very qualities of Web 2.0 technologies become in themselves potential sources of unanticipated outcomes when attention is paid to the technology (ibid) but also because individuals (that is, the social aspects) are often 'entangled' with the technology (Orlikowski, 2000). Juxtaposing the general functional qualities of Web 2.0 technologies (van Wamelen and de Kool, 2008) with their unintended consequences, I examine this conundrum in relation to leadership from the literature below. The discussions will then culminate in what the implications are for theory and methodology for this research.

#### 2.2.5.2 Social Interaction Versus Isolation

Avolio, Kahai and Dodge (2000) discuss an emerging nature of leadership mediated by advanced information technologies. For these authors, this emerging concept – which they label *e-leadership* – is particularly important giving the advancement of information technologies that was transforming work practices from physical to virtual communities. That is, a new context within which leadership is to be exercised was emerging and this was going to be facilitated by information technologies. Although the terms, '*Web 2.0*' and '*social technologies*', only came to be popularised after O'Reilly Media's 2004 conference (Altamimi, 2013), Avolio, Kahai and Dodge (2000) arguably captured elements of these Web 2.0 technologies particularly in underpinning leadership with social interaction mediated by information technology. Here, leadership is exercised in and through a medium of technology for social interaction among all actors – both leaders and 'followers'.

However, a later work by Avolio and Kahai (2003) portrays e-leadership as a technological means for exercising leadership, the implication being, e-leadership is a tool in a leader's portfolio for 'doing leadership' (Huxham and Vangen, 2000, 2005) in the organisation. This conceptualisation potentially problematizes Avolio et al's (2000) earlier argument where e-leadership is not just a tool for *doing* leadership in the face of

advanced information technologies, but a structural mechanism within which a discursive relationship between leadership and technology is enacted with technology influencing but also being influenced by leadership. As a consequence, e-leadership presents a duality in its conceptualisation of leadership. First, e-leadership as a relational concept enabled or facilitated by information technology (Avolio, Kahai and Dodge, 2000), which in this context is Web 2.0, and second, e-leadership as a technological means for achieving outcomes that were before only possible in face-to-face situations (Avolio and Kahai, 2003). Whereas the former is enacted in a form of social interactionist structure, which is consistent with Web 2.0 applications today, the latter potentially creates avenues for 'isolation' (van Wamelen and de Kool, 2008) if the technology fails, or if individuals deploying these technologies become so addicted to it as a tool that they risk isolating themselves from social interactions (Turkle, 2011). For instance, Shamir and Ben-Ari (1999) coin the term, *teleleadership* to depict leadership in the centre of information communication technologies like a military leader involved in reading and interpreting electronic information and transmitting instructions via the same mechanism to followers. This notion, they argue, presents a form of distant leadership isolating the leader from followers without any social interaction. The implication is that, manager-employee relationships are seen as gapped in organisations for which technology becomes a means by which the distance is bridged, especially in today's 'boundaryless' organisations (Shamir, 1999; Gajendran and Joshi, 2012).

Consequently, Web 2.0 technologies may be an instrument for sustaining manager-employee relations while at the same time isolating the manager from employees (Kahai, 2013). This intermediary role of the technology, Avolio, Kahai and Dodge (2000) argue, potentially impacts the manager-employee relationship for which they propose leader-member exchange (LMX) theory (Graen and Uhl-Bien, 1995) as a promising basis to ground and explore such phenomenon. However, LMX theory in the context of leadership in a Web 2.0 era theoretically problematizes the affordances of the technology; here, it is not just leader-member dyads that are at play but member-member dyads, as well as dyadic relations established with the wider Web 2.0 context including external stakeholders of the organisation. The implication is that because participation is open to everyone, several dyadic relationships must be considered which is a limitation to LMX in this context. Uhl-Bien (2006) thus argues that although

an LMX approach may inform us about 'LMX relationships (or MMX, which is LMX applied to a peer), we learn little about other types of relationships that may occur in leadership interactions. Additionally, for our purposes here, we learn little about relational processes' (Uhl-Bien, 2006, p. 668).

### 2.2.5.3 Participation versus Exclusion

With regards to *participation* in leadership, Avolio *et al.* (2014) acknowledge the implications of earlier foundational work (i.e. Avolio, Kahai and Dodge, 2000; Avolio and Kahai, 2003) and expanded the idea of e-leadership by recognising the complexities involved in leadership in organisations vis-à-vis recent advances in information technologies. Here, the authors muse the potential of e-leadership in encouraging participation among followers through available technologies like Web 2.0. They argue, 'participatory systems are now common in many Web 2.0 applications, ...These technologies impact leadership transmissions by promoting self-disclosure and the freedom to share details of leader and followers' work and personal lives in real time' (p.118). However, the authors contend that although these technologies as per their constructions provide platforms for participation among all actors in the organisation, thus shifting the locus from individual to collective phenomena, leadership practice and studies are still yet to empirically verify this assertion, hence a gap to be explored.

Accordingly, 'exclusion' of individuals who for some reason do not engage with these technologies is potentially overlooked. This exclusion might result in non-participation in any interactive electronic transmissions of leadership thus posing a challenge in itself. For Venters, Green and Lopez (2012), such exclusion of individuals is a result of generational differences for which Generations Y and Z have an advantage. Taxonomically, Bingham and Conner (2010) categorise these generations using Pew Research's report; Generation Y are those born between 1981 and 1997 (also referred to as Millennials) and Generation Z are those born after 1997. They claim these generations are technologically savvy individuals or at least able to easily adapt to new technology. Here, contrasting Bingham and Conner's (2010) taxonomy with Venters,



Green and Lopez (2012) suggests that those born before 1981 risk being excluded from electronic transmissions of leadership through Web 2.0 technologies.

Whereas a universal acceptance of this generational taxonomy is lacking (Livingstone and Bober, 2003; Alberghini, Cricelli and Grimaldi, 2010; Vodanovich, Sundaram and Myers, 2010; Stanton and Stanton, 2013), thereby problematizing generalisations of this kind, differences in generational dispositions to various organisational phenomena have been shown elsewhere. For instance, Smola and Sutton (2002) argue how generational differences significantly influence work values of individuals in an organisation, impacting on their loyalty to the organisation. An implication is that some individuals may fully participate in work practices while others may not. Arsenault (2004) then identifies generational differences in organisations presenting how certain leader behaviours are perceived and ranked differently by different generations. The implication is that individuals possess different expectations due to generational inclinations (Ng, Schweitzer and Lyons, 2010) and therefore rank leader behaviours differently.

For Albion and Gutke (2010), certain leadership models best resonate with some generations. An implication is that a generation with ubiquitous information technologies including Web 2.0 must be led with a particular leadership approach (Kouzes and Posner, 2007; Warner and Sandberg, 2010) with a likely loss of cognisance for individual differences. Here, non-participation of individuals in manager-employee interactions enabled by Web 2.0 technologies may be attributable to some factor like generational descent. However, these categorisations depict apriorisms and generalisations that potentially make the reader lose sight of the phenomenon as an outcome of the deployment of these technologies within the organisation, not merely as a cause for exclusion. As such, the question of what unintended consequences emerge as a result of the participation in, or exclusion from these Web 2.0 technologies when it comes to leadership, becomes pertinent.

Thus, Web 2.0 technologies may enable participation among managers and employees in the organisation but exclusion of individuals as an unintended consequence may sorely impact information sharing in an online environment (Cramton and Orvis, 2003).

Ironically, information sharing in online participation is itself shown to be a product of the actual use of these information communication technologies among employees (Kim and Lee, 2006). The implication is that, exclusion may occur in other forms among those actually involved in the use of the technology as examined below.

#### 2.2.5.4 Information Sharing versus Information Protection

Information sharing, according to Chan (2013) is one important way of empowering followers and eliciting suggestions thereby allowing the voice of followers to be heard in the organisation. This 'voice' of followers that information sharing supposedly engenders in the organisation may range from a mere breaking of silence among followers (Milliken, Morrison and Hewlin, 2003), a means by which certain organisational practices including leadership are challenged by followers (Detert and Burris, 2007), a way to relate with peers – 'speaking out' – as well as with leadership – 'speaking up' (Liu, Zhu and Yang, 2010), or a product of confidence and trust in leadership (Gao, Janssen and Shi, 2011). Therefore Chan (2013), in his survey of 220 managers and employees in a Chinese organisation, proposes that managers create more open channels of communication through information sharing so as to encourage voice activities in their organisations. What is missing in Chan's (2013) argument, however, is the specific means the open channels of communication he advances might look like. Moreover, he positions his study with a theoretical model of paternalistic leadership which assumes one individual being a father figure with strong authority and concern for followers (Westwood and Chan, 1992; Pellegrini and Scandura, 2008), which is in conformity with the Chinese Confucian ideal of compliance and harmony (Westwood, 1997). As such, information sharing in this context may be hindered by information protection if that is what will ensure compliance and harmony.

Additionally, Randel and Ranft (2007) show that information sharing may be underpinned by individual motivations, and therefore may not necessarily be work-related. This is supported in Cramton and Orvis (2003) who posit that information could also be of a *social nature* – that is, relating to individual relationships, aspirations, motivations and so on – or *contextual* – that is, information relating to the milieu

surrounding tasks. Consequently, individuals may decide to withhold some information if it does not fulfil their personal intentions or if it is deemed undesirable for certain work contexts. As such, information technologies that enable information sharing in the organisation, one can suggest, not only serve as a vehicle for sharing but also for withholding information (Mesmer-Magnus *et al.*, 2011). This is a paradox, which Cramton and Orvis (2003) argue is a challenge to what they term 'technology-mediated communication'. Howard (2006) for instance argues how through a process of political redlining, individuals can share or withhold information from certain groups of people as a result of their online activities by using technologies like Web 2.0. Certainly, Web 2.0 technologies, Takaragawa and Carty (2012) argue, have a role to play in distribution patterns taken when it comes to information sharing. However, how and why individuals in leadership use these technologies to withhold information with regards to information sharing in an online environment remains a gap to be explored.

Furthermore, Kim and Lee (2006) show that employees' usage of information technologies in the organisation is an important factor in their sharing of information among themselves. Nonetheless, the authors assert that while the engagement of these technologies by individuals has a positive impact on how they share information, it still depends on the perception of ease of use of the technology in question. Perception of ease of the technology is here defined as 'the degree to which a person believes that using a particular system would be free of effort' (Davis, 1989, p.320 cited in Kim and Lee, 2006, p.374). Accordingly, the idea of openness and information sharing that Web 2.0 technologies fundamentally portray (O'Reilly, 2007) carries with it implicit notions of information withholding as an unintended consequence if these technologies are perceived to be non-user-friendly by individuals. Methodologically, Kim and Lee (2006) use survey technique to measure employees' utilisation of information technology applications and their perception of ease of use of the technology being deployed for information sharing. Whereas attention was focused on individuals for the analysis, the technology in question is ignored, thus implicitly rejecting any attribution of agency to technology in the phenomenon. Moreover, this study was conducted with 322 employees focusing primarily on employee knowledge sharing without consideration for managers in the organisation. Additionally, the methodological approach disregards the reasoning behind the various choices made on the questionnaires thus separating

the study from subjective thoughts individuals might propose about why they might choose to protect or withhold information even if they score highly the technology in terms of its ease of use. In effect, information sharing among managers and employees may be facilitated by Web 2.0 technologies but an unintended consequence of information withholding still lurks in its trail and what the implications are for the manager-employee relationship remain a gap. Perhaps information withholding or protection may be an outcome of the disquiet about the 'big brother' effect, which is discussed next in the proceeding section.

#### 2.2.5.5 Transparency versus The Big Brother Effect

Cotterrell (1999) argues that the idea of transparency 'involves not just [the] availability of information but active participation in acquiring, distributing and creating knowledge' (p. 419). This implies participation by all those with interest in the acquisition, distribution and creation of information in the organisation. Fombrun and Rindova (2000) then introduce the importance of stakeholders by defining transparency as 'a state in which the internal identity of the firm reflects positively the expectations of key stakeholders and the beliefs of these stakeholders about the firm reflect accurately the internally held identity' (p.94). For Florini (2007), it is not only about internally held beliefs about the organisation but also 'the degree to which information is available to outsiders that enables them to have informed voice in decisions and/or to assess the decisions made by insiders' (p. 5). Transparency is therefore an issue for those within the organisation as much as it is for those 'outside' the organisation. Its impact on leadership can therefore not be relegated to the background since managers must deal with all these expectations (Bennis, 2013). According to Bennis (2013), the ubiquity of information technologies with associated applications like Web 2.0 that leadership is exposed to will continue to grow making transparency inevitable. For him, an increasing transparency, which is a result of digitisation must be embraced by managers as the normative, and they must understand the power these technologies enable both for leadership and followership.

Bennis (2013) then highlights *Onward: How Starbucks Fought for its Life Without Losing its Soul*, a book by Howard Schultz (Starbucks CEO) in which he (that is, Schultz)

narrates receiving feedback and information from 17,000 coffee shops around the world. This was only possible because digital technology, Bennis argues, had enabled such capacity to get feedback so quickly and respond accordingly that Starbucks avoided reputational damage. However, what Bennis (2013) argues, though bolstered with Schultz's experiential data, undermines the unintended consequences that transparency in a 'digital world' has engendered. He states rather in passing, 'transparency is inevitable at every stage of our existence. Yes, it will be misused, but we had better learn about it and embrace it if we are going to be effective leaders in the digital world' (ibid, p.636). Similarly, Jaradat (2013) illustrates how transparency is conceptualised by leadership in Jordanian universities as parallel to engaging both internal and external stakeholders of their organisations. In other words, transparency is synonymous with open engagement with all those who influence or are influenced by the organisation. Here, Jaradat interviews 80 managers (consisting of deans, deputy deans, and heads of departments) about how they perceive the idea of transparency with respect to their jobs. Posing such question to managers in this study only provided a platform for them to endorse their own activities as being transparent and this is evident in responses given: from transparency is 'access to information by university staff...' to 'fighting all forms of corruption' to 'applying open-door policy' and so on (p.78). The implication is that, managers' business-as-usual could pass as the ideal for transparency. Furthermore, because only managers are interviewed in Jaradat's (2013) study, how employees view the phenomenon is neglected and therefore how transparency can be misused for instance, seems not to be of concern because the managers in the study assume to be doing it right per their responses.

However, the accessibility of information to all actors in this 'age of transparency' demands that the opinions of followers cannot be taken for granted by leadership (Meyer and Kirby, 2010; Norman, Avolio and Luthans, 2010) and also by researchers anymore. This 'age of transparency' (Meyer and Kirby, 2010) or the 'digital world' (Bennis, 2013), Florini (2007) argues, does not necessarily make transparency inevitable as asserted in Bennis (2013). This is because, she avers, 'some of the same technologies that have fostered the information revolution are being used to control the resulting flow of information' (Florini, 2007, p.5) thereby bringing the notion of 'the big brother' or electronic surveillance into the phenomenon. The implication is that,

transparency, which is purportedly an outcome of information technologies and associated applications like Web 2.0, possesses the unintended consequence of surveillance in its trail, which must not be ignored (Grimmelikhuisen, 2012). Moreover, surveillance has been shown to be a concept that does not auger well for leadership in organisations. It breaks trust between managers and employees (Westin, 1992), reduces employees' perception of personal control thereby decreasing task performance and job satisfaction (Stanton and Barnes-Farrell, 1996), and it militates against managers' ability to influence when employees get the impression that they are being monitored by their managers (Subašić *et al.*, 2011). That said, Andrejevic (2004) position on surveillance challenges the assumption that surveillance is only an instrument for managers. He argues that surveillance does not necessarily diffuse from a centralised location in a hierarchical fashion (such as from managers, or commercial entities, the State, etc.) but can also be lateral, that is, in a peer-to-peer situation. This is even pushed further in the idea of 'participatory surveillance' (Best, 2010) in which individuals turn the big brother gaze on themselves for their own purposes in what could also be referred to as self-surveillance (Lupton, 2013), that is, the use of self-tracking technologies or applications for self-care or self-management. For Livingstone (2005), these concerns are an indication of the blurring of the boundary between what is private and what is public, a dichotomous relationship created by communication technologies such as Web 2.0. As such, the issue of 'transparency versus the big brother' within the concept of technology-mediated interaction in leadership becomes nuanced by unintended consequences thus calling for further empirical investigation of the phenomenon in the organisation.

#### 2.2.5.6 Implications for Theory and Methodology

With the arguments raised in the literature so far (see Table 1 below), that is, the challenge of leader or follower isolation as opposed to social interaction, exclusion in the face of participation, information protection or withholding as opposed to information sharing, and the challenge of the 'big brother' effect in contrast to transparency, some pertinent questions still remain: What unintended consequences emerge for the manager-employee relationship upon the use and/or disuse of these Web 2.0 technologies in the organisation? Moreover, are these arguments of unintended

consequences of Web 2.0 technologies for leadership consistent with the lived experiences of managers (and employees) as well as their manager-employee technologically mediated relationships? For these questions, Kipnis (1993) has shown it is as much a philosophical as it is an empirical undertaking. Philosophically, Bimber (1994) argues three kinds of *technological determinism*<sup>5</sup>: the *normative*, *nomological*, and *unintended consequences* accounts. The normative is a decoupling of technology from ethical and political debates thus allowing it to be autonomous. The nomological is the argument that there is only one possible cause of social change, which is technology – the artefacts. The third account is the argument that the impact of technology on the social often has consequences which social actors cannot anticipate. This third account is what is reflected in Kipnis' (1993) study.

In his study, Kipnis (1993) argues that technology provides opportunities for shaping people's behaviour by changing how users respond to the technology. These 'behaviour technologies' as he calls them, offer systematic techniques for influencing individuals in the organisation parallel to how leadership theories share 'the idea that Person A causes Person B to do something that B would ordinarily not do' (p.149) only this time 'Person A' is replaced by the technology. Nonetheless, it is worth noting leadership theories have now gone beyond this conceptualisation of leadership as a sheer tool for influence even though such arguments still remain (Spector, 2014). That highlighted, Kipnis (1993) argues that the technology does not only influence subject behaviour, it also reflexively acts on the one using the technology to influence others thus affording it a 'metamorphic effect'. This then implies that the technology possesses embedded 'inscriptions' (Akrich, 1992) that act on both user (or controller) and subject (or target of the technology). Technological 'inscriptions', Akrich (1992) argues, are outcomes of the innovator's beliefs about how the technology and its user would (or rather must) relate under particular settings for which the technology is designed in order to reflect such predetermined or pre-imagined relationship. However, she cautions that these 'prescriptions' as envisaged by the innovator of the technology, become subjected to negotiations by the real users who may use it for different purposes. This assertion thus poses a methodological challenge, that is, one needs to consider how the Web 2.0 technology being used in the organisation is generally 'pre-scripted' to be used, as well

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<sup>5</sup> Technological determinism is discussed in prior sections.

as how the technology is being deployed in practice in order to understand any unintended consequences. Akrich (1992) acknowledges this methodological challenge by stating that the researcher needs to compare '*the world inscribed in the object and the world described by its displacement*' (p.209; Author's emphasis). This approach is however lacking in the methodological designs seen in the literature so far. Table 1 below offers a brief overview of issues raised.



Some Influential Authors	Focus	Key finding/ argument	Method Used	Underlying Assumptions	Emerging themes For Investigation
Avolio, Kahai and Dodge (2001)	Implications of e-leadership – theoretical and methodological	Advancements in information technology present a new context within which leadership must be exercised.	Qualitative: By theoretical abstraction but they make a proposition for a quantitative study of e-leadership.	Leadership can be exercised in and through a medium of technology for social interaction among all actors (both leaders and followers), <i>isolation</i> is ignored.	Social interaction versus isolation
Church et al. (2002)	The use of a Web application for organisation development and change.	The impact of technological applications on organisational practices is observed as a paradox.	Qualitative: A case study of PepsiCo's Web-based career management platform.	Uncertainty about outcomes.	General paradox of technology.
Avolio et al (2014)	E-leadership as an emerging practice of leadership in both theory and practice.	E-leadership is ' <i>a social influence process embedded in both proximal and distal contexts mediated by AIT that can produce a change in attitudes, feelings, thinking, behavior, and performance</i> ' (Avolio et al., 2014, p.107).	Qualitative: Analysis of various theoretical arguments on advanced information technologies (AIT) in organisational practices.	Assumption is that the technology is easy to deploy and everyone uses the technology hence exclusion is ignored.	Participation versus exclusion
Bennis (2013)	Transparency as a welcome attribute to leadership in a Web 2.0 world.	Leadership must accept the attribute of transparency enabled by the technology or miss associated benefits.	Qualitative: By induction, using Howard Schultz's experience as CEO of Starbucks.	Web 2.0 offers optimistic outlook for leadership with little thought to unintended consequences.	Transparency versus surveillance (the 'Big Brother')
Chan (2013)	Information sharing.	Leaders must create open channels of communication through information sharing so as to encourage voice activities in their organisations.	Quantitative: A survey of 220 leaders and employees in a Chinese organisation.	Paternalistic model of leadership deployed to deliver the Confucian ideal of compliance & harmony.	Information sharing versus information protection
Chang and Kane (2013)	The legal implications for leadership in a Web 2.0 era.	Leaders are in a 'damned if you do and damned if you don't' dilemma. (n.p.).	Qualitative: Five legal cases used as empirical data.	Uncertainty about outcomes of Web 2.0 engagements.	Transparency versus surveillance (the 'Big Brother')

Table 1: Overview of key issues raised with regards to unintended consequences.

Even though the majority of the arguments from the literature seem to be rather theoretical, some methodological implications for empirical examination are also raised or at least implied. One of such influential papers is Avolio, Kahai, and Dodge's (2000) argument that research in this field 'must now examine the dialectic interplay between leadership as a source of structures and how leadership affects and is affected by the structures arising from the appropriation of technology' (p.644). Using Adaptive Structuration Theory (i.e. DeSanctis and Poole's, 1994) as a lens, they argue what is of essence is the relational needs and interaction between leadership and followership for which the technology now has a role to play. As such, the level of analysis is not individuals per se, but the resultant interactions engendered via the deployment of the technology in the organisation. The authors then propose an experimental methodological design by which such interaction among actors might be measured. Research subjects, they propose, would be placed in two by two groups of transactional/transformational leadership cum low/high media-rich collaboration technology, tasks would then be assigned under separate conditions offered by the two leadership behaviours, and then a questionnaire used to measure such variables as trust, moods and behaviours, perceptions' of media richness, and impact of leader behaviours on the group processes.

Additionally, the researcher would be detached from real life interactions of subjects by obtaining data using the **text** recordings from the technologies deployed (Ibid). Here, an implicit notion is that, the textual interactions taken from text recordings are a representation of the 'real world' events among actors. This is consistent with Callon (1986) and Latour (1987), who argue that the role of texts is that of representation, a precursor for the situated action it represents, and even more an actor in the heterogeneous network of relations (of people, the technology, the texts, the leadership behaviours, follower perceptions, and so on). Therefore, the theoretical lens of adaptive structuration alone, as deployed by Avolio, Kahai, and Dodge (2000) does not fully capture the implicit notion their methodological proposition holds. This is because adaptive structuration theory, though highlights a recursive relationship between technology and organisational practices, tends to be concerned with the emergent structures generated as a result of the interaction with technology (ibid). These structures are conceptualised as rules, resources (political and economic), and the

organisation's culture (DeSanctis and Poole, 1994; Klein and Kleinman, 2002), and not necessarily the more detailed actor-to-actor interactions or trajectories in this network of relations (Callon, 1986). The implication is that how actors came to organise or disorganise, sustain, and or dismantle the network of relations established by virtue of the technology has been taken for granted. Additionally, the 'textual reality' (Bloomfield and Vurdubakis, 1994) alone, being the data obtained from the technology, may not be an adequate representation of the real experiences that exist outside those texts (Bloomfield and Vurdubakis, 1994, 1995). Therefore the subjective opinions of individuals or the human actors in the network might also have to be taken into consideration to fully understand how the technology influences and is also influenced by the manager-employee relational practices so as to explore any unintended consequences.

With regards to Kipnis (1993) who conjectures that a leader can use a particular technology to cause 'Person B to do something that B would ordinarily not do' (p.149), one can further argue other assumptions underpinning this view. One assumption is that of a top-down use of the technology by managers to influence employees. What is lacking is how the converse may hold if both managers and employees are considered on an equal basis or without privileging one group over the other on a platform like Web 2.0 that intrinsically jettisons top-down engagement of users. Additionally, technology is argued to influence manager perceptions of employees (Kipnis, 1993) but leaves a gap of how employees perceive leadership as a result of the technological mediation of the manager-employee relationship. Here, technology is also ascribed such agency as to influence manager perception of employees. Avolio et al (2000), as shown earlier, have also advanced e-leadership as a discursive relationship within which technology influences but is also influenced by leadership. As such, there is an ascription of agency to all actors (managers, employees, and the technology) in a heterogeneous network of relations.

Accordingly, a technological deterministic lens alone for viewing this phenomenon of a heterogeneous network in which leadership is itself an actor (among others like the technology) does not suffice, as is the inadequacy of only a social constructivist explanation. This is because, Akrich (1992) argues, 'technological determinism pays no

attention to what is brought together, and ultimately replaced, by the structural effects of a network. By contrast social constructivism denies the obduracy of objects and assumes that only people can have the status of actors' (p.206). The implication is that, one must deploy a theoretical lens that embraces all actors (both human and non-human) in the network symmetrically if one desires to explain how manager-employee relational activities are mediated by Web 2.0 technologies. It is in this regard that the analytical lens of the actor-network theory becomes instrumental in exploring empirically the role of the technology and the gap of what unintended consequences occur as a result of its deployment for the manager-employee relationship. The following research questions are thus posed:

**How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?**

- *What practices are involved when relational activities of manager-employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

**2.2.6 Conclusion**

Having argued that Web 2.0 technologies offer significant benefits when it comes to the manager-employee relationship, this chapter also demonstrates that there are unintended consequences of their deployment in organisational life. Here, social interaction is shadowed by isolation, exclusion lurks behind the idea of participation, information sharing is challenged by information protection, and transparency is dented by the big brother effect. However, the theoretical and methodological approaches taken in studying this technology's role in leadership have largely ignored the technology as a key (non-human) actor in the analysis. As a result, we take for granted or fail to empirically explore the role of these technologies as well as any unintended consequences that they produce in the leadership relationship. Furthermore, the singular lenses of a technological deterministic view or arguments of social constructivist positions alone do not adequately address this conundrum. Accordingly,

this chapter has argued that a 'new' theoretical lens is required, one that is neither solely technologically deterministic nor socially constructivist; rather, it has to accept technology as a non-human actor in a heterogeneous network of relations. That is, it must avoid placing an overemphasis on the agency of only the human actors – managers and employees or on only the technological actants. This 'new' theoretical lens is the actor-network theory, discussed in the next chapter that explores the key theories and concepts underpinning this study (Hart, 1998).

# Chapter Three

## The Key Theories and Concepts – 1

*'You cannot go on 'explaining away' forever: you will find that you have explained explanation itself away. You cannot go on 'seeing through' things forever. The whole point of seeing through something is to see something through it.'*

– C.S. Lewis

### 3.1 Actor-Network Theory – A Brief Overview

The actor-network theory (ANT) is an array of interrelated concepts that emerged in the 1970s from science and technology studies beginning with the work of Bruno Latour, a French anthropologist and social scientist, and Steve Woolgar, a British sociologist (Garrety, 2014). They studied the work of scientists in the laboratory (the so-called laboratory studies) using an ethnographic approach and documented observations that challenged the 'objective' process of how scientists produced 'facts'. They noticed that scientists relied on 'things' – petri dishes, mice, drawings, chemicals, paper, graphs, etc. in the construction of scientific 'facts'. That is, 'they become 'facts' when scientists assemble a network of allies that is strong enough to withstand doubts and challenge' (ibid, p.15) and the material objects were instrumental allies in persuading others about these 'facts'. In the 1980s, Michel Callon (French sociologist), John Law (British sociologist), together with Bruno Latour became the main proponents who first used the term 'actor-network theory' and carried the 'laboratory studies' into other social phenomena. In the process, Singleton and Michael (1993) noted these ANT theorists 'transgressed many of sociology's most cherished disciplinary dichotomies: nature/culture, subject/object, natural science/social science, cause/meaning, ...- all of these conceptual contours have been eroded by the actor-network approach' (p.227).

ANT thus challenges the very core of what constitutes the social and 'to investigate how something becomes 'true', routine or accepted, the researcher finds a point of origin and traces how networks spread, who or what was enrolled, and how interests were translated' (Garrety, 2014, p.15). This implies 'following the actors' (Callon, 1986), and non-human actants would also now have a voice in how the social is researched and

explained. ANT has since found wide acceptance in a range of academic disciplines including management (Cressman, 2009). Garrety (2014) thus states,

[ANT] presents a novel way of looking at the world that can be counter-intuitive to those who are used to focussing on what normally counts as 'organisational' – or at least the versions of 'organisation' that appear in management and organisational behaviour textbooks. The latter seem to favour a taxonomic view of the world that is composed of lists of things (lists of 'needs' that motivate people, stages of team formation, types of groups, lists of leadership styles, levels of culture, etc.). Artefacts do not feature much in these texts beyond their appearance as superficial manifestations of culture. Nor is there much consideration of how things actually *get done*.' (Garrety, 2014, pp.17-18, Author's emphasis).

Accordingly, this research draws on ANT's analytical resources to fulfil the aims and objectives earlier detailed in the introductory chapter of this thesis.

### 3.2 Actor-Network Theory As A Lens For This Study

Leadership studies have focused largely on the leader as an individual having leadership traits (Kirkpatrick and Locke, 1991; Judge *et al.*, 2002; Hogan and Kaiser, 2005; Zaccaro, 2007), or on followership thus recognising the agency of followers (Meindl, 1995; Grint, 2005b; Shamir, Bligh and Uhl-Bien, 2007), and more recently on the relational aspects of manager-employee interactions (Uhl-Bien, 2006; Cunliffe and Eriksen, 2011). What is common in these conceptualisations of the phenomenon is an overemphasis on the agency of leaders and or followers, thus neglecting the role of technology in a world that is now a 'digital world' (Bennis, 2013), a technologically mediated age of transparency (Meyer and Kirby, 2010), 'a world where the use of information and communications technology is pervasive and ubiquitous' (Vodanovich, Sundaram and Myers, 2010, p. 711), a digitally mediated interactive world (Winget and Aspray, 2011), or more radically, 'in practice we are active participants in the development of a world of hybrids' (Bloomfield, 2001, p. 195). Nonetheless, even though some works (Bilgram, Brem and Voigt, 2008; Dutta and Fraser, 2009; Iverson and Vukotich, 2009; Newcombe, 2009; De Hertogh, Viaene and Dedene, 2011) explicitly acknowledge an intimate relationship between technology and leadership, their epistemological assessments still ignore this new social actor – technology – in the social space of the human. As such, it

has become a game of seeing the elephant in the room yet ignoring its thundering stomps. That is, taking an ontological posture that allows one to only offer explanations that fit their (or a dominant) worldview while other parts of the social are taken for granted (Woolgar and Pawluch, 1985). Woolgar and Pawluch (1985) present this occurrence metaphorically as *ontological gerrymandering* whose strategy is that,

‘the successful social problems explanation depends upon making problematic the truth status of certain states of affairs selected for analysis and explanation, while backgrounding or minimising the possibility that the same problems apply to the assumptions upon which the analysis depends’ (Woolgar and Pawluch, 1985, p.216).

For instance, Woolgar and Pawluch (1985) critique Spector and Kitsuse’s (1977) position as one example of ontological gerrymandering. In Spector and Kitsuse’s argument, they consider that marijuana in the 1930s was officially defined as being dangerous and addictive. In the 1960s however, marijuana was no longer considered as addictive. This change in definition the authors argue,

‘there is nothing in the nature of marijuana itself to explain this definitional change. The nature of marijuana remained constant throughout the interval and, therefore, an explanation of the variation must come from another source. In fact, its “nature” cannot adequately explain either the definition of marijuana as an addictive or nonaddictive substance. The explanation of the definition must be sought in the conceptions held by various groups, the notion of addiction they applied, the type of evidence they used to support their views, the political strategies and tactics they used to gain acceptance of their definitions and the support given to them by governmental agencies for institutionalizing those definitions’ (Spector and Kitsuse, 1977, p.43 cited in Woolgar and Pawluch, 1985, p.216).

That, notwithstanding, Woolgar and Pawluch (1985) argue that Spector and Kitsuse (1977) fail to realise that they themselves have made a definitional claim of the nature of marijuana or the constancy of the substance and its behaviour. This assertion thus challenges the ontological lens through which definitional claims or analyses are made when it comes to social phenomena. For Law (2004), it demands that research applies methods that deviate from the hegemony of ideas in social science, which ‘tend to work on the assumption that the world is properly to be understood as *a set of fairly specific, determinate, and more or less identifiable processes*’ (p. 5).



When it comes to leadership, such ontological assumptions may not suffice since it is considered a nebulous concept with many definitional claims. For instance, Stogdill (1974) reckons 'there are almost as many definitions of leadership as there are persons who have attempted to define the concept' (p.259), and for Bennis and Nanus (2003), 'decades of academic analysis have given us more than 850 definitions of leadership[!]' (p.4). And this is because, Grint (2005a) argues, 'leadership research appears to be anything but incremental in its approach to 'the truth' about leadership: the longer we spend looking at leadership the more complex the picture becomes' (p.15). As such, questioning the underlying ontological assumptions from which all those definitions proceed, especially in this newly conceptualised technological world, is required in order to avoid backgrounding any analysis to aforeheld assumptions.

It is in this regard that the resources provided by the actor-network theory (ANT) offer the ontological basis to challenge assumptions of both human agency (expressed in social constructivist ideas) and non-human or technological assumptions (expressed in technologically deterministic schools), with its principle of generalised symmetry (Law, 1992). This is because 'attempts to "apply" an existing analytical perspective to a new object reveal (perhaps more clearly than is evident..) basic, taken-for-granted assumptions about the character and status of that [object]' (Woolgar, 1991, p. 20). This section thus discusses in more detail the resources drawn upon from the analytical perspective of the ANT starting with the principle of generalised symmetry.

### ***3.2.1 The Principle of Generalised Symmetry***

One of the fundamental concepts in ANT is the principle of generalised symmetry (Callon, 1986). Callon (1986) contends that whereas plurality of descriptions about Nature and the natural sciences are acknowledged, the same has been inadequate when it comes to society or sociological phenomena. For him, Nature by itself is not able to establish a consensus concerning descriptions accorded it. Therefore, sociologists and philosophers would have to seek less ambiguous explanations for the emergence, development and eventual closure of the arguments, something that is impossible to do. This is because, he argues, the social elements are themselves as uncertain as Nature and therefore one cannot be agnostic towards one and not be to the other. As such, it poses a theoretical difficulty that is 'from the moment one accepts that both social and

natural sciences are equally uncertain, ambiguous, and disputable, it is no longer possible to have them playing different roles in the analysis' (ibid, p.198).

For instance, leadership as a sociological concept has not found any consensual agreement as to constrain us to one definition and the same is true for the conceptualisation of technology. Accordingly, one must not treat these two entities as separate in any analysis; rather, both must be explained in the same terms and seen as possessing interests that require negotiation and accommodation (Callon, 1986; Law, 1986c, 1987, 1992; Latour, 2005). An implication for this ANT argument is that the same descriptive and explanatory framework must be applied to both the social and the technological, in this case, leadership and Web 2.0 technology. This is because, Law (1992) argues, 'the social is *nothing other than patterned networks of heterogeneous materials*' (p.381, Author's emphasis). This idea is the principle of generalised symmetry, which van House (2004) assesses as 'the most radical (and controversial) contribution of ANT' (p.15) especially in extending the same argument to humans and non-humans. Thus, actors should not be restricted to only humans but to all other entities in relational networks with the human (Law, 1992; Latour, 1995). In other words, both humans and non-humans are involved in the social and are able to act on one another (Law, 1986c; Latour, 1995). Latour (1992) for instance makes a plea for non-human actors partaking in the social;

'Here they are, the hidden and despised social masses who make up our morality. They knock at the door of sociology, requesting a place in the accounts of society as stubbornly as the human masses did in the nineteenth century. What our ancestors, the founders of sociology, did a century ago to house the human masses in the fabric of social theory, we should do now to find a place in a new social theory for the non human masses that beg us for understanding' (Latour, 1992, p. 227).

A critical stance to this assertion is raised by some (Amsterdamska, 1990; Collins and Yearley, 1992; Ashmore, 1993; Lee and Brown, 1994; Elam, 1999) who argue that this ANT approach makes a moral and ontological error by equating humans with non-humans or by anthropomorphising non-human entities (like technology) in sociological phenomena; Shapin (1998) for instance criticises that 'the 'dog' that - so to speak - 'doesn't bark' in Latour's picture of scientific travel is a conception of normative order. The Latourian account appears all natural fact and no moral fact' (Shapin, 1998, p. 7). An

alternative should rather be, Ashmore (1993) argues, that non-human actants be granted an intermediate ontological status of *behave* – that is, being able to respond only to external stimuli delivered onto it by humans. On the other hand, Latour's (1995) argument on human delegates like the door-closer seems to offer some response; here, humans delegate the job of closing doors to the technology (the non-human), a self-regulating door-closing device or lever, but this technological device now obliges a certain behaviour on the human who wishes to pass through the door without being hit. Law (1992) also replies to critiques of the principle of generalised symmetry asserting that ANT does not impute itself any moral or ethical locus (other than the call to treat humans and technology on equal terms), nor does it de-humanise the human agent, but that an actor must be considered as a patterned network of heterogeneous relations or

*'an effect generated by a network of heterogeneous, interacting, materials... If you took away my computer, my colleagues, my office, my books, my desk, my telephone I wouldn't be a sociologist writing papers, delivering lectures, and producing "knowledge." I'd be something quite other- and the same is true for all of us'* (Law, 1992, pp.383-4, Author's italics).

In effect, leadership becomes rendered as a generated effect by such network of relations established with and through the Web 2.0 technology, that is, in this instance; but how this is so remains a gap to be filled. Subsequently, Avolio, Kahai and Dodge's (2000) conceptualization of e-leadership as a discursive relationship between leadership and technology with technology influencing but also being influenced by leadership does not stray from ANT's analytical stance on actors (both human and non-human) acting on each other in a network of heterogeneous materials although the authors do not explore this further.

Furthermore, Callon and Latour (1992) respond to Collins and Yearley's (1992) critique by tagging their paper (that is, Collins and Yearley's) as moral and deontological thereby making the principle of generalized symmetry appear as it were like high treason. Collins and Yearley (1992) criticize ANT's principle of generalized symmetry as attempts to adulterate the social with nature. This is because, they argue, blurring the boundary between the social and objects by giving voice to non-humans only disguises the fact that those voices in themselves require human mediations. That is, it is almost as if the objects are 'out there' per realist paradigm, until humans come along and 'discover' them, but ANT turns it back on such 'reality' that the social cannot be de-

prioritised. This is the 'epistemological chicken' debate that Collins and Yearley (1992) argue against Latour. Therefore, the critiques assert that such radical symmetrism by ANT should be jettisoned, instead, symmetry should be an *alternation* between nature and society by using the same language and analysis while keeping both entities distinct. For this, Callon and Latour (1992) respond that alternating between two extremes of Nature and the 'social' might as well be the sociologist's business-as-usual which is not only counterintuitive but also empirically stifling. Therefore the use of ANT vocabulary is 'to avoid the deleterious effect of alternation by borrowing what is acceptable on one side to show how it can be acclimatized on the other' (p.354), and to have a repertoire which fully articulates the trajectories of nonhumans in the network. Some of the ANT vocabularies are hybrid terms such as,

"actant" instead of "actor," "actor network" instead of "social relations,"  
"translation" instead of "interaction," "negotiation" instead of "discovery,"  
"immutable mobiles" and "inscriptions" instead of "proof" and "data,"  
"delegation" instead of "social roles" (Callon and Latour, 1992, p.347).

Another vocabulary is 'obligatory passage point' (Callon, 1986) instead of 'what-we-need-to-do' or 'that-which-is-indispensable'. Brown and Duguid (2000) for instance express the ubiquity of roles played by technological actors in the human social space using human job titles and vocabulary, positing that the terms blur the world of technology and that of humans and therefore suggests the possibility of having the best of both worlds (see p.40). Moreover, Callon and Latour (1992) argue that it is not as if perceptible differences between the human and the non-human are non-existent but that, it is a methodological and analytical decision in order to treat all actors (better still, *actants*) equally. Meanwhile Callon and Latour are also critiqued on the *intentionality* of the human, a notion of agency that objects cannot achieve (Collins and Yearley, 1992). Here, ANT refutes that assertion by positing agency as not only an issue of intentionality but also of actions and behavior. For instance, Callon and Latour (1992) use a speed bump – fittingly called a sleeping policeman – to illustrate how a plea of 'slow down for the sake of your fellow humans' as a road sign on campus gets translated to 'protect your own suspension for your own benefit' by the speed bump, a non-human actant. Therefore the authors contend

'Who made the move from action to behavior, from meaning to force,...? We the analysts or they, the analyzed? Who or what is now enforcing the law, the

standing or the sleeping policeman? Who are supposed to have sociality embedded in themselves, the talking humans or the silent road bumper? [Therefore] to claim that only the humans have meaning and intentionality and are able to renegotiate the rules indefinitely is an empty claim' (Callon and Latour, 1992, p. 361).

In that regard, attempting to understand how a Web 2.0 technology deployed in an organization acts on individual actions and behaviours and reciprocally so, demands a philosophical lens that refutes an overemphasis of the agency of the human actors without backgrounding the technology. Therefore, allowing technology as an actor in the leader-technology-follower relation as ANT demands will permit us to analyse its role in the network as well as that of leadership more clearly. In other words, no distinction should be made, ANT argues, between technology as a non-human actant and the concept of leadership as a sociological human phenomenon. That is, all actants must be analysed on equal terms without discrimination (Callon, 1986; Law, 1986a, 1987, 1992, Latour, 1992, 1995). Consequently, this ontological positioning creates some methodological demands.

### ***3.2.2 ANT's Methodological Demand***

As observed with the principle of generalized symmetry, ANT poses some methodological demands for this research. The first is a direct consequence of generalized symmetry that whatever descriptive or explanatory framework is deployed to leadership must also be applied to the Web 2.0 technology. The second is the principle of 'agnosticism', which Callon (1986) argues the researcher must extend to include all actants in the 'social'. Here, the researcher or observer of the actor-network must be impartial and abstain from censoring or judging the voice of actors in the network when these actors speak about themselves or the network of relations they constitute. According to Callon (1986), no point of view is privileged and the identity of the actor in the network may still be negotiated through 'translation'.

Translation is explained as an instance in which 'the spread in time and space of anything – claims, orders, artefacts, goods – is in the hands of people; ...modifying it, or deflecting it, or betraying it, or adding to it, or appropriating it' (Latour, 1986a, p. 267).

That is, what Latour refers to as the *tokens* – which are the transmissions in the network of relations – among actors are continually subjected to transformations through negotiations from one actor to the other in order to achieve individual interests (Latour, 1986a). The implication is that, individuals in the network of relations being studied may have reasons that are embedded within the transmissions they make to others over the Web 2.0 platform, which the researcher must seek to uncover, and this must not exclude the transmissions by the technology itself. This is because actors in ANT are effects of relations (Law, 1992) that ‘gain their ontological character through the position they occupy within the shifting relationships’ (Brown, Middleton and Lightfoot, 2001, p. 129) at play in the heterogeneous network they constitute. For this reason, the principle of ‘agnosticism’ concludes that interpretations offered by these actors in the network must not be censored in any way by the researcher even when those interpretations are discordant to views held by the researcher (Law, 1986b).

A third methodological demand for an ANT approach is what Callon (1986) posits as the principle of ‘free association’. Here, he argues, the researcher must ignore any notion of a boundary separating what is human and non-human by abandoning all *a priori* distinctions between the two. This allows the researcher to see the free associations actors have with different elements in the network when they talk about their worlds. Additionally, the researcher, according to Callon (1986), must not impose any pre-established grid of analysis upon actors but must follow the actors in order to identify these free associations (Law, 1986a, 1992) because these relationships become the result of analysis rather than a point of departure (Callon, 1986, p.201).

Accordingly, ANT for this study then affords the researcher to understand the organisation of the network of relations among individuals involved in the deployment and engagement with the Web 2.0 technology, how some actors ‘do’ their leadership (Huxham and Vangen, 2005) with respect to other actors – whether they be humans or the technology. According to Latour's (1993) concept of modernity (what he calls ‘the modern constitution’), these arguments of ANT are implications of what is obvious, not what modernity has long been purported to be, in terms of humanism, thereby overlooking the ‘birth of nonhumanity’ – of things or of objects – for which we must examine the dichotomies of what he terms, ‘purification’ and ‘translation’.

### 3.2.3 Purification and Translation

The idea of modernity, Latour (1993) argues, creates two sets of different practices, one of *purification* and the other of *translation*. 'Purification', he argues, establishes two ontological distinctions: the world of humans on one side, and that of non-humans on the other. Here, Latour expresses arguments of nature versus society from the middle seventeenth century dualism having the political philosopher Thomas Hobbes on one side and natural philosopher Robert Boyle on the other. According to Latour (1993), Hobbes' position is that humanity must take its own destiny into its hands if it desires to solve social problems, political controversies, or understand any social phenomena; the role of the gods no longer matter, God is 'crossed-out' (ibid). That is, humans become conscious of themselves (Costea, Crump and Amiridis, 2008) culminating in what Durkheim (1984) for instance refers to as the 'cult of the individual'. While Hobbes focuses on the birth of 'man', Latour (1993) articulates that Robert Boyle rather focuses the arguments on objects through laboratory experimentation. In effect, two ontological perspectives are offered under the Latourian concept of 'purification': a purely human phenomenon in dealing with sociological phenomena and a purely Natural phenomenon observed in the realm of objects, like the laboratory work of scientists.

Notwithstanding, Latour (1993) argues that there is a paradox in modernity. Here, he asserts that modernity is able to generate hybrids – what Latour also calls quasi-objects and quasi-subjects – that close the demarcation between the 'purely human' and 'purely object' worlds even though those distinctions still remain. These hybrids according to Latour, *mediate* the relationship between the human and the non-human. They are generated effects of the network of relations and they *actively* participate in the network. As such, the human in the network is not one without a set of its nonhuman representatives, delegates, figures, texts, narratives, concepts, etc.; humanism thus maintains itself when it stays or shares itself with its network of relations (see Latour, 1993, p.138).

The implication is that a 'social' phenomenon like leadership in a technological epoch (Robins and Webster, 1999) must not only be limited to personality constructs (Zaccaro, 2007), followership (Shamir, Bligh and Uhl-Bien, 2007), or even human contextual

factors (Hersey and Blanchard, 2012), but the heterogeneous materials, concepts, texts, machines, softwares, all play a role in generating the concept of leadership as an effect of the network of heterogeneous relations and not merely the 'social'. This is because 'entities such as nature, culture, the human body, the social agent, and so on, that were once regarded as discrete and unitary, are now being deconstructed to reveal their distributedness and interconnectedness' (Michael, 2000, p. 2). In fact, ANT posits that 'what we call the social is materially heterogeneous: talk, bodies, texts, machines, architectures, all of these and many more are implicated in and perform the "social"' (Law, 1994, p. 2). Therefore 'purification' may seek to establish two distinct ontological zones but in reality we cannot ignore the role of quasi-objects/subjects *mediating* the human-nonhuman boundary in social phenomena like leadership. For Callon (1991), the world is rather filled with 'hybrid intermediaries'. Bloomfield (2001) thus argues

'Although we tend to account for the world in terms of distinct categories - eg when we speak in terms of the social and the technical - in practice we are active participants in the development of a world of hybrids'  
(Bloomfield, 2001, p. 195).

Consequently, the relationship between human and non-human actants as mentioned earlier, is negotiated through what Callon (1991) articulates as 'intermediaries'. An intermediary, Callon (1991, 1992) argues is itself a heterogeneous network, thus it can be anything that passes between actors thereby defining the relationship between them (Callon, 1991, p.134; 1992, p.82). Intermediaries can be *literary inscriptions* (Latour, 1986b) like texts, reports, and so on, computer software, technical artefacts, instruments, discussions, contracts, people and the skills they incorporate, money, etc (Callon, 1991; 1992). That is, intermediaries are not standalone remote entities, they describe the networks they constitute which gives them the character they are known for.

For instance, a Web 2.0 social technology application is not defined as such without reference to its programme of action that coordinates the interactions over it by humans for it to be called Web 2.0. It describes its network of relations; therefore the definition of an object is 'also the definition of its socio-technical context' which is a 'textualisation' that accompany its design or displacement (Callon, 1991, p.137). Such 'textualisations', Callon (1991) asserts, define and distribute roles to other actors (human or non-human)



that are linked together into networks with the object. Another example Callon (1991) offers is 'skills as networks'. Here, skills are embodied in human subjects but are only operationalized in a network for which they can be seen as skills; in other cases, the skill will induce nonhuman actors for it to play its role as a skill. Therefore 'leadership as a skill' (Wenig, 2004; Lord and Hall, 2005; Mumford, Campion and Morgeson, 2007) only becomes recognised as such because its network of relations allow for such skill to be operationalized; hence a Web 2.0 heterogeneous network brings to the fore a context for leadership to be a 'skill as network' (Callon, 1991). In other words, 'to describe a skill is thus, at the same time, to describe its context' (Callon 1991, p.138).

Accordingly, intermediaries transport, transmit, or transfer energy (Latour, 1993, p.77) or earlier termed 'tokens' (Latour, 1986a) from actor to actor in its network in order to define itself in that context. However, Latour (1993) later argues that conceptualising these networks as *intermediaries* means they lack an ontological status in themselves, and therefore only bring together (ibid) or probably keep apart (Bloomfield and Vurdubakis, 2000, p. 86) hitherto distinct actors without any transformative power over what they are transmitting to. Therefore, they are not given any importance in their own right.

The converse is that, Latour (1993) argues, we must see these intermediaries as *mediators* – 'that is, actors endowed with the capacity to **translate** what they transport, to redefine it, redeploy it, and also to betray it' (p.81, Emphasis added). In this instance, agency is ascribed to mediators in the heterogeneous network of relations. 'Translation' thus involves an actor or actant exercising some form of control over the other in what Callon (1986) describes as the *sociology of translation*. However, prior to examining this concept of translation, it is necessary to establish who (or what) *actors* are. This is because these 'actors' in the 'actor-network' are those involved in Callon's (1986) sociology of translation.

### 3.2.3.1 Actors

Following an earlier definition of an actor as 'an *effect generated by a network of heterogeneous, interacting, materials...*' (Law, 1992, p.383), ANT's principle of generalized symmetry argues that actors can be human or non-human (or even hybrid) having the

capacity to act on each other (Callon, 1986; 1991; Law, 1987; 1992; Latour, 1995; 2005). That is, an actor or actant, Latour (1996) maintains, is 'something that acts or to which activity is granted by another. It implies no special motivation of human individual actors, nor of humans in general. An actant can literally be anything provided it is granted to be the source of an action' (np, Author's emphasis). As a source of action, they are not mere intermediaries but mediators that transform others by translation; they thus put other intermediaries into circulation (Callon, 1991).

But this notion of an actor raises some concerns. For instance, scientists transform texts, experiments, tests, and so on into new intermediaries or new mediators (Latour, 1996). As such do we call the scientists actors and call the texts, experimental devices, etc intermediaries? Furthermore, managers engaged in a Web 2.0 relationship with other actors may be able to achieve their relational goals by having that transformative effect on others. Again in this scenario, do we call managers the 'actors' and the technology an intermediary while tagging their textual interactions as mediators in such heterogeneous network? Callon (1991) acknowledges these nuances positing that these are not ontological or metaphysical issues but rather empirical. As such an investigation into the phenomenon more closely at an empirical level will make us ascertain whether the technology delivers other intermediaries into circulation or transforms the notion of leadership in the manager-employee relationship into something different which may then become an unintended consequence. It is in this regard that the methodological implications earlier discussed become even more pertinent – that is, generalized symmetry, agnosticism, and free association.

### 3.2.3.2 Actors as Networks

Actors, as discussed earlier, describe the networks they constitute. They are linked together in a heterogeneous relationship with other materials that usually have no *a priori* reason to have any compatibility with one another (Callon, 1991), but have their incompatibilities overcome so they can be part of a network that defines their own existence (Law, 1992). For such a network of relations to be stabilised, ANT theorists (Law, 1986c; Callon, 1991; Law, 1992; Latour, 1995, 2005) argue, an actor enrolls members of the network through negotiations and transformations that align the

interests of those being enrolled with the interests of the enrolling (or controlling) actor, while suppressing opposing interests of other actors.

In other words, the interests of other actors are *translated* into the network of relations so that they can all now operate as a single unit (Law, 1992). For instance, the assemblage of a Web 2.0 technology into an organisation and its engagement by users becomes so ordinary with time that we tend to lose sight of it as a network of relations in operation. For the user, it is just a technology for some relational activity; however, in the event of a breakdown other actors are called upon to examine the technology. These actors may include the software programmers, the systems administrators, the Internet Service Provider, the computer hardware, and so on. All these actors make up the network of the Web 2.0 technology that was earlier seen as just one technological apparatus in the organisation.

Accordingly, a process of *simplification* (Callon, 1987; Law, 1992) as a result of all actors working together (and some becoming relegated to the background) has made the observer only see the network as a single unit in operation within the organisation. Such simplification of the network is what ANT refers to as *punctualisation* (Law, 1992). That is, the network is now seen as an actor, 'acting as a single block' (Law, 1992, p.385) or a 'black box' with a known set of characteristics (Callon, 1991) in a larger network of which the organisation is a part (Callon, 1987). It is subtly a 'black box' because some elements in the network (which are in themselves sub-networks) seemingly disappear or are backgrounded (Latour, 1987; Law, 1992; van House, 2004). Additionally, the punctualisation has become necessary, Law (1992) argues, in order to easily define the network 'without having to deal with endless complexity' (p.385). This is because the idea of a *network*, Latour (1987) argues, implies connections between resources for which 'these connections transform the scattered resources into a net that may seem to extend everywhere' (p.180).

Therefore punctualisation of the network simplifies it; nonetheless, a closer investigation of the network in research unveils the roles being played by all actors or actants constituting the network. Accordingly, 'the actor[-]network is reducible neither to an actor alone nor to a network... An actor[-]network is simultaneously an actor whose activity is networking heterogeneous elements and a network that is able to redefine and

transform what it is made of' (Callon, 1987, p. 93). Callon (1991) later asserts, 'For this reason, I speak of *actor-networks*: for an actor is also a network' (p.142, Author's italics). Having thus explored the idea of the *actor*, the next section then examines Callon's (1986) *sociology of translation*, which these actors are involved in within a network of relations.

### 3.3 Sociology of Translation

Through ANT's concept of translation, one is able to explain how networks of heterogeneous relations are formed, become dominant, and are sustained (Latour, 2005). As noted earlier, translation involves transmissions in the network of relations among actors in order to bring transformations desirable to actors that are actively involved in the translation process (Latour, 1986a). Translation can thus lead to *displacement* of certain actors from their original trajectories in order to stabilise the network (Bloomfield and Vurdubakis, 1999). According to Callon (1991), such displacement of actors as a result of translation extends the definition of action (of one actor over another) within the network of relations. For instance, 'A' translates 'B' may imply a transmission to, or endowment of 'B' with 'interests, projects, desires, strategies, reflexes, or afterthoughts' (p.143) by 'A' whether 'B' is human or non-human. However, Callon highlights, this does not mean that 'A' has total freedom or absolute control because A's actions are themselves a result of other translations either in the past, or from an external interlinking network and so on. As such, the researcher, he cautions, 'should not exercise censorship' (p.143) or reject the translations as *a priori*, unreasonable or unrealistic but must describe the entities and all relationships between these actors in the network. This is because, Latour (1999) argues,

'Actors know what they do and we have to learn from them not only what they do, but how and why they do it. It is *us*, the social scientists, who lack knowledge of what they do, and not *they* who are missing the explanation of why they are unwittingly manipulated by forces exterior to themselves and known to the social scientist's powerful gaze and methods' (Latour, 1999, p. 19, Author's emphasis).

In that regard, Callon argues, translation implies a definition for which the idea that 'A' translates 'B' is also to say that 'A' defines 'B'; but this makes little sense if translation is spoken about 'in general' without mention of the intermediaries or the medium within

which the translation is occurring. Therefore, he argues, we must also define the medium, that is, the material into which the translation is inscribed which could be 'round-table discussions, public declarations, texts, technical objects, embodied skills, currencies - the possibilities are endless' (Callon, 1991, p.143).

Such intermediaries, which may rather be *mediators* (Latour, 1993), are themselves heterogeneous networks (Callon, 1991, 1992), and in this research they happen to be the technological actant – the Web 2.0 platform – being explored. However, the process of translation is not just an imputation of interests from A to B, it is underpinned by what Callon (1986) refers to as 'four moments of translation' – *problematization*, *interessement*, *enrolment*, and *mobilisation*. In this research, the position taken is that the notion of translation is not necessarily a straightforward phenomenon; it may be threatened by certain situations within the network thereby changing the order in which the four moments may occur. Similarly, Callon (1986) argues that these moments of translation may overlap in a process that involves interactions and more importantly negotiations among actors.

### 3.3.1 Problematization

The first 'moment' in Callon's (1986) sociology of translation is 'problematization'. Here, one or more actors is engaged in defining and exploring the nature of a problem that the actor wishes to promote as having a particular solution. By advancing a problematic (and a potential solution), the actor makes itself an *obligatory passage point* in its bid to construct a network of relations, a move that seeks to render the actor as an indispensable agent in the heterogeneous network (Callon, 1986). An implicit notion raised here is that, by seeking to make itself an obligatory passage point in the network of relations, an actor becomes controlling by imposing its views on others in the heterogeneous network. Law (1986a) for instance argues that the controlling actor may utilise all sorts of resources available to it as 'raw materials' with which to manipulate others into its obligatory passage point even when the other actors in the network are at a distance. These materials may include 'texts of all sorts, machines or other physical objects [like a software or technology], and people, sometimes separately but more frequently in combination' (Law, 1986a, p. 255).

'Problematization' in the process of translation can thus be mutely underpinned by elements of coercion that may (or may not) be readily visible to some actors in the network or relations. Latour (1987) for instance analogises the network of heterogeneous relations to a 'mesh' (see p. 180), a notion that implies some actors can be sieved out of this 'mesh' by others. Callon (1991) rather conjectures the process as sometimes being a product of compromise, negotiation or 'mutual adjustments' (p.143) among actors. For Linde, Linderoth and Räisänen (2003), it is rather intertwined with tensions and competing networks as actors try to identify and engage others within the network because these other actors may have different objectives for joining the network.

### 3.3.2 *Interessement*

Callon's (1986) second moment of translation is what he terms *interessement*. He justifies the usage of the terminology by its very etymology. That is, to be 'interested' is to be in between – the Latin *Interesse*, inter (meaning *between*) plus *esse* (meaning to *be*). The idea is that an actor stands in between another's other linkages in the network so as to impute its interests. Here, the persuading actor advances how a particular solution solves a challenge or a problem for the other actors being influenced. Callon thus argues 'to interest other actors is to build devices which can be placed between them and all other entities who want to define their identities otherwise' (Callon, 1986, p.208).

*Interessement* is therefore a group of actions through which an actor attempts to 'impose and stabilize' the identity of others that it previously defined through *problematization* (ibid). In the case of leadership in a Web 2.0 environment, the devices of *interessement* that are engaged in order for a manager to impute interests to other actors over the technological medium become a thing worth investigating as this will deepen our understanding of the leadership process in this technological environment. That is, such know-how will help us identify what resources are drawn upon by managers in order to impute interests to others in the manager-employee relationship.

In other words, *interessement* allows those who wish to advance their particular ideas or who profess to have some solution to persuade others to accept their definitions of the problem, and to collaborate in pursuing their preferred solution (Knights, Murray and Willmott, 2000). Similarly, Linde, Linderoth and Räisänen (2003) posit that *interessement* makes the developing network generate some form of *incitement* (and in other cases *excitement*) about what an actor wishes to advance thus locking other actors into fixed roles while at the same time weakening the influences of other competing entities that may threaten the developing network. *Interessement* thus seeks to construct a system of alliances through what actors are, what they want, and what they are associated with in the network of relations (Callon, 1986).

Through *interessement devices* – that is, devices or resources that may be engaged by actors to negotiate or secure the process of *interessement* – actors can be positioned to be *enrolled* (see next Section for *enrolment*). These devices can be delegates or representatives (be they human or non-human) that speak for others in the network of relations (ibid) so as to consolidate the legitimacy of the obligatory passage point. For instance, most social media platforms will only allow users (actors) if they register on the platform. In addition, registration almost invariably imposes the picture of an avatar over an actor's profile thus forcing the actor to add his or her own picture if it does not want this delegate or representative avatar as the actor's profile picture. Certainly, *interessement* will be of no consequence if actors who are 'interested' do not get to be *enrolled* in this process of translation as explicated below.

### 3.3.3 *Enrolment*

*Enrolment* is Callon's (1986) third moment of translation in which various actors in an emerging network are assigned specific roles. As Callon argues, *interessement* will only be successful if *enrolment* is accomplished. This is because, he asserts, no matter how convincing an actor advances an argument, success is never assured since the argument does not necessarily result in the formation of alliances towards its purposes. From a sociological perspective, he does not ground *enrolment* in the functionalist definition of society as being made up of roles or holders of roles. Therefore, *enrolment*, as he points out, neither implies nor excludes pre-established roles. Accordingly, he posits *enrolment* thus compels us to 'describe the group of multilateral negotiations, trials of strength and

tricks that accompany the intersements and enable them to succeed' (Callon, 1986, p.211).

However, such description of *enrolment* could not be only considered as nuanced by agitations or resistances in the network, rather, some actors can be enrolled without resistance especially those who have originally given their consent (ibid). Nonetheless, the process of enrolment may sometimes also involve seduction and or coercion (Callon, 1986; Latour, 1987), displacements (Bloomfield and Vurdubakis, 1999), or obstructive battles of wills (Linde, Linderoth and Räisänen, 2003), that is, tensions resulting from competing networks in which some win and others lose or are forced to take on roles assigned them.

Contrarily, for a Web 2.0 technological network, this argument poses a 'macho' description of translation in which actors in the network are subdued into roles, highlighting the hegemony of other voices or an imposition by leadership in a network of relations originally established to enhance a collaborative climate in the organisation. This 'macho' description of the process of translation is what Shapin (1998) critiques as 'the militaristic and imperialistic language that is so characteristic of Latour's work' (Shapin, 1998, p. 7). Nevertheless, Star and Griesemer (1989) are more sympathetic of Callon and Latour's work but contend that individuals in a heterogeneous network may not necessarily depart from their original viewpoints to be 'interested' and 'enrolled' militarily as Shapin (1998) criticises. Rather, actors hold their usually divergent viewpoints within the network resulting in tensions that are held together by the development of *boundary objects*.

Boundary objects, the authors suggest, are an analytic concept that inhabits intersecting social worlds; they can be abstract or concrete but are plastic enough to adapt to local constraints yet robust enough to provide a common identity that is recognisable across divergent worldviews in the network of relations. They state, '[boundary objects] have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation' (Star and Griesemer, 1989, p. 393). For instance, the existence of a Web 2.0 platform in the organisation may itself be uncontested but may carry different meanings to different



individuals in the network. To one, it is just a tool by management for surveillance; to another it is a tool for flattening existing hierarchy, and so on. It thus occupies a boundary across different social worlds while the shared goal of using it for various purposes remain as actors are enrolled into its heterogeneous network. In other words, the network of relations may be loosely held, accommodating ambivalence, ambiguities, disparate perspectives, indeterminacies, and the dual status of 'insiders' and 'outsiders' in the heterogeneous network thus posing a leadership challenge (Singleton and Michael, 1993).

### 3.3.4 Mobilisation

The last moment in Callon's (1986) sociology of translation is *mobilisation*. Here, enrolled actors are rallied into a unit while representatives (who are either self-appointed or designated by others) speak for them. Mobilisation thus requires that displacement of actors from their original positions (physical or conceptual) occur in order to render them mobile. That is, to maintain commitment towards a 'shared goal', all enrolled actors are mobilised to form alliances that ensure stabilisation of the network. I have placed *shared goal* in inverted commas to show the 'precarious' nature of the established network (Law, 1992) since competing forces still remain as argued in the enrolment stage. Accordingly, mobilising allies sometimes requires, Callon (1986) sustains, the introduction of new intermediaries that establish equivalences with the actors in order to make their *displacement* and *reassembling* easy.

For instance, in a Web 2.0 platform like Facebook, an algorithm serves as a self-appointed representative or spokesman for enrolled actors (i.e. users) showing up on the 'walls' of other actors to inform them that a particular individual or friend that they may know is also on Facebook; this way, a user is enticed into connecting with whoever the algorithm has suggested or represented. Through this negotiation, this algorithm thus mobilises other actors in order to stabilise the network. In addition, the algorithm as a *representative* uses an intermediary of a clickable icon. This clickable icon establishes equivalence with the user being represented, displacing the user from his/her original location onto the Facebook 'wall' of another. A reassemblage then occurs when the newly mobilised actor who now becomes part of the network of the represented user accepts or clicks that icon. In other words, actors are transformed into new intermediaries,

displaced from their original positions, their devolved constructions are then used as allies to mobilise other actors into the network of relations.

Therefore the actor (who in this case is the representative) must assemble enough allies who *hopefully* support his/her bid to mobilise others. '*Hopefully*', because, the assumption is that, actors that are represented may have given full consent to their representatives to rally others into the network of relations. This is because the representatives must 'simultaneously perform whatever it is that is being represented' (Law, 2014, p. 338), a task Law (2014) asserts is a difficult one. Similarly, leadership in a Web 2.0 environment potentially involves the enactment of influence beyond human actors, mobilising allies, representing other actors while simultaneously performing what or who is being represented. These require empirical investigation. Figure 3 places the four moments of translation in perspective. Although the arrangement portrayed in the picture shows a vertically smooth connection, it is not always straightforward as argued so far. In the following section, the use of the ANT in leadership studies is explored, thus lending further credence to the deployment of this approach for this study.

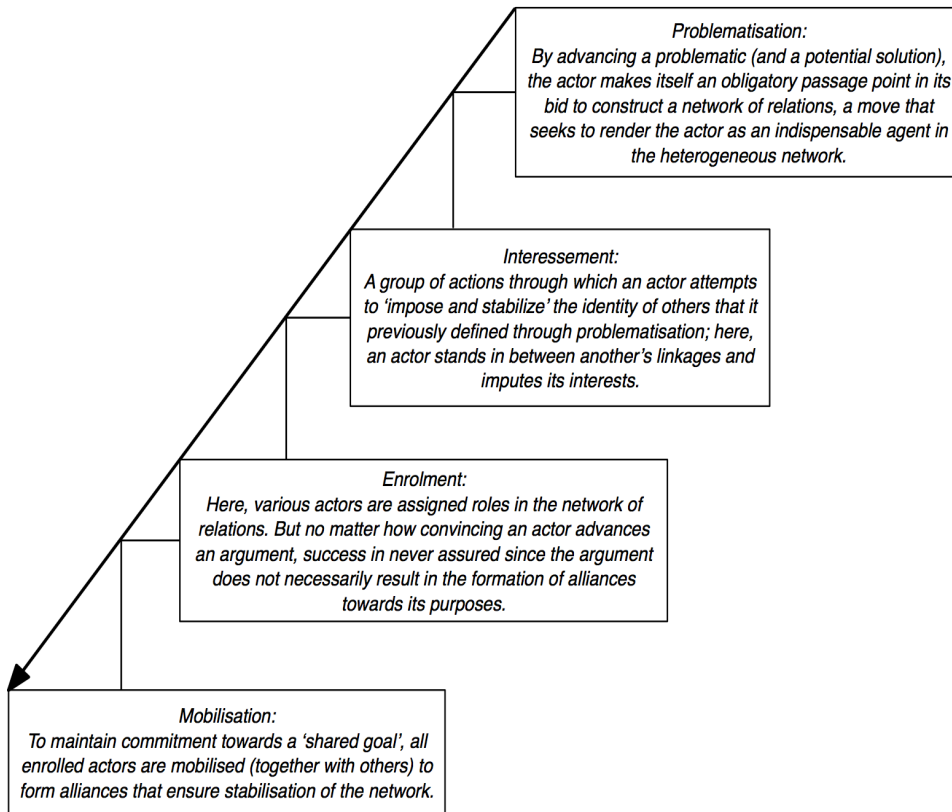


Figure 3: Processes of translation summarised (Callon, 1986).

### 3.4 Actor-Network Theory in Leadership Studies

Up to this point, one could get the impression, although unintended, that the actor-network approach has not been deployed in leadership studies altogether. In this section, this assumption is corrected. Meanwhile, this is a major gap in leadership studies in which not sufficient attention is paid to ANT. Dinh *et al.* (2014) take stock of leadership's 'established and developing theories since the beginning of the new millennium' (p.36) and no mention is made of ANT. When "actor-network" as a search term is used in *Leadership Quarterly (LQ)*, a major leadership journal, only *one* paper (out of four returned) takes interest! This one article is by Crosby and Bryson (2010) who suggest the ANT as one way of understanding 'leadership concerns' when we wish to understand the creation of cross-sector collaborations. In *Leadership*, another leadership journal, the same search term delivers only *eight* articles, out of which just

*three* sufficiently make reference to the ANT! Collinson and Grint (2005) for instance recognise this lack of attention to the ANT in leadership studies, arguing that

‘we identify a need to develop much more sophisticated theorizing (that engages with contemporary developments, for example in post-structuralism, **actor network theory**, ...). We believe that increasingly sophisticated theorizing can significantly enhance the intellectual integrity of leadership studies’ (Collinson and Grint, 2005, p. 7, Emphasis added).

Nonetheless, the recognition or use of ANT in the few papers that take some interest offers promise into this emerging area of leadership studies. Sidle and Warzynski (2003) are arguably among the early works that deploy the actor-network theory in leadership studies. They argue that ‘the actor-network view of leadership provides a more salient and balanced explanation of how leadership actually works in today’s business world than reductionist, trait-based, and competency theories do’ (p.41). Using the Roy H. Park Fellows Program in the Johnson School at Cornell University as a case study, the authors explain how this program began, citing the various negotiations and connections that actors from different locations undertook in order to establish the Roy Parks Leadership training program as a centre of excellence. They believe the program at the Johnson School was designed to develop competencies that foster actor-network leaders. An actor-network leader, they argue, ‘is a person who has learned to see connections and relationships between people and things and develop the networks of knowledge, information, space, and social capital necessary for managing and increasing organizational or system performance’ (Sidle and Warzynski, 2003, p. 42). However, by defining who an ‘actor-network leader’ is, Sidle and Warzynski (2003) have implied an ‘actor-network follower’ thereby creating two ontological zones of actor-network leadership and actor-network followership, an argument that problematizes the ANT. This is because, actors must be treated in the same terms symmetrically and as Law (1992) asserts, ‘Napoleons are no different in kind to small-time hustlers, and IBMs to wheel-stalls. And if they *are* larger, then we should be studying *how* this comes about – how, in other words, size, power, or organization [or leadership] are generated’ (p.380, author’s italics). Accordingly, Sidle and Warzynski (2003) have swiftly moved from the *processes* involved in actor-network leadership to *traits* needed for actor-network leadership, an argument that contradicts their earlier assertions. This is confirmed in their list of ‘competencies’ they claim are needed for one to serve in the role of an ‘actor-

network leader'. Nonetheless, the authors have stimulated thinking into how the actor-network can be a lens for investigating the concept of leadership in organisations.

For Perillo (2008), 'the social world is characterised by multiple significations of leadership... [and the] ...Actor-Network Theory (ANT) provides an appropriate method for analysing what gets assembled and fashioned as leadership practice' (pp.190-191). As such, instead of seeking traits, competencies, or 'signs' of leadership, one should consider leadership as a 'networked practice [that] provides for the tracing of the associations that characterise actual and indeed multiple and shifting leadership realities' (ibid). Perillo (2008) then uses a case study of two Australian Independent boys' schools to analyse leadership as a *social fashioning process* – based on the assumption that 'social orders are composed of people and artefacts acting relationally rather than of people per se' (Usher and Edwards, 2007, p.9 cited in Perillo, 2008, p.190). In the case studies, she illustrates how actors situated leadership in relational processes, school heads acting in relation with a policy, teachers and students acting in relation with architectural designs, landscapes, buildings, plays, and so on. These relations constructed fluid meanings and negotiations as to what leadership is without any specific labelling of the same. Accordingly, the skills or competencies of one particular individual as a 'leader' is lost to leadership as a process, a *social fashioning* in which what constitutes leadership is open for negotiations in a heterogeneous network of relations. Here, by following actors through interviews, Perillo (2008) is able to unpack leadership in these Australian boys' schools as an effect of various interactions among actants in a network whose everyday practices generated leadership, even though a deeper analysis of the role of the artefacts she had recognised would have thrown more light into such heterogeneity.

Fairhurst and Cooren (2009) recognise the role of artefacts in establishing 'leader presence/absence'. *Presence*, they aver, is 'the means by which some specific aspects of reality are made present to a given audience, whether through the form of an object that is literally shown to them or through the artful production of speech' (p.470) while *absence* is the means by which aspects of reality are silenced. Presence/absence is therefore an *effect*, the authors argue, that must be generated relationally – either materially through objects or through discourse to a given audience. For leadership, Fairhurst and Cooren (2009) recognise the *naturalness* with which humans are

progressively becoming coupled with digital media technologies that they are better conceived as cyborgs – hybrid forms – so that conceiving a leader’s embodied self becomes difficult without the appropriate philosophical lens. However, with the ANT, they argue, leadership can through the recognition of non-human agency, present itself to a person through a sign, a text, a technology, in a given situation which was, ‘by definition, previously absent (at least to this person), which means that apparently absent agents can not only make themselves present through various devices, but also and consequently tele-act, that is, act from a distance as they become knowable through the traces of past organizing’ (Fairhurst and Cooren, 2009, p. 473). Accordingly, what was before a *micro-actor* – that which acts on its own accord – can now play the role of a *macro-actor* – that which positions itself *in situ* and is acknowledged as acting on behalf of others (ibid). By implication, ‘there is no a priori distinction between macro and micro actors’ (p.474) because these are generated effects in practice.

Using the example of Kathleen Blanco, a former Governor of Louisiana who was widely criticised for the poor handling of hurricane Katrina, Fairhurst and Cooren (2009) show how Blanco’s ‘presence’ was made ‘absent’ by the perceptions of citizens simply because she appeared overwhelmed on national TV at such a time. They write, ‘we see the comingling of the effects of presence/ absence. Blanco appeared to be incorporated by Katrina, thus diminishing her capacity to quickly sponsor her own networks’ (p.479). This is contrasted with Governor Schwarzenegger, who in the wake of wild fires in California, uses tough-talking language to establish ‘leader presence’ in order to meet public expectations. The authors state, ‘by deploying any and all such elements, Governor Schwarzenegger is clearly trading on the durability of his movie roles’ discourse as an action hero with forcefulness, tenacity, and courage under fire in order to meet the expectations of his constituents in fighting the raging fires’ (p.481). Unlike Blanco, Schwarzenegger did not look overwhelmed on national TV, he used speech to make absent any sign of weakness and established presence by remaining calm and resilient thus *enrolling* other actors in his cause. The authors then highlight the need to consider the discursive practices as ways of analysing an ANT approach to leadership; sadly, they too fail to follow, fully, the trajectories of the nonhuman actants enrolled in the networks they describe.

In Mulcahy and Perillo (2011), the ANT is used as a lens 'to frame, and provide for the making of, complex, non-exclusive and indeed commonplace accounts of management in colleges and schools' (p.124). Here, educational or school management is not seen in the capabilities of individual leaders but in performative practices which, they argue, are of a socio-material kind. For these authors, leadership is a heterogeneous *assemblage* of social and material agents, a practice that is 'fashioned' (Perillo, 2008) relationally with human actors as 'co-participants' with nonhuman actants. Citing Law (2009), Mulcahy and Perillo (2011) argue that in order to understand management and leadership, one needs to 'trace how the webs of heterogeneous material and social practices produce them. It is *these* that are performative, that generate realities' (Law, 2009, p.151, emphasis in original, cited in Mulcahy & Perillo, 2011, p.128). In a multi-case study design, the authors conducted a survey, ran interviews and collected observational data. Surveys are an unusual approach to data collection for an ANT inspired research whose data collection tenet is *follow the actors*, usually done with one main setting (using ethnomethodological data) and therefore Mulcahy and Perillo (2011) are quick to point out that only the data collected through interviews and observation were used in the analysis. They demonstrate how 'plans' of introducing technology for teaching and learning in one Grammar School (Viewbank Grammar) got translated from the desks of IT personnel to the classroom; here, the technologies were sent to the classroom instead of teachers being taken to technology training thus engendering new forms of relations in the classroom as well as with management. This approach, according to the authors, created new forms of interactions that changed practices operationally that can simultaneously produce new 'p'olitical manoeuvrings. This is because, they highlight, 'material objects are never just (inert) objects but are always something more. They are a diversity of possibilities. And politically, they can play diversely—enter into unexpected relationships and associations' (p.141). However, the authors do not describe in detail *how* the technologies (computers, projectors, etc.) which are now made available in the classrooms take part in the 'p'olitics of the organisation, a missed opportunity.

Consistent in these papers discussed in this section is the recognition of ANT for non-human agency in leadership practice even though most authors in leadership studies do not pay sufficient attention to these actants in the network of relations with human

actors. An exception is Smith, Kempster and Barnes (2016) who use ANT to conceptualise the building and sustaining of a peer learning network for entrepreneurial leadership. By following actors using ethnographic methods as well as observations of their online interactions, the authors capture actants such as slides, application forms, posters, biscuit tins, physical buildings, etc. to demonstrate learning as a network effect. Here, actants as mundane as buildings and biscuit tins are shown to be networked with human actors in ways that depict the full configuration of who these actors are (i.e. as generated effects of a network of heterogeneous materials) and what spaces they engage in for leadership learning. Here, entrepreneurial leadership learning is positioned as a network effect in which actors 'co-enrol' one another in a network of heterogeneous materials.

Nonetheless, all authors in this section have successfully demonstrated the relevance of the ANT approach to leadership studies, rejecting the heroic individualistic view of leadership, to leadership as embedded in relational processes among actors in a heterogeneous network. Methodologically, all the authors use a case study design, using qualitative methods for data collection. Additionally, those who use multi-case studies or some quantitative data collection technique, they analyse each case separately or make it clear what specific methods are relevant or consistent with the actor-network approach (that is, eschewing the quantitative methods). Finally, the critique to offer these studies as highlighted earlier is the apparent theoretical 'hype' given to non-human actants in the network of relations while taking a much softer approach when analysing their roles in the heterogeneous network, perhaps for fear of being criticised for technological determinism (see Chapter Two). The implication is that, insights into how the technological artefacts are aligned *performatively* within the network of relations to generate effects of intent or those unanticipated are lost in the analyses.

### 3.5 Conclusion

In this chapter, the actor-network theory is examined as a philosophical lens underpinning this research with justification for its deployment provided. Following earlier arguments in the previous chapter, it is argued that a 'new' theoretical lens is required to be able to embrace the role of technology, a non-human actant, in the



heterogeneous network of relations. Arguably, ANT is not 'new' per se. The novelty of this ANT undertaking is in its deployment in a leadership study within a Web 2.0 technological environment. Furthermore, the methodological demands that ANT's ontological assertions make on this research are highlighted in this chapter, positing that the unit of analysis shifts from individuals to heterogeneous networks. In addition, ANT's sociology of translation is discussed offering examples for Web 2.0 phenomena; accordingly, this provides a basis for analysing how leader-'follower' networks of relations in a Web 2.0 environment are formed, become dominant, and are sustained. Finally, the overall lack of an ANT body of work in leadership studies further justifies this study, which also contributes to the extant literature in this area of management research. That said, a fundamental question that remains is what leadership position to adopt (amidst the myriad of leadership models and theories) in order to rightly 'align' this study within the ANT *cum* leadership domain? The next chapter answers this question, *enrolling* relational leadership as the concept that 'best fits' this research; 'best fits' is used cautiously because as Rubin and Babbie (2011) argue, 'due to differing philosophical assumptions, not everyone agrees about how best to do science' (p.46), more so, it is ANT-norm to expect differing opinions in a network of relations.

# Chapter Four

## The Key Theories and Concepts of Relational Leadership

*'Thoughts without content are empty, intuitions without concepts are blind.'*  
- Immanuel Kant

### 4.1 Introduction

The concept of leadership has long been recognised as a nebulous one (Stogdill, 1974) with an evolutionary theorising that is acknowledged as having implications for methodology (Avolio, Walumbwa and Weber, 2009) as well as ontology when it comes to technological actors like Web 2.0 applications. Nonetheless, it is important that this study positions itself within a definition of leadership that allows one to analyse the phenomenon in a way that is consistent with the arguments made so far. This is because, the definitional claim posited about the concept has ramifications not only for how leadership is 'perceived, recruited, rewarded and made responsible' (Grint, 2005a, p. 5), but also for how it is researched (Avolio, Walumbwa and Weber, 2009).

Furthermore, 'the importance of the definition', Grint (2010) argues, 'is not to simply delineate a space in a language game, and it is not merely a game of sophistry' (p.2). Rather it has vital implications for how organisational practices are enacted (or in some cases neglected), and 'how we recognize [or research], train, teach, exert and limit leadership depends fundamentally on that first definitional step' (Grint, 2005a, p. 32). Having highlighted other leadership perspectives in the introductory chapters, the study thus puts forward relational leadership as one that is consistent with arguments made so far and this is justified further in the next section.

## 4.2 What is (and Why) Relational Leadership?

In Uhl-Bien's (2006) analysis of the notion of *relationality* with respect to leadership, she identifies a duality of an 'entity' perspective to the concept of relational leadership and a 'relational' perspective to the phenomenon. Broadly, relational leadership is a relationship-based approach to leadership, but this conceptualisation includes different aspects that impact on how it is perceived and analysed. For instance, the ideas of the *entity* and *relational* perspectives open up discussions (as shall be seen later) about the nature of reality that is used as a lens for the concept of *relationality* in leadership. Celko (1999) provides an interesting explanation about *entities as relationships* from database design theory that offer some pointers, albeit not entirely. He writes,

*'A relationship is a way of tying objects together to get new information that exists apart from the particular objects. The problem is that the relationship is often represented by a token of some sort in the reality. A marriage is a relationship between two people in a particular legal system, and its token is the marriage license. A bearer bond is also a legal relationship where either party is a lawful individual (i.e., people, corporations, or other legal creations with such rights and powers). If you burn a marriage license, you are still married; you have to burn your spouse instead (generally frowned upon) or divorce them. The divorce is the legal procedure to drop the marriage relationship. If you burn a bearer bond, you have destroyed the relationship. A marriage license is a token that identifies and names the relationship. A bearer bond is a token that contains or is itself the relationship' (Celko, 1999, p.15, Author's Italics).*

As is argued later in this chapter, relational leadership is parallel to Celko's analogy of the bearer bond relationship. The *entity* and the *relational* perspectives focus on different realities, that is, the actor and the process respectively, but they both contain or generate *relationality* that the absence of one is the destruction of the relationship. In other words, there can be no relationship without the actors that form it and there can be no relationship without the process through which it was formed and these are not mutually exclusive. In the following sub-sections, the *entity* perspective is first reviewed with its various elements, being the dominant position according to Uhl-Bien (2006) and Cunliffe and Eriksen (2011). Its implications in a Web 2.0 environment are also examined, following which the *relational* perspective is discussed. This chapter then culminates in a general discussion on relational leadership theory (RLT) in a Web 2.0

context and concludes in re-examining the definitional proposition offered in the literature.

#### 4.2.1 *The Entity Perspective*

The *entity* perspective, Uhl-Bien (2006) argues, focuses attention on the *individual* as an entity or social agent whose actions result in organisational practices. Here, individuals are seen to be carriers of their own 'knowings' to which they alone have access to, drawing on the contents of such internal mental 'knowings' in order to effect social order or change. Thus, the individual *entity* is distinct, independent, and can be separated from others or decoupled from its environment. Accordingly, the unit of analysis remains at the level of individuals (be they 'leaders' or 'followers') for which one would be particularly interested in 'their perceptions, intentions, behaviors, personalities, expectations, and evaluations relative to their relationships with one another' (p.655).

Relationally, one assumption that this perspective carries is that, individuals come along with unique characteristics whose impact can be measurably ascertained in any interpersonal relationships they build or seek to build. This conceptualisation is reflected in leader-member exchange (LMX) theory (Graen and Uhl-Bien, 1995) in which individuals bring various expectations to play on the quality of dyadic relations established between two individuals ('leaders' and 'followers/members'), or among a group/peers as member-member exchange (MMX) or team-member exchange (TMX) for leadership operationalization. Additionally, even the introduction of a third individual into the relational exchange in a triadic fashion (although that reduces triadic forces of individuality, bargaining power and conflict) does not fail to mention individual characteristics that shape the overall motive of the triad either for *competitive* or *collaborative interdependence* (Offstein, Madhavan and Gnyawali, 2006, p.95).

*Collaborative interdependence* assumes the relationship to be a bundle of resources made up of individual cognitive entities. Here, the leader-member relationships are grounded on 'the premise that each [individual] brings valuable knowledge, informational resources, and expertise in a complimentary fashion' (Offstein, Madhavan & Gnyawali, 2006, p.101). It thus proposes that the combination of their unique

characteristics broaden the resultant resource pool by ‘marshalling member resources of information, knowledge, knowledge and skills to realize diverse and ever-increasing challenging outcomes’ (ibid). Offstein, Madhavan and Gnyawali (2006) argue that the role of the ‘leader’ in such collaborative interdependence is to foster an environment in which actors in the relationship can freely exchange information without any discomfort.

However, one may not be able to recognise any covert motive in the relationship for personal gain when it is assumed that everyone has, through trust and mutual respect, made available for the relationship all their ‘knowings’. In fact, Offstein, Madhavan and Gnyawali (2006) recognise this and posit German sociologist Georg Simmel’s idea of *tertius gaudens* or ‘the third who benefits’ (Simmel, 1950) which suggests that a third member can opportunistically make gains when two parties in a relationship are in a conflict situation. An example is that because two members in a relationship might hold each other in check, thus denying each other some benefits due to conflict, the third member that steps in can surreptitiously (or probably in a Machiavellian fashion) reap the gains that otherwise would have been claimed by one of the two parties had they not been in conflict. Nonetheless, a third actor joining the relationship can also have a positive impact in what Obstfeld (2005) proposes as the *tertius iungens* or ‘the third who joins’. This relates to the situation where the third person connects disconnected individuals or facilitates a new relationship between them.

Conversely, *competitive interdependence* assumes that resources in the relationship are scarce. Here, individuals seek to maximise personal gains even at the expense of others (Offstein, Madhavan and Gnyawali, 2006). This desire may be implicit or explicitly expressed, the former being more difficult to ascertain by the leader. Moreover, they reckon that it would only take one actor in the relationship to view it as competitive hence transforming it into *competitive interdependence* even if it were collaborative at the start. Here, the leader must manage these imbalances accordingly ‘to ensure that competition does not escalate to the point of creative destruction such as sabotage’ (p.102). However in a Machiavellian fashion, a leader may take advantage of relational imbalances within the relationship, the authors suggest, by occupying a central node position and use that positional power to play members against each other in order to

reap benefits. From an ANT point of view, actors in *translation* (explained in the previous chapter) can deploy such means through seduction, reward, or even coercion as they establish themselves as obligatory passage points within the network of relations (Callon, 1986).

However, the taxonomy that Offstein, Madhavan and Gnyawali (2006) develop – *collaborative* and *competitive interdependence* – is from the backdrop of social network theory, which differs ontologically from the actor-network theoretical underpinning of this research. Social network theory posits social structure as made up of nodes that are linked by ties (Balkundi and Kilduff, 2006; Li, 2013); in effect, the actors-as-nodes possessing ‘cognitions in the mind’ (Balkundi and Kilduff, 2006) can be linked by ties or disengaged from the network in order to allow or limit some individual influence in the network relationship. This is because ‘when a person is understood as a knowing individual s/he is being viewed as a subject, distinguishable from the objects of nature. The latter implicitly are viewed as passive, as knowable and malleable only by the subject’ (Dachler and Hosking, 2013, p. 3).

Such notion is incongruent with actor-network theory’s position of actors-as-networks or the effects generated by networks, actors that presumably look passive because they are non-human are in reality actants that also constrain and/or enable action within the network of relations (Law, 1992). Moreover, in actor-network theoretical terms, one does not reduce the network to actors as containers of their ‘knowings’ separable from their environments. Crosby and Bryson (2010) also recognise this uniqueness of the ANT approach in leadership by stating how “‘association” includes far more than, for example, a communication link between nodes in a network’ (p.217) as social network theory portrays it. Rather, network associations, they argue, may also be extended to a host of other possible connections including objects.

Under the *entity perspective* of the concept of relational leadership, Uhl-Bien (2006) identifies other relationship-based approaches to leadership. These include Hollander’s relational theory, the role of charisma, relational and collective self, social network theory approach, and Rost’s postindustrial leadership, all of which are addressed in this section. Uhl-Bien (2006) acknowledges Edwin Hollander (Hollander,

1958) as one of the earliest scholars to position leadership as a relational process, usually involving an exchange between leaders and followers. In Hollander's (1958) early work, he postulates 'idiosyncrasy credit' as a mediating construct that allows individuals to award credits to someone who is perceived to differ in certain regards, be it task performance or 'idiosyncratic behaviour' – in this case a permissible deviation from a group's common 'expectancies'.

In effect, leadership is based on interpersonal evaluation of an individual relative to what is the 'norm' to engender follower trust. Placing this argument in a Web 2.0 context can be a challenge. This is because the perception of 'idiosyncratic behaviour' in an individual over a technological platform may take many forms including burning oneself to death in order to ignite or 'lead' people to action as witnessed in the beginning of the Arab spring in Tunisia. Nonetheless, the perception of a leader's competence when it comes to task performance in a Web 2.0 platform is evident in wikis where this individual takes on a leadership role of directing and moderating contributions by others who have awarded him/her such 'idiosyncrasy credit'.

Furthermore, Hollander's (2009) more recent work, *Inclusive Leadership: The Essential Leader-Follower Relationship*, places nearly over five decades of his work in perspective where he takes a more follower-centric approach to leadership and also offers clarity on his 'idiosyncrasy credit' (IC) model, which addresses the critique raised earlier of a non-conformist behaviour sometimes taking the form of a brutal suicide in order to influence others. He avers that 'the IC Model is non-normative, describing what seems to occur as people rise in their accorded status, or "esteem," in groups and larger entities' (Hollander, 2009, p.xxii). This notion still presents the reader with the cognitive processes within the individual who displays an 'idiosyncratic behaviour'. As Uhl-Bien (2006) notably states, Hollander's model still 'describes processes that are located in the perceptions and cognition of the individuals involved in the relationship' (p.657) thereby making it consistent with the entity perspective of relational leadership.

Notwithstanding, Hollander (2009) points out a concept of *inclusive leadership* in his later work, which involves 'doing things with people, rather than to people' (p.3), an idea

that appears to resonate with a Web 2.0 tenet of '*prosumerism*<sup>6</sup>' – that is, participants are both *producers* and *consumers* of information. Additionally, unlike the tensions in collaborative and competitive interdependence earlier mentioned, *inclusive leadership* 'respects competition and cooperation as part of a participative process' (Hollander, 2009, p.3). The implication for a Web 2.0 context is that, the forces of competition and cooperation can all be at play as managers and employees engage in relational practices on the technological platform, a paradox of technology.

Another entity perspective of relational leadership argued in Uhl-Bien (2006) is the idea of charisma. Referring to such works as Weierter (1997) and Howell and Shamir (2005), Uhl-Bien (2006) identifies that this approach considers charisma as a social relationship between leaders and followers with the latter's characteristics defining the perception of the former as charismatic, as well as determining the extent of the charismatic relationship (like the responses to charismatic influences).

An offshoot of this conceptualisation is the idea of relational and collective self. The notion of relational self as argued in Andersen and Chen (2002) offers some insight. The authors argue that an individual's self is shaped in part by ties or is an entanglement with *significant others* – that is, 'any individual who is or has been deeply influential in one's life and in whom one is or once was emotionally invested' (ibid, p.619). As such, the authors contend, from a social-cognitive model of transference, that an individual may carry a mental representation of his or her significant other only to activate such representation in an encounter with a new person. It implies that an encounter with a new leader can result in the individual perceiving this new leader 'in ways derived from the [past] representation and also to respond emotionally, motivationally, and behaviorally to the person [or the leader] in ways that reflect the self-other relationship' (Andersen and Chen, 2002, p. 620).

Following this argument, significant-other relationships can also be argued in the technological (or rather, sociomaterial) world or organisations. That is, situations in which humans have built emotionally strong relations with technology to the extent that

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<sup>6</sup> This term is actually futurologist Alvin Toffler's neologism (Toffler, 1980). The concept pointed towards a new mode of production where an individual who was a beforehand-passive consumer in the producer-consumer relationship would now actively partake in the production of what it consumed. It has since been applied to the Web 2.0 era in which Internet users do not only 'consume' information but are themselves also generating information.



'we fear the risks and disappointments of relationships with our fellow humans. [And so] we expect more from technology and less from each other' (Turkle, 2011, p.xii). Additionally, individuals in this sociomaterial world are almost inseparable from the technologies (their non-human significant-others) that they are tethered, in what Turkle (2008) calls 'the tethered self' where individuals are so hooked up to technology that they now live in 'private media bubbles' (ibid), and tend to respond emotionally to these technological significant-others. Grint (2005) for instance argues,

'Wholly human social relations are inconceivable – because all humans rely upon and work through non-human forms, through hybrids – and that humans distinguish themselves from animals, amongst other things, on the basis of the durability or obduracy of their relations. That is, they encase their social relations into material forms. This does not mean that material forms determine things but that these material forms are an effect of their relations' (Grint, 2005, p.22).

Accordingly, from that socio-cognitive model of transference, employees and managers may activate their mental representations of their technological significant others when they encounter a new Web 2.0 application in the organisation within which to collaborate with themselves. The converse may also hold when individuals construct alternative identities that express some form of scepticism towards the technology or those they are collaborating with (Collinson, 2003). Relational leadership thus goes beyond human relations to relations with technological artefacts within the organisation.

Conversely, whereas relational self brings to the fore relationships with one individual significant other, collective self rather emanates from 'identifications with a group, an organization, or a social category' (Uhl-Bien, 2006, p.658) akin to what Durkheim (1984) for instance refers to as *mechanical solidarity* – a socially unified consciousness. Uhl-Bien (2006) then argues, 'the implication is that if leadership is produced by these social psychological processes, then for an individual to be effective as a leader he/she must display the prototypical or normative characteristics of an ingroup member' (p.659). This approach to relational leadership in a Web 2.0 environment not only assumes that individuals are the same but also that opinions of individuals are similar on whatever issues are discussed over the technological platform. Certainly, this does not occur because organisations encourage (or rather harness) differing opinions of individuals

through network formations by the adoption of such technologies (Cheuk and Dervin, 2011; Semple, 2012). Unfortunately, research has largely focussed on such network formations through social network theory. Uhl-Bien (2006) critiques such approaches and argues that

‘network theory has appeared to be concerned with description (e.g., who talks to whom, who is friends with whom) and taxonomy (e.g., friendship network, advice network, ego network) of relational links, focusing primarily on “mapping” network interconnections (e.g., identifying the number and types of links that occur among individual actors), rather than on how relational processes emerge and evolve—e.g., how these interpersonal relationships develop, unfold, maintain, or dissolve in the context of broader relational realities (including other social constructions)’ (Uhl-Bien, 2006, p. 660).

Therefore, the deployment of the actor-network theoretical approach in this study addresses this concern as ANT explores how networks of relations develop, unfold, are maintained or dissolved through translation (detailed in Chapter Three).

A further idea within the *entity* perspective of relational leadership is Rost’s postindustrial leadership. Here, the notion of leaders and *followers* is challenged. Rost (1995) refuses the commonly held assumption that leadership needs followership, which he argues is a 20<sup>th</sup> century thinking of leadership in an industrial epoch. Rather, he asserts leadership is a relationship of influence across multiple directions; in other words, a top-down conceptualisation of leadership does not hold in a postindustrial era. Leadership is an influence relationship, he argues, among leaders and *collaborators*. All actors are thus involved in this leadership relationship to make it work. These actors are not ‘leaders and *followers*’ but ‘leaders and *collaborators*’. Rost (1995) vehemently discards the idea of *followers* stating ‘I have since given up on the concept of followers as hopelessly irredeemable, that is, inherently industrial in its denotation’ (p.133).

He then argues, ‘If leadership is what the relationship is, then both collaborators and leaders are all doing leadership. There is no such thing as followership’ (ibid). Nonetheless, Rost (1995) accepts that equality in influence among actors is not necessarily the case as ‘the influence patterns of these people are inherently unequal’ (p.133). In a Web 2.0 environment, the idea of *collaborators* instead of *followers* may hold, albeit not in every context. For instance, ‘*followers*’ is a common term in Twitter®

although practically, both the 'follower' and the 'followed' may actually be following each other in the network. In other contexts however, like in Web 2.0 applications inside organisations, one would rather subscribe to the idea of *collaborators* instead of *followers*. But how these *collaborators* multidirectionally influence the leadership relationship as they collaborate with leaders in a Web 2.0 platform is a gap to be explored.

Even though the arguments raised so far offer a relationship-based orientation to leadership, they are all classified under the *entity* perspective of relational leadership. Uhl-Bien (2006) suggests these perspectives view leadership as 'an influence relationship in which individuals align with one another to accomplish mutual (and organizational) goals' (p.661). She argues these perspectives take a realist ontology, presuming an individually constituted reality of the leadership relationship thus ignoring the social relational processes. The *entity* perspective to relational leadership thus makes the individual agent (be they 'leaders' or 'followers') the *primus inter pares* or 'the first among equals' in the social world or organisation, overlooking the reality that technology is also now an involved actor. Such role of technologies in the social world, Grint (2005) for instance asserts, demands a 'hybrid' approach to leadership in which we do not only consider leadership to emanate solely from persons (as humans) but also from other sources which may not necessarily be human. He offers such examples as the traffic light 'leading' one to stop for safety or to drive on, the derailed train 'leading' one to flee from danger, the lighthouse providing direction, or even the so-called 'ideals' leading the Marxist guerrilla to fight for equality and so on.

ANT (see Chapter 3) thus argues that sociomateriality must be embraced and leadership espoused as an enactment of influence in a network of heterogeneous materials for which non-human elements must become part of the unit of analysis (see Smith, Kempster and Barnes, 2016). Accordingly, the *entity* perspective to relational leadership focussing its attention on only individuals (or humans) does not fully encompass relational leadership in a Web 2.0 technologically mediated environment. In other words, 'leadership is too important to be left to [only human] leaders' (Grint, 2005, p.4), either as nodes, or individuals with unique 'knowings.' The next section therefore explores the *relational perspective* to the concept of relational leadership.

#### 4.2.2 *The relational perspective*

Unlike the *entity* perspective, Uhl-Bien (2006) argues, the *relational* perspective of relational leadership views phenomena as socially constructed, not embedded in the minds or 'knowings' of individuals. It thus focuses on 'the social construction processes by which certain understandings of leadership come about and are given privileged ontology' (p.655). Bradbury and Lichtenstein (2000) offer a Buberian approach to relationality as the 'space between' individuals and phenomena in organisational practices. The Buberian approach, the authors argue, which stems from theological philosopher Martin Buber's (Buber, 1970) work on dialogue argues 'dialogue as a dialectical movement between and among human and nonhuman phenomena' (Bradbury and Lichtenstein, 2000, p.551) for which true interaction occurs in the 'space between'. In other words, one must account for the relational processes among actors rather than the individual properties of organisational members. For Morley and Hosking (2003), that 'space between' is an enactment of the leadership relationship between individuals and *context* because 'people create contexts and contexts create people' (p.70) and these are both created in practice (that is, *praxis* – the totality of human action often theorised as routinized behaviour consisting of several elements including objects (Reckwitz, 2002)).

The ontological underpinning therefore is that actors are created, maintained, changed, and organised in process (which in this case is conversations) (Morley and Hosking, 2003). This view is consistent with ANT's ontological assertion of an actor being an effect generated by a network or a network of heterogeneous relations (Law, 1992). A relational approach therefore offers the opportunity to 'focus on processes in which both the actor and the world around him or her are created in ways that either expand or contract the space of possible action' (Holmberg, 2000, p. 181). In a Web 2.0 environment, these processes occur as discursive practices inside (and with) the technological platform, which although considerably 'virtual' or non-physical, duplicates the situated practices as texts that the observer can analyse.

Additionally, relational constructionism is one of the underlying principles of the relational perspective to leadership. Here, Dachler and Hosking, (2013) are particularly instructive in underpinning relationality with processes (that are within networks of multiple meanings) and not with individuals (Uhl-Bien, 2006). The unit of analysis thus shifts away from individual characters to *relationships*. The idea of *relationships* as unit of analysis is further detailed as not just influence-based conceptions of intragroup, intergroup, or interpersonal relationships but relations that encompass interdependent contexts including *things*. In the context of this research, such relationships involve the network of heterogeneous materials consisting of managers, employees, Google+ (the technological application), the online communicative or relational practices, and the researcher (which can often be overlooked). Bradbury and Lichtenstein (2000) thus warn that the researcher must also 'be conscious of the impact of her/his research on what is being researched, and too on how that research impacts her/himself. Such a scholar enters an organization as if it were an extended set of relationships. S/he thereby places more attention on the "space between"—the space between subject and object, subject and research, researcher and subject, and the reflexivity of the research process itself' (p.551).

This relational ontology thus recognises the role of *objects* or *things* as also involved in the interactional processes in the network of relations in the organisation, not with only individuals as Cunliffe and Eriksen (2011) rather suggest. Understandably, Cunliffe and Eriksen (2011) state that research subjects 'spoke of relationships not in terms of networks and objects –but *with people*' (p.1431). Relational leadership therefore embraces objects or things, not as separable entities but as intricately involved in the dialectical interplay and discursive practices among organisational actors for which the 'space between' becomes the zone for meaning making.

Epistemologically, a relational position 'asks how the processes of leadership and management in organizations emerge—e.g., how realities of leadership are interpreted within the network of relations' (Uhl-Bien, 2006, p.662). For a Web 2.0 environment in which technology is also an actor, these questions must also be posed in order to gain this understanding into the heterogeneous network of relations. Methodologically, the relational perspectives pay attention to the network of relations theorising processes as

*'historical and social co-ordinations'* (ibid, p. 665), that is, *how* did things come to be? As a consequence, leadership 'will be relational, with no privileged places, no dualisms and a priori reductions. It will not distinguish, before it starts, between those that drive and those that are driven' (Law, 1994, p. 13).

#### **4.2.5 Relational Leadership Theory and the Web 2.0 environment**

In the arguments raised so far, relational leadership theory offers an overarching framework within which one can understand the relational dynamics (among all actors) involved in leadership, including non-human actors. Relational leadership theory (RLT) thus sees leadership as the process in the 'space between' actors where social systems are formed, maintained, or dismantled through interaction among actors. These processes in the 'space between' are shaped by actors as individuals (entity perspectives) and by contexts that generate the relationship (relational perspectives). The focus is that, RLT seeks to offer a better understanding of the relational dynamics\the social processes\that comprise leadership and organizing' (Uhl-Bien, 2006, p.668). This has at least three implications for relational leadership in a Web 2.0 technological platform.

First, this undertaking may seem impossible because the social processes in a Web 2.0 environment are non-physical, 'virtual', and social cue-impoverished, since the human actors are most of the time in a non-vocal interaction with the technology (Kozinets, 2002). Second, this virtual environment can often be a duplication of how individuals are already organised in the physical world. Cheuk and Dervin (2011) argue that 'too often Web 2.0 and other online dialogue applications are still designed with top-down communication implicitly assumed as outcome' (p.121). The implication is that, relational leadership in a Web 2.0 context extends the social processes that comprise leadership in the physical space into the technological space and nothing new is learned. To avoid such direct replication of the physical space, one would have to accept the inclusion of the technology as an (new) actor in the leadership relationship.

Third, if the analysis of relational dynamics must also now include technology, then the affordances of the technology may not be taken as an independent *entity* with fixed characteristics. In other words, the nature of the technology – what it enables and what it constrains – becomes contingent, as it involves itself in negotiating the perception of its character with actors in the network of relations. This is because, in the heterogeneous network of relations that these technologies are a part of, they tend to ‘gain their ontological character through the position they occupy within the shifting relationships’ (Brown, Middleton and Lightfoot, 2001, p.129). However, Callon (1986) forewarns of the dangers of ‘changing register’ when we shift attention from the *social* to the technical (or the technological). That is, when the *social* is not taken as constitutive of heterogeneous materials, we risk separating the *social* from the *technological* in a process Latour (1993) refers to as *purification* – that is, separating ‘society’ from ‘nature’ as two distinct ontological zones asymmetrically. Relationality in a Web 2.0 context for relational leadership is therefore a sociotechnical undertaking in which the relational dynamics and social processes are not necessarily the same as those in the physical space.

Epistemologically, the discursive practice among actors usually captured as texts in a Web 2.0 application (Kozinets, 2002), and the technology itself (Latour, 2005) become critical to our understanding of relational leadership in such context. With regards to the former, the researcher is able to see through the textual discourse, the relational practices that shift and (re)distribute power among all actors in the Web 2.0 online space. With regards to the latter, the researcher is able to ascertain whether the technology itself legitimises a unidirectional top-down form of leadership or whether it enables *collaborators* to multidirectionally influence one other.

Consequently, adopting a notion of relational leadership in a Web 2.0 environment requires a fundamental shift in how relational leadership is perceived ontologically. That is, first, it must recognise the technology as also participating in the leadership relationship and not just facilitating it. Second, it must embrace heterogeneity and be open to relational practices that go beyond only ‘leaders’ and ‘followers’. Third, the ‘space between’ must not only just be the visible, physical, and vocal relational dynamics observed in the physical space but also the ‘textual interactions’ as well as the

affordances of the technology (Kozinets, 2002). Fourth, the definition of relational leadership in a Web 2.0 environment must now take account of the new context it engenders in the organisation.

Therefore, Uhl-Bien’s (2006) definition of relational leadership, which she suggests is applicable to both *entity* and *relational* perspectives may need to be enriched to contain the Web 2.0 context. She defines relational leadership as ‘*a social influence process through which emergent coordination (i.e., evolving social order) and change (i.e., new values, attitudes, approaches, behaviors, ideologies, etc.) are constructed and produced*’ (p.668, Author’s italics). For this study, a propositional improvement in the definition thus advances relational leadership as *an enactment of influence in a heterogeneous network of relations in which evolving social order and change are produced, sustained, and or constrained through intermediations in order to stabilise the network*. This definitional step is also consistent with the actor-network theoretical underpinning of this study in which ‘there is no social order, there are only endless attempts by actors at ordering through formation and stabilization of networks’ (Heeks and Stanforth, 2015, p. 37). Additionally, this definitional re-ordering becomes necessary because of the fluidity, lack of stability, and uncertainty that characterises a Web 2.0 environment (O’Reilly, 2007; Semple, 2012). Table 2 below provides a general overview of differences a Web 2.0 environment brings to relational leadership.

<b>Relational Leadership</b>	<b>Physical environment</b>	<b>Digital (social technology) environment</b>
<b>Entity Perspective</b>	<i>Relationships</i> are analysed but <b>individuals</b> remain the focus as the unit of analysis.	Networks are analysed; individuals receive no privileged ontology.
<b>Relational Perspective</b>	Relational <i>processes</i> occur in the <i>social</i> – among individuals or between individuals & <i>context</i> .	Relational <i>processes</i> occur among individuals & <i>things</i> (i.e. technology), or among individuals, <i>things</i> & the digital context.
<b>Definitional Propositions</b>	<i>‘Relational leadership as a social influence process through which emergent coordination (i.e., evolving social order) and change (i.e., new values, attitudes, approaches, behaviors, ideologies, etc.) are constructed and produced’ (Uhl-Bien, 2006, p.668).</i>	<i>Relational leadership as an enactment of influence in a heterogeneous network of relations in which evolving social order and change are produced, sustained, and or constrained through intermediations in order to stabilise the network.</i>

**Table 2: General differences in relational leadership in a Web 2.0 environment.**



### 4.3 Conclusion

Overall, relational leadership is an eclectic concept that finds applicability in various contexts. It thus provides a good starting point to underpin this study with relational leadership as one seeks to gain some understanding into relational practices of actors in a heterogeneous network of relations. Following Uhl-Bien (2006), the arguments raised have struggled with the implications that both the *entity* and *relational* perspectives pose to relational leadership in a Web 2.0 environment, ultimately pushing forward the concept of relationality beyond what is just *social* to what is now sociotechnological. Methodologically, the discussions have highlighted the need to move beyond individual actors or nodes as containers of their 'knowings', dyadic relationships, and triadic forces as unit of analysis, to the relational dynamics or processes and more importantly to the network of relations itself as the unit of analysis. Finally in terms of its definition, the arguments raised have explored relationality as not only a sheer social influence process but also one in a heterogeneous network of relations, culminating in an extension of the definitional proposition of relational leadership posited in Uhl-Bien (2006). This definition as argued in theory together with the resources of the ANT forms basis for the worldview that underpins how the study is conducted as shown in the next chapter.

# Chapter Five

## Methodology

*'I think you can have a ridiculously enormous and complex data set, but if you have the right tools and methodology then it's not a problem.'*  
- Aaron Koblin

### 5.1 Introduction

This chapter sets out to show the *how's* and *why's* of decisions made in the research process. In other words, the question of how this research was conducted and the basis upon which the various methodological choices were made are presented. Additionally, the research context is detailed in order to provide the reader with a vivid picture of the field within which the researcher operated. Furthermore, this chapter also offers the reader with the ontological position taken as well as its epistemological outworking. Clough and Nutbrown (2002) argue that 'all social research sets out with specific purposes from a particular position, and aims to persuade readers of the significance of its claims' (p.4). The research questions are:

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager-employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

This chapter provides justification for choices made in the research design that 'best' allow the research questions to be answered and objectives (set out in Section 1.8) met. 'Best' is used rather carefully because arguably, there is no best way of doing research. Rubin and Babbie (2011) for instance argue, 'due to the differing philosophical assumptions, not everyone agrees about how best to do science' (p.46). Consequently, the arguments offered in this chapter represent those that are consistent with the

researcher’s ontological stance and the theoretical underpinning of this study in order to follow through to answering the research questions.

## 5.2 Planning the Research

For a research project with limited timeline and funding, it was important that the work be carefully planned with milestones for delivery at various stages until it was completed. However, consideration was also given to the emergent nature of such an undertaking, especially when one can never be sure of where actors would go, thus allowing the researcher to ‘follow’ them, or when actors would be available for the researcher to have access to them. Nonetheless, planning the process as tasks to be delivered allowed the study to engage the materiality of the project plan as an actant whose leading enabled the researcher as its follower to meet other actors. Thus, the project plan served as an intermediary between the researcher navigating the unknown world of emergent research eventualities.

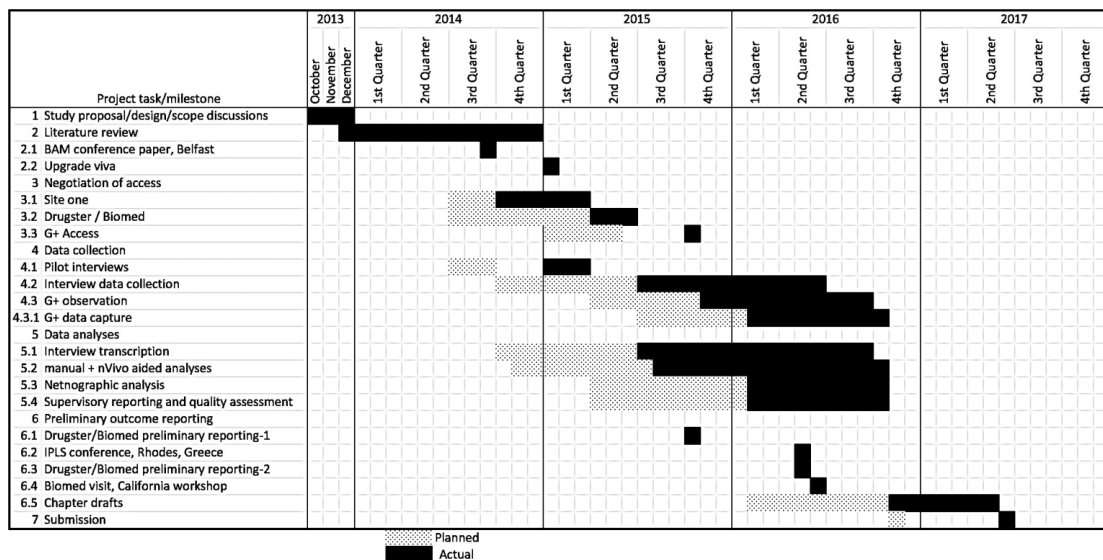


Figure 4: Timeline for project execution

The timeline for executing this research project shows what is planned as well as its actual completion. It also demonstrates the emergent nature of the process undertaken. In fact, the research design itself, explained and justified in the coming sessions as a qualitative study, has elements that show its emergent nature (Creswell, 2014). Accordingly, changes were accommodated or made in order to fulfil planned tasks. The

project plan was as much acting on the research process as it was also being acted on. This discursive relationship with the project plan as an intermediary, also reflects the philosophical assumption undergirding this study. The understanding that the project plan was not fixed but open to flexibility, yet, stable enough as an actant to be referred to at every stage of the process epitomises the dynamic interactions on this journey. Whereas changes in the timeline for some activities were accommodated, others were non-negotiable. For instance, gaining access and scheduling interviews were subject to change in order to suit the hosting organisation. However, conference dates as well as preliminary reporting schedules were held in place. This was so for two reasons. First, the setting of those dates was outside the control of the researcher and therefore not negotiable. Second, conference papers and presentations were built into this project as part of the research's quality assessment measure discussed in [Section 5.7](#). Notwithstanding, the research process involved decisions made in order to collect data that would be relevant to answering the research questions as stated at the beginning of this chapter.

To answer the research questions, my own independence or detachment from actors as already seen in the research project plan was not possible. Choices made were informed by the theoretical framework within which the study was conducted, acting on the project plan and being acted on, and interpretations made that reflected such theoretical orientation (Alvesson and Sköldbberg, 2009). Further arguments to this effect are based on the philosophical underpinning of this research discussed in the following sections.

### **5.3 What are the ontological and epistemological grounds for the study?**

Positioning a study of this kind philosophically is a difficult task. However, it is without doubt that all social research stems from some philosophical assumption (Clough and Nutbrown, 2002), that is, whether the researcher is aware of it or not (Easterby-Smith, Thorpe and Jackson, 2008). It is a bigger challenge when ANT is invoked in a study. This is because ANT came from a tradition that is pluralist in its approach to research. In an interview with Thomas Hugh Crawford, Bruno Latour expressed the difficulty in pigeonholing research from French tradition, which often is idiosyncratic, combining

ideas from various disciplines (Latour and Crawford, 1993). The benefits are seen in the fresh thinking that results from such approaches but the challenge emerges when classifications are needed. ANT is one such example in the social sciences and has been seen as radical (Garrety, 2014). For instance, Latour advances ANT as an ontology (Latour and Crawford, 1993) while also positing it as a method, which is an epistemological undertaking (Latour, 2005). Ontological assumptions deal with the nature of reality or the theory of existence and epistemology deals with how one comes to know reality or the theory of knowledge (Easterby-Smith, Thorpe and Jackson, 2012). Usually, a researcher's ontological and epistemological positions inform what methodologies are deployed for data. For an ANT flavoured study, the task is to ensure that the research process is consistent with both the philosophical and theoretical underpinning.

The most common use of ANT, usually in information systems research, can be found in its deployment in epistemology where it is a method for collecting and analysing data (Cordella and Shaikh, 2006). In leadership studies, ANT is positioned as a 'lens' through which the phenomena being studied are analysed. Although a 'lens' allows us to see reality through its rays of refraction, thus bordering on ontology, the 'lens' that is talked about tends to be the use of ANT as an analytic tool. Little attention seems to be paid to its ontological ramifications. Cordella and Shaikh (2006) argue that 'unfortunately, actor network theory has rarely been used as the ontological foundation for the understanding of the nature of the interaction between technological artefact and people' (p.4). As a result, leader-centric analyses are still common and the object/technology relationship with the human leader is neglected.

Over the last one and half century, the dominant philosophical paradigm – that is, a 'fundamental model or scheme that organizes our observations and makes sense of them' (Rubin and Babbie, 2011, p. 47) – in management research has been positivism (Easterby-Smith et al. 2008; 2012). The ontological assumption for positivists is that the social world is external and 'out there' waiting to be discovered. Accordingly, its epistemology posits that, the 'truth' of this external world must be known through objective methods and not individuals' subjective views (Easterby-Smith, Thorpe and Jackson, 2012). In other words, if it is out there, then it can be measured using

predetermined objective metrics. This approach is value-free and tends to take for granted the 'conflictual negotiation process which includes different interests and participants in the research process' (Alvesson and Sköldbberg, 2009, p. 30). For an ANT inspired research, the understanding that actors are effects of constantly negotiated and renegotiated networks means that the positivist frame of things that presumes a stable external world would not hold.

A counter argument to positivism is social constructivism, a philosophical idea that was developed in the last half century (Easterby-Smith, Thorpe and Jackson, 2008), or what Habermas (1970) refers to as interpretivism. Here, reality is not 'out there' independent of the researcher and therefore waiting to be discovered. Rather, it is socially constructed, negotiated subjectively and given meaning by its human participants (Denzin and Lincoln, 2005; Easterby-Smith, Thorpe and Jackson, 2012). In other words, interpretivism argues that people create reality as they make sense of their experiences with themselves and/or their environment. In this paradigm, reality is neither independent of the participants of the research nor of the researcher because subjective human interests 'are the main drivers of science' (Easterby-Smith, Thorpe and Jackson, 2008, p. 59). Accordingly, interpretivists assume there are multiple realities, which may even contradict one another (Holstein and Gubrium, 2005). Here, the researcher's own account is as much a part of the process as the setting being researched (Alvesson and Sköldbberg, 2009) and one cannot claim to know the nature of 'truth' objectively. Ontologically, ANT lends itself more closely to an interpretivist paradigm than to positivism; ANT embraces multiplicity of people's aspirations as they create reality. Additionally, positioning ANT studies under the interpretivist domain is reflected in or explicitly stated by most researchers working with ANT.

However, this ontological posture fails to capture fully the ontological ramifications of ANT particularly in accounting for non-humans (Cordella and Shaikh, 2006) or Latour's (1992) 'missing masses'. Nonetheless, given the sheer volume of published work, it is safe to conjecture that ANT's interpretive community permits this. For this thesis, the ontological position taken is interpretivism with a 'twist'. That is, one that recognises that objects also have a voice that must be accounted for. It is also one that recognises all actors as ontological equals so that no entity or actor or social structure is granted

greater ontological status than objects or humans and all occur in a 'flat' manner (Law, 1992). In fact, actor-networks are in themselves open-ended in reality, a meaningful analysis is only possible when the network is 'simplified' at some point (Law, 1992) and this has epistemological consequences.

Epistemologically, positivists are often detached from research subjects almost in pursuit of 'the tradition of the natural scientist' in order to maintain 'objectivity' (Saunders, Lewis and Thornhill, 2009). Here, 'human interests should be irrelevant' and only what is observable is given any importance; for a clear observable measure, the unit of analysis is often reduced to the simplest terms (Easterby-Smith, Thorpe and Jackson, 2012). On the flip side, interpretivists are not detached from their research participants in pursuit of 'objectivity' but are part of the phenomena being observed (ibid). Moreover because interpretivists deal with human agents, the argument is that,

'you cannot adequately learn about people by relying solely on objective measurement instruments that are used in the same standardized manner from person to person—instruments that attempt to remove the observer from the observee to pursue objectivity' (Rubin and Babbie, 2011, p.51).

As a result, the unit of analysis in interpretivist research paradigm may often comprise the totality of 'whole' situations in which actors are situated (Easterby-Smith, Thorpe and Jackson, 2012). Similarly, ANT research acknowledges the researcher as also a part of the network of heterogeneous relations they are studying. They are not detached from their research participants (including non-humans) and their interests are equally accounted for in the research process. Here, Orlikowski and Baroudi (1991) recount Simon's metaphorical tale in Weick (1979),

'The story goes that three [baseball] umpires disagreed about the task of calling balls and strikes. The first one said, 'I calls them as they is.' The second one said, 'I calls them as I sees them.' The third and cleverest umpire said, "They ain't nothin' till I calls them." (Weick 1979, p.1 cited in Orlikowski and Baroudi, 1991, p.16).

Additionally, the unit of analysis is the actor-network<sup>7</sup> under study, that is, the heterogeneous network of relations of whom the researcher is a part.

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<sup>7</sup> That is, the research setting of which the researcher has now become networked. This unit of analysis is thus made up of the human actors in the organization studied and all the other non-human actants that are networked with them, or that are of interest to the research enquiry.

### *5.3.1 Methodological Implications*

The methodological approaches taken in research are usually a consequence of the researcher's epistemological stance, which is also an outcome of his/her ontological position (Rubin and Babbie, 2011). These then reflect in the specific methods or techniques deployed for data collection. However, in some cases it is possible that 'the same method[s] may be used within different epistemologies' (Cassell & Symon 2004, p.8). Nonetheless, because positivists pursue objectivity, methodological approaches that separate the researcher from research subjects are usually deployed. Experimental methodological designs usually characterise positivistic approaches. These aim for reproducibility as well as the ability to generalise research outcomes (Easterby-Smith, Thorpe and Jackson, 2012). Because human interests in positivistic research are of little relevance, research participants are treated as subjects who would respond to some outside stimulus in a way that can be measured (ibid). For experimental groups, variables are specified so that it can be clear which groups are being experimentally treated and the results measured against a control (Creswell, 2014). Another logic that characterises methodologies under a positivistic paradigm is the use of quantitative designs like in surveys. To maintain 'objectivity', methodical sampling procedures are used to ensure a representative population. Following, statistical analyses and tools are used to make sense of the data by identifying patterns or trends for generalisation (Easterby-Smith, Thorpe and Jackson, 2012; Creswell, 2014). Here, the researcher approaches the study with well-defined constructs and hypothesis with which to test theory (Rubin and Babbie, 2011).

On the other hand, interpretivists do not seek statistical generalisation but to understand a phenomenon, the insights of which 'can then be used to inform other settings' (Orlikowski and Baroudi, 1991, p. 5). Accordingly, research methodologies deployed in this paradigm seek to get close to the phenomenon under study in order to interact with participants' own experiences. Orlikowski and Baroudi (1991) for instance argue that in order to generate valid interpretive knowledge, 'field studies' are suitable as these examine humans in their social settings. Therefore, the methodological approaches used here 'allow participants to use their own words and images, and to draw on their own concepts and experiences' (Orlikowski and Baroudi, 1991, p. 15).



Qualitative research designs are often used in this regard. This allows the researcher to make knowledge claims based on constructivist assessments of individuals' experiences with an aim to develop theory (Creswell, 2014). As mentioned before, this aim is not to statistically generalise as in most positivistic undertakings, but to gain understanding into the particular context under study. The mark of 'good qualitative research', Creswell (2014) argues, is *particularity* rather than universality of outcomes. Here, the researcher does not approach the study with already established constructs to measure or hypothesis to test, rather, the constructs are derived from the field as the researcher interacts with the phenomenon under investigation (Orlikowski and Baroudi, 1991). The following section thus details what this research's field was in order to contextualise the arguments made so far.

#### 5.4 Introducing the Research Context

Drugster is a multinational for-profit organisation that specialises in healthcare, pharmaceuticals and wellness. The organisation was founded in Europe as a healthcare company over a century ago and has achieved world acclaim as one of the frontiers in breakthrough science in areas such as cancer and biotechnology. Its expansion across Europe was born out of a desire by its founders to build a network of overseas subsidiaries in order to increase its business operations. The organisation has since taken its business activities overseas to nearly every continent. With overseas operations, management of the organisation is made possible through international satellite offices, business affiliates, subsidiaries, and company divisions in a network that spans across time zones, nationalities, national cultures and legislations. Currently, Drugster has more than 90,000 employees worldwide and this is expected to rise by at least five per cent in 2018 per the organisation's growth rate.

Core at its human resource policy are the undergirding principles of trust, mutual respect, and integrity. The result is an openness that permeates most parts of the office infrastructure at its headquarters in Europe. Office cubicles run across entire floors separated by waist-high translucent glass partitioning in a well-lit environment. In other offices of the organisation abroad, the partitioning is wooden; here, employees have

pinned photos, in some cases splashed photos of themselves, their families, football clubs, and holiday destinations onto the wooden walls within their desks' immediacy. Additionally, colleagues of employees could be seen walking along pathways that separate or rather connect various office cubicles. Some individuals also stand over the partitioning to pass on information, pick up or give out files and other materials, or even engage others in what seemed like side conversations and so on. All these were visible as background activities when video conversations with employees and managers at various offices of the organisation were conducted.

Drugster wishes to be the employer of choice in its recruitment drive. This aspiration is captured in its annual reports, but is also evident in the recognition it has received over the years by Science Magazine as a top-20 employer in the healthcare industry. The organisation recognises the importance of the Internet in its recruitment operations and has used its careers website as a primary gateway. For instance, in 2007, nearly 5 million hits were recorded on its careers website alone and this has since increased. With more than 100,000 prospective candidates applying annually on its e-recruitment system, Drugster's Human Resource (HR) managers assert the Internet has enabled them to reach far more people than any other media.

A sense of open communication is visible within the organisation as managers interact freely with employees. In Drugster's annual 2015 report, they assert they are committed to ensuring a workplace where every employee feels valued. According to its statement, the organisation believes that its success depends on its ability to attract and retain a diverse and skilled workforce. The organisation's report places emphasis on its workforce and believes in a low-power gap for its manager-employee interaction. On a typical working day, both managers and employees can be seen in corporate casual or semi-formal outfits in a work environment that portrays a sense of camaraderie to the observer. But this work environment was not always this way.

This semi-formal dress code work environment became part of Drugster's culture when the organisation merged with a smaller company, Biomed, less than a decade earlier. Biomed is a scientific research and development organisation based in the United States. Their activities centre on research that leads to breakthrough products that can enhance

healthcare. Although this organisation has its own corporate structure, Biomed engages an interdisciplinary approach that cuts across functional units and departments as part of its scientific research activities. With a mix of both experienced and newly recruited scientists, Biomed cross-fertilises ideas from both young and old in a corporate structure that mimics laboratory work where everything is open and everyone is easily accessible. The merger between Drugster and Biomed thus brought together two separate organisational cultures. According to a senior vice president of Drugster at the time of the merger, Drugster was keen to learn from and adopt Biomed's culture as part of its future endeavours. Drugster had operated with a traditional hierarchical buttoned-down work environment while Biomed's culture was more of a 'Silicon Valley style', according to a Biomed manager (INV-S-L10). While the semi-formal or sometimes informal dress code of Biomed's employees and managers was also now reflected at Drugster, full integration of both organisations was still some distance away.

For full integration of both Drugster and Biomed, some factors were considered. First, geographic distance between the two organisations – Drugster in Europe and Biomed in the United States – meant that steps that went beyond physical interaction of members of both organisations were necessary. Second, the organisation's cultural differences meant that managers and employees from both ends would need to be adaptable to each other's culture when teams were brought together from both sides. Third, the difference in time zones across the continents meant that live conversations would have to be done at a time when both sides were 'awake'. This would mean early morning hours for Biomed and late evenings for Drugster. Fourth, team collaboration that required everybody's input would have to be structured around an open mechanism that made everyone visible in order to ensure that everyone participated and was informed. Fifth, any mode of communication to be adopted would need to be future-proof in order to align with the contemporary technological and competitive business environment.

To bridge the distance between Drugster and Biomed, the decision was made to implement a social technology within the organisation. From a myriad of social technologies available in a Web 2.0 epoch, Drugster made the choice to implement Google+ (pronounced Google Plus), a social technology communication platform by Google Inc. Google+ was launched in 2011 with an aim to create a social network in

which users would be able to connect with other users on different levels of relationship. Its most important competitor, *Facebook*, connects users with others as simply 'friends'. In Google+, users would categorise those they connected with in what is referred to as 'circles'. Circles are groups or categories created by the user either of friends, family, or any other type of relationship the user wishes to create and interact with. This technological platform thus allows users to create a community of interest for interaction and collaborative purposes. According to Google, Google+ is 'a place to discover amazing things and connect with passionate people' ([plus.google.com](http://plus.google.com)). Drugster already used other Google services like Google Calendar, Gmail, Google Drive, Google Docs, among others. Therefore, implementing Google+ as the social technology of choice was with pragmatic reasons, one of which was to allow the full suite of Google applications to deliver easy synchronisation.

To implement this technology, Drugster rolled out a two-year pilot programme. The pilot implementation allowed the organisation to test its assumptions of what this technology can achieve; that is, in facilitating the Drugster-Biomed merger while also improving cross-function collaboration within the bigger organisation. In this pilot implementation, a few groups made up of employees and managers were formed on the Google+ technological platform. Google+ recognises these groups as 'communities'. On the wider Google+ platform, various communities can be seen. With only a few clicks, one can find and join various communities of interest, be it photography, technology, leadership, cooking, travel, and so on. For Drugster, the communities that were created consisted of those that focused on functional work activities or departments, project teams, or other communities that involved some kind of hobby like photography. Members of these communities cut across functional units as well as managers and employees from both Drugster and Biomed. To ensure success, the implementation team measured the reception of the pilot by a survey<sup>8</sup> to ascertain how adoption would be when a full organisation-wide rollout began. Subsequently, the implementation team received feedback from the pilot that indicated some level of interest although some concerns like privacy and usefulness were also raised. Nonetheless, the decision to roll out the technology throughout the organisation was made. It was at this opportune

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<sup>8</sup> The survey data was made available to me, which helped support my findings. It provided an extra layer to the analysis as a secondary data source.

moment that access was granted into the organisation, but not without the challenging process of selecting a research site and negotiating access.

#### *5.4.1 Selecting the Research Setting and Negotiating Access into Drugster - I*

The selection of Drugster as the research site for this qualitative undertaking resulted from a number of factors including a personal motivation for this kind of study (Section 1.9). That is, research that seeks an understanding into the intertwining role of technology in the social space of the human with its related consequences whether intended or otherwise for leadership. More importantly, the idea that the world is an interconnected space made possible by social technologies made me think of what that meant for any organisation today. The focus has largely been on the political front in the wake of social-media-enabled protests. The quieter world within the organisation seemed to have little attention paid to it.

To gain access into an organisation for this study, I relied on my personal network for access into various pharmaceutical organisations, having practised professionally in this industry for nearly eight years. Unfortunately, all requests were turned down when the process reached the final stages of approval within these companies. This highlighted the strongly guarded nature of this industry due to several regulatory processes they are subject to. With this initial failure, other avenues available through the Henley Forum at the Henley Business School (HBS) were explored. The Henley Forum is a partnership between Henley Business School and several organisations in the UK that seek to improve their knowledge sharing and organisational learning strategies. This is run as sessional workshops where these companies congregate at Henley for participation in the forum's learning activities. For the 2013/14 Henley Forum, managers were concerned with how they could leverage social technologies within their companies for organisational learning and knowledge sharing. Although the primary goal was on knowledge sharing, it also became apparent that leadership with regards to the deployment of social technologies was of concern to participants in the Forum. Following, I was involved in conducting qualitative interviews with managers from eight of these companies, a work that resulted in the publishing of a practitioner guide to building a successful social technology environment in the organisation (see *Liking*

*Social Business*, 2015). The Forum seemed to be the perfect place to conduct this research but other theoretical considerations were necessary.

For an ANT research, the choice of the setting was as important as the study itself. Moreover, for the organisations in the Henley Forum, managers had already deployed social technologies and were now exploring ways of improving implementation success within their respective companies. The heterogeneous networks of relations were either already formed or nearly so, and this made these settings unsuitable for the work of 'description' (or unpacking) through *following the actors* (unless done historiographically). This is because, 'no description of a setting is possible or even thinkable without the mediation of a trial' (Akrich and Latour, 1992, p. 260). That is, in the absence of what could be called a disruptive event, what ANT theorists call a *trial*, the research *setting* would not qualify. A *setting* is defined as an assemblage of human and non-human actants with distributed performances (ibid). Accordingly, the setting of choice for this study needed to be consistent with the methodological demands advanced in theory.

Following, I participated in the European Commission Regional Cluster conference on e-leadership for both learning and networking purposes. Through this event a potential research setting was identified, a biotechnology organisation based in The Netherlands who were just at the start of the deployment of their social technology. Here, a *trial* was about to ensue, providing a perfect setting to follow actors and observe how they would construct their network of relations. However, initial conversations with the gatekeeper into this organisation portrayed a situation in which I would become a consultant prescribing what ought to be done. Moreover, the organisation asked that the process be postponed. As a consultant, I risked being 'biased' and the study potentially becoming an interventionist account or perhaps action research; this situation did not satisfy what the objectives were.

Through discussions with other individuals in my doctoral network, Drugster, where a colleague used to be a manager, emerged. In a combination of what could be chance and opportunity, access was granted to undertake this study. Chance, because the two-year pilot implementation of Google+ had just completed and managers were just about to begin rolling out the technology in the bigger organisation. Opportunity, because the

roll-out offered the chance to follow actors in the technology deployment process. To gain access, a letter to Drugster was delivered through a team-lead within the organisation. This internal team-lead followed a trajectory within the organisation that was oblivious to an external actor, but ensured that the request for access got to the relevant people. In ANT terms, this team-lead was a human delegate who went where I could not go in the network of heterogeneous relations in order to give access to a new actor.

Before granting access, Drugster requested for the signing of a non-disclosure agreement (NDA). The NDA was a form of what Bruno Latour calls an immutable mobile (Latour, 1987). It could be moved around to relevant stakeholders associated with the study without a change in its content or form, once it was signed. According to Latour, immutable mobiles 'allow translation without corruption' (Latour 1986, p.8). In this context, the NDA was what Drugster, Henley Business School, two research supervisors, and the researcher would journey with, in order to ensure that the study was done within agreed principles of non-disclosure. Consequently, two pseudonyms – Drugster and Biomed – were enrolled<sup>9</sup> for the research settings and coded labels used to identify all interviewees.

#### *5.4.2 The Research Setting and Negotiating Access - II*

Gaining access was a two-stage process. First, access into Drugster as an organisation and second, access onto Google+, the Web 2.0 social technology platform that was being deployed within the organisation. Google+ was the platform that brought together both managers and employees to interact and or communicate on a daily basis. This second research site – Google+ – is an example of a setting that Kozinets (2002) refers to as a field behind the screen. This field consists of the online community – the Internet-based fora (Kozinets, 2002), – and the technology, which is itself subject to different interpretations by actors (Akrich, 1992; Bijker, 1995). Being a field behind the screen, it is textual, computer-mediated, non-physical, and often social cue-impoverished

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<sup>9</sup> An ANT terminology explained in Chapter Three.

(Kozinets, 2002). As a result, the physical space or context of meeting or interacting with actors for interviews was also not ignored.

However, in order not to imply an ontological superiority of the physical context over the online context as some have implied (Kaushik *et al.*, 2002; An and Frick, 2006; Ean, 2010), it is worth noting that the physical space was needed for practical reasons of data collection, including observational data that impacted on the study. By implication, following the actor as a methodological principle for this research involved doing so at both physical and virtual spaces and this is detailed in the proceeding sections. For access into the online space, a manager with administrative rights on the technological platform invited the researcher onto the platform. This invitation was done electronically to the researcher's Gmail (Google email) account. This is because the technology, as noted earlier, is a product of Google, and only those with Google's Gmail accounts could be invited to have access onto the platform. By implication, Gmail was an obligatory passage point without which access could not be granted. The Google+ membership invitation was accepted and access gained onto the platform. The implication was that, following the actor involved some form of netnography – an online observation of actors through their textual discourse and interactions (Kozinets 1998; 2002) – as well as the physical settings.

#### **5.4.3 Research Participants**

Research participants included both managers and employees, that is, the human actors involved in the deployment and use of the technology in the organisation. Additionally, the technological application itself being a non-human actant in the network of heterogeneous materials was also considered a participant. This is to ensure adherence to the principle of generalised symmetry (Callon, 1986) earlier mentioned in [Section 3.0.2](#). Furthermore, in order to remain consistent with arguments raised in the literature review, participants were recruited at three levels:

First, those actors who were involved in the decisions to implement the technology; these criteria make reference to what Bijker (1995) refers to as the relevant social groups – that is, those that were involved in the negotiations of what technology to



adopt and for what purpose. Following, actors that were involved in the implementation of the technology were also recruited as they worked directly with the leadership team that took decisions.

Second, actors were followed based on their online activities that were consistent with the concept of manager-employee relations in order to let the study remain focused on the research questions (Kozinets, 2002). Example, online community within the organisation for the sole purpose of photography was excluded. For more specific justification on the selection of these actors, Kozinets (2002, p.63) suggests using criteria that are specifically suitable to the investigation. The following was thus pursued: An online community that has

- a more focused and research question-relevant grouping,
- higher 'traffic' of postings,
- larger numbers of discrete message posters,
- more detailed or descriptively rich data, and
- more between-member interactions (as the Web 2.0 application affords).

Third, actors that were not actively participating in the online space were also recruited in the study. This is because actors have the freedom to associate with other agents in the network of relations (Callon, 1986) and to assume that the network of relations was only what was visible online potentially weakens methodological rigour. Moreover, actors who are absent online may be affected either directly or indirectly by the online relational practices of their colleagues since they (that is, those absent online) were still part of the organisation's actor-network. Earlier in the literature review, this is the group of actors that Winner (1993) reckons may be marginalised, thus referring to them as the 'irrelevant' social group. These actors were identified using a snowball logic (Bijker, 1995), that is, I interviewed a relevant actor and then asked him/her to identify other known actors (which in this case are those that did not participate in the online activity). However, because it risked becoming so big a 'snowball' for any meaningful analysis (Klein and Kleinman, 2002), selection was limited to a maximum of two actors for every relevant online participant. This trade-off was made in order to prevent hegemony of one voice but also for the practical reason of not being able to have access to all actors in this group vis-à-vis the timeline of the data collection.

#### 5.4.4 Population Size

Being a qualitative design, this study was not so much for statistical generalisation as it would have been for a quantitative undertaking, therefore a sampling logic and typical criteria regarding sample size, Yin (2003) argues, are irrelevant (see p.51). However, Yin contends that the analytic benefits independently arising from two (or more) cases are more powerful than in only a single case study design. This argument is however advanced with a positivistic assumption of obtaining similar results, a condition that is not consistent with actor-network theory's context specific studies. Being a 'single-case' ANT approach, Drugster's context specific study allowed for a well-focused and detailed undertaking in order to draw analytic insights and 'de-scription' (Akrich and Latour, 1992) of the setting. Moreover, following actor trajectories for analytic de-scription in many ANT studies is an exercise that is clad in unpredictability as the researcher does not impose any pre-established grid of analysis (Callon, 1986). Additionally, networks of heterogeneous relations are generated effects that are uncertain in character so that Law (1992) for instance argues, it is better to treat social structure as a verb than as a noun.

Furthermore, the notion of calling a study as a 'single' case study has to do with, in ANT terms, *simplification* or *punctualization*. Law (1992) argues that simplification masks the complexities of the network that has produced the effect of what is often taken for granted as a single unit. Rather, it is a large network of diverse materials whose parts are often bigger than the whole. For an ANT researcher, a *simplified* or *punctualized* network, which others may refer to as a single case study, only opens up a complex world of social orderings in a way that bring understanding to how that network came to be. Moreover, foundational works by ANT theorists have focused on 'single' cases including Callon's (1986) breakthrough study on the domestication of scallops that has since become the methodological bedrock for ANT research. Callon's work involved many actors – scientists, fishermen, researchers, documents, etc. – or parts in a network that went beyond only scallops at St Brieuc Bay. Similarly, in a more recent study in the area of leadership and ANT, Smith et al. (2016) explored an understanding into entrepreneurial leadership learning with an in-depth focus on the LEAD programme – a

leadership development programme for small and medium sized enterprises. As a punctualized network, LEAD is a 'single' case study with many variants in some universities in the UK. However, the researchers demonstrate its complexity as they unpack the trajectories of entrepreneurs – made up of four different cohorts across three providers of LEAD – on their leadership learning. For Drugster, being a global Fortune-500 organisation, the population of participants were drawn from the United States, Canada, Europe, Asia Pacific and Atlantic Countries (APAC region), across its functional units of Marketing, Supply Chain, Sales, IT, Legal, global and local functions for a total of thirty-four interviewees. This number is apart from additional thirty managers and employees that were engaged with in a one-day workshop in California, USA. Table 3 below shows the distribution of participants that form the study population.

	Canada	United States	Europe	APAC Region
Marketing	1		1	1
IT		3	10	
Supply Chain			1	
Legal			1	
Sales			1	
Global & Local functions		5	9	1
California workshop	30			

Table 3: Distribution of participants for study population

### 5.5 The data collection

As discussed earlier, it was necessary that the specific methods used in this study be consistent with the research philosophy, design, as well as the actor-network theoretical underpinning of the study. While ANT's method is 'following the actor', the specific methods that fall under *following* actors are not clearly expressed in theory. However, ethnographic approaches are mostly deployed as is also reflected in Smith et al's (2016) most recent work in the area of leadership. Whereas ethnography allows the researcher to go native in order to immerse in the setting for a rich understanding, sometimes full-

fledged ethnography may not be possible due to constraints of access, time, budget, politics, or other practical commitments (Hammersley, 2006). Iszatt-White (2011) for instance argues for an 'ethnomethodologically-informed ethnography' which does not pretend to live up to every turn of a full-fledged ethnography but allows the researcher to be oriented to 'the practices and activities through which members of the setting make sense of [their] action' (Iszatt-White, 2011, p. 121). This argument is consistent with the ANT method although ANT goes beyond the 'ethno -' (human) centrism. Accordingly, in following actors in order to trace their trajectory and 'de-script' their setting for understanding, techniques that had an ethnomethodologically-informed essence were deployed. That enabled the researcher to interact with and hear from actors themselves in their own organisational setting. This is because as Latour (1999) argues,

'Actors know what they do and we have to learn from them not only what they do, but how and why they do it. It is *us*, the social scientists, who lack knowledge of what they do, and not *they* who are missing the explanation of why they are unwittingly manipulated by forces exterior to themselves and known to the social scientist's powerful gaze and methods' (Latour, 1999, p.19, Author's italics).

Overall, the methods used involved interviews (semi-structured, open, telephone and video) in addition to other techniques like observation, appraising documentations or texts, netnography, and a workshop. Creswell (2014) highlights that the methods of data collection in qualitative research traditionally based on interviews, observations and documents, now also include the use of other things such as e-mails, sounds, scrapbooks, videos, images, telephone conversations, and other communication technologies. In the words of Denzin and Lincoln (2005), qualitative researchers 'turn the world into a series of representations, including fieldnotes, interviews, conversations, photographs, recordings' (p.3).

The techniques used – interviews, telephone and video interviews, observations, textual data, netnographic observation – were all necessary as I followed the trajectory of the actors. For instance, video and telephone interviews were needed because of the widely distributed nature of Drugster as a multinational organisation as well as the multiple dispersed locations of actors. Textual data and netnography were needed because actors congregated on Google+, an online environment and I needed to follow them there.

According to Thorpe and Holt (2008), the pivotal guideline should be that the researcher finds a technique that offers adequate access to the studied phenomenon. Therefore, technology played a key role in being able to reach participants that were spread across three continents while also allowing me to follow actors in their place of work. This also evoked reflexivity as technology intermediated between the researcher and research participants. Additionally, because ANT refutes the privileging of any group of actors by arguing the principle of generalised symmetry, the data collection process considered not only the voice of human actors but also that of their non-human counterparts – i.e. the texts and the technology examined. Here, ‘the designation ‘generate data’ is more appropriate than ‘collect data’ as data of social processes are rarely collectable objects but cues (words, numbers, actions, symbols, gestures, [and technological inputs]) that can be perceived and organized in numerous ways (Thorpe and Holt, 2008, p. 39).

#### 5.5.1 Interviews

As part of the range of techniques used in generating data for this study, interviewing participants was of importance as a method of inquiry. According to Rubin and Rubin (2012), ‘qualitative interviews let us see that which is not ordinarily on view and examine that which is often looked at but seldom seen’ (p. xv). This assertion is affirmed in research involving technology where one is able to gain a deeper understanding about the human-technology relationship when the humans are allowed to speak for themselves (Myers and Newman, 2007; Schultze and Avital, 2011). Interviews allow the researcher to engage participants in a way that allows the generation of ‘deeply contextual, nuanced and authentic accounts of participants’ outer and inner worlds, that is, their experiences and how they interpret them’ (Schultze and Avital, 2011, p. 1).

In interviewing participants, the researcher is able explore the world of the interviewee as he or she seeks to *de-scribe* the *setting*. As highlighted earlier, a *setting* is an assemblage of both human and non-human actants; to ‘de-scribe’ a setting is thus to trace the movement from words to things and things to words without privileging any actant over another (Akrich and Latour, 1992). That is, in interviewing an actor, the researcher is seeking not only to hear the voice of the human being interviewed, but also the voice of the non-human actants that are networked with the human. For example, ‘I saw my phone notification early in the morning’ suggests that there is a phone

networked with this human actor. Here, the voice of the phone is made known in the relationship when the interviewer probes further or recognises that the phone has enabled or constrained the human into early morning work. The ANT principle of *following the actor* through qualitative interviews thus opens up a world of connections – both human and non-human – that the researcher must recognise while also taking stock of his or her own actions in the network (Law, 2004).

The difficulty, however, is that, *following* the actors as Latour's (1996) sociology demands, still lacks a clear approach because, he admits, 'it is not said *how* to follow them' (p.238, Author's emphasis). Here, the deployment of qualitative interviews, which remain one of the most important techniques for data generation in qualitative research, becomes apparent in following the actor although qualitative interviews are also not without challenges (Myers and Newman, 2007). In interviewing actors, the researcher is part of, and interacting with other actors or actants in the heterogeneous network of relations. Such interaction allows the researcher to explore and understand the '*whats*' and '*hows*' of social reality from his or her involvements and experiences of actors (Holstein and Gubrium, 2005). A qualitative researcher, Denzin and Lincoln (2005) argue, attempts to 'make sense of, or interpret, phenomena in terms of the meanings people bring to them' (p.3). For an ANT interview, this also involves the meanings generated by the other non-human materials that make up the interviewee. In the words of Mitchell (2017), the interviewee must be considered as a 'conduit' through which data is generated.

For this study, semi-structured face-to-face interviews were conducted. Compared to structured interviews that involve the issuance of predetermined categories in a questionnaire, semi-structured interviews offer the researcher the flexibility of exploring a set of research interests while also allowing relevant emergent themes to be delved into (Rubin and Rubin, 2012). Unstructured interviews on the other hand would potentially drive the discussions into territories that have no connection whatsoever to the research question. Accordingly, *interview guides* were used (Appendix 1 and 2) for the semi-structured interviews in order to ensure that the questions asked centred on what would be relevant in answering the research questions.

Nonetheless, in order for the process to be consistent with ANT, it was ensured that there was no hegemony of interviewer voice but rather a managing of the 'space between' the interviewer and interviewee in order to explore their worlds. Managing this 'space' is a process that was not only done in the actual interviewing activity but involved e-mailing participants to set-up appointments, negotiating dates for the interviews, sending documents needed to explain what the research was about, and having initial non-recorded conversations for rapport. These then culminated in the actual interview activity where the interviewer-interviewee atmosphere was relaxed (Alvesson and Sköldbberg, 2009), this also made room for improvisation (as new insights emerge) which is part of semi-structured interviews (Myers and Newman, 2007).

#### 5.5.1.1 Video and telephone interviews

Although face-to-face interviews were held, the majority were done over video technology – using *Google Hangouts*<sup>®</sup> – allowing me to be face-to-face with participants. On three occasions where the video feed could not work due to Internet failure, the interview was conducted via a telephone. On another one occasion where the video feed was problematic, other communication technology – *Webex*<sup>®</sup> – was used. Although *Webex*<sup>®</sup> has the potential for both video, text, and audio, it was the text component coupled with telephone that aided the interview process. This is because a Drugster electronic account was a prerequisite to be able to access the full functionality of *Webex*<sup>®</sup> within the organisation. It was thus recognised that the idea of gaining access as a researcher also depended on all the heterogeneous actants in the network. In this case, there was one actant – a Drugster account – to which little attention was paid.

A Drugster account had the potential to allow the researcher to engage with any participant through the participant's own desired technological choice. However, because obtaining a Drugster account required being an employee (which I am not), participants were asked prior to the interview whether they were comfortable with *Google Hangouts* – a video communication software with similarity to *Skype*<sup>™</sup>. In the exception of one interviewee who preferred not to show his face, all other participants that were interviewed this way agreed to this technologically intermediated interview

process. For the interviewee who disabled his video feed, the interview still went ahead; this time, only the video feed of the researcher was enabled.

Technologically mediated interviews as used in this study present a way by which interviewees can be reached without the researcher being physically present (Saunders, Lewis and Thornhill, 2009). For an organisation like Drugster where the interviewees were spread across three continents, technology mediated interviewing made data 'collection' possible, albeit not without challenges as highlighted in the previous paragraph. Three of the total thirty-four one-to-one interviews were held over telephone. Although not the predominant method of data collection used in this study, telephone interviews can be effective when it is approached with an understanding of its potential pitfalls as well as benefits (Musselwhite *et al.*, 2007). While it may offer a quick way of data collection, it also prevents the researcher from exploring non-verbal cues that also form part of the communicative process (Saunders, Lewis and Thornhill, 2009). Because it was used as contingency in this research, its advantages outweighed potential challenges. It allowed me to immediately continue conversation that was left off when the video feed went off in Google Hangouts or when the feed could not be established due to Internet breakdown.

As mentioned earlier, video interviewing, a technologically mediated method of data collection for face-to-face interviewing was accomplished with Google Hangouts. This software application makes it possible to deliver real time video communication between two or more actors. However, it is worth mentioning that not all video interviewing is necessarily real-time communication. Recent research in video interviewing methods has shown that video interviewing can be both synchronous and asynchronous depending on the technological application used (Guchait *et al.*, 2014; Torres and Mejia, 2017). For instance, a software application like *HireVue* possesses functionalities for both synchronous video communication where participants can see and talk to each other in real time; and asynchronous video communication where one party makes questions available to the interviewee as on-screen text. The interviewee reads the on-screen questions and answers them in front of an Internet-connected camera that records their answers as video files. These video files are later viewed by



the interviewer who is able to pause, rewind, fast-forward, or stop the video 'interview' at his or her convenience.

Guchait et al (2014) argue that video interviewing is increasing in its popularity among large Fortune-500 corporations and that individuals recognise that 'this is where the future of interviewing is heading' (p.98). However, the authors found that asynchronous video interviewing was unfavourable among interviewees who saw it as 'impersonal'. Here, the authors suggested that 'instead of having candidates read questions from a screen, they could watch a recording of someone reading the question. This may help candidates feel like they are responding to an actual person so the interview becomes more personal' (ibid).

For an ANT study of this kind, the use of asynchronous video interviewing would be inconsistent with both the research design and the undergirding philosophy. In fact, such an approach differs no more than a structured interview. Here, questions are predetermined just like in a questionnaire and made available to the interviewee to read on the screen. The difference is that answers are offered vocally in front of a Web camera instead of either vocally to an interviewer or written as text or ticked as a box among other optional answers on some computer screen or a paper.

In contrast to asynchronous video interviewing, synchronous video interviewing allows both interviewer and interviewee to be engaged in real time, as they talk to each other face-to-face. It requires that both the researcher and the actors being interviewed are online simultaneously. Similar to face-to-face interviews without the intermediation of a video technology, there is the need for the researcher to negotiate place, time and duration of the interview in a way that is ethical (Rubin and Rubin, 2012). In synchronous video interviewing the interviewee has the added advantage of being interviewed at a place that is convenient for them – whether in their home or at work. For the thirty interviews conducted via Google Hangouts in this study, it was possible to see interviewees in real time, read their non-verbal cues, probe topics that emerge in the conversation, ask to be shown artifacts, see background activities and ask questions for further explanation of the background activities. In fact, on one occasion, the video interviewing technique allowed literally, a following-the-actor situation where the

interviewee walked with a hand-held mobile device from his home to his car to his office while the interview was ongoing.

#### 5.5.1.2 Conducting the interviews

Before the interviews were conducted, a set of interview guides was developed (see Appendix 1 and 2). The interview guides contained a number of questions that served as guidelines in engaging participants. These questions were rooted in the literature while also geared towards answering the overall research question. Although the set of questions were numbered in the guide, the questions were not necessarily asked in that order. This was because as emergent topics arose, it was necessary to explore those emergent themes and follow up with other questions, which were not necessarily in the arranged order. This adaptation mechanism was needed in order not to make the interviewee lose their trail of thought as discussions went on. Secondly, it allowed the actors to speak for themselves without being boxed into the researcher's strict pattern, a principle in ANT (Callon, 1986). Thirdly, it enabled me to refine my own interviewing skills in the process, as it demanded flexibility while staying focused on the research interests. Fourthly, I understood that I was also an actor in the network of heterogeneous relations and I tried to minimise my own influence on the network in order to ensure reliability and validity of the data obtained from participants.

#### 5.5.1.2 Pilot interviews

Following the initial development of the interview guides, pilot interviews were conducted. In the search for access, my involvement in the 2013/2014 Henley Forum was not without benefit. Five of these individuals in addition to two other managers in a similar Drugster-like organisation – that is, an intercontinental pharmaceutical company – were involved in the piloting exercise between January 2015 and March 2015. In order to experience the same interview conditions as anticipated for this study, two of these pilot interviews were held over Google Hangouts. This strategy provided a first-hand experience of the nature of this technology, its settings, picture and voice quality, ability to record audio with a third-party application (called *AudioNotes*) on the computer while also communicating and so on. Additionally, the pilot interviews were useful in:

- obtaining an average duration of the interviews
- identifying potential areas of lack of clarity in the questions; these were then refined for better understanding
- conditioning the researcher for the interview process and
- familiarising with Google Hangouts software as it felt like it was less user-friendly than Skype™ for a video communication application.

### 5.5.1.3 The interviewing process

Interviewing of participants was initially planned to be done between October 2014 and June 2015. However, because candidates were largely selected using a snowball technique, time was needed to arrange suitable interview dates with individuals identified. The actual interviewing process thus occurred several months later from June 2015 to July 2016 where my engagement with participants came to a close (at least temporarily).

Location of participant	Time difference from researcher
<b>North America (3 States)</b>	Between 5 to 8 hours depending on the State
<b>Europe (4 countries)</b>	Between 1 to 2 hours depending on the country
<b>Asia Pacific</b>	Between 8 to 9 hours

Table 4: Time zones of participants

Many of these participants either worked in global teams with their counterparts on the implementation of Google+ within the company or reported to senior colleagues on the other part of the world. To begin the process, contact was made with the head of the department in charge of decisions of implementing the Google+ technological platform within the organisation. From this actor, the snowball began rolling. It rolled onto one manager who was central to the implementation process, at both the technical and stakeholder engagement level. To be consistent with the criteria developed in the literature, which is also reflected in [Section 5.4.3](#) which described the research participants, this second actor was instrumental in identifying individuals at both the

decision-making level and the implementation levels. That is, those that Bijker (1995) refers to as the 'relevant social group'. This second actor was involved in coordinating various units and departments within Drugster for the implementation of the technology. This actor was an important 'node' in the network and whose position in the network constantly shifted in order to accommodate others and to influence others as the technology was being rolled out. Discussions and an interview were held with this actor and I quickly wrote down any other names of individuals that emerged in the interview. Later, the key question was 'how I could speak with the individuals mentioned?' For this, the necessary arrangements were made through this actor, emails sent, initial contacts made and date and time of interviews negotiated. In some cases, there was no need to write down any relevant names mentioned by interviewees; they themselves recommended other actors whose role impacted on their own work within the organisation.

However, in order to fully capture *other* actors in the network, where *other* stands for those actors that Winner (1993) reckons are often taken for granted in the network. Here, there was the need to also speak with those individuals who were not necessarily involved in the implementation of the technology but were users or potential users or non-users. This also eliminated 'elite bias' (Myers and Newman, 2007) where a researcher interviews only certain individuals of high status and therefore failing to see the broader picture. In this case, participants were asked to identify someone they knew that would be expected to use the technology upon implementation or someone who knew about the pilot stage of the implementation but did not participate. Speaking with managers, the researcher asked to speak with those who would be considered as being at the base of the organisation or reported to them in some form. Asking these interviewees about their roles in the organisation and whom they reported to, ensured that the right criteria were met. This group of actors was limited to not more than two per interviewee as the snowball was rolled. The logic was to be mindful of Klein and Kleinman's (2002) suggestion identified in the literature that the researcher risks building so big a snowball that it could jeopardise any meaningful analysis. Accordingly, I stopped rolling the snowball when, 1) all criteria set for participants were met (see Section 5.4.3), and 2) I achieved saturation – that is, a continuous repetition of what

other interviewees had already told me. This was important because ANT advocates that the researcher follows the actors but does not say when to stop the following.

When all actors were identified for the study, I negotiated date and times for the interviews which developed into a schedule. Overall, 7 members of the Google+ implementation team were interviewed in addition to 27 other actors including managers and employees. Three individuals declined to be interviewed. Per the study's ethical approval process, actors had the right to want to participate in the study or opt out at any time that they felt they needed to without offering any explanation. Accordingly, those who declined interviews were not pursued to provide reasons for their decision. For those who accepted to be interviewed, a schedule was created to help project-manage the interview process (a cropped sample of the interview schedule is available at Appendix 3).

Before a typical interview was conducted, a Google Hangouts hyperlink was sent in addition to a calendar invite in an email. This hyperlink would be the key access point to click in order to open the video communication software. The calendar invite presented all recipients with three pre-programmed responses – *accept*, *maybe*, and *reject*. In ANT terms, these invites were delegates that formed part of the negotiation to obtain a suitable interview date. At the same time, these delegates respected the human actor by not imposing only one choice. Nonetheless, the three options simultaneously limited the choices by not allowing an invited actor to decide another date that suited their convenience. For that to happen, a new set of emails asking for different arrangements had to be sent. Therefore, it was assumed that all those who accepted the invite for an interview made some adjustments in their work schedule for the sake of the interview. Perhaps they did not want to go through another cycle of renegotiating a different interview date although appointments were not imposed on participants.

Additionally, I assumed that some participants could have clicked on *reject* but thought to *accept* the invites because of courtesy. As a result, I ensured that the interview duration did not go beyond 60 minutes, which was how long I promised participants it would take. For those participants whose time zones were between eight to nine hours away from the UK, I ensured that the time for the interviews best suited them so that the

needed adjustments would rather be made on the part of the researcher. Example, interviews with those actors in California mostly occurred at 5pm or 6pm UK time when it was between 9am or 10am over there. Conversely, interviews with actors in Singapore in the Asia Pacific region occurred at 9am UK time when it was about 4pm over there. This arrangement fitted into the usual time arrangements for Drugster’s own internal communications with its managers and employees in these respective regions. As a result, this ensured that the scheduling had little impact on interviewees since no new times were demanded from the researcher (Table 4 above illustrates the time difference that was managed with participants).

On the interview day, the following setup of equipment was made: laptop computer with Internet access, *AudioNotes* recording software, a physical pen and notebook, a desk and a mobile phone (see Table 5 below). The file from which the interview consent form and study description would be read was also opened in readiness to ensure that no time was wasted on the part of the researcher. The setup of equipment used served as nearly the totality of actants that made a researcher about to interview a participant over the Internet. The reasons for this setup are explained in the Table 5 below.

Equipment/ actant	Reasons for enrolment
<b>Laptop with Internet access</b>	To enable a stable video feed
<b>AudioNotes software</b>	To record the interview
<b>Pen and notebook</b>	To write down any contextual information observed to be later typed into <i>AudioNotes</i> . Also as a contingency in case an interviewee decided not to be recorded
<b>A desk</b>	To support the laptop in order to stabilise the video feed
<b>Mobile phone</b>	As a contingency in case accompanying audio feed was lost during the interview. An immediate call-back can be done without having to reschedule the interview

Table 5: List of actants assembled for the video interview

Actants in Table 5 that I was networked with made me a researcher of the online context in agreement with what ANT scholar John Law asserts that

‘If you took away my computer, my colleagues, my office, my books, my desk, my telephone I wouldn't be a sociologist writing papers, delivering lectures, and producing "knowledge." I'd be something quite other- and the same is true for all of us’ (Law, 1992, pp.383-4).

Ten minutes before the video interview, login into Google Hangouts using the link that was generated and sent via email was done. This early login of at least ten minutes before the scheduled time allowed the opportunity to ensure that everything was working perfectly. Indeed, on a few occasions, this strategy proved useful as it became necessary to restart the computer on two separate occasions to get things back into working order. Once the interviewee came online in Google Hangouts, an alert notification was received and then a brief conversation would begin. Usually, there was exchange of pleasantries in order to ‘break the ice’ after which a personal introduction was made. Following, consent was sought for audio recording the interview process and the purpose of the research explained to the participant. It was also mentioned to participants ‘they were free to withdraw from the interview at any time they felt uncomfortable or unwilling to participate and they did not have to specify any reason. Additionally, any contribution they made could be withdrawn from the set if desired at any point either through email or verbally in the course of the interview’ [in full compliance with Henley Business School’s ethical guidelines].

With the exception of one interviewee who agreed for the interview to proceed but not with the video feed and audio recording, all other interviewees agreed to be recorded. In fact, even the voice output sounded muffled from this particular interviewee who did not want to be recorded. Thus, it was difficult to physically write notes during the process. This particular interview was therefore excluded from the data analysis. The interview started by asking participants about their roles and responsibilities in the organisation as a whole. With the support of the interview guide, other questions then followed exploring three major areas but directed towards how the actors are building the network of relations regarding the implementation of Google+ within the organisation. These three major areas concerned

- First, about leadership; in this case actors' understanding of their own leadership and how that played out in their various roles and responsibilities. These questions sought to gain an understanding into how actors in various positions influenced others as they sought to build the network with Google+, a new technological entrant.
- A second major area of the interview looked into the Google+ technology itself, being a new actant that was being introduced into the organisation.
- The third major area explored participants' own relationships with the technology or with others in relation to the technology.

As mentioned earlier, emergent topics were also explored as the interviews progressed. Here, the guiding principle was that it was the actors that were involved in their own network building and should remain the focus so that it can be understood how they went about the process (Latour, 1999). This would then allow me to identify the leadership practices they engaged in their network formation as well as the unintended consequences that emerged in the process.

Each interview was unique and the order of questioning varied from actor to actor. This flexibility allowed actors to freely express themselves while my role became more of facilitating a conversation rather than rigidly following a structure. Moreover, as the interviews progressed, reflections and learning carried from previous sessions helped refine the process including what may be seen as mundane. For instance, my dress code shifted from a blazer-wearing researcher to a more dressed-down semi-formal approach after the first-two meetings. I quickly learned that employees in this Fortune-500 organisation wore either business casual dresses and in some cases what could be termed as informal (like a T-shirt) for work. This adjustment on my part was important in order to reduce any power-gap and 'go native' in the spirit of an ethnomethodological essence. At the end of each interview and immediately afterwards, an email was sent to thank the participants for their time (see Appendix 7). This gesture made it possible to return to some participants for further clarity on some issues identified after transcribing the interviews. They all consented to being contacted afterwards should the need demand for any further clarity. However, one participant could not be contacted after transcription because this actor had resigned from the organisation a few weeks after the interview.



#### 5.5.1.4 Observation and other supplementary data sources

Observation as a data collection technique enables the researcher to obtain data that is 'not filtered by what others might have (self-) reported' to him or her (Yin, 2011, p.143). Observation as a method is commonly seen in experimental research methodologies requiring the researcher to observe 'treatment groups' against controls in order to measure outcomes. In the context of a qualitative study with an ethnomethodological essence, observation serves as a tool of gathering data that is perceived directly through the researcher's own senses to complement the reflexive adjustments that are inevitable due to researcher presence (Yin, 2011). For instance, in interviewing actors through a video technology, the interviewee may look formal, remove all background wall photos, clear desk of old computer equipment, remove old paper files from the video background and so on, in order to look 'presentable'. That is, the researcher's presence would have inadvertently realigned the environment in a way that perhaps conceals the materiality of the interviewee's work or the work environment in general. Accordingly, attempts by the researcher to observe and record relevant background information becomes necessary while also being unobtrusive.

In this study, I ensured that the background information from the video interviews was obtained as data for the analysis. Information regarding the arrangement of office desks, interaction of employees and or managers in the background, the artefacts displayed in interviewee's office, and also the technological devices that are visible. Admittedly, I could never tell whether anything was removed in the background or intentionally placed there just for the interviews and this is a limitation I had to live with (notwithstanding a cynical one). The observational data add richness to the context being studied and also help define the leadership climate within the organisation. Background activity at the office involving individuals interacting in visibly informal manner (like having a laugh together) was noted as well as individuals exchanging paper files and documents over their office partitioning also proved useful in understanding the work environment. Inferences drawn from such observations would later help explain actor-actor or actor-actant interactions in the network of heterogeneous relations of which Google+ is now a part. According to Yin (2011),

meanings that are derived from observations become inferences that can be strengthened by other techniques to either confirm or challenge such inferences. He argues that ‘doing so would be an example of “triangulating” that is an essential part of qualitative data collection’ (Yin, 2011, p. 147). At Drugster, the observations made about the general work environment including manager-employee relations were also sustained when a presentation was made to a group of managers at a meeting in California in June 2016.

Furthermore, I recorded the observation data as part of my field notes diary, which helped me construct the narrative. In addition to Drugster’s pilot survey<sup>10</sup> data that was made available to me, the observation data, and the organisation’s annual report were other actants that I enrolled as supplementary data sources. The pilot survey data and my observational notes were useful as supplementary sources for triangulating the interview data as I construct the narrative. Additionally, the organisation’s annual report also provided me with a rich context in ‘de-scribing’ the setting (Akrich and Latour, 1992) and for obtaining hard facts (e.g. employee numbers) that formed part of my description of the Drugster Actor-Network in Section 6.2.

### **5.5.2 Netnography as part of data collection**

In order to follow actors and fully capture how the newly introduced technological actant influenced their manager-employee relational practices, it was necessary that actors be followed *in situ* as highlighted earlier in [Section 5.4.3](#). In other words, if the technology – Google+ – has brought actors together to a place where they displayed manager-employee relations, it was needful that I also went to that place to see for myself. This place was the social technology’s platform, Google+. Being a Web 2.0 social technological platform, the congregation of actors at this space was only visible in a way that was consistent with the technological affordance. That is, if the technology only enabled actor-actor relations to be visible by their photos, then the researcher would see only photos of the various actors; if it only enabled audio interactions then this was what would be visible; if it made their textual intercourse visible then what they wrote

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<sup>10</sup> As already mentioned in Section 5.4, the survey was conducted within Drugster to measure the reception of the pilot implementation of Google+ communities. Approximately 6,000 were surveyed spanning across primarily IT users (that is, employees with IT functions) and what they termed ‘business users’ (that is, employees within all other functions).

to each other would be visible and so on. In the case of Google+, manager-employee relations were made visible by their textual interactions while also making observable who these actors were by their photos. In order to follow and understand these manager-employee interactions, netnography was deployed as a data collection method.

Netnography stands for a methodological approach that deploys principles of ethnographic research in an online setting or environment (Kozinets, 2002). It enables the researcher to obtain a nuanced understanding of a social phenomenon in an online setting and to express its sociotechnical qualities (Kozinets, 2010). Netnography is a method that is argued to be an important complementary technique of data collection in an era of technological advancement. This is because 'it uses computer-mediated communications as a source of data to arrive at the ethnographic understanding and representation of a cultural or communal phenomenon' (Kozinets, 2010, p. 60). Accordingly, netnography must follow procedures that ensure that ethical research standards are followed even though the setting, being an online environment, poses its own unique ethical challenges. Kozinets (2010) argues that the same rigour that accompanies ethnographic studies must be pursued when one wishes to deploy netnography to gain some understanding into social phenomena in an online space. For instance, the stages of research question definition, community identification and selection, community (participant-) observation and data collection with ethical considerations, analysing data, and findings reporting and so on must all be part of the research process (ibid).

However, arguments that deem researching anything in an online environment as 'unreal' or 'unauthentic' also exist (Kozinets, 2010). In the case of Hine (2000), 'an ethnography of, in and through the Internet can be conceived of as an adaptive and wholeheartedly partial approach which draws on connection rather than location in defining its object' (Hine, 2000, p. 10). Here, this posturing of netnography as being 'wholeheartedly partial' (Hine, 2000) when compared with the 'real world' experiences of ethnography, assumes an ontological superiority of the 'real world' over the online world. In this study, such an assumption undermines the concept of heterogeneity of social ordering. Therefore this study's netnographic technique was also approached with the same underlying worldview of ANT that does not privilege one setting over the

other. For Kozinets (2010), 'all constructions of 'reality' and 'authenticity', practicality, and even 'adequacy' and 'holism' are, however, in ethnography and elsewhere, socially constructed, contextually determined, and contingent upon standards that we deem or do not deem to accept' (p.62).

#### 5.5.2.1 Conducting the netnography

To be able to conduct research into actors' relational activities online on the Google+ platform, a second level access was key. This is explained in [Section 5.4.2](#). There were various Google+ communities already formed or in the process of being formed within Drugster. The choice of which community to gain access into depended on which one the gatekeepers would allow. It also depended on negotiations with gatekeepers for entrée into those communities that were more relevant to the research interests. However, because there could be several communities that potentially delivered research interests, it was necessary for some criteria to be used in order to justify the choices made. Here, the use of criteria suggested by Kozinets (2002) was helpful in selecting which Google+ communities to have access into. As highlighted earlier in [Section 5.4.3](#), the following criteria was used. An online community that has

- a more focused and research question-relevant grouping,
- higher 'traffic' of postings,
- larger numbers of discrete message posters,
- more detailed or descriptively rich data, and
- more between-member interactions (as the Web 2.0 social technology application affords).

In order to align the study more closely to the research interests, two additional criteria were added. These were for a community that also has

- as much as possible, many of those actors that were interviewed in the physical world in order to follow them online.
- managers and employees in the same community in order to observe the manager-employee interaction online.

With these criteria, communities such as Drugster's photography community, marketing community and many others were eliminated. In November 2015, access was granted into Drugster's *Leader-Member Community (L-M Community)* and later in June 2016, a second access was granted into Drugster's *Shared Stage Community (S-Q Community)*. Having now gained access into the Google+ platform, an announcement was written into this L-M community to introduce the presence of the researcher as a new member. It was negotiated with the community gatekeeper that the introduction be made by the latter in order to give credibility to the researcher's presence as not an intrusion. The purpose of the researcher's presence was also mentioned in this introduction and the researcher's name was tagged into the introduction in order to ensure researcher visibility to all members. Thereon, non-participant observation for three months was done before data capture began. This initial observation was made in order to develop an impression about the nature of the interactions and then to ascertain whether it would be disruptive to actively participate or not.

Although access negotiations allowed participant observation on the part of the researcher, active participation was not pursued. The choice of being a 'lurker' rather than an active participant was made. This choice was made because it was soon clear that the textual interactions were either contextual or social in nature. To participate in the latter while ignoring the former stimulated feelings of not being taken seriously. Moreover, it was assumed that it would be awkward to participate in either when all posts had some connection to their daily work of which the researcher was not a part or employee. Furthermore, it was not the intention of the researcher to be deeply native in this L-M community as its characteristics separated it from a prototypical online community (e.g. an online community of iPhone troubleshooters or online community of environmental conservationists and so on).

For data capture, 'field notes' were used. Here, the term 'field notes' are used cautiously because in this instance, it was 'the field behind the screen' (Kozinets, 2002). Thus, platform notes offer a more accurate description. The platform notes made included observations about the technological user interface as that impacted on how members interacted with one another, arrangement of community members on the platform, community symbols or logos, designations or labels attached to the photos of


community members and the general look and feel of the platform as a new entrant. Additionally, my own thoughts and feelings of being a member of the community, the general usability or user-friendliness of the Google+ platform for the purpose it was implemented to serve were all captured. That is, the pinging of notifications, the usability of the Google+ mobile application, and the researcher's emotional connections to the platform were all valuable as part of the data capture. These platform notes later become part of the descriptions in the findings in Section 6.4 of Chapter Six.

Furthermore, where platform notes were better expressed as an image, screenshots – screen images or photographs of specific areas of the platform – were taken for illustrative and analytical purposes (e.g. Figure 5 below). In addition, textual interactions were captured as screenshots (several illustrations are offered in Section 6.4). These screenshots were then labelled and organised into a folder. In order to avoid information (or data) overload as is the case with digital media, captured textual data were copied and classified as primarily social or informational, and primarily contextual or non-contextual. These classifications made it possible to focus the analysis on where the research interests were. Kozinets (2002) for instance argues that ‘although researchers might include all the data in a first pass or “grand tour” interpretation, they will generally want to save their most intense analytical efforts for the primarily informational and on-topic messages’ (p.64).

For this study, it became apparent that the classifications made only served little for the analysis because no particular topic from the textual interactions was of direct relevance to the phenomena being examined. For instance, an online community discussing what marketing tagline to use in promoting a coffee brand would allow the netnographer to follow directly the topic under discussion and make meaning of how the tagline came to be agreed upon by following the textual interactions among participants. Here, the netnographer may decide to ignore all non-contextual data after a ‘grand tour’ observation, e.g. ignore posts about tea or coffee flavoured candies, and focus on primarily informational and on-topic messages that allow the netnographer to follow their research interest of textual interactions about a coffee promotional tagline alone.

In the case of Drugster, the phenomenon under investigation was to understand, firstly, how the implementation and/or use of the technological platform influenced manager-employee relational practices. Secondly, the study sought to unpack any unintended consequences that would emerge for the manager-employee relationship as a result of the implementation of this technological actant, Google+. Because interviewing participants alone would not tell the whole story, directly observing how these actors related with one another over the platform was key to understanding the phenomenon. Accordingly, following only one episode or topic (like the coffee promotional tagline example) limited the data to a specific *content* rather than at the meta-level for analysis. Therefore, following several episodes of actor-actor textual interactions was more useful in this context. This also made it possible to identify patterns of how they interacted on whatever work they were doing at that particular time. Additionally, such an approach threw light on the relational dynamics among actors due to the Google+ technology. As a result, screenshots of communicative episodes that were initiated by managers as well as screenshots of communicative episodes that were initiated by employees over the period of investigation were part of the netnographic data captured. A communication episode is a message posted onto the platform that has generated the interest of at least one other community member who would have reacted in some form to the posted message (see Figure 5 below). In capturing the data, it was ensured that various reactions to the communication episodes were not ignored. These reactions ranged from commenting on a post, to tagging another member into the post, and many others as explained later in the Analysis and Findings section.

**A communicative episode**

 [redacted] Discussion 29w

I am very pleased to let you know that +[redacted] will take on the role as **Team Manager for the** [redacted] **Team** effective from 16 March, 2016.

I am very happy that [redacted] is confirmed for this role. It is a great recognition to her leadership, significant contribution to our team and beyond, and the passion which she has demonstrated leading our [redacted] team over the last years. ...



+1 31 22

**Reactions by community members to the post**

 [redacted]: Congratulations!

Figure 5: A screenshot illustrating a communicative episode in Google+. All annotations in red are by the researcher for illustration.



### *5.5.3 Study Administration and Ethical Considerations*

Although this study does not involve vulnerable individuals like children or the elderly or ill people, it was still necessary that the actors involved were managed ethically. Accordingly, procedures set up by the university to ensure that research was conducted ethically were followed. This involved submitting the research protocol for ethics approval before beginning the study. This ethical approval was signed off in April 2015. The ethical considerations signed off revolved around participant anonymity, privacy, informed consent, confidentiality, and data storage (see Appendix 8). However, data collection could only commence after Drugster asked for a non-disclosure agreement (NDA) to be signed by the researcher. The NDA was prepared by the university's research and contracts office, agreed on by Drugster and signed by both parties. Additionally, a separate NDA between the university and the researcher was also signed. The tripartite signing of the NDAs ensured that all parties were satisfied before data collection commenced. Appendix 5 shows one section of the NDA where only the signature of the researcher is shown and none other in order to preserve the anonymity of Drugster's representative who signed the other NDA.

In order to ensure anonymity, codes were developed for each interviewee instead of their real names. These codes represented whether it was an interview or what the researcher called a 'side conversation' – that is, a follow up conversation to clarify issues from a previous interview or an informal conversation about anything that was of interest in connection to the research; it was also any mundane discussions that were relevant to understanding a particular context. For side conversations, audio recordings were not made; rather, copious notes were immediately typed out after the conversation in order not to lose the data. These side conversation notes were also labelled with codenames to ensure anonymity. It was also ensured that these notes were written out of sight of the participant in order to be unobtrusive about the process. For a video side conversation, these notes were made immediately afterwards. For physical face-to-face situations, these notes were made discreetly. However, in one instance it was requested to record a side conversation, as it was necessary to seek clarity on emerging themes from a previous interview. The ethics regarding capturing background activity of people in my video interviews is more nuanced. Here, I ensured that the observational notes

captured were only used as ‘inferences’ (Yin, 2011) in understanding and writing about the setting and not for identifying individuals without their consent.

In administering codenames to each interview data, the location of the interviewee was also coded in. This was done in order to keep track of participants’ specific data having interviewed actors at various locations on different continents. The code also identified whether the interviewee was in a formal leadership position or not. This was done in order to track actors’ responses and relate to their interactions on the Google+ platform, that is, for those who were actively involved in the community online. Finally, the order of the interview was also marked in the code to make it easy to track the raw data should the need arise. Because Drugster runs a unified electronic calendar system intra-organisationally, explaining all thirty-four codes would make it really easy to identify who was spoken to at what location and on what date since a copy of this thesis will also be made available to the head of the organisation. Therefore only three differing codes are explained in Table 6 below for illustration.

<b>Code</b>	<b>Date</b>	<b>Source of data</b>	<b>Location</b>	<b>Designation</b>	<b>Suffix number</b>
31.07.15.INV-Si-L17	Interview done 31 <sup>st</sup> July 2015	‘INV’ indicates Interview	‘Si’ denotes interviewee in Singapore	‘L’ indicates participant in leadership position	‘17’ shows participant is 17 <sup>th</sup> person interviewed
02.09.15.INV-U-E30	Interview done 2 <sup>nd</sup> September 2015	Interview source	Interviewee in the United Kingdom	‘E’ indicates employee	Participant is 30 <sup>th</sup> person interviewed
16.09.15.SC-B-L2	Conversation dated 16 <sup>th</sup> September 2015	‘SC’ indicates side conversation	Participant at Basel	Leadership position held	Second person interviewed

**Table 6: Participant codes for anonymity illustrated**

Furthermore, it was ensured that privacy of participants was respected in the video interviews. An example of this was the interviewee who chose not to enable his video feed. The researcher did not contest this decision. On the other hand, the video feed of

the researcher was enabled nonetheless. Informed consent was also sought before interviews were conducted with participants given the opportunity to pull out of the interview should they wish to discontinue. Additionally, any information given in an interview could be pulled out of the data if the interview chose to do so despite assurance of anonymity; this happened in one instance where an actor referred to some managers with a term that was not necessarily derogatory but could be useful to the analysis. This interviewee withdrew the statement made and asked for it to be removed. For data protection, all the data organised from the interviews including transcripts in *AudioNotes* files were all encrypted using *Encrypto* software and saved on only the researcher's computer. In order to back up this data for practical purposes, SpiderOak™'s encrypted cloud storage was used in order to provide another layer of data security. SpiderOak™ was chosen due to its highly-rated encryption algorithm, that was also recommended by American technology security fugitive Edward Snowden.

Finally, the names of the two Google+ communities – L-M and S-Q communities – where access was granted were also anonymised. This is because a quick search in Google+ by anyone anywhere would reveal the communities and the organisation thereby breaking the ethical code signed up to. These steps were carefully thought through, as research involving technology in the public domain, can be clad with many uncertainties. For instance, a clear consensus on ethical issues for netnographic investigations remains unclear (Kozinets, 2002). Example, was informed consent not implicit in the act of posting messages to an online community platform? Was the online community forum a private or a public site? Answers to these questions remain unclear especially as it has to do with netiquette and discussions concerning the private/public boundary in a Web 2.0 era (Sharf, 1999; Livingstone, 2005).

However, in this study, because interviews were also conducted in addition to netnographic observational data, it was better to maintain traditional ethical principles in qualitative research and extend some of these principles to the online context. King (1996) for instance cautions that researching Internet communities does not necessarily mute traditional ethical considerations in qualitative research. This involved extending anonymity to participants' published textual interactions copied from the Google+ Web 2.0 platform (Kozinets, 2002). This was achieved by blanking out the faces of

individuals from their photos when screenshots were used as illustrations for the analytic work in this thesis. Furthermore, Kozinets (2002) proposes that the researcher fully discloses his/her 'presence, affiliations, and intentions to online community members during any research' (p.65). The option was given me by the gatekeeper to only lurk on the platform (see p.193, Figure 22 under Section 6.3.2) but I felt it was necessary to fully disclose my presence. Even though a netnographic approach carries a benefit of being unobtrusive (Sharf, 1999), this ethical responsibility of disclosing the presence of the researcher on the Web 2.0 platform was carried out via the platform manager or administrator as reported earlier (See Figure 6 below). Here, a message was posted informing members about the research, its aims, while also tagging in the researcher for visibility. Nonetheless, because I was not actively posting onto the platform, I believe my presence was soon forgotten so that I became a silent participant and observed the interactions of members on the platform in their 'natural' form without breaking my ethical code.

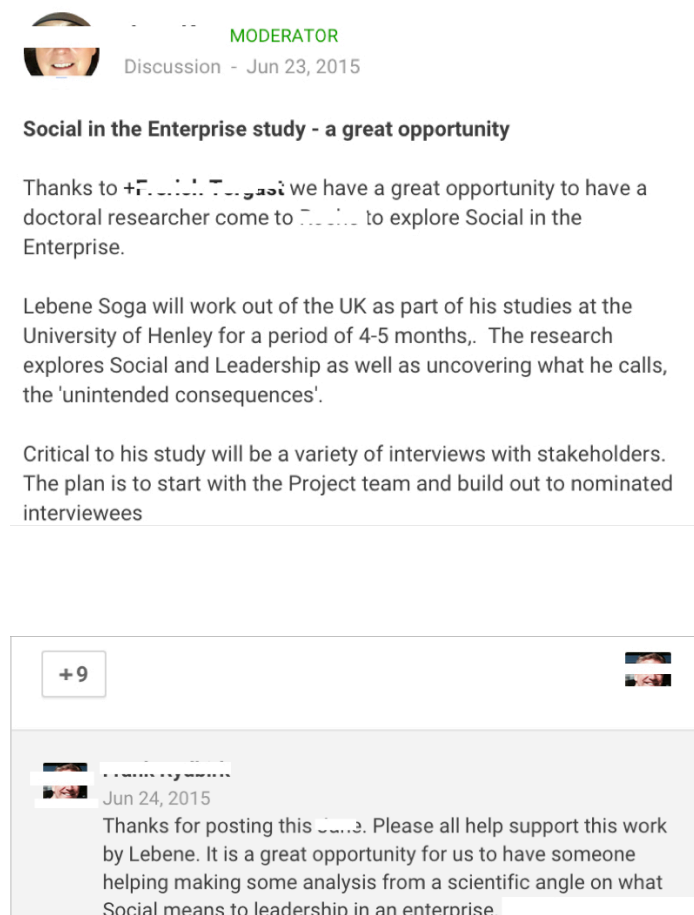


Figure 6: Google+ platform introduction of researcher

## 5.6 Data Analysis

This section details the analytic steps taken in arriving at meaningful findings and conclusions. Just as the data collection stages were informed by theoretical principles as well as the philosophical underpinnings of this study, the analysis followed similar pattern. The data analysis for this study occurred in two broad stages. First, analysing the interview data, and second, analysing the netnographic data. These two stages were not done in sequential order but had an iterative relationship. The theoretical resources of ANT's four moments of translation were also drawn upon to inform the analysis for consistency. Here four major questions were run recursively through the data in order to identify what actors did and how actors responded to actions taken by their colleagues in the network of relations. These broad analytic questions included the following:

- Problematization – how did actors advance a problematic and a potential solution in the network? What obligatory passage points were built in a bid to construct the network of relations?
- Interessement – how did actors impute interest in others in order to advance their goals of network formation?
- Enrolment – how did actors enrol others to expand the network throughout Drugster? What new roles emerged or were created or adopted by actors in the network as a result of the deployment of Google+?
- Mobilisation – how did actors mobilise support of the bigger network in order to have a common goal of Google+ as a new organisational actor?

For these four main ANT translational questions, sub-queries were maintained throughout the data in order to keep the focus on answering the research questions.

These sub-queries include:

- What roles did those in leadership positions play?
- What roles did those in non-leadership positions play?
- How did those in non-leadership positions respond to actions taken by their colleagues and by those in leadership positions?

- How did those in leadership functions respond to actions taken by their colleagues and by those in non-leadership positions?
- What new practices emerge from the data (as a contribution)?
- For each of the above, what was intended by actors and what actually happened in practice?
- Apart from, or in addition to Google+, what artefacts were deployed and what meanings were granted these non-human counterparts?
- What surprise elements emerged from the data?

With these questions in mind, the researcher was aware of the cautionary measure in ANT not to establish any pre-established grid of analysis but to let the data speak for itself. Therefore these questions only served as a lens through which the analysis was done as illustrated in Figure 7 below.

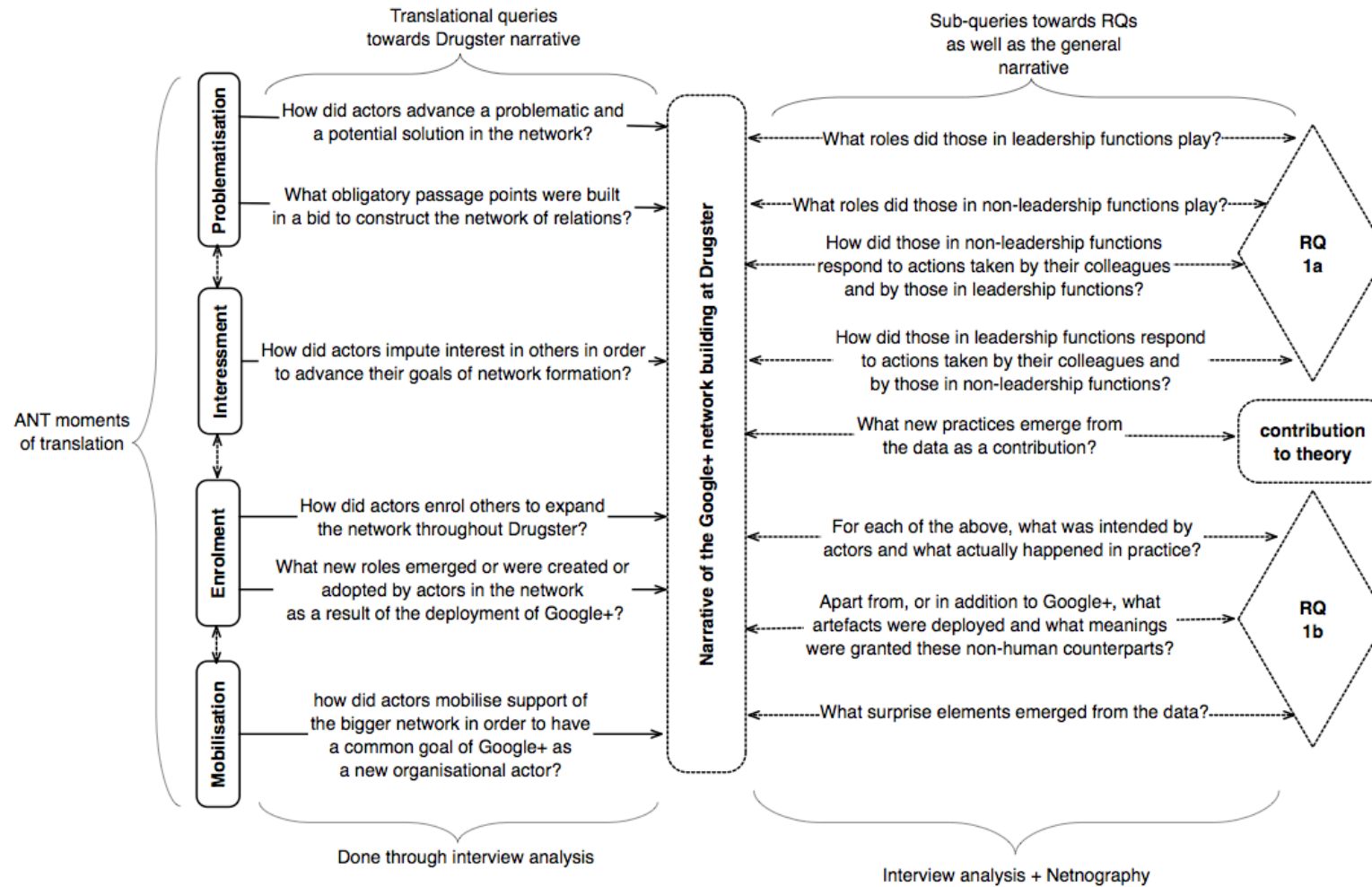


Figure 7: Set of queries used as lens in data analysis

### 5.6.1 *Analysing the interviews*

To generate meaning from the interviews, an approach that allows one to identify and report patterns from the data was used. To see these patterns, thematic analysis, which is the dominant technique for analysing qualitative data was used. According to Braun and Clarke (2006), thematic analysis is a method that enables the researcher to identify, analyse and report patterns or themes within data. This method of data analysis can be approached deductively or inductively. For a deductive approach, the researcher is driven by the 'theoretical or analytic interests in the area [of research], and is thus more explicitly analyst-driven' (Braun and Clarke, 2006, p. 84). The inductive approach, however, is a bottom-up process that is driven by the data (Braun and Clarke, 2006), in order to 'identify themes in the text data that were related to the evaluation objectives' (Thomas, 2006, p. 242).

Notwithstanding, an inductive coding approach may often be made to look like themes simply 'emerged' from the data, thus inadvertently denying the active role of the researcher (Braun and Clarke, 2006). Although this process is data-driven, 'researchers cannot free themselves of their theoretical and epistemological commitments' (Braun and Clarke, 2006, p. 84). Conversely, the deductive coding approach is a top-down process that analyses data from an already established theoretical position or hypothesis 'to test whether data are consistent with prior assumptions, theories, or hypotheses identified or constructed by an investigator' (Thomas, 2006, p. 238).

For this study, the inductive approach to coding insights from the data, informed by the theoretical commitment of the researcher was used. In fact, 'data are not coded in an epistemological vacuum' (Braun and Clarke, 2006, p. 84) and therefore the theoretical resources and preoccupations of the ANT guided the analytic process in order to derive meaning. This is what is illustrated in Figure 7 above; that is, a framework of analysis that is *guided* by the ANT theoretical commitments of the researcher while allowing the data to speak for itself.



### 5.6.1.1 Conducting the interview data analysis

The process of conducting the interview data analysis was based on Braun and Clarke's (2006) six-step guidelines. These include data familiarisation, initial code generation, themes search, themes review, themes definition and naming, and reporting findings. Figure 8 below is an illustration of these guidelines based on Braun and Clarke (2006).

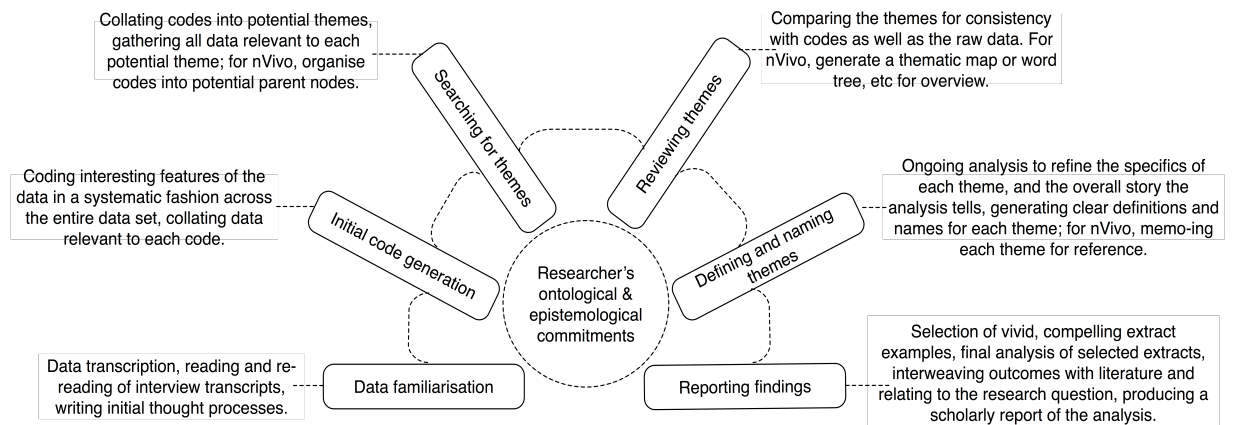


Figure 8: Thematic coding guidelines used (based on Braun & Clarke, 2006).

Here, although I followed a stepwise process using the analytic guidelines in Figure 8 above, these were not necessarily linear. They were connected in ways that allow a back and forth recursive activity. At the centre of this analytic process were my own ontological and epistemological commitments that undergird the analysis.

#### 5.6.1.1.1 Data familiarisation

This first step of familiarising with the data began at the start of this research. During the negotiations for access, the role of technology in communicating with managers at Drugster, the managerial climate experienced among other things, all built up a set of assumptions and analytic interests before the interviews were set up. Because the research involved interacting with individuals, making video calls for face-to-face conversations, being involved at meetings, observing online communications, exchanging emails, inter alia, a sense of knowledge of the setting was created. This aided in the first analytic step of familiarising with the data.

With contextual knowledge of the data, transcribing twenty of the thirty-four interviews personally, also helped immerse me in the data. A particularly useful technique used was when it was possible to connect a Bluetooth headphone to the computer while playing the interviews. This made it possible to be engaged in other less cognitively demanding chores while also listening and re-listening to the audio recordings. Although transcribing the interviews was challenging and time consuming, it soon became a worthy exercise as it stimulated ideas about interpretations at an early stage. In the words of Braun and Clarke (2006), transcribing should be seen as ‘an *interpretative act*, where meanings are created’ (p.87-88, Author’s italics). The other fourteen interviews were transcribed by a professional transcriber. Following, the transcripts were read while concurrently listening to the audio files via a Bluetooth headphone speaker in order to ensure that the transcripts represented what was said. Additionally, repeated reading through the transcripts and writing one’s initial thoughts were helpful techniques that not only delivered data familiarisation but also identified some typographical errors made in the transcripts.

#### 5.6.1.1.2 *Initial code generation*

In generating initial codes from the transcripts, segments of each interview transcript were grouped under broad themes that were identified in the data familiarisation stage. These broad themes spaced out the data clearly to allow for identification of codes. Figure 9 below offers an illustration of how this was done in the transcripts.

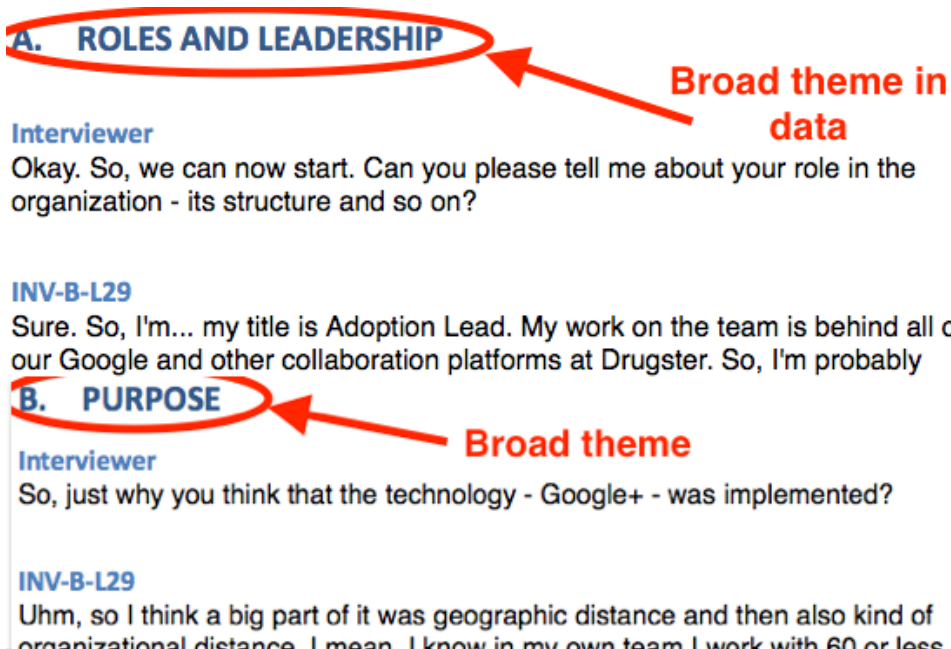


Figure 9: Illustration of making broad themes in raw data (data familiarisation stage) for easy coding.

Initially, coding started using a manual process of highlighting and the use of post-its to map out codes. This was because I assumed that using software like nVivo to code introduced a new actant into the analytic stage and its agency needed to be accounted for. Indeed, such is the case for ANT approaches, but a few words from Latour's (2005) book, *Reassembling the Social*, that 'it might be useful to list the different notebooks one should keep—manual **or digital**, it no longer matters much' (p.134, emphasis added) was relevant to the nVivo approach that I later used. Latour (2005) lists four notebooks whose properties encapsulated all that nVivo was capable of doing in a digital form –

- First notebook – to keep a log of the research enquiry itself
- Second notebook – for gathering information in such a way that it is possible simultaneously to keep all the items in a chronological order and to dispatch them into categories which will evolve later into more and more refined files and subfiles.
- Third notebook – for writing what Latour calls 'trials' – i.e. how things hold together while overcoming resistances in a network (achieved through *Memo-ing* in nVivo).
- Fourth notebook – to register the effects of the written account on the actors whose world has been either deployed or unified (Latour 2005, p.134-135).

From the Latourian viewpoint, nVivo can be that set of four notebooks with functionalities that go beyond those four propositions. Here, generating codes from the data using nVivo posed the challenge of either seeing nVivo as a tool for the analysis or as an actant with agency. For instance, nVivo could re-organise the codes into a fixed structure that denied the fluidity of the network when either a query is run for a *Treemap* or a *Sunburst* representation of the codes (see Figures 10 and 11 below).

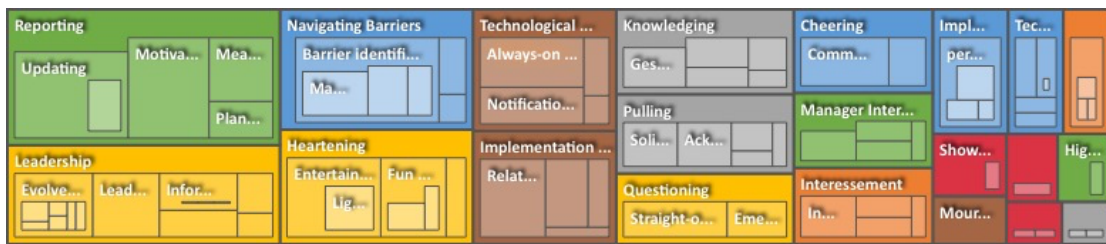


Figure 10: Treemap representation of initial codes in nVivo



Figure 11: Sunburst representation of initial codes in nVivo

As a tool, nVivo could only do so much as its affordances could permit by offering a hierarchical or a structured representation of the data as shown in the figures above. But as an actant, I was networked with nVivo and I exercised control over it, by *acting* on the software in order to refute any such representation of the data. This latter option fitted into what was consistent with ANT analysis as initial set of 81 codes was developed. Here, I identified direct quotes from the data, to which I assigned the codes. Examples are shown in Tables 8 and 9 in Chapter Six.

#### 5.6.1.1.3 *Searching for themes*

In searching for themes in the data, my attention shifted from the codes generated to identifying how they linked together into themes. It involved browsing through the codes in nVivo and identifying potential similarities from codes from other sources (that is interview transcripts) and dragging these into themes – what nVivo refers to as ‘parent nodes’. That is, searching for themes involved considering the various codes and combining them to form ‘an overarching theme’ (Braun and Clarke 2006, p.89). Example, codes such as ‘transparency’, ‘collaborative working’, ‘information sharing’, ‘relationships’, were dragged into a parent node (theme) labelled ‘implementation benefits’.

In searching for themes, it soon emerged from the data how the broad ANT moments of problematisation, interessement, enrolment, and mobilisation were done. This was also demonstrative of my own theoretical preoccupations being at the heart of the analysis. Additionally, the guiding questions that were run through the data (see Figure 7 – Section 5.6) at the data familiarisation stage made it possible to see the linkages of the codes and their relationships with one another into themes.

#### 5.6.1.1.4 *Reviewing themes*

In reviewing themes, I needed to ensure that the codes were consistent with the themes and the data they carried. As mentioned earlier under searching for themes (in Section 5.6.1.1.3), an example of codes collated into themes was where codes such as ‘transparency’, ‘collaborative working’, ‘information sharing’, ‘relationships’, were dragged into a parent node (theme) labelled ‘implementation benefits’. These codes could also be themed as ‘implementation apprehensions’ and it would have fitted into the frame at the superficial level. In order to ensure that the themes represented the codes into which they feed, a ‘back and forth’ from data to code to theme was necessitated. This iterative process ensured that the raw data informed the collation of codes into themes in order to let the data speak for itself (Table 8 in Chapter Six is an example).

At this stage, it was also clear that not all codes were sufficiently supported by data to make a theme. For example, a code that was labelled as 'expert' under the theme 'Evolved role of leadership' was removed at this stage of review. This was because it did not have sufficient data to support it as part of the evolved role of leadership that emerged from the data due to the implementation of Google+ in Drugster. By sufficient data, I do not only mean interview transcripts but other data sources used (see Section 5.5) including my own observations. For example, this earlier code – 'expert' – also contradicted what was seen on the field when I engaged with many of the managers. For instance, at a workshop in California, a manager reported to employees how in his managerial journey there were and still remain many things he did not know. Such posture from a manager, acknowledging to his 'followers' that he did not know it all was noted and this contradicted the coded piece of data. Additionally, it was found in the netnographic analysis the 'experts' were those labelled as 'consultants' on the Google+ platform (more on netnography in later sections). The reviewing stage of the analysis was therefore instrumental in ensuring that all codes matched their representative parent nodes or themes as well as the overall data.

#### *5.6.1.1.5 Defining and naming themes*

At this stage, all themes were organised and memos made against themes hyperlinked in nVivo. Additionally, general reflections about the outcomes of the analysis were also written as well as other insights and connections generated about the themes identified. These reflections and insights identified the general 'essence' of what the themes are (as part of their definition) as well as how they could be developed into a logical narrative for reporting. At this stage, a strategic choice was also made as to what themes would be of relevance to the hosting organisation, Drugster's preliminary report as part of research communication. Here, themes such as 'Google+ implementation benefits' and 'Leader-follower relational practices' were chosen to be of immediate value for preliminary reporting to Drugster ahead of the full completion of the thesis.

### 5.6.2 *Analysing netnographic data*

In analysing netnographic data, emphasis is placed on the researcher's interpretive skill as the analysis depends on being able to 'break down the text and then reassemble it as a new interpretation' (Kozinets, 2010, p. 120). However, because netnographic data includes other forms of data that are not necessarily textual, the analysis is often a combination of analytic coding and hermeneutic interpretation (Kozinets, 2010). Here, the principles of analytic coding employed in textual data as done in analysing interview data is also relevant. At the same time, the netnographer's unique insights from being a member of the online setting allows for the delivery of understanding as part of the hermeneutic interpretation of the data.

For analysis of netnographic data, the researcher is allowed the flexibility to use techniques that ensure meaning making without sacrificing analytic rigour (Kozinets, 2010). Because online interaction takes many forms on social technology platforms, analysis of data also opens up the many modalities of communication associated with these technologies that are not always readily accessible. Kozinets (2010) thus argues that

'The analysis of netnographic data should be subtly attuned to the prevalent contingencies of the online cultural environment: the textuality of the data, the dis-embodied and anonymous nature of online interaction, the claims of dishonesty and the alleged difficulty of observability and verification' (Kozinets, 2010, p. 134).

To account for these concerns, a framework for analysis was developed following the works of Kozinets (1998, 2002, 2010) as well as insights from Braun and Clarke's (2006) ideas on thematic coding. The analytic steps in the framework involve data classification, memoing, coding, contextual positioning, searching for themes, evaluating with further data, and then reporting outcomes (see Figure 12 below). These analytic steps are based on the argument that the textual interpretation of netnographic data begins by 'breaking a text down into its constituent elements, classifying them, finding patterns among them that relate them, closely examining all of their elements, asking about the motivation behind them, testing and checking with further data, and then reading them for the culture that they represent' (Kozinets, 2010, p. 125).

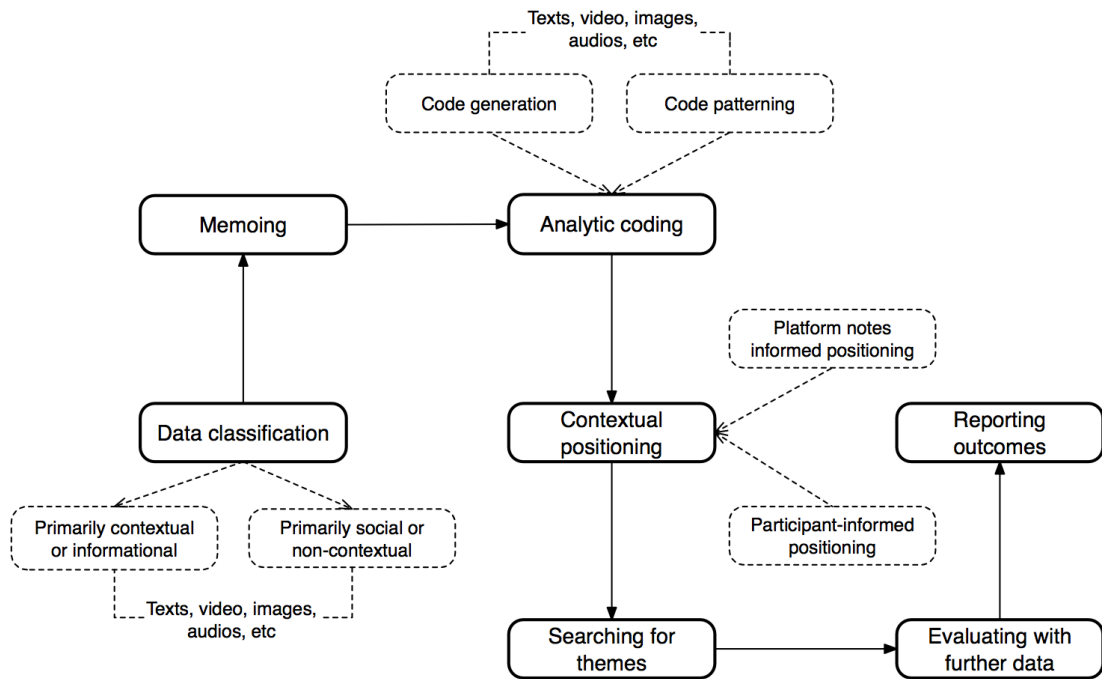


Figure 12: Framework for analysing netnographic data

#### 5.6.2.1 Data classification

In classifying data from the Google+ platform, two approaches are useful. Netnographic data as primarily contextual or informational can be separated from those that are primarily social or non-contextual. These classifications are done not for purposes of statistical extrapolation but for revelatory depth about the nature of interactions that participants are engaged in. Depending on the prevailing contingencies as argued earlier, these classifications may not be necessary. This is because data that are considered as non-contextual may be of relevance to the ongoing activity of members in the community and this was the context I found at Drugster. For example, initially, some data was considered non-contextual or ‘social’ like the photo of a community member with a gnome.





**Figure 13: Example of data that can be considered as 'primarily social or non-contextual'**

In Figure 13 above, an employee is seen holding a gnome in what seemed like a happy moment. The individual is dressed like someone at work and from contextual knowledge gained from the interviews, the background is familiar as Drugster’s office environment. What could a gnome – named as ‘Bas the gnome’ – be doing in such an environment? These questions form part of the next step in the analytic process called ‘memoing’. Answers to these questions help position this data in its classification.

### 5.6.2.2 Memoing

At this stage of the analysis, ‘reflections on the data or other remarks are noted’ (Kozinets, 2010, p. 119). In the case of Bas the gnome, these reflections included the smiling face of the employee, the office background, the number of ‘pluses’ – i.e. ‘thumbs-ups’, etc. Depending on the nature of the data – either as texts, photos, videos, etc., – memoing could take other forms. Memoing in this case occurred in some cases as notes written on post-its or as annotations made on photos. Unlike interview data,

netnographic data presents a unique approach to analysis. Here, no transcription of data is required as the data is available in a form that is readily 'analysable'. Memoing also includes the platform notes that were made because these notes 'provide key insights into the what the online culture is and what it does' (Kozinets, 2010, p. 114).

To capture the nature of interactions online, the various kinds of netnographic data were identified as part of memoing. These included:

- Texts – that is, textual posts that were written onto the Google+ platform by members of the community;
- Visuals – that is, photo images including infographics, scribbles, photographs (of people doing something – having meetings, presenting, socialising, etc.), video files, etc posted by community members;
- Hyperlinks – that is, of articles elsewhere online that were relevant to their work, or hyperlinks to shared spaces like *Google Drive* – a cloud storage service similar to the Dropbox™, or hyperlinks to collaborative documents like *Google Sheets* and *Google Docs*, etc.;
- Community icon – that is, the image that was used to identify the community;
- Work documents – that is, documents of direct relevance to the work of the community, e.g. slide decks;
- Labels – that is, what designations individuals labelled themselves with;
- Comments – that is, the nature of comments made by both managers and employees to communication episodes initiated by others;
- Plus Ones – that is, the 'thumb-ups' or Google+ built-in affirmations that individuals give to the communication episodes of their colleagues;
- Layout – that is, the general layout of the Google+ platform;
- Personal identifiers – that is, how individuals represented themselves in their profile photos.

For Bas the gnome, further observations and memoing helped classify the data as actually primarily contextual and not as was initially assumed. This was an office tradition of sending Bas the gnome to an employee as a congratulatory gesture for good work done. Whereas this was understood upon further observation and analysis of several other Bas-the-gnome kind of data, other memoing was only possible when real-

time observation was done. In other words, analysing the netnographic data began from the real-time interactions observed in the community, not just from screenshots like in the case of Bas the gnome.

That is, the time of day when individuals started posting and whether others immediately gave their posts a *plus-one* (i.e. a thumbs-up) were also relevant to the enquiry. Although the technology made known at what specific time a post was written, it does not capture at what time reactions to the post were made by other actors. For instance, it would be known by the observer that a manager made a post at 9:00am even if the time of observation was 11am. Google+ kept visible the date and time of posting beside the post. However, if an employee reacted to that post by giving it a plus-one (or thumbs-up) at 9:01am, it was not known at 11am whether that plus-one was issued at 9:01am or at 10:59am. To know this, the observer needed to also be online at 9:00am and at 9:01am when these interactions were occurring in real time.

Accordingly, I made daily observations from 6:00am to 7:00am UK Time in order to observe reactions to early communication episodes on the platform. These times were chosen as they related to between 8:00am and 9:00am; an hour before Drugster's usual working day began. Moreover, one hour was also enough to take care of any time lag that might have occurred due to Internet speed fluctuations. These daily early observations were done over one working week only, in April 2016. I considered that one week was enough to capture any early morning communication episodes. Furthermore, an hour before the working day started was a reasonable time to capture whether a claim could be made about Google+ enabling manager-employee relational episodes outside normal working hours. This was then supported when communication episodes were also captured in Google+ at weekends without the need to observe in real time.

### 5.6.2.3 Analytic coding

At this stage of the analysis, codes are assigned to the data. Generating these codes involves assigning labels to units of data; 'these codes label the data as belonging to or being an example of some more general phenomenon' (Kozinets, 2010, p. 119). These

unit codes are then examined for patterns – code patterning – in order to generate an interpretation, which leads into searching for themes. For example, Bas the gnome was coded as ‘congratulatory gestures’, other posts like funny photos that depict out-of-office or holiday breaks from work or other work related fun were coded as ‘work entertainment’. It was later observed that ‘work entertainment’ as a code was a pattern of other posts that were coded as ‘light chats’. These codes as well as other posts of ‘humour’ aggregated into a broader code labelled as ‘heartening’. The occurrence of ‘heartening’ in other communicative episodes made it emerge as a theme in the manager-employee relationship over the platform. Here, Kozinets (2010) argues that ‘categories for coding usually emerge inductively through a close reading of the data, rather than being imposed by prescribed categories’ (p.119). However, assigning codes alone was not enough and needed to be put in context. That is, was ‘heartening’ all there was to the kind of data coded or could there be some other meaning that the data generated? It is at this stage that contextual positioning was essential to the analysis in order to answer the question raised.

#### 5.6.2.4 Contextual positioning

In order to ensure that the analytic coding accurately represents the context of the online practices, two processes were followed. These are (1) crosschecking with online community members and (2) the consultation of platforms notes.

In the first instance, the researcher ‘returns to the field for the next wave of data collection in order to isolate, check, and refine the understanding of the patterns, processes, commonalities, and differences’ (Kozinets, 2010, p.119). In returning to this field behind the screen, some community members with whom I already established rapport in the interview stages were contacted. These individuals helped clarify whether the meaning generated from the coding accurately represented the context within which their posts were made. In the second instance, platform notes or data written at the memoing stage were consulted to ensure that the generated codes and patterns were contextually positioned to reflect the online practices.

At this stage, the researcher's ontological positioning has a bearing. For instance, Kozinets (2002) argues that the researcher is analysing 'content of an online community's communicative acts rather than the complete set of observed acts' (p.65). From an ANT perspective, the communicative acts play a role of representation, as precursor for the situated action it represents, as well as being an actant in the network of relations (Callon, 1986; Latour, 1987). Accordingly, the communicative episodes on the platform were analysed as representation of reality, as actants, in the heterogeneous network who also have a voice. An example has to do with another episode of Bas the gnome in which an employee displayed a photo of himself while also adding a bit more contextual detail. Figure 14 below offers this illustration.

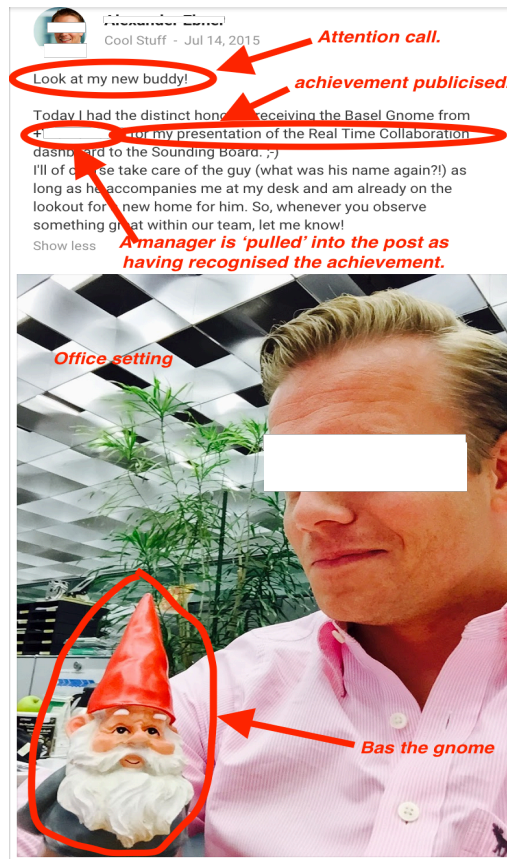


Figure 14: Example of contextualising netnographic insight

In this episode of Bas the gnome, the employee calls the attention of other members with humour, 'Look at my new buddy!' At the same time, he invites into the conversation a manager who awarded him the gnome while also announcing his own achievement. Whereas the context here falls under the code, 'congratulatory gestures', there is also an implicit announcing of one's own achievement without waiting for a manager to do so. The employee 'pulls in' the manager into his celebration to generate audience in recognising his own achievements.

#### 5.6.2.5 Searching for themes and evaluating with further data

At this stage of the analysis, themes are organised from the coding stage. Here, themes cover the pattern of codes observed. In the case of Drugster, the generated themes regarding the online communicative episodes showed a change in relational practices among managers and employees. These are explained in the findings in detail (Chapter Six). However, in order to refine and safeguard reliability of the generated themes, evaluating with further data was ensured. Here, the outcomes that were drawn from the netnographic analysis from the L-M Community (67 members) were taken into the S-Q Community, which had a much bigger membership of 1,129 members. By 'testing' the insights developed from L-M in the much larger S-Q community, reliability was ensured. 'Testing' in this manner is not used in the positivistic sense but as a way to juxtapose insights from L-M community with data in S-Q community in order to confirm its reliability. This also gave credibility to the data and ensured that all the netnographic insights were confirmed when I reported to a team of managers and employees of Drugster in California in June 2016. Example, some of the practices that emerged from the netnographic data were found to be largely employee associated while others were seen more in manager communicative episodes. Taking this insight from one community to the other, it was visibly identifiable who were managers (beforehand unknown to the researcher) and who were employees. Nonetheless, there were also practices that were generally observed in both manager and employee communicative episodes (more on this in the findings). As mentioned, reporting outcomes to managers at Drugster was essentially part of the process of evaluating the credibility of the research output and its reliability. A lot more on this quality evaluation is discussed in the next section.

### 5.7 Research evaluation and inbuilt quality demands

Evaluating the quality of management qualitative research can often be a difficult task due to the differing philosophical conventions (Johnson *et al.*, 2006). Moreover in evaluating quality, qualitative research is implicitly compared with quantitative research where it is assumed that well-defined criteria for assessing quality are available (Hammersley, 2007). As a result, evaluation criteria such as 'objectivity, validity, reliability and generalizability with little modification' (Johnson *et al.*, 2006, p. 133) may often be misappropriated for qualitative research. This assumption often

ignores the increasing diversity of approaches to qualitative research in which the aim is not necessarily to establish causality but also to gain understanding into social phenomena. To prevent attempts that deploy these one-fits-all evaluation criteria, Johnson et al (2006) propose what they call a 'contingent criteriology' for qualitative research evaluation. That is, the need to consider the underpinning philosophical assumptions of the research, its aims, and methodological commitments, which all constitute the researcher's mode of engagement.

For this study whose interpretivist philosophy couples Bruno Latour's post-modern view of reality, Johnson et al (2006) argue the need to demonstrate *heteroglossia* for quality evaluation. That is, the research must demonstrate the presence of various viewpoints by giving voice to 'previously silenced textual domains; unsettling of the hegemonic; articulation of incommensurable plurality of discourses, narratives etc. which de-centre the author through multivocality' (p.147). These principles serve as the guiding evaluation criteria for this study.

#### ***5.7.1 Evaluation of the study for quality assurance***

To evaluate this study, the overall research design and justification for the methodological steps taken needed to be consistent with the quality demands stated above. As shown in this study, research participants involved employees, managers, and the technology being deployed in the organisation. The multi-voiced formation of participants that were recruited based on stipulations in the literature ensured adherence to *heteroglossia*. That is, the range of those who were involved in decisions to implement Google+ at Drugster, the implementing team, the user, and the technology all offered a range of actors or actants with various, sometimes conflicting viewpoints. Some of these participants could be described in Johnson et al's (2006) terms as 'previously silenced textual domains.' For instance, the need to observe the silent technology and allow it a voice in the manager-employee relationship, the need to ensure that the user of the technology and not only the implementing actor was heard ensured that no one voice was privileged. Moreover, the role of the technology in the manager-employee relationship as is later shown in the findings generated a scenario in which the hegemony of managerial hierarchy was challenged.



Furthermore, it was ensured in the analysis that not only the human actors were followed, but also their non-human counterparts thus allowing the plurality of discourses. That is, narratives that also brought to the fore the relevance of the non-human actant in the manager-employee relationship was included. Such plurality of voices from various spectra of the organisation coupled with the researcher's own reflexivity ensured adherence to multivocality. This de-centres the author while simultaneously ensuring that the researcher's own impact on the research process was accounted for.

### *5.7.2 Validation of the study as part of quality evaluation*

As part of evaluating the study for quality, there is the need to ensure credibility of the findings. Creswel (2007) refers to this evaluation process as 'validation', which he describes as 'an attempt to assess the "accuracy" of the findings, as best described by the researcher and the participants' (pp. 206-207). This assessment involves a demonstration of the researcher's long presence in the field to gain the trust of participants, the use of multiple methods to generate data and triangulate evidence, peer review or debriefing for quality, as well as in-member checking that solicits participants' views to ensure credibility of findings and interpretation.

Validation of this study was achieved having been on the field both to understand the context of the research setting and to generate accurate data for the analysis. The combination of interviews with netnographic observations as well as physical interaction with participants and use of other organisational texts ensured that the data that was generated with the interpretation was confirmed by the other methods used. Additionally, monthly supervision meetings with the study's two supervisors, their involvement in the signing of the non-disclosure agreement for gravitas, as well as their cross-checking of the analysis all proved useful in the validation process. Finally, Henley Business School's in-house validation procedures, which include upgrade viva and mandatory annual conference presentations, ensured that the study's interpretive community was regularly updated and probed its overall progress and quality. As highlighted in [Section 5.2](#), external conferences where various stages of the study were

presented also provided platforms for inputs to be made from the peer-review process being an important element of research validation (Creswell, 2007).

The first conference, British Academy of Management (BAM), offered the opportunity to present initial thinking as well as some of the review of literature to a panel of experts. The second conference, Interdisciplinary Perspectives on Leadership Symposium (IPLS) held in Greece, also offered a unique opportunity to present a more advanced stage of the study to a cohort of experts in relational leadership as well as critics and experts of the actor-network theory. Furthermore, because the interpretive community for this research also includes the hosting organisation, who are practitioners, preliminary findings reporting was also scheduled in the project plan and agreed on. This measure allowed participants of the study to confirm or challenge anything that was not clearly captured. It also ensured that interpretations given to the data truly captured the intentions communicated with the researcher. Three of these scenarios were scheduled and executed in order to ensure that quality in terms of the credibility of the claims made was not compromised. Table 7 below captures this inbuilt quality assurance measure.

Quality assurance task	Purpose	Outcome
<b>2.1 BAM conference paper</b>	Initial thinking & literature review	- Judged by two anonymous reviewers as 'excellent' and 'provocative' paper. - Panel discussion encouraged publishing.
<b>6.1 Drugster/ Biomed preliminary reporting - 1</b>	- Host organisation as part of interpretive community. - Feedback on any misinterpretations or misrepresentations.	- Received without changes. - Accepted as insightful and additional data given.
<b>6.2 IPLS conference, Rhodes, Greece</b>	- Advanced stage of research and early findings/analysis	- Panel discussion made and work encouraged. - Research collaboration network formed for future publications.
<b>6.3 Drugster/ Biomed preliminary reporting - 2</b>	Update on earlier preliminary findings report.	- Accepted and invited to California.
<b>6.4 Biomed visit, California workshop</b>	Research presentation to a team of managers and employees. - Feedback on any misinterpretations or misrepresentations.	- General discussion held. - One interpretation of outcomes challenged (the idea that 'silos' are not necessarily bad for the organisation).

Table 7: Quality assurance measures for research output

## 5.8 Conclusion

This chapter has offered into detail the research context being studied as well as the methodological decisions made for investigating and understanding the setting. It has explained the research design while providing justification for how data was generated and analysed in order to arrive at answering the research questions. This chapter has also provided the reader with the philosophical underpinning of this study, ensuring that methodological steps taken were consistent with the demands of its philosophical undertone. Additionally, the ethical considerations that confront a study of this nature were also addressed while ensuring that quality standards for research evaluation were not compromised. Overall, this chapter on methodology provides the bedrock from which the findings emerge in answering the research questions and in making contribution to theory.

# Chapter Six

## Findings

*'Seek, and ye shall find; ...he that seeketh findeth.'*  
- Christ

### 6.1 Introduction

This chapter offers insight into the findings from Drugster's actor-network. The findings are presented bearing in mind the theoretical resources of the ANT. Accordingly, the language of the ANT is inevitably woven with the description in order to provide an interpretation that is consistent with the underlying theory. In order to fully address the research questions, the findings are presented in two ways. First, a narrative of how Drugster's Google+ actor-network came to be formed is offered while also showing how the network is sustained. Figure 7 under Section 5.6 in the previous chapter is thus evoked here after analysing the interviews to produce the narrative. Here, the technology's implementation together with its influence in the network is presented. Second, a description of how Google+ as a technological actant in the network intermediates the manager-employee relationship in the organisation is presented. Here, the relational practices that emerge as managers and employees engage over (and with) the platform are presented (i.e. insights from netnography). Following, the unintended consequences from such technological intermediation are also offered. With reference to the research questions, shown below, the findings offer answers while also providing a basis for discussion and contribution to theory.

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager-employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

### 6.1.1 Assumptions underpinning the findings

An assumption in this study as per the theoretical resources of the ANT is that, Google+ is an active player in the manager-employee relationship. Accordingly, reference to the technology in this chapter may seem anthropomorphic when actually, it is displaying non-human agency. Two main themes explored in this research per the research questions above are the conduct of the manager-employee relationship and the practice of leadership. I have thus assumed that leadership is an effect of the network of relations (argued in Chapters Three and Four) and not a set of individuals in the organisation.

Following, my style of language in referring to individuals in leadership positions alternates between the use of the words 'leaders' or 'managers' and others as 'employees' or 'followers' although 'leaders' and 'followers' are used sparingly. Other non-ANT words like 'positive' or 'negative' are used as part of my subjective feeling of the findings to which I ascribe these words; they do not conclusively represent the feelings of other actors in the network of relations of which I was (and still am) a part. Other questions that arise in this chapter were derived inductively as argued in Section 5.6 (see Figure 7).

I have also assumed that, the presence of Google+ as a new technological participant in the manager-employee relationship impacts the relationship in some form. However, the assumption that Google+ *impacts* the conduct of the relationship does not embrace technological determinism (explained in Chapter Two) but only points to a commitment that ensures that the role of the technology in the relationship is not silenced. For clarity in presentation, the actors specifically mentioned are listed in Table 8 below as part of the Drugster Google+ actor-network after which the narrative of building the network is offered.

<b>Actor-network</b>	<b>Actor</b>	<b>Function</b>	<b>Human</b>	<b>Non-human</b>
Implementation team	G+ Component owners	Research and advise on what social technologies to deploy in Drugster. Responsible for sustaining the overall business case for Google+.	✓	
	Project Manager	Manages the Google+ project's implementation cycle, scheduling, risks, budget, quality assurance, stakeholders.	✓	
Management team	Google Suite Technology Manager	Oversees all Google services within Drugster	✓	
	Organisational change manager	Manages technology implementation processes to ensure uptake without disruption.	✓	
	Legal unit manager	Ensures all practices and work activities within Drugster meet legal and industry standards.	✓	
Top/Upper Management	Drugster division heads & Senior IT decision makers	Manage the overall organisational objectives and ensure stakeholder needs are met; they drive their respective departments to ensure competitiveness and profits are achieved.	✓	
Competing technologies	Jive	An Aurea owned Web 2.0 software solution that allows individuals to communicate internally (like Intranet) for project collaborations.		✓
	Yammer	A Microsoft Web 2.0 software application for internal communication among employees.		✓
	Webex	A Web 2.0 software application for internal communication and collaboration; also has ability to use video communication.		✓

	Chatter	A Web 2.0 application from Salesforce for internal communication and collaboration.	✓
	Drugster Intranet	Legacy technology system within Drugster for internal communication and searching of organisational database for work-related information, people, emails, departments, and so on.	✓
	Google+ & Google suite of applications	Google+ is a Web 2.0 social media application from Google for internal (and external) communication among employees. Other technologies in the suite include <i>Google Hangouts</i> for video communication, <i>Google Drive</i> for cloud storage, <i>Google Docs</i> for document management and sharing.	✓
Workers' union	Employees	A Drugster governance group made up of employees (particularly in Germany); manages employee concerns about working conditions and rights.	✓
External organisation	EU general data protection regulation (GDPR)	A European Union policy to ensure that management of data generated by individuals in member states are handled ethically. The policy is set to take full effect in 2018.	✓

**Table 8: Description of actors mentioned in the Drugster Google+ narrative**

## 6.2 The Narrative of Building the Drugster Google+ Actor-Network

Drugster has an employee base of more than 90,000 individuals across the various continents. Prior to the implementation of Google+, the organisation sustained its network of actor-to-actor *collaboration* and *relationship* with the help of various technologies such as Jive, Chatter, WebEx, Yammer, and the legacy Intranet. The concept of collaboration as found at Drugster involved working together towards organisational goals, example, using Google Drive – that is, Google’s Cloud service – to work together on a document that would later be presented to upper management. It also involved avoiding getting things done in segregation by building on what was already (being) done by a colleague at work. According to an informant, ‘It’s the strength of collaboration that you don’t have to do everything from scratch, you can leverage things that have been done [already]’ (INV-S-L4). For the concept of relationship, Drugster considers actor-actor interactions as necessary relational activities for the organisation’s widespread nature. ‘Interaction’ in this case is understood as relating with others at work, either for social reasons or for the sole purpose of work. These interactions could involve speaking to someone in person or via some technological means, engaging in internal organisational activities as well as some external events, or meeting up for a coffee if actors are in close proximity and so on (INV-B-L1; INV-B-L2).

The various technologies that were available before Google+ was implemented included Jive, Yammer, Chatter, Webex, and Drugster’s own Intranet. Just like Google+, these technologies form part of the plethora of Web 2.0 or social technologies. They possess similar technological architecture by facilitating actor-actor interactions across geographical boundaries. Jive, Webex, and Chatter worked on user-license fees. That is, for more than 90,000 employees, Drugster would have to pay licence fees for each employee that needed these technologies for their work (INV-B-L28). Additionally, the availability of these technological applications for use within the organisation soon became part of questions raised if one needed to have the technology available anytime, anywhere. The idea of ‘anytime, anywhere’ underscored a pattern of work in which individuals sometimes worked from home or elsewhere without their physical presence behind the office desk. In fact, some of my participants (eleven) were in the comfort of



their homes when I interviewed them. Example, I noted the following in my research diary.

INV-B-L1(Tr) was at home. He had a small earpiece with which he listened to me. His cat stepped in at some point to play with some items in the background. I could hear the sound of the cat playing but it was not in sight. He mentioned it was his 5-month old cat. He wore a shirt without a tie and so did I, having learnt from previous interactions with others. – (09/07/15 Diary notes).

### *6.2.1 How Drugster's Google+ began*

With the merger of Biomed and Drugster as shown in the research setting (see [Section 5.4](#)), the organisation decided to create an environment in which employees and managers of both organisations would connect with each other and get to know one another. This was because both Drugster and Biomed needed to work together as one entity on projects that would be beneficial for the organisation as a whole. Teams were formed that constituted organisational members at both Biomed and Drugster. Managers and employees travelled from Europe where Drugster is headquartered as well as other parts of the world to the United States where Biomed is headquartered. The almost formal way of working at Drugster, needed to embrace the 'Silicon Valley style' of informality at Biomed (INV-S-L10). With these factors, an informal interactive activity began organically from the employee base using the Google+ technological platform.

Drugster already used a suite of Google's services and applications. This included email, Google Calendar, cloud storage called Google Drive, Google Hangouts, which is Google's video calling application, Google Docs, among others. Therefore the choice for Google+, also one of Google's services, as the go-to social technology by employees in their bid to network with others was without difficulty (INV-B-L28). Additionally, Google+ was free to use and did not need Drugster to pay license fees in comparison to the other social technologies in the organisation. The technology brings actors together by enabling users to form communities. Google+ communities are online spaces on the Google+ technological platform where individuals are able to speak out loud by writing their thoughts about whatever they wish to discuss. In the community, an individual raises a

topic in a post and others react to the post by either clicking buttons that show support or by commenting on the posts or by writing their own posts on the subject matter under discussion.

The start of the Google+ implementation at Drugster was when individuals set up a Google+ community to connect with themselves for conversations that aim to create an informal environment for people to know one another. At its inception, some of the topics discussed included physical activity where questions, such as 'Have you taken your 10,000 steps today?' (INV-B-L1), were raised for people to talk about their day. Other mundane topics on physical activity became like a competition and individuals posted their physical activity exploits and so on. With many employees in Drugster resident in Germany, football matches between Germany and the USA, where Biomed was based, were also some of the mundane discussions that generated interest among employees from both sides. Example is shown in Figure below.

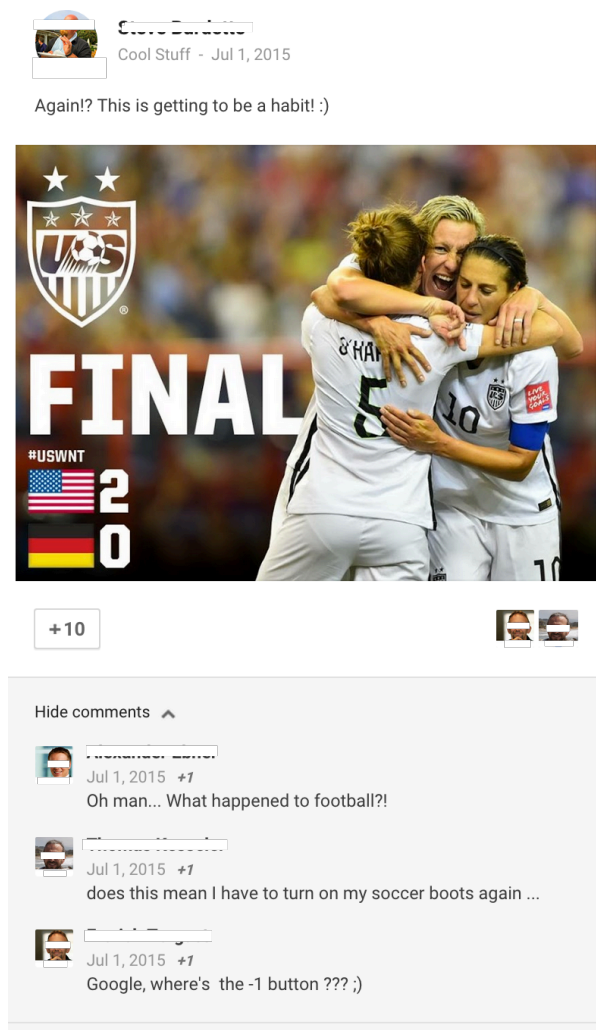


Figure 15: A mundane practice in a Google+ platform for network building

This and other topics generated interest among employees and a lot more individuals joined the community. The discussions also evolved into topics spanning beyond the mundane. They shared success stories, motivated one another, talked about their failures, shared ideas for improving their work and on other social issues (INV-S-L4; My platform notes). For those who wanted to know more about the features Google+ offered, individuals who knew more shared tips and tricks about the platform and the community grew generically.

With this initial Google+ online community, interested individuals discussed how the platform could also be useful for their work (INV-B-L1; INV-S-L10; INV-B-L2). This interest for its utility for work purposes caught the attention of the Google suite technology manager who then decided to implement Google+ across the entire

organisation. However, in order to implement this technology across the organisation, the implementing team, headed by the manager of the Google technology suite, tested key assumptions through a pilot implementation project. This project tested the assumption that majority of the organisational members wanted this technology and not just a few individuals who organically deployed it to network with their colleagues at both Drugster and Biomed. For the pilot phase, an organisation-wide survey was conducted after which some more 'pilot' communities were set up in order to monitor traction (INV-B-L2; INV-B-L28). The findings of the survey made available to me showed mixed outcomes (see Appendix 4 for the Google Drive links I was given access to). With fifty pilot communities set up, satisfaction among primarily IT employees were over eighty per cent. This outcome was reported with 6,000<sup>11</sup> surveyed. However, satisfaction for non-IT employees was low with only twenty per cent of the non-IT employee communities observed as successful – that is, either established with many active online participants or the community was now well integrated into their daily work.

Despite the mixed findings from the pilot phase, the Google Suite Technology Manager decided that with appropriate education, an organisation-wide implementation of Google+ would be successful. However, he needed the support of upper management as a mandate for organisation-wide implementation. Moreover, a new phenomenon began in which employees who had not been part of the pilot project heard about Google+ and began asking for the technology. The implementation team was overwhelmed by the rise in interest from the employee base and used the data to strengthen their business use case to upper management for organisation-wide implementation. To persuade upper management, the challenge of establishing Google+ as an obligatory passage point<sup>12</sup> was faced and these are shown in [Section 6.2.2](#) below.

### ***6.2.2 Establishing Google+ as an Obligatory Passage Point (OPP)***

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<sup>11</sup> Actual number is approximately 5,900. This is approximated as the data may be made available on the organisation's website and when found would potentially disclose the organisation's identity.

<sup>12</sup> OPP is further explained in Section 3.0.4.3.1. At Drugster, it meant making Google+ the technology of choice instead of Jive, Chatter, Yammer, WebEx, Intranet, and so on.

Drugster had a range of social technologies that was already available within the organisation as mentioned earlier. Top management saw Google+ as an additional tool with which actors would interact. The concept of the technology being a *tool* was not exclusive to only the top management. In fact, all managers and employees that were involved in the study mentioned or referred to the technology as a tool when they spoke about Google+. The conception of Google+ as a tool, and for that matter, all the other social technologies within the organisation as tools made the selling of Google+ as *another* tool<sup>13</sup>. To establish this tool as an OPP among the other tools demanded that it needed to be useful for something that the other tools did not provide the capability for (INV-B-L1). To persuade upper management, the Google Suite Technology Manager *enrolled* the Organisational Change Manager as an *ally* in the task of persuading top management for the implementation. Both actors made a business case for Google+ from technological and organisational change perspectives, in a language that upper management would appreciate. The Organisational Change Manager noted in a quote below:

‘So we taking again a strategic approach in that we saying we identified three key players in our programme who have a very definite role to play. The first is the IMs and the senior IT leaders, so we need them to understand the language’ (INV-B-L2).

The two managers became the *controlling actors*<sup>14</sup> that sought to establish Google+ as an OPP as well as ensure its implementation throughout the organisation. For the Google Suite Technology Manager, it was important to have all Google tools working in unison in the broader actor-network of Drugster (INV-B-L28). This would make his managerial oversight for Google’s suite of applications complete. For the Organisational Change Manager, it was an opportunity to supervise an organisation-wide change process as employees and managers took on a new way of working (INV-B-L2). For the upper management, it was more of a burden of another tool to the already available toolkit of other social technologies in the organisation. Moreover, not all those in upper management were technologically adept like millennials to embrace every new technology (INV-B-L21).

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<sup>13</sup> The concept of the ‘tool’ is critically discussed in Chapter Seven as part of the discussion.

<sup>14</sup> The term is not necessarily used in the often-negative sense of managerial ‘command and control’ although some controlling actors can deploy such an approach.

To persuade the upper management, the two controlling actors built a business case around the financial benefits to be gained if Google+ replaced the other social technology tools. The already available Google suite of technologies, the absence of license fees, and some supporting data from the pilot implementation all formed part of the strategies for establishing Google+ as the OPP to upper management. Drugster had always paid license fees for the other social technologies without raising concerns. There was no official outcry from top management against the available technologies for their high license fees. Nevertheless, the two controlling actors informed top management of the savings that could be made should Google+ replace other applications of similar functionality in Drugster.

In establishing Google+ as an OPP, the two controlling actors influenced top management's decision by offering as a problem what was not beforehand a problem. They did this by arranging a meeting in June 2013 in which they presented to top management their business case. At this meeting, various questions were answered regarding ease of use, integration with the available Google suite of applications, human, technological as well as the legal impact the technology would have on the organisation. In this physical environment, the relational practices of dialogue, discussion, and questioning were at play as the two controlling actors related with top management in order to exert influence.

One of the strategic goals of the upper management was to ensure that the decisions made regarding the organisation's IT infrastructure were justifiable. They needed to ensure that IT projects aligned with Drugster's strategic goals by aiding work processes in order to deliver benefits that made the organisation competitive. For the two controlling actors, this knowledge was key to their establishing of Google+ as an OPP. For them, advancing an understanding of its ability to save costs would ensure acceptance. By aligning themselves with the strategic aims of the upper management, they identified themselves as also seeking aims that were consistent with the overall objectives of the upper management. In other words, by aligning *with* upper management, it was possible to gain the mandate needed to implement Google+ across

the organisation. With upper management, Google+ was now established as an OPP but enforcing<sup>15</sup> that to the employee base faced different challenges.

#### 6.2.2.1 Enforcing Google+ as an obligatory passage point.

Having obtained the mandate to establish Google+ as an obligatory passage point, the controlling actors now faced the task of enforcing it within the organisation. Some of the challenges they faced with upper management remained the same for the employee base but on a different scale while others were unique to the employee base. To identify these challenges, I analysed the data for those quotes that answered the relevant interview questions. As shown in Table 9 below, the relevant interview questions here did not directly ask employees about 'OPP' as that is a technical vocabulary only I could understand.

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<sup>15</sup> The word 'enforce' is not regularly used by managers at Drugster or the controlling actors in the network of relations. It forms part of my narrative. An ANT process of translation often uses such militaristic language, which Shapin (1998) for instance criticizes Latour for. Shapin (1998, p.7) calls it 'the militaristic and imperialistic language that is so characteristic of Latour's work.'

Relevant Interview Questions	Participants (a few for illustration)	Quotes	Codes (called 'Nodes' in NVivo) <sup>16</sup>	Themes (Parent nodes)	Stage of translation
<p>- Could you share your experience with any issues/challenges that came up with the implementation process and how these were resolved?</p> <p>- What does this technology mean to you as an individual?</p> <p>- How do you feel about using this technology?</p>	INV-B-E36	'Like every month there's a new tool, I mean, I get a lot of e-mails 'Oh, this. Do this. Do this.' I mean, you don't go to all of these tools. You know, you wanna get your work done, at the end of the day, I wanna get my work done. I don't have time for all these different tools. So, a lot of the people kind of like, you know, avoid reading these e-mails and I don't think that's something you can avoid, uhm, also, many people question how social [technologies are] useful in the enterprise.'	Tech overload <sub>14</sub>	Challenge of usefulness	OPP
	INV-B-L5	'So, what is something that I can count it down to people and do it and you know there's something that I've heard it's good at, but I'm still being used to that [sic] [She expresses her difficulty with the technology having mentioned later she is not in favour with it].'	Redundant tools <sub>11</sub>		
	INV-B-L-CO1	'Many people are like, "What do I need social [technologies] in the enterprise for? I don't want to share my lunch pictures, I don't wanna share selfie, I don't wanna share cat videos. What is social [technology] in the enterprise need [sic]?"	Questioned usefulness <sub>10</sub>	Perceived mundanity <sub>12</sub>	
INV-B-L5	'...You know, I don't use Facebook [in comparing Google+]. I would like just really limit it and really like to limit how much I give use of social media...'	Facebook comparison <sub>17</sub>			
	INV-B-L2	'So one of the big difference between consumer and enterprise social is the perception that it's a toy, here's			

<sup>16</sup> Subscripted numbers in this column show the number of quotations out of which the particular codes are generated.



		a picture I had for lunch, like it's Facebook, here's another stupid picture of me doing something silly...'			
INV-S-L4		'Sometimes I'm surprised that a technology like Google+ was accepted at [Drugster]. Because [Drugster] by, you know, and you're a by people [sic], I guess, you know, especially Germanians [Germans] are they're very...very very private and Google+ itself is a very social platform, it's a very open platform.'	Work-life privacy <sub>7</sub>	Fear of intrusion	
INV-B-L27		'Erm, I think. . . lets say things would just stop me from the beginning for me with Google+ for example is that it's, I know again its a culture thing but mixing business life and private life is something.'			
INV-B-L2		'I mean practically there's so many dos and don'ts and hurdles and it's not part of the enterprise agreement and it's difficult'	Enterprise agreement <sub>8</sub>	Legal challenge	
INV-B-LCO1		'every country has their own laws, and that's something that I think was like something (sic) that I didn't think would be such a challenge in the beginning.'	Legal <sub>12</sub>		
INV-S-L4		' So, I see the challenges that on legal in you know privacy people have with Google+ [sic]'			
INV-S-E16		'Google+, I think, there's a lot of talk about you know, where do they take Google+ next and the main product manager of Google+ left Google and now they're kind of re-constructing Google+ and taking some of the features out or making them separate. I think that's healthy, I mean, at some point I think it was trying to do too many things and the interface was starting to be a bit confusing.'	User interface <sub>10</sub>	Technological challenge	
INV-S-E6		'So, I think we need to work with Google and figuring out how the activity that you have on Google+ can integrate better with the rest. Right now, it still feels a bit separate.'	Tech integration <sub>9</sub>		

Table 9: Sample analysis of data done in nVivo for OPP challenges

Following, the themes of the challenge of usefulness, the perception of casualness, fear of intrusion, legal challenge, and technological challenge emerged as the stumbling blocks for controlling actors as they sought to enforce Google+ as an OPP. Additionally, Drugster's survey data that was made available to me (Appendix 4) also supported these themes identified from the interviews. In that data, 222 out of 993 (22%) IT user respondents and 64 out of 231 (28%) business<sup>17</sup> users indicated their dissatisfaction with the technology. They also gave reasons that corroborate what emerged from the data. These are further discussed in the following sub-sections.

#### *6.2.2.1.1 The challenge of usefulness*

Employees wondered why another social technology tool was needed. They felt inundated with several other social technologies in the past and wondered what was unique about Google+. An employee stated,

'Like every month there's a new tool, I mean, I get a lot of e-mails 'Oh, this. Do this. Do this.' I mean, you don't go to all of these tools. You know, you wanna get your work done, at the end of the day, I wanna get my work done. I don't have time for all these different tools. So, a lot of the people kind of like, you know, avoid reading these e-mails and I don't think that's something you can avoid, uhm, also, many people question how social [technologies are]<sup>18</sup> useful in the enterprise.' (INV-B-E36).

This challenge was also one faced by the controlling actors when they met with the upper management. Nonetheless, they circumvented this challenge by aligning with upper management's overall objective in order to sell the technology's cost saving feature as indicated earlier. Conversely, employees wanted what would be useful to get work done and the commercial argument (of the technology's cost saving capability) was not enough. That was something for upper management to think about. As a result, the challenge of the technology's usefulness remained as the controlling actors sought to advance the network.

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<sup>17</sup> Drugster's survey grouped respondents as business users and IT users. That is, employees in IT functions and employees in other business functions. Here, I paid attention to the business user data because an IT user data is already 'biased' being inherently in favour of the technology. Nonetheless both categories show a level of dissatisfaction with the technology.

<sup>18</sup> Participants often used only the word 'social' to refer to 'social technology' and the word 'tool' to describe how they conceptualise it.

#### 6.2.2.1.2 *The perception of casualness*

From the data, employees worried that Google+ was more of an informal social media application than what was needed for the organisation's internal business needs like communication or collaboration. The other social technologies available had been marketed as tools for professionals in the workplace. For instance, *Chatter* is associated with Salesforce, *Yammer* is associated with Microsoft's suite of applications, *Webex* is primarily for business use, etc. From the interviews, no participant associated these available social technologies with cat videos and other playfulness found in the mainstream social media like Facebook, Twitter, Google+, among others. This is also supported in the Drugster pilot survey data made available to me (Appendix 4). Google+ thus suffered the perception of informality, lack of seriousness and lack of professionalism. As confirmed by the Google+ Component Owner,

'Many people are like, 'What do I need social [technologies] in the enterprise for? I don't want to share my lunch pictures, I don't wanna share selfie, I don't wanna share cat videos. What is social [technology] in the enterprise need?' (INV-B-L-CO1).

This perception of Google+ among employees hampered its acceptance as an OPP.

#### 6.2.2.1.3 *The fear of intrusion*

Other employees who were avid social media users like Facebook, Twitter, Instagram, argued that they would like to have a clear distinction between their work lives and their private lives. This is because some individuals were already on Google+ as a social media platform that they used to be in connection with their family and friends outside the work environment. Thus, the implementation of Google+ inside the organisation threatened their work-life boundaries. They felt that bringing Google+ into the organisation would open up their private Google+ accounts for work colleagues and managers to look into. In fact, Drugster's own survey data indicates that 40% (89 out of 229) of employees who were not in IT functions had problems with privacy settings of Google+.

Although users of Google+ do not necessarily have access into another user's profile, knowing that the technology was now part of Drugster's toolkit would allow work

colleagues to freely connect with others across the Google+ platform. Notwithstanding, the netnographic analysis of the technology showed that Google+ enabled users to categorise their connections into groups and therefore concerns about work-life privacy were disputable. But this remained a challenge for the controlling actors and the implementation team in persuading employees to pass through Google+ as an OPP.

#### *6.2.2.1.4 The legal challenge*

The legal challenge occurred in two ways. First, the external regulations in Europe, which is the GDPR, meant that the controlling actors and their implementation team relied on the legal department of Drugster to ensure that Google+ satisfied the law. This involved developing mechanisms that ensured that employee data were safely held within the organisation. Second, because Drugster is geographically dispersed, the Google+ implementation was faced with country-specific legal frameworks. For example, managing this process in China took a different approach than managing it in California. The Google+ Component Owner for instance noted,

‘every country has their own laws, and that’s something that I think was like something (sic) that I didn’t think would be such a challenge in the beginning.’ (INV-B-LC01)

Additionally, governance groups like the Workers Union were reluctant in accepting the benefits of the technology to employees. They expressed concerns about how employee data would be handled and whether Google could be trusted with protecting the data. Accordingly, the implementation team learnt that the legal implications of enforcing Google+ as an OPP were a challenge. Moreover, they could not override the concerns of these governance groups.

#### *6.2.2.1.5 The technological challenge*

Being a relatively young social technology – Google+ was founded on 28<sup>th</sup> June, 2011 – the technology came with its own challenges to potential users. It was not as popular as Facebook and most of the employee base found the technology something new to learn (Fiegerman, 2015). Facebook, for instance, at the end of the first quarter of 2017 is reported to have 1.94billion users while Google+ has 111million users to date (Statista.com). The user-interface of the two platforms are organised differently.

Accordingly, those employees who had Facebook accounts still needed to learn how to use Google+. This challenge was more so for those who were not technologically adept.

At the same time when these challenges were emerging, a Mashable article was published that painted a gloomy picture for the implementation team and the controlling actors. The article titled, 'Inside the failure of Google+, a very expensive attempt to unseat Facebook' by Fiegerman (2015), was being rapidly shared across major social networks as well as inside Drugster. In fact, the article has now been shared over 35,200 times according to Mashable's own velocity graph analytics. The article cast uncertainties on the sustainability of Google+ as a social technology platform and especially doubted Google's willingness to continue to support the technology. This situation threatened the implementation process as well as efforts that had been put in place to ensure that Google+ was the OPP. Accordingly, it became clear to the implementing actors that Google, the developer of Google+, was needed as an external actor, that is, to offer assurance that Google+ would remain supported.

Internally, Drugster's own legacy *Intranet* technology could not be ignored. It was the go-to place for employees for all internal news dissemination as well as other reports. Making the Intranet as a component of Google+ would strengthen the position of the latter as an OPP in the organisation. This process was only feasible with technological means and it proved difficult to do. Additionally, although the Drugster-Biomed merger was achieved in principle, their technological systems remained different. Biomed had Google services but Google's software still recognised Biomed as a separate entity. To merge both organisations technologically was another challenge confronting the implementation team. The controlling actors thus negotiated all these challenges in different ways in order to maintain their objective of Google+ OPP.

#### 6.2.2.2 Circumventing obligatory passage point challenges

In order to enforce Google+ as an OPP, aligning with upper management's objectives enabled the controlling actors to exert influence and obtain their mandate. However, the challenges faced in enforcing the OPP among employees and other lower level managers evoked various other strategies from the implementation team and controlling actors.

First, whereas with upper management, the challenge of ‘just another tool’ was managed by selling the technology’s cost effectiveness, the approach taken for employees was to propose the various user benefits of the technology. With Drugster’s mix of employees of various generational differences, the implementation team believed that proactively creating an environment that attracted and retained millennials was necessary for the organisation’s future. Having Google+ as an internal platform for work, they argued, created the ideal environment for the younger generation in whose lives these social technologies were already ubiquitous. The project manager of the implementation for instance states,

‘...millennials and young kids are not using email they’re just using social. So it’s you know from a corporate perspective the thing that’s going to make an employer attractive to these people. It’s about how we work and how we do business...’ (INV-B-L3).

As a result, the implementation team advanced the various benefits of using Google+ including knowledge sharing, openness, opportunity to network on projects, real-time collaboration, and so on. However, this strategy induced further questions from employees. Because there were other *tools* that already provided these benefits, they wanted to know what other benefits Google+ offered that was not already there. This was because the *problem* that Google+ solved was not exactly known. In other words, solutions were offered for a problem that did not exist, leading to an increase in enquiries about the benefits. The implications are further examined in the Discussions chapter below (i.e. Chapter Seven).

Second, in order to address the perception of casualness associated with Google+, the controlling actors organised training workshops to educate employees on the utility of the technology. By educating participants at the workshops, they dispelled the idea of its ‘casualness’ and instilled in employees the importance of such a technology in contemporary organisations. They used stories from successful implementations at other organisations as well as in Drugster’s own pilot stage as strategies of influence. These training workshops were mandatory and threatened the closure of Google+ accounts of those who did not participate in the workshops (See Figure 16 below). The workshops also served a second purpose of circumventing other challenges the implementation team faced, which are discussed in the following paragraphs. This

strategy was also identified as part of the *interessement*<sup>19</sup> devices used by controlling actors in their bid to establish the Google+ actor-network.

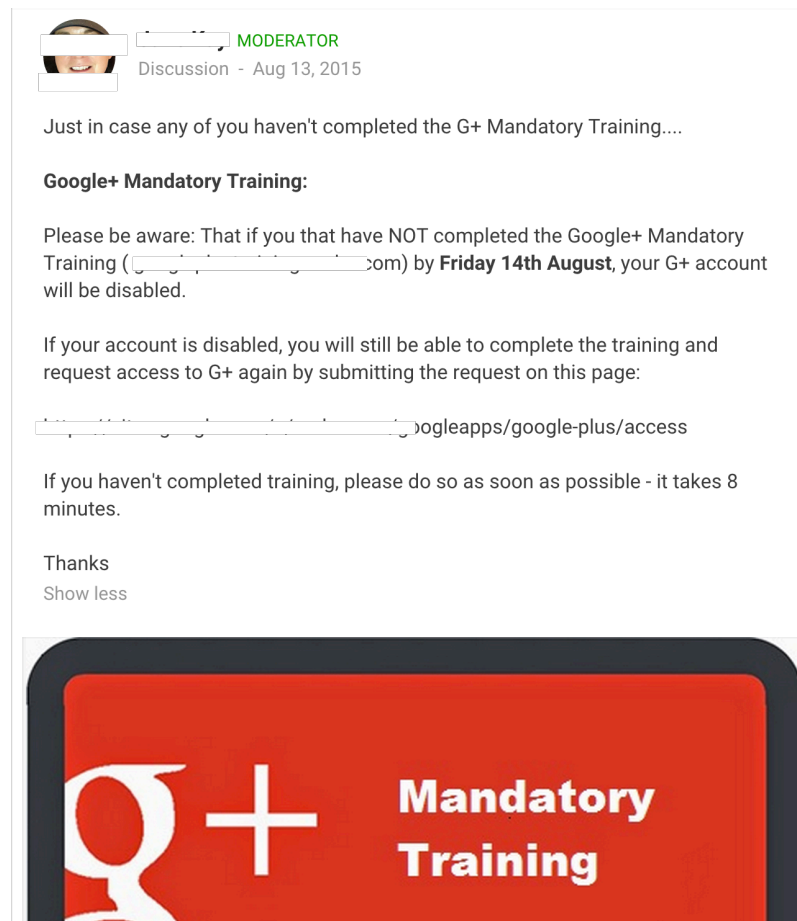


Figure 16: Mandatory training workshops as interessement device for network building.

Third, the implementing actors engaged the affordances of the technology itself to address the challenge of the fear of intrusion. Here, they organised training workshops to show employees how the privacy settings of Google+ enabled them to shut-off other actors from prying into their personal profiles if they so wished. Moreover, they assured employees that new work-based user accounts would be created for the purposes of the Drugster Google+ platform. These new accounts would not interfere with their private accounts; they would be private on the platform and closed from external user accounts. Here, I found closed Drugster Google+ communities on the platform. I could not enter a Drugster Google+ community until community managers (also called 'community

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<sup>19</sup> All four moments in Callon's (1986) sociology of translation are discussed in Chapter Three. Regarding the findings, these are examined again in detail in the discussions chapter in Chapter Seven.

owners') granted access through a hyperlink. The findings of the netnography further illustrate this outcome. For those employees who attempted joining a Drugster Google+ community with their private accounts, an automatic response was triggered by the technology that directed potential community members to use their Drugster work accounts instead. Figure 17 below is a snapshot of this technological directive.

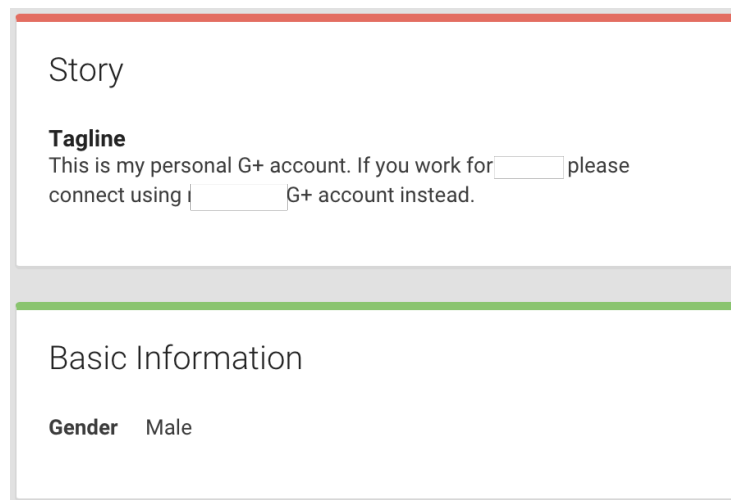


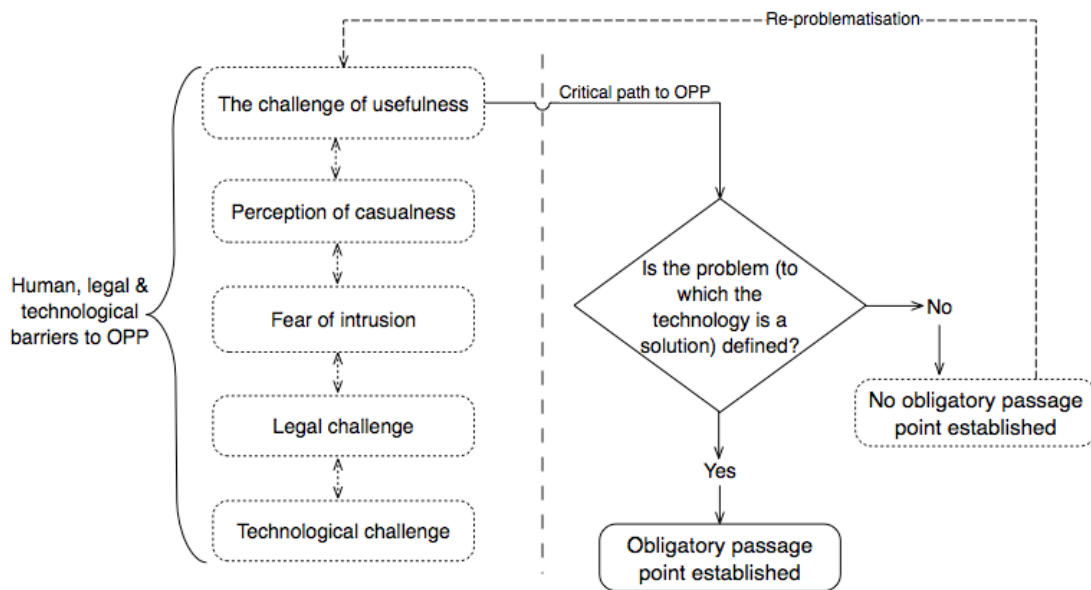
Figure 17: Technological delegate to separate private accounts from Drugster communities.

Fourth, the implementing actors addressed the legal challenges on a case-by-case basis. For cases that involved implementation of Google+ at other countries outside Europe and the US, they received advice from Drugster's legal unit. This was to ensure that the laws in various countries were followed in their bid to deploy the technology across the various geopolitical landscapes that Drugster operated in. In Europe, conditions that demonstrate the fulfilment of regulations prescribed by the GDPR were negotiated with the Workers' Union. By bringing the GDPR as an actant in the negotiations, the Workers' Union were satisfied to the extent that steps were taken to ensure privacy and data protection.

Fifth, because employees at Drugster cut across various generations, training sessions for the technology and in some cases, one-to-one illustrations for various groups and senior managers were conducted. This was to address the technological challenge. The training sessions familiarised potential users on the how-tos of Google+ in order to fill the knowledge gap between the tech savvy (who were mostly millennials) and those who were not. Additionally, Google+ community managers served as first line of call for



those who needed any technological assistance. These community managers were human *delegates* of the controlling actors and the implementation team in order to serve the entire organisation. Furthermore, because the Mashable article cast doubts on the sustainability of the technology itself, the controlling actors met with Google to negotiate an Enterprise agreement. Google had announced that it would not cut support for Google+ and to have that documented in an Enterprise agreement would allay fears of all stakeholders involved.



**Figure 18: Critical path to establishing Google+ as an OPP**

Overall, although the mandate to establish Google+ as an OPP was obtained from the upper management, this was not practically enforced. Strategies deployed to address the OPP challenges yielded outcomes that only solved the challenges but did not necessarily enforce Google+ as an OPP. As shown in Figure 18 above, the challenge of usefulness remained unsolved as other competing technologies continued in the organisation. This became the critical path to enforcing the OPP. With no OPP, the implementation team relied on strategies that generated interest in the technology rather than enforce it as obligatory. Consequently, the cycle of having to generate interest in potential users by advancing only the benefits of the technology continued thus resulting in a process of ‘re-problematisation’. Re-problematisation is further examined in the Discussions Chapter (see Chapter Seven).

### 6.2.3 The Drugster *interessement* approach

From the literature review, *interessement* is that ANT moment of translation in which a controlling actor advances how a particular solution solves a challenge or a problem for the other actors being influenced (see Chapter Three). At Drugster, this occurred in two ways.

First, having navigated most of the challenges to establishing Google+ as an obligatory passage point, controlling actors took advantage of the growing number of employees who had high interest in Google+ to ‘interesse’ others. As shown in the narrative in Section 6.2.1, a phenomenon occurred in which some employees who were not part of the pilot project heard about Google+ and started asking for the technology. As indicated by a member of the implementation team,

‘What has been interesting is that we’ve try to keep our finger on the pulse of groups that are coming around and saying, hey, I think I have this need. And for me, what has been most inspiring of the last year is kind of the quality of the request is going up and up and up’ (INV-B-L1).

This demand was also one of the arguments used by the controlling actors to strengthen their business use case to upper management as they aligned with their strategic goals in order to persuade them (INV-B-L2; SC-B-L2). For this increasing group of employees who asked for the technology, *interessement* occurred by the sheer knowledge that Google+ was being deployed in the organisation.

‘The early requests were like, ‘Give me the tool. I don’t know what it does, but I want it. Someone else has that I don’t have, I want it’’ (INV-B-L1).

This occurred without any input from controlling actors. By occurring itself, *interessement* generated and replicated itself among those individuals who wanted Google+ in what I refer to as a process of ‘auto-*interessement*’. I make reference to my diary notes in which I indicated my own feeling after conversations with a number of participants (see notes in the text box below).

Conversations with participants about Google+ seem to be like Marmite. Some people just love the technology and go for it while others simply feel it is a burden. I feel like I’m evoking people’s emotions by my questions. Is this a good thing? I have something to reflect about (29/07/15 Diary notes [after speaking with INV-R-L13]).

Second, to interesse employees, controlling actors used stories of successful implementations elsewhere as well as at the pilot stage to stimulate interest and establish relevance of Google+. Because solutions were being offered without showing what specific problem Google+ was solving with respect to the other available social technologies, the controlling actors used the mandatory workshops as indicated earlier in Section 6.2.2.2 to generate interest in the technology as a whole. By sharing success stories and advancing the benefits of the technology, implementing actors 'interested' employees in their bid to expand the network. The Organisational Change Manager for the Google+ actor-network states,

'...a lot of what we're doing is actually selling our new stories and our value proposition and we then have to identify the senior IT decision makers who then normally assign the single point of contact and they become our...our bridge if you like into the functions...' (INV-B-L2).

Additionally, the 'single point of contacts' that were appointed also played the role of advocates who were instrumental in advancing the benefits of the technology to potential users.

#### **6.2.4 The Drugster enrolment strategy**

The moment of *enrolment* in ANT's translation is the stage where various actors are assigned specific roles in the emerging network with the aim of advancing the network. While auto-interessement ensued alongside the use of stories to advance the Google+ actor-network, the implementation team enrolled advocates, community owners and community moderators to advance the network. Many of these actors who were enrolled belonged to the auto-interested group of employees who were enthusiastic about using the social technology in the organisation. These actors were enrolled either by coming forward themselves to the implementation team or through Google+ training workshops where controlling actors inspired employees to embrace the technology in light of the benefits delivered. At these training workshops, they also identified and empowered individuals as advocates who would partner with them in advancing the Google+ network of relations. The organisational change manager stated,

'...we're raising awareness we're raising desire we're giving people knowledge so that they've got the ability to follow through and reinforce

what collateral information, report, coaching, training materials that they need in order to be our advocates and to be our partner...' (INV-B-L2).

The enrolment of these groups of actors – advocates, community owners, and community moderators – soon led to the creation of Google+ communities across the organisation with 200 communities springing up. Activities within these communities included sharing of news items within Drugster, posting of hyperlinks of articles that are relevant to their work, seeking clarification on projects, celebration of success, and so on. I offer a lot more on these in the netnographic findings in Section 6.4 below. Furthermore, community owners who created these online communities simultaneously served as gatekeepers. Moderators supervised activities within the community and worked together with community owners to co-create and enforce community rules. Members of the communities also made suggestions that were incorporated into the community rules. From their training, community owners and moderators learnt to ensure multivocality, participation, and co-creation. Accordingly, the community rules were not passed down to members but were shaped together by all actors in the community. Once agreed, its enforcement was now the ambit of the community owner and moderator. In fact, each community was unique and some communities worked together to co-create their community logo, which visibly identified the community on the Google+ platform.

As the network grew, communities also multiplied. However, many of these communities emerged along the already established departmental lines in Drugster. Example, a community owner in the finance department created a Google+ community and invited his colleagues to join as members. Soon, this community grew and became an exclusively finance-only community as colleagues invited other colleagues in the same department. While some communities were set up solely for the purpose of taking a department into the Google+ online space, others inadvertently became communities for only specific departments within the organisation without such initial aim. As stated earlier, one reason for the Google+ platform was to enhance inter-departmental interaction, break silos, share knowledge, and so on. Conversely, the communities have turned out to reinforce the very idea of the tribal communities seen in closed departments albeit in the digital space. In fact, in the implementation team's own survey

report made available to me, Google+ communities are grouped into their various departmental functions (see Figure 19 below).

		members
[redacted] Champions Community	HR	75
[redacted] Intranet Community	Comms	86
[redacted] Communicators Community	Comms	88
[redacted] Forum	HR	242
Controllers Community of [redacted] Europe [redacted]	Finance	73
[redacted] Leadership Learning & Development	HR	37
HR Career & Learning	HR	15

Figure 19: Departmental Google+ communities at Drugster

Figure 19 above (main department and company names anonymised) is a snapshot of a table listing some of the Google+ communities emerging along departmental lines. The figure also shows that some departments have more than one community, thus breaking the respective departments further into smaller closed units within the same department. This led to the emergence of an unintended consequence I have referred to as ‘digital silos’.

Consequently, newly evolved roles of actors who acted as digital silo breakers emerged within the organisation. Individuals who were part of activities in more than one sub community joined the relevant communities within their departments. The controlling actors themselves enlisted in various communities. Whereas in some communities they were *community owners* or *moderators*, in other communities, they were there as *members*. In the former, they were recognised as managers by the designation of ‘owner’ or ‘moderator’ on the platform whereas in the latter, they were just as every other member. In either case, they showed their presence in more than one community by cross-posting discussion topics from one community into another. Community moderators and owners soon networked with one another in order to share ideas about community ‘best practices’ and cross posting. They called their network a ‘moderators’ club’. A community moderator noted,

'We decided to form a club of moderators and having one person from each sub-region in order to have a better look or presence and to have a better relay in the different clusters or group of countries' (INV-B-L14).

Other actors who were in more than one community also emulated this behaviour and often cross-posted ideas from one community onto another. By stretching multiple linkages across various communities, these actors ensured that bridges were formed that made the digital silos porous.

### 6.2.5 The Drugster mobilisation strategy

In ANT's moment of *mobilisation*, enrolled actors are rallied or displaced from their original positions thus rendering them mobile (see Section 3.0.4.3). To maintain commitment towards a 'shared goal', all enrolled actors are mobilised to form alliances that ensure stabilisation of the network. By enrolling actors as advocates, community owners, community moderators, as well as the emergence of actors as silo breakers, the controlling actors and their implementation team decided to roll out the technology globally across the organisation. On the surface, everything seemed to be in place for mobilisation of employees into various Google+ communities across Drugster. However, the findings show that three stumbling blocks still remained to be overcome to be able to fully mobilise allies into the network. These stumbling blocks were structural, human, and technological challenges that persisted from the earlier moments of establishing the OPP and throughout the translation phases (see Section 6.2.2).

The *structural* stumbling blocks included the legal frameworks that remained as immutable mobiles<sup>20</sup> in the network of relations. Although negotiations were held with the Workers' Union and steps taken to ensure that concerns that bordered on privacy were upheld, the EU's GDPR remained resolute. It could not be breached. Therefore, the implementation team liaised with Drugster's legal unit at every stage of the process in order to ensure compliance to the laws. The *technological* stumbling blocks included the ongoing negotiations to establish the Enterprise agreement from Google, the lack of integration of Google+ with Drugster's legacy Intranet, and the technological schism of the Drugster-Biomed divide although both organisations were officially now merged. The *human* stumbling blocks were the perceived mundanity of Google+ by those groups

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<sup>20</sup> Immutable mobiles in ANT are actants (e.g. Inscriptions) that can be moved from place to place without distortion, i.e. they 'allow translation without corruption' (Latour, 1986b, p. 8).

of employees who compared it with Facebook. This also included the perception of Google+ as a new technological entrant by an older generation who were confronted with a new learning curve for this technology. I referred to these as *stumbling blocks* because mobilisation ensued apart from them.

In *mobilising* employees and managers into the Google+ network, advocates, community owners, and community moderators rallied employees into the online spaces they created and managed. They sent *invites* from the Google+ platform into the email inboxes of their targeted groups. These invites were delivered as hyperlinks inside the email inboxes of the recipient. In order to join the community, the recipient of the invite clicked the hyperlink and was directly transferred to the Google+ community as a member. Simultaneously, training workshops and seminars organised by advocates across the organisation served as channels for mobilisation into the Google+ actor-network. As the communities multiplied, other employees emerged as leaders who also received training from the implementation team and then dispatched to create communities in their various departments.

For some departments, use was made of non-human actants to mobilise employees into the Google+ network. A notable example was the use of the QR Code as a technological ally. This ally was enrolled as a delegate for Google+ in mobilising employees into the marketing department's Google+ community where employees were spread geographically over many sites. The manager of this department stated,

‘one of the challenges we wanted to address is to be able to connect the people who are located in the sites and we have, in our own organization, we have 40 sites, 40 locations where we have people working and those people really feel very remote sometimes.’ (INV-B-L14).

With the geographical spread, engaging the services of the QR Code as a delegate helped mobilise employees who were remote from the headquarters of this Drugster's departmental unit. Here, potential community members were given paper cards with QR Code imprints. To be mobilised into the Google+ platform of the community, potential members scanned the QR Code using their smartphones. Immediately after a successful scan, the user was greeted with a button on the screen which when tapped automatically mobilised the user into the community. Figure 20 below shows an example of the QR Code that was engaged as an ally for mobilisation.

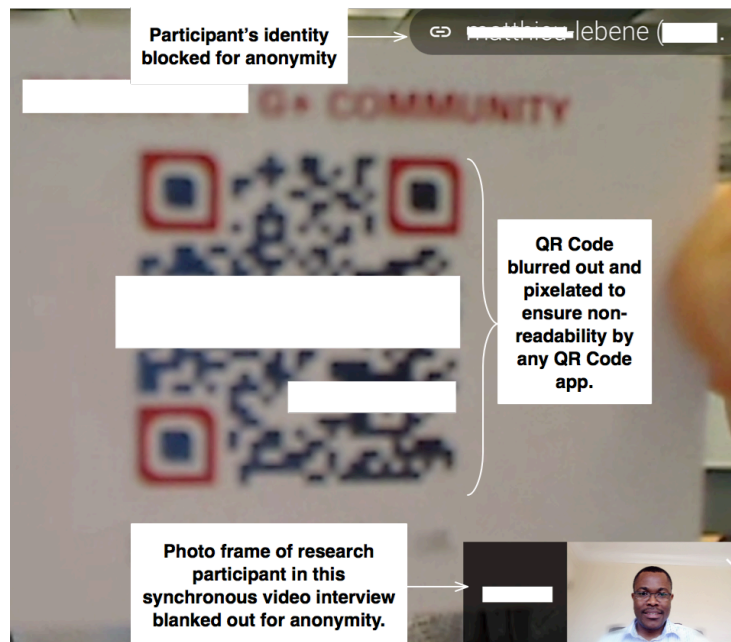


Figure 20: QR Code as a non-human delegate to mobilise actors into the network.

As a non-human ally, the QR Code worked alongside managers who wished to advance the Google+ network of relations. These paper cards could reach where managers could not. As a result, they accomplished far more than the managers could physically do across the global organisation. In fact, the researcher found that even a photo snapshot of the QR Code as shown in the image above when scanned mobilised an individual into the community's doorstep. However, the use of these technological delegates was not without challenges. The QR Codes added pace to mobilisation. Curious employees simply scanned the code to see where it would lead them. With these QR Codes, individuals got mobilised even before they knew what the communities they joined were about (INV-B-L14). This created a sense of discomfort and a feeling of lack of information flow from managers. A member of the implementation team stated,

'...I think it's been very uncomfortable to some people, how fast things have changed and how they've continually continued to change. So, that's like a- it's almost like an expectation that things will always change and that's, you know, also going with Google is like that..' (INV-B-E5).

Consequently, large numbers of employees were mobilised into the community but few actively engaged in posting topics for discussion or in contributing to discussions being held. The community owner stated,

'The community is currently, at most, 600 members and I think that's- for us this year, the focus has been more about the intent to drive



greater content in the community rather than bringing more members because having more members that are inactive doesn't really bring value.' (INV-B-L14).

Throughout the process, the findings demonstrate how transmission of leadership occurred in the advancement of the network. First, in *problematization*, the controlling actors aligned with upper management's objectives in order to exert influence, they also respond to the various OPP challenges as they sought to enforce Google+ as an OPP. Second, in *interessement*, the findings show how controlling actors used interessement devices such as workshops and success stories to influence other actors; simultaneously, auto-interessement emerged in the process of translation. Third, in *enrolment*, one can see how enrolled actors – advocates, community owners and moderators – carried out the transmission of leadership by influencing others into the Google+ communities they created. Fourth, in *mobilisation*, the findings show how the transmission of leadership extends beyond human actors in that a technological delegate – the QR Code – now participates in influencing others into the network of relations. The transmission of leadership thus spread from controlling actors through to the heterogeneous network where it also engendered a feeling of discomfort among some individuals. Figure 21 below shows the schematic representation of the process, building on Figure 18.

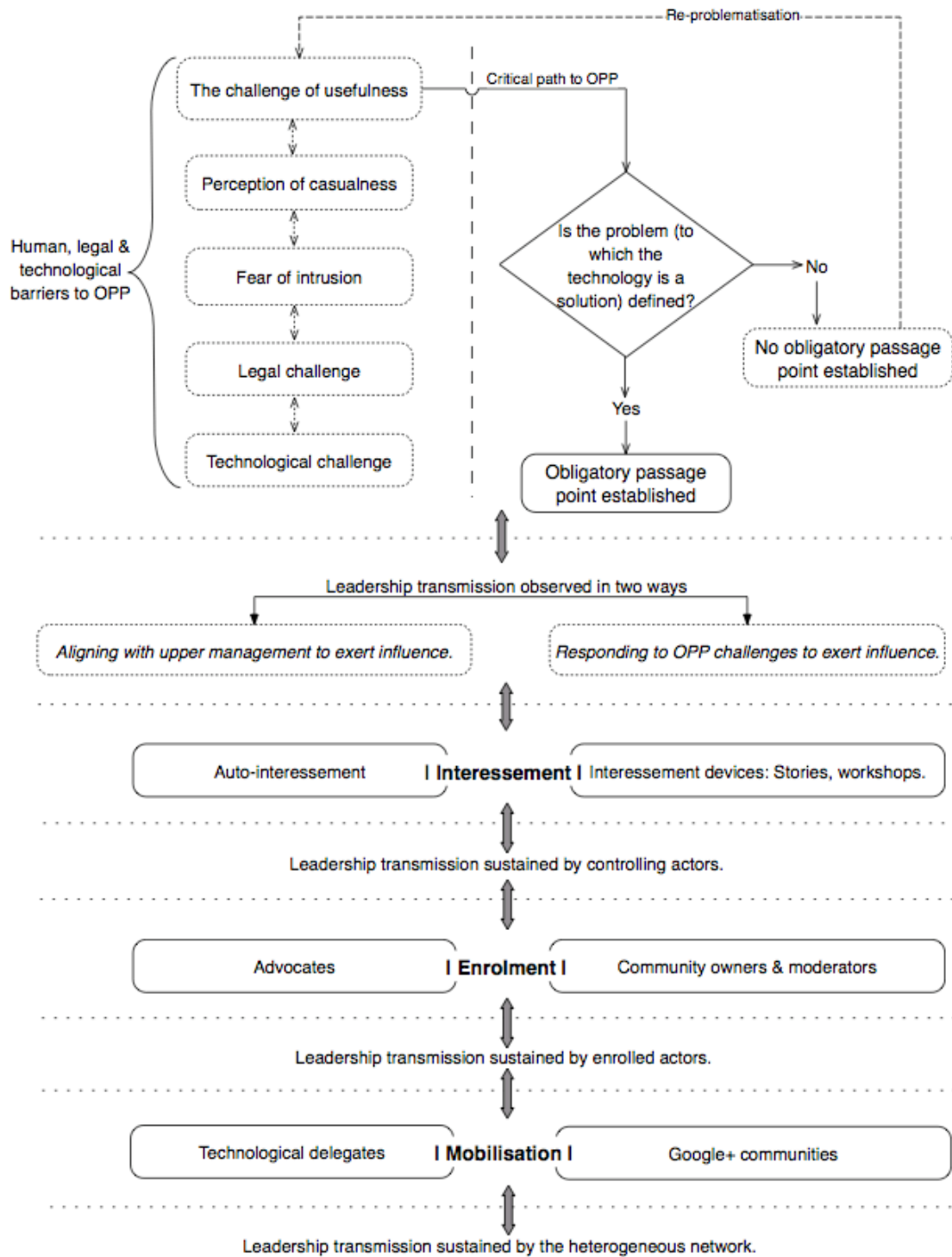


Figure 21: Transmission of leadership in the process of translation at Drugster.

In referring back to the research questions, shown below,

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager/employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

the implementation of the technology as observed through the lens of ANT's translation seems to decentralise leadership from individuals to the heterogeneous network as also illustrated in Figure 21 above. Such devolvement of leadership in the network of relations is examined further in Section 6.3 below.

### **6.3 The practice of leadership in the construction of the network**

The practice of leadership in Drugster occurred in many different forms. Both employees and managers demonstrated leadership in some way or talked about the concept in the way they understood and practised it. The study found that leadership at Drugster was as much a lived experience as it was a part of their daily jobs. In talking about their jobs, participants either professed to be in some leadership role or acknowledged they were not in leadership roles. Additionally, the findings also show that there are those that saw their roles as requiring leadership in a positional sense and those that spoke about their actual work activities as part of leadership. The quotations in Table 10 below illustrate this finding from the coding process.

Relevant Interview question	Participant	Quotes	Codes	Themes	
<p><b>Can you please tell me about your role in the organisation, its structure, etc.?</b></p> <p><b>Now let's talk about leadership..</b></p> <p><b>What activities would you normally undertake as part of your leadership? (In general, and then in the social technology?)</b></p>	INV-B-L6	'I have no leader position. I have more coordinating- coordinator position.'	Professed 'followership'	Role identification	Leadership as lived experience
	INV-B-L7	'Yeah, I'm not really a leader. So, I'm more kind of an individual contributor, I think that's how they are calling it. So, uhm, I think I'm - it's a difficult question, to be honest - right now, I have this student, so I'm a leader of a student.'			
	INV-B-L1	'I'm not in a leadership role, but I influence others and kind of work through the organization and get others to take on and carry the torch and spread the word. So, I, you know, help a lot of people to join on people's teams, I give them guidance and insights and kind of share best practices from place to place.'			
	INV-B-L2	'So I have a leadership role and I am under the management team with [Name], uuh and the leader of the other groups. I don't have any direct reports so I am slightly different to the other management teams.'	Professed leadership		
	INV-B-L5	'I work in Group Communications, I'm on the Leadership Communications Team and I report to a global view group communications. Uhm, as the Senior Adviser and Business Partner to the head of Group Communications, uhm, I am responsible for communications to communicators throughout the worldwide company.'			
	INV-B-L8	'Uhm, so, my role in the company is I work in a training team in the area of IT and then, the role is called Training Solution Manager. So, I'm assigned to IT projects and I'm leading in the IT project and the training streams.'			
	INV-B-L9	'I'm Legal Counsel, working in the Legal Department at the [Drugster] headquarters. What other details would you need? So, I'm the leading note [notary] team.'	Positional leadership		
	INV-B-L3	'So my role in the organisation is I'm working in [ABC department] and as an organisation we have a separate PM department all the project management department where all the PMs are sitting and running the various IT projects in the organisation.'			
	INV-S-L10				

	INV-S-L4	<p>'Yes. So, uhm, I am the team manager for the Social and Custom Apps Team within [ABC department]. I'm based in San Francisco, my team is in both San Francisco and Brussels and then, we have one person in Madrid.'</p> <p>'...since I'm the Component Owner for Google Plus, I look at what the road map for Google Plus is, how it can be used in influencing the way people communicate with each other and foster collaborations in a global environment.'</p>			
	INV-B-L7	<p>'what I'm doing is I'm in contact to this business and this other stakeholders representing our tools, our team, but also doing some kind of consulting.'</p> <p>'what I'm doing is I go to functions and groups and all different types of people to really talk to them about social and how they can use Google Plus for fulfil their needs.'</p>	'Functional' leadership		
	INV-B-L1	<p>'I'm not in a leadership role, but I influence others and kind of work through the organization and get others to take on and carry the torch and spread the word. So, I, you know, help a lot of people to join on people's teams, I give them guidance and insights and kind of share best practices from place to place.'</p>			

**Table 10: Leadership in role identification.**

In fact, it was surprising to find that employees who initially said they did not consider themselves leaders or did not believe they were in leadership positions actually practised leadership in their various contexts. Example, an employee stated,

‘So, you know, I’m not in a leadership role, but I influence others and kind of work through the organization and get others to take on and carry the torch and spread the word. So, I, you know, help a lot of people to join on people’s teams, I give them guidance and insights and kind of share best practices from place to place.’ (INV-B-E1).

From the above quote, one can observe that leadership seems to be associated with an individual’s role or position in the organisation. For instance, members of the implementation team who worked alongside the controlling actors argued that successful Google+ implementation was only possible if leadership in a positional sense was involved. The notion of leadership involvement referred to upper management’s active participation in discussions within the Google+ online platform. The involvement in online discussions by managers in high positions was seen as a leadership practice that would encourage others to participate in order to stabilise the network. Employees were thus placed in a ‘follower’ position that needed the influence of managers for network stabilisation.

The ‘leader-follower’ distinction observed in Drugster was amplified by the nature of the technology being introduced. Because the perception of Google+ as a Facebook-like application trivialised its usefulness for office work, managers involved with the implementation used engagement workshops to show *how* different Google+ was. A Project manager said,

‘We are really going forward with a lot of manpower providing consultancy to interested groups so pre-engagement sessions with them to explain them [sic] umm how Google plus works and what they can achieve with the community’ (INV-B-L3).

Historically, ‘followers’ looked to their ‘leaders’ to show them *how* things worked. In previous projects within the organisation, ‘the questions were more about ‘How do I do it?’’ (INV-B-L1). Thus, the introduction of a new actant in Drugster’s network often positioned managers as experts who needed to show employees how to work with newly introduced actants. The findings show that this historicity of the leader-as-expert who ought to be followed was also amplified by the nature of the technology, which in

this case was Google+. The perception of its mundanity meant that an employee could potentially be seen as wasting office hours if they were active participants on the Google+ online platform. As a result, by showing employees how it was different from other technologies like Facebook, it instilled confidence in employees in order to mobilise them into the network. Additionally, the nature of the technology as a social media application meant that if managers actively participated in conversations on the Google+ platform, they would demonstrate its usefulness by walking the talk themselves. This quote from a manager is salient:

‘Leadership involvement helps explain some of the ‘why’, s it sends the signal that it’s okay and this [Google+] is a place where we can spend time, you know, you’re never gonna get yelled at for checking your e-mail, but you might feel, you know, that, you know, checking in on social [media] updates from others is not a waste of company time.’ (INV-B-L1).

From the analysis, leadership emerged as both a lived experience and a concept that was associated with an individual’s designated role or position in the organisation. As a lived experience, individuals across various levels of the organisation’s hierarchy practised leadership. The implication for me was that I could not argue that it was the implementation of the technology that led to decentralisation of leadership, as it seemed in Section 6.2. Instead, the implementation amplified such decentralised leadership and extended it beyond only the human actors as shown in Section 6.2.5. Moreover, the implementation of the technology conferred new leadership roles – advocates, owners, and moderators – on some employees.

### **6.3.1 Multi-directional influence**

As observed earlier in the findings, the two controlling actors exerted influence on upper management by aligning with the overall objectives of the latter. Here, the controlling actors influenced those above them in the organisational hierarchy in the construction of the Google+ network. Similarly, employees who were not in managerial roles, but got enrolled as community owners and moderators influenced their colleagues in the creation of Google+ communities as the network grew. In the analysis, I assumed that these community owners and moderators influenced individuals who were both

above and below them in the organisation's hierarchy. I made this assumption after I realised that I mistakenly missed out on asking follow-up questions that explored who these communities owners mobilised. However, my assumption was later confirmed from the netnographic analysis. From the netnography, I observed that actors could only join a community when a community owner sent an invite directly to potential community members. Moreover, community membership consisted of individuals who were at all levels of the organisation's hierarchy in relation to the community owners. Arguably, some could have asked to join by themselves through self-enrolment or issue a directive that they be sent invites to join. Nonetheless, the netnographic insights (on multi-directionality) in the following sections confirm the assumption made. The combined methods used in the study thus showed another usefulness in this instance as already argued in the preceding chapter.

As shown, the flow of influence in the network of relations as Google+ was being implemented was multi-directional. Managers influenced other managers including upper management, employees who had no prior leadership positions assumed leadership roles (as community owners and moderators) and mobilised their colleagues. This practice of leadership was made possible by the new technological actant – Google+. However, actors with managerial roles still exerted leadership influence associated with their roles so that the organisational structure and hierarchy was sustained. However, this technological actant also revealed tensions in the network, which are discussed in the following section.

### *6.3.2 Tensions across the Google+ actor-network*

Throughout the moments of translation, tensions existed in the construction of the network. As highlighted earlier, there was an incomplete process of establishing Google+ as an OPP. By advancing only the benefits of the technology and not the specific problem it solved, users questioned its relevance. This is seen in the following quote from a young manager:

'To be honest I mean, you know, I might be [a] **very old-schooler** here, right? I have a mobile phone, I have Hangouts, I have Skype, I have Messenger, I have an Internet page, so what the heck else do I need? Sorry to be that honest, you know, if someone can convince me, yes that's the one, I'll accept it, right? But so far, I don't know what it's



[i.e. Google+ is] for. Okay, there might be one thing when it comes to internal marketing of certain functions, might be okay, but still, is that beyond what the tools we have on-hand today? I don't know, right? But, when it comes to collaboration or sharing or whatever, I get too much information already, right? So, yeah, I don't know what really can convince me, to be honest.' (INV-Si-L17, emphasis added).

Here, a positive drive by the implementation team to make actors embrace the technology produced more questions than it offered answers for potential users. As a result, a void was created which Google+ did not fill as an OPP from the start. It made those who wanted to know what specific problems Google+ solved for their work feel as though they were missing something, in that a young actor cynically called himself a 'very old-schooler' (INV-Si-L17) – that is, a person who adheres to an old way of doing things (from Merriam-Webster's definition). In other words, 'followers' sought clarity of purpose of the technology from their leaders and not meeting this need resulted in cynicism from the former.

Following, as the controlling actors advanced the Google+ network, the idea of a 'social network' within Drugster via Google+ conflicted with what was really being constructed. The findings show that it was not so much a social network as it was a network ordering, a configuration in which some actors are influenced into the network, others auto-interesse and get enrolled into the network, some are invited into the network, while others continue to question its usefulness. For me as one following the network ordering, an invitation into the network felt like an eviction from the safety of my email inbox into the open space of the Google+ community. I remained in the community as I had negotiated, that is, as a non-participant, but I still felt exposed to everyone. Similarly, unlike their email inboxes, which were invisible to others within Drugster, the Google+ platforms were open spaces where messages were visible to everyone on the platform. For a social network, individuals are nodes connected by ties to other nodes; it is about who is connected to whom. In this network ordering as shown so far at Drugster, individuals are constantly moving actors or actants who are involved in a process to advance and stabilise a network. That is, they responded to concerns raised by employees, aligned with the objectives of upper management, sort legal counsel, organised training workshops, enrolled advocates, community owners and community moderators, and so on. Here, it was not so much about who was connected to whom but

how the process of implementation and its emergent connections held together. Moreover, the lack of OPP from the start reinforced these continual movements and counter-movements observed in the network of relations. Additionally, various narratives surrounding the role of Google+ in the organisation as found in the data also confirm the presence of these tensions in the network. The following quotes from participants in Table 11 illustrate some of these different narratives about why the technology was implemented.

Relevant interview question	Participants	Quotes
<b>Why do you think the decision to implement a social technology in the company was made?</b>	INV-B-L2	'...millennials and young kids are not using email they're just using social. So it's you know from a corporate perspective the thing that's going to make an employer attractive to these people. It's about how we work and how we do business...'
	INV-B-L3	'...[Because] we have all the [Google] applications it makes sense to use all the applications they have in place and then it fits well perfectly together...'
	INV-B-L28	'...people hate emails so you don't have to necessarily give them more of what they hate.'
<b>Why did you decide to implement a social technology in the company?</b>	SC-S-E6	'...[Because] we needed a technology that made you present but not present...'
	SC-S-E4	'...damn it, I guess it is to bring everyone together I don't know!'
	INV-Si-L17	'...I don't know. Because we wanted to be modern ... I think it's more on the Ooh, we wanna be cool like geeks and let's use the latest technology.'

**Table 11: Illustration of different narratives surrounding Google+.**

Another tension that persisted in the construction of the Google+ network was the different attitudes to the technology. This was mostly ascribed to the generational gap in which the younger Generation embraced the technology while the older Generation resisted it. This same argument is seen in the literature as discussed in Section 2.2.5.3. However, the study found that this generalisation did not necessarily hold in that there were actors who readily accepted the technology even though they belonged to the

older Generation. I identified this as ‘mixed generational affinity’ in the data. The following quotes in Table 12 illustrate this:

Relevant interview question	Participant	Quotes	Codes	Expressed affinity for technology
<b>Conversation around generational differences and affinity for technology:</b>  <b>Age range:</b>  <b>&lt;1981 – Generation X</b>  <b>1981-1997 – Generation Y</b>  <b>&gt;1997 – Millennials</b>  <b>Where would you place yourself?</b>  <b>What do you think about these in relation to your own use of technology?</b>	INV-B-L1	‘Well, I’m born before ‘81. So, I should have been digital native, but I would say I’m the oldest of the Gen Y that you’ve come across. I mean, I grew up with the stuff and I’ve done it my whole life’	Gen X high	High
	INV-B-L5	‘...the technology is weird...I feel the way I feel in, uhm, it’s generational.’	Gen X low	Low
	INV-B-L7	‘I’m born 1986, so I’m for the [Generation Y]. I remember we had this big, super large PC and I was playing Captain Comic on a floppy disk and it was amazing and yeah, I was really seeing as how technology was really growing up and I know, for me, it’s really a part of life.’	Gen Y high	High
	INV-B-L8	‘So, I belong to Generation Y, so 1982. Nearly a Generation X, ... when I was a child or younger that I learned how to get along without any kind of technology.’	Gen Y high	High
	INV-S-L10	‘Yeah, I mean, I’m Generation X,... I honestly I’m on Google Plus all the time.’	Gen X high	High

Table 12: Indication of mixed affinity for technology across generations.

The findings show that an expressed liking for the technology did not necessarily relate to what generation an individual belonged to. It was more about the readiness to learn how to use the technology and the technology’s own behaviour. In the former, it was apparent that an actor with little knowledge about a technology would have to learn about it in order to use it. A participant rightly said,

‘You know, I think either is generally true that the younger people- the younger you are, probably the more open you are to sharing and being comfortable in these tools, but there’s other factors as well, so it’s hard to generalize. I’ve seen some more [X] type people also take quite advantage of Google Plus. So, it can be a learned behaviour.’ (INV-S-L10).

However, in the latter, the behaviour of the technology itself was important. As highlighted earlier in Section 6.2.5, one way in which individuals were mobilised into

the network was through hyperlink invites that were sent to people's email inboxes. An example of this invite as sent by a community owner to the researcher is shown below (see Figure 22).

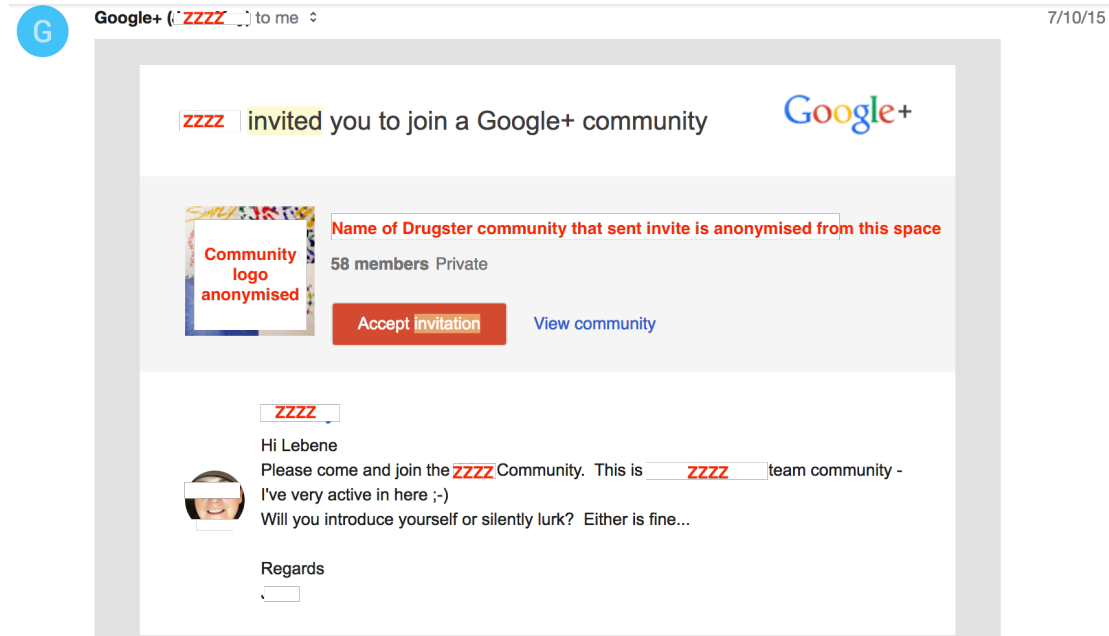


Figure 22: Sample email invite to mobilise actors into Google+ network

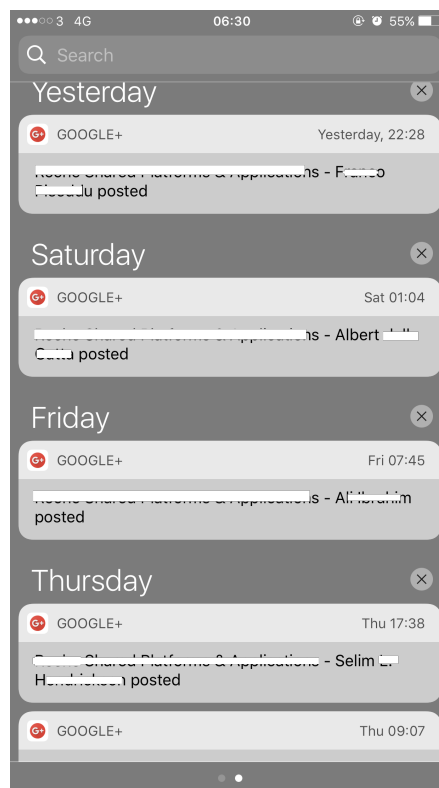
In this case, the email invite came directly from the Google+ platform. Similarly, other activities that occurred on the platform such as postings or comments made on conversation threads also generated direct links to members' email inboxes. Until individual community members turned off this functionality in the Google+ platform's settings for themselves, the technology continued to send emails to members about all community activities. Those who did not know about this functionality faced the challenge of a barrage of email notifications they had to deal with. This was seen as an annoyance from the technology thus creating a tension between its utility and its perceived burdensomeness. Example quotes from a manager and an employee respectively follows:

'I had an increase of e-mails until I switched off this notification stuff in Google+ because I got even more [emails] you know so this was counterproductive...' (INV-B-L9).

'I'm not interested in everything, so when I open my [e]mails, I got all these notifications so I still have to figure out what do I really want to know and what do I just want to know when I have a little bit more

time and, uhm, maybe when check out [sic] some new things. Otherwise, you'll really get overwhelmed...' (INV-M-E11).

Here, Google+ was deployed in the organisation to solve a (non)problem but it also exercised its agency by acting on its own accord on those it was networked with. This situation was compounded for those community members who accessed Google+ using their smartphones. For smartphone users, Google+ sent notifications (shown in Figure 23 below) in addition to the email prompts. Just like it was for email notifications, smartphone notifications also persisted unless the individual member turned off that feature.



**Figure 23: Google+ smartphone notifications**

The findings thus show that although generational gap may account for tensions in the construction of a network involving a new technology as some studies indicate per the literature review, the behaviour of the technology itself must not be discounted. In the findings, the technology had the ability to irritate other actors that are networked with it. In response, managers used the aforementioned training workshops to empower the human actors to control this technological actant that was now part of their leadership domain of influence.

Finally, the construction of this heterogeneous network at Drugster was not without tensions that pertain to what the technology has done to the individual actors' own selves. Human actors mentioned how the technology made them pause to reflect before posting something on the Google+ platform. They thought about whether what they were about to post was 'nethical' – ethics in relation to the Internet – for Drugster's work environment, or whether what they were about to post painted a good picture of who they were or wanted to portray, or whether they would be judged wrongly by their colleagues because of their posts, or whether their posts would be considered harmful to the organisational reputation. Example, a manager in Drugster's Asia-Pacific region expressed concern about company reputation as a result of these social technologies:

'There are some risk[s] we face with the extensive use of WeChat [- a social technology similar to Google+] in China for example, people not understanding the limits and posting things that can be dangerous and can damage the company reputation' (INV-S-L31).

These tensions existed in the construction of the Google+ network. For those who accessed the Google+ community using their smartphones, a feeling of being tethered to the technology was expressed. In other words, they felt compelled to check out the community when notifications arrived on their smartphones regardless of what day of the week or time of day. From the netnographic analysis (see Section 6.4 for more detail), community members were observed posting or commenting on posts before working hours and also during the weekends (see Figure 21 above where a notification was received on a Saturday). In one example, a manager agreed with his partner to have Sundays as the family's no-screen day. He states,

'...we [interview and partner] have an agreement and that also go down to our children that on Sundays we have a text 'sabbatical'. So on Sundays, we have a screen free day, there's no iPhone, there is no computer, there is no screen, there is no television until late evening when we want to see the news. But as long as the children are awake there is no screen on Sunday...' (INV-B-L28).

Although the 'screen free' day sought to break the technology's tether, this manager admitted sometimes sneaking into his bedroom to check the smartphone for Google+ notifications. His sense of duty as a manager was amplified by the presence of the Google+ network he was now managing that he willingly (albeit surreptitiously) broke

the family agreement. Here, the tension created between the family self and the work self was not visibly noticeable in the workplace but at the level of the individual actor.

In a case where this personal tension potentially impacted the workplace, the technology was directly blamed. Its presence brought a speed in real-time communication for problem solving across the organisation that those who used to be a first point of call for problem solving lost their position. Individuals sought the wisdom of the community in answering their needs and not a manager as the first point of call. At the same time, the deployment of Google+, perceived as a non-business social media application, implied that other technologies could be introduced in the future that could threaten jobs. A manager states,

‘The impact on the self probably, let’s say I feel a sense of and I think [Drugster] is a good example of this. I feel a sense of redundancy now, because technology is so fast and change are so fast that you are just starting something you feel can be useful for you and technology behind is already changing...’ (INV-S-L31).

The findings show that the controlling actors did not plan to intentionally induce these tensions in the construction of the Google+ network. The tensions emerged as an unintended consequence of the deployment of Google+. In reference to the research questions, indicated below (see second bullet point),

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager/employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

these findings began to indicate the emergence of unintended consequences but so far at the individual level. To explore this further for the manager-employee relationship, the netnographic analysis was instrumental in understanding this phenomenon. It is after the netnography section below that I bring all together to clearly offer answers to the research questions although these are already beginning to show at this point.

## 6.4 Findings from netnography

### 6.4.1 Introduction

The setting up process for Google+ is similar to many other social media platforms. By providing personal details like full name, email, password, telephone number supposedly for two-factor authentication (a security measure for your account) and so on, an actor is able to sign up onto the platform. This process took me about five minutes to complete. It was a stepwise process led by the technology itself, directing, and giving clues on what was to be done next. Logging in leads to the homepage of one's profile where several conversations from various communities, circles – that is, online groups – to which one is subscribed, or 'following', or belongs to, are shown in randomly arranged tiled blocks.

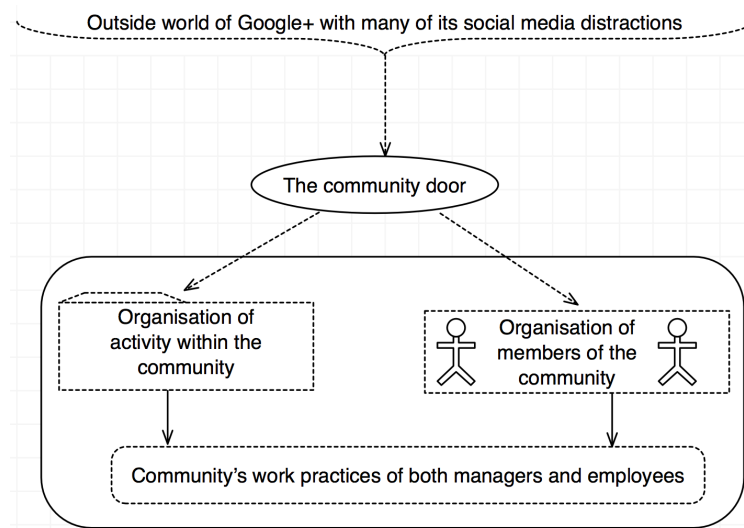
The user is at liberty to jump into any conversations from this homepage by a click. Example, I subscribed to 'Technology', a group set up by technology enthusiast Eli Fennel with over 300,000 followers. As a result, conversations started by Fennel appear randomly on my Google+ homepage. In addition, conversations started by members within Drugster's L-M and L-Q communities also appear on the homepage. For more homepage feeds, an actor could subscribe or 'follow' other interests and have all their feeds show on his/her homepage. Conversely, the user is able to click a 'communities' tab that shows the number of communities s/he belongs to, not as conversational feeds but as immutable icons. Here, the user, by a click, is able to access only the community s/he wishes to engage in at any particular time without the clutter of other homepage feeds. The following sections (6.4.2 to 6.4.6) offer a vivid description of the Google+ space from my platform notes (see Section 5.5.2.1) after which the analyses of actors' practices are presented (from Section 6.4.7).

### 6.4.2 Structure of a Drugster Google+ community

The findings show that the Google+ communities at Drugster are closed communities that are carefully guarded by managers. Until the community's door is opened, nobody can enter. If an invite is not sent for someone to join, then a request is needed before entry is approved. However, on the outside world of the community on Google+, there are other communities as well as activities that an individual can engage in as



highlighted earlier (see Section 6.4.1). These outside social media activities have no connection whatsoever to what happens inside a Drugster community. Upon entry into a Drugster Google+ community, two findings emerge: these are the organisation of members in the community and the organisation of activity within the community (illustrated in Figure 24 below). These form part of my initial classification of the netnographic data as shown in Section 5.6.2. As explained earlier in Section 5.6.2.1, I did not need to classify the data as ‘primarily contextual’ or ‘primarily social’ since both were constitutive of the manager-employee relationship and I was interested in both elements of the data. I observed that the communities’ relational practices were made possible by how members as well as activities were organised in the platform.



**Figure 24: Structure of a Google+ community at Drugster**

### **6.4.3 An outsider’s view within Google+**

Immediate information available to an online visitor (an outsider to the community) is the name of the community and its logo. The number of community members is also visible to an outsider and in the case of the Drugster’s L-M Community, sixty-seven (67) is displayed as within the community. What is not known before entry is what this membership of 67 means and who they are. However, diminutive icon-sized photographs of five individuals are shown on the community logo. The entrant is not shown who the managers are, what various roles individuals in the community play, what the community itself stands for apart from its name, and what the community

does. An entrant with access must click on the community logo as the door to enter this platform.

#### **6.4.4 *The community door***

The community logo serves as the door to Drugster's Google+ platform. Various communities have their own unique logos across Drugster. These logos often possess some meaning for members of that particular community. They confer a unique identity on the community and its members. In the case of Drugster's L-M Community as an example, the visible community logo is a collage of two paintings<sup>21</sup>. The first painting in the collage shows a group of individuals engaged in creative diagramming, and the second painting shows the picture of a network of individuals. For this L-M Community, the logo aims to tell a new entrant a story of what the community is about. In my preliminary report to Drugster, I explained what my interpretation of the L-M logo was when I gained access. This was confirmed to be the case, thus validating my interpretation. This is explained in Section 5.7.2. The paintings in the logo convey an idea of working together in a creative manner. It also depicts a connection among members who may be in different physical locations. Consequently, each community at Drugster has its own unique 'feel' and the door to the community gives an early impression. For instance, discussions in the L-M Community differ from those in the S-Q Community. The former has sections for discussions about work, humour, brainstorming, and so on. The latter is not as structured as the former and discussions on its platform have a feel of openness not seen in the former in that some posts from employees directly challenge managers on issues without fear. In both cases, how members are organised in the community allow for open discussions.

#### **6.4.5 *Organisation of members in the community***

Upon entry into a community, one is able to see who all members are. A click on the 'members tab' generates a popped-out list showing photographs and names of all members (See Figure 25 below). To know more about a particular individual, the

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<sup>21</sup> Being an online community, a true description of its logo would reveal its identity when searched since the logo is visible to the outside world in Google+. As a result, the description offered here is intentionally vague. However, the internal description of the community is an accurate depiction, forgoing anonymity since only members have access and are informed about this research.

enquirer clicks on the photograph of interest to view a detailed profile of the actor. As indicated earlier, community members separate their Drugster accounts from their private Google+ accounts. This is seen when one accesses the profile of an individual member and sees a message saying ‘This is my Drugster Google+ profile’ or ‘This is my Biomed Google+ profile’.

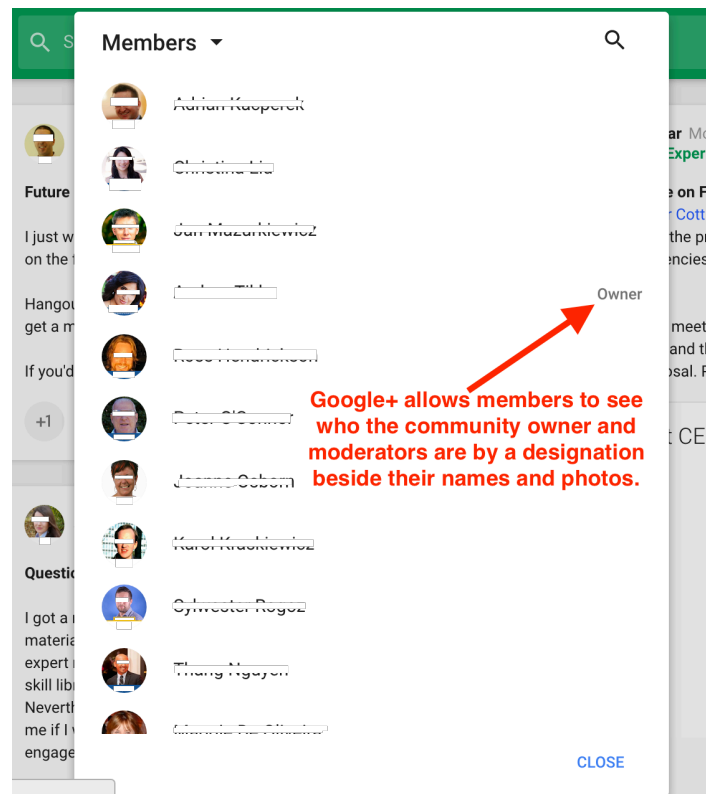


Figure 25: A popped-out list showing identity of community members in Google+

As part of the analytic stage of ‘memoing’ (see Figure 12 in Section 5.6.2), I observed that members can choose to display their Sex or their other interests, which are visible in the form of the various other groups or communities within Google+ they are members of. For example, someone can be a member of one or more communities like ‘hiking community’, ‘Android fans’, ‘iPhone owners’ and so on. These other interests of members are only shown when a curious visitor clicks on the *Interests* tab of an individual’s profile. Nonetheless, this *Interests* tab is available on some profiles but not visible on others. Members choose what to display by tweaking the settings of the Google+ platform to suit them.

The popped-out list of members when accessed shows certain characteristics that also reveal how members of this community are organised. On each of the photographs of members making up a community is a label<sup>22</sup>. The various labels are 'DRUGSTER', 'BIOMED', 'CONSULTANT' or a combination of 'CONSULTANT' and either 'DRUGSTER' or 'BIOMED' on each profile photograph. These labels are set by the implementation team following concerns of public intrusion. That is, in order to identify those who are not Drugster or Biomed employees that may have found their way into the community. Additionally, the technology itself labels community owners and moderators with their appropriate designations (see annotation in Figure 25 above). No other designations like 'MANAGER' is present neither do I have any label on my own profile or a 'Researcher' tag beside my name. The implications of these are captured in Table 13 below.

#### ***6.4.6 Organisation of activity in the community***

Within Drugster's Google+ communities, activities of members are seen in tiled conversational blocks or communicative episodes (See Figure 26 below). These blocks show, first of all, a member's post and the comments or reactions others have made to the posted message or conversation. In those communities where a structured approach is taken, a member can decide to post to a specific forum created within the community. Example, an actor in the L-M Community who wishes to solicit ideas for a project posts to a forum for 'innovation ideas'. This same actor, if s/he wishes to discuss an outcome of a meeting with stakeholders posts to 'stakeholder interactions' forum within the community. For those communities where no particular structured approach is taken, posts are made directly into the main platform of the community to begin a conversation.

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<sup>22</sup> These labels in Figure 23 have been blanked out from the profile photos as they explicitly identify the organization.

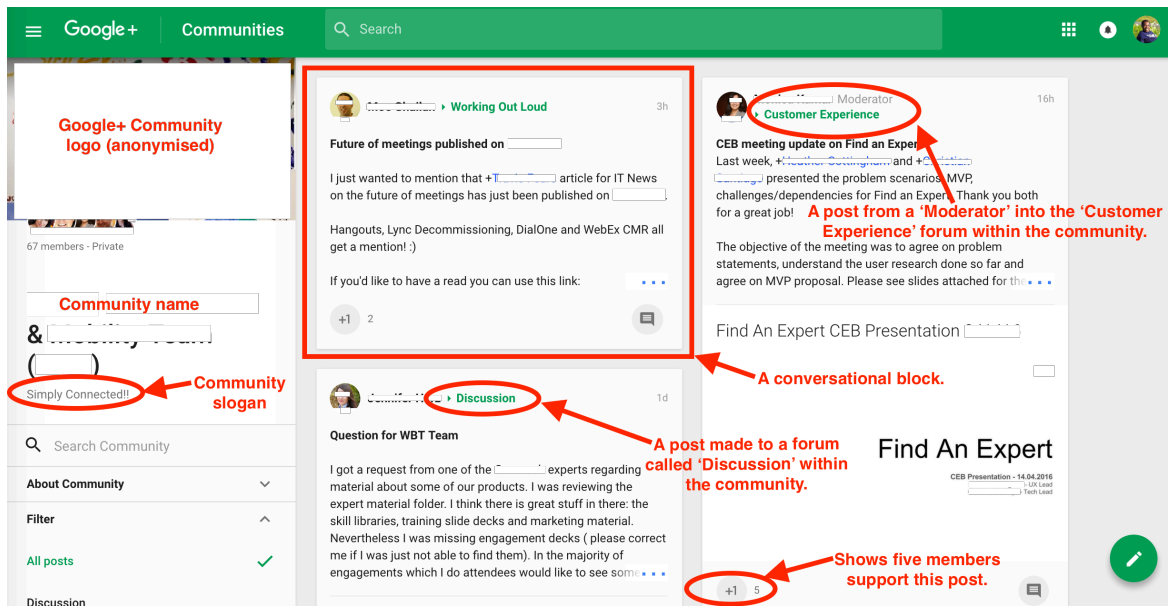


Figure 26: A Drugster Google+ Community's platform with annotations.

Additionally, the tiled conversational blocks show whether the contents of what is posted are in the form of texts, hyperlinks, infographics, photographs, or a combination of texts with any of the aforementioned. Members show their support for a post by giving it a '+1' (pronounced 'Plus One'). A '+1' is a button available to all posts which when clicked by an individual indicates his/her approval, liking, agreement, or support to what is posted be it a text, photograph, infographic, or a hyperlink and so on (see annotation in Figure 26). According to Google,

'the +1 button makes it easy to show that you like or agree with something... Adding a +1 to Google+ posts also helps you keep track of posts that you like, and it can help people in your circles and extended circles know what you recommend.' (Google+ Help, 2016).

Members' posts also have a *comments* button with which some textual remarks or contributions or acknowledgements to their particular posts are made. Just like the '+1s', all members of the community can see those who have written comments on posts as well as the total number of comments that a particular post has attracted. Managers and employees have equal opportunity to voice their thoughts onto the platform. Equally, managers and employees comment on posts they wish to without any inhibition. There is no visual indication on the platform as to who is a manager and everyone is on an equal level on the platform. Table 13 below shows a general overview of some of these observations discussed so far.

Observation	Meaning
Community members are labelled as either from Drugster or Biomed	<ul style="list-style-type: none"> <li>An outsider without a label is easily recognisable and excluded.</li> </ul>
Absence of the designation of 'MANAGER'	<ul style="list-style-type: none"> <li>Communities are organised around their core activities and not the ranking of members as either managers or employees.</li> <li>There is zero recognition of organisational hierarchy.</li> </ul>
The Google+ platform itself labels individuals who are community 'Owners' or 'Moderators'	<ul style="list-style-type: none"> <li>The technology openly imposes a new leadership role even if the designated individuals do not label themselves as such.</li> </ul>
Apart from the label 'CONSULTANT' on some members' profiles, no other work titles are displayed	<ul style="list-style-type: none"> <li>Consultants are made visible to all after which everybody else having a permanent employment in the organisation is the same.</li> <li>Equal level ground is available for both managers and employees.</li> </ul>
Communities are closed and have their own unique logos	<ul style="list-style-type: none"> <li>Every community is unique, has its own purpose, is exclusive although other Drugster employees from other geographic locations or departments may join.</li> <li>Departmental units have their own closed communities and community culture.</li> </ul>

**Table 13: Overview of Drugster Google+ communities.**

#### **6.4.7 Drugster Google+ relational practices among managers and employees**

The combination of how activity is organised with how members are organised in the Google+ communities generated new ways of manager-employee interactions. These are characterised in the following sections. From my selection criteria (stated in Section 5.4.3) for the platform communicative episodes (as seen in conversational blocks on the Google+ platforms), I focused on those that have a direct link to some element of people's work at Drugster. This excludes those communities that were not studied like the 'photography' community and other communities that only relate to non-work.

However, for the communicative episodes studied, actors discussed the various stages of their individual jobs and asked for inputs from community members. They also asked questions for clarity on various issues relating to their work, received inputs in order to synthesise the solutions they needed. Notwithstanding, some of the communicative episodes by actors on the platform were also designed to create humour. As a result, the communities have a semi-formal feel but not too informal to a point of silliness (like sharing cat videos) as some thought it would be from the interviews. Rather, it created an environment of trust between managers and employees so that employees freely communicate with their managers without fear. A divisional manager at Drugster puts it this way:

‘...we are not close as friends but we definitely, I would dare to say it is an open trust relationship were they [employees] can speak their minds.’ (INV-B-L28).

Nonetheless, managers<sup>23</sup> exerted influence and assigned responsibilities on the platform, motivated employees (see Figure 28), debated issues, provided vision, and presented plans for achieving their vision. In some instances, managers also openly share their reflection on how they felt emotionally in their journey with their employees (see Figure 27 below). In Figure 27 shown below, a manager demonstrates how he was emotionally challenged in his journey with employees since he took office. He illustrates this by mapping emoticons that represent his emotional state and uses arrows to show direction to the next points in his journey.

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<sup>23</sup> By managers, I mean individuals who are already known outside the platform as managers to community members including myself, having already interviewed them. This is because on the platform, there is zero indication of who a manager is.

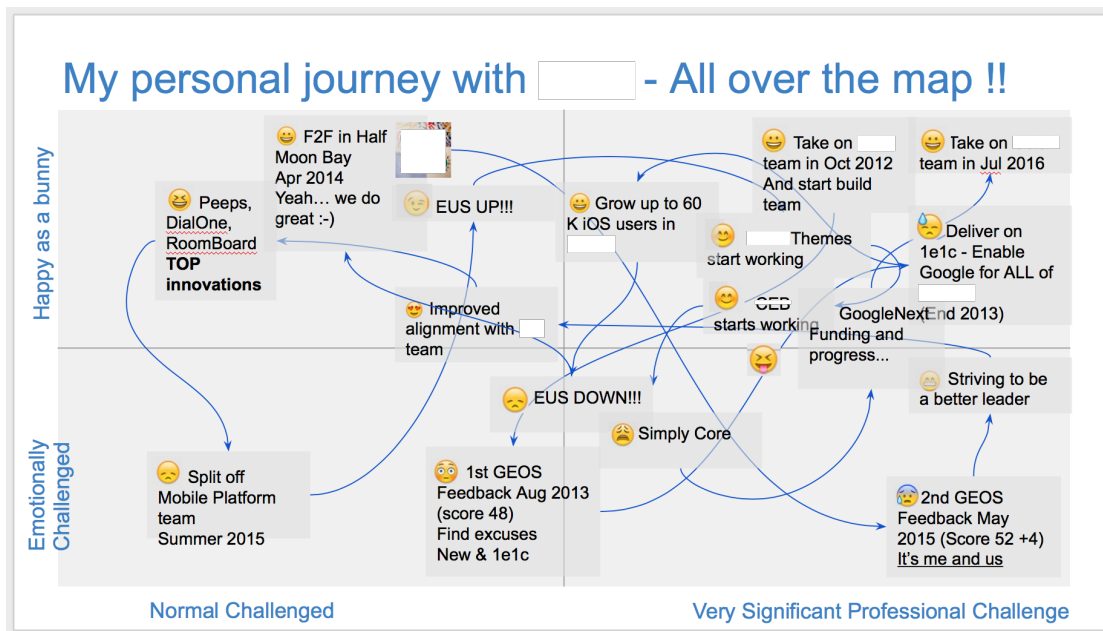


Figure 27: An illustration of manager's openness with employees using his personal journey.

In their interactions with one another, managers and employees influence each other as highlighted in Section 6.3.1. Managers acknowledge the communicative episodes shared by employees and engage with them in order to take up ideas that influence their decision-making. Similarly, employees respond to managers' communicative episodes and all actors engage with one another as they voice their ideas. In Figure 28 below, a manager actually motivates and encourages employees to voice their opinions by asking members to 'Go on #ShareSuccess in a post and be proud'. The '#' button is used as a form of laying emphasis. Additionally, clicking on a '#' theme like '#ShareSuccess' allows a user to view other posts in which that particular theme (in this case, 'Share success') was used. The practice of leadership in the technological platform seems to include all participants in the community and every actor is allowed to have a voice. These community members are all networked together in the Google+ digital environment and only those in the network are able to participate in their online relational practices.



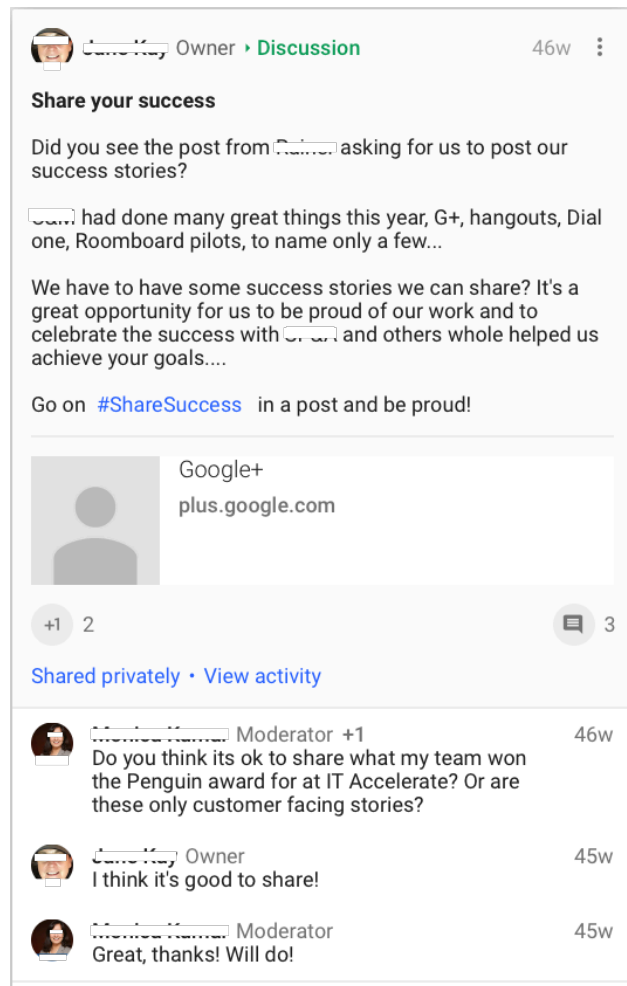


Figure 28: A manager encourages employees to share their success stories for motivation.

Inside the Google+ platform, which is an online environment, leadership is found to be about networked relationship and multi-directional influence. The following quote from a manager well represents the kind of leadership being exhibited in the Google+ platform:

'My leadership style is very much around **co-creation**. So, I really see myself as an enabler for putting people together and helping the team forming and storming, removing the barriers, connecting the dots, connecting to the experts, delivering the right tools for the team to move forward and achieve the team's objectives. **I do not see myself as an expert of any kind**, but I think I have a good, let's say, **ability to connect the dots**, right? So, in that sense, for me, Google+ is very powerful because it fits quite well with what I consider being my leadership style.' (INV-B-L14, emphasis added).

From the above quote, the idea of co-creation, connecting the dots, and not being an expert as fitting well into Google+ suggest relational practices in which more than one

actor is involved. From the analytic stages of 'analytic coding, contextual positioning, searching for themes and evaluating with further data' (see Section 5.6.2), eight relational practices emerged from the platforms that underpin the new Google+ enabled manager-employee interactions. These are *reporting*, *questioning*, *pulling*, *measuring*, *cheering*, *mourning*, *heartening*, and *showcasing*. These are explained in the sub-sections below:

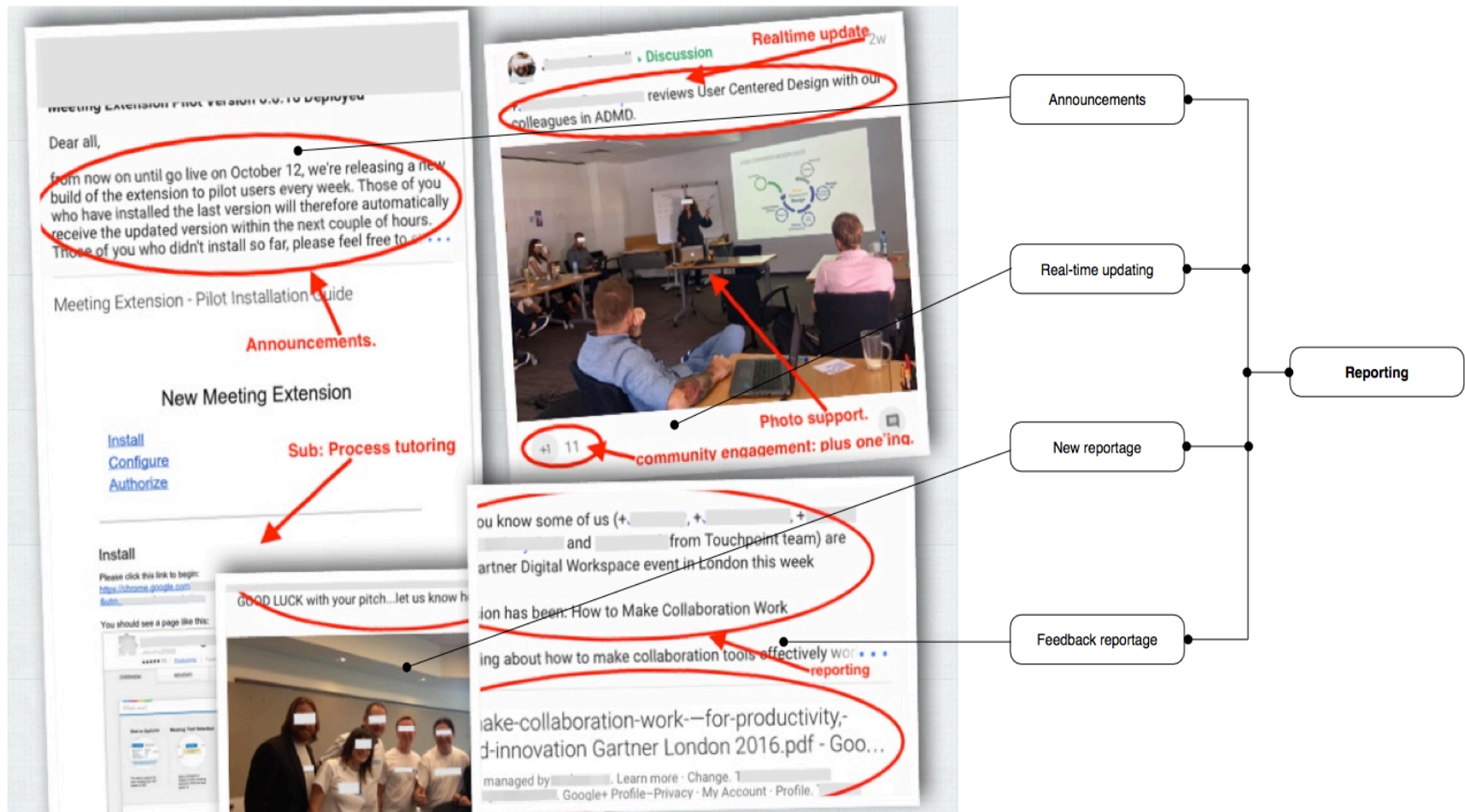


Figure 29: An illustration of netnographic analysis leading to 'reporting'.

#### 6.4.7.1 Reporting

*Reporting* is a practice on the technological platform in which actors account on some aspects of work they have been involved in. These are often outcomes of meetings attended or updates on projects or progress on an initial plan and so on. *Reporting* is a form of up-to-the-minute open accountability to community members regarding work activities. From the findings (illustrated in Figure 29 above), managers are the group of actors that often deploy this practice. It also portrays a show of relevance for those who are cynical about what their managers are up to. It signals manager presence in the community and allows individuals to seek clarity on the reports presented and/or challenge them, a scenario that was not possible in the pre-Google+ environment.

An example of a manager *reporting* progress of work on a previous issue raised by an employee is shown in Figure 30 below. In this communicative episode, the manager acknowledges and gives an update on a debate that was raised by the employee. He is challenged by the employee and shifts to side with the employee by stating how 'it also goes on my nerves' in order to relate with the employee's concerns. Such a shift momentarily places him off his managerial position just to empathise or identify with the concerns of the employee. Simultaneously, he re-shifts to a position of influence by tasking employees to take action. He writes in bold letters '**And here I have an ask to you all**' to assert his influence and demand action.

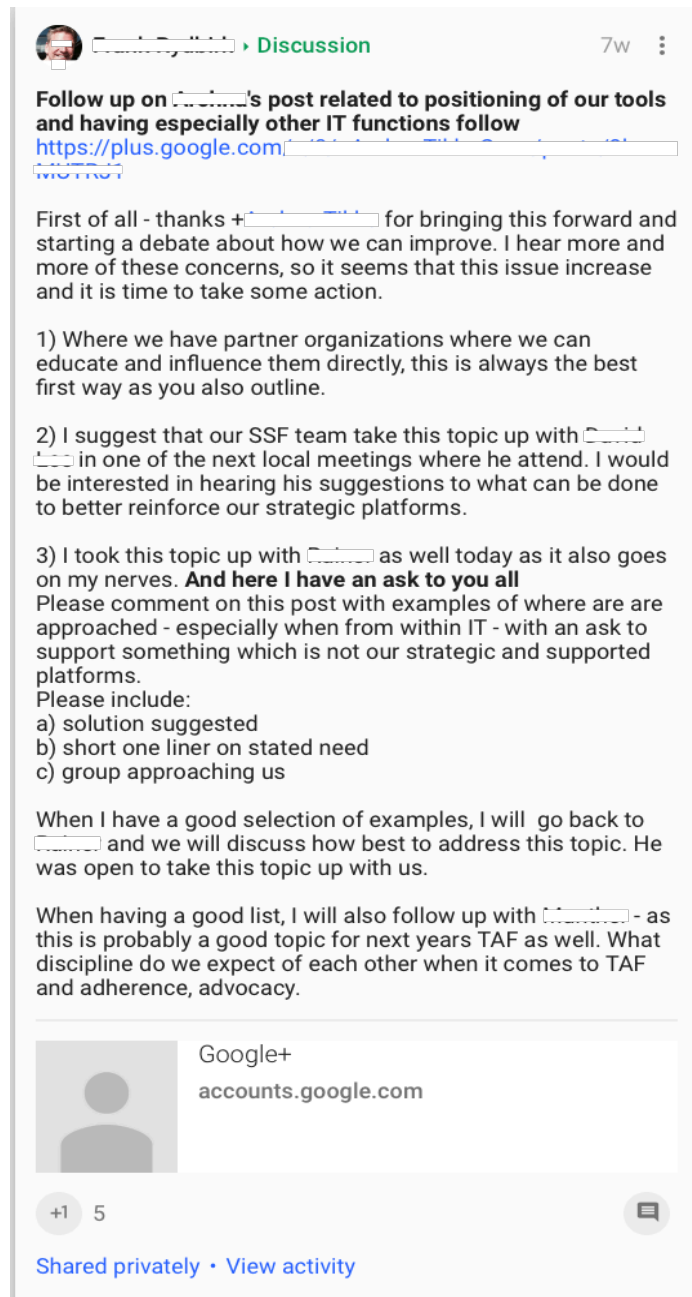


Figure 30: 'Reporting' in a Google+ platform.

#### 6.4.7.2 Questioning

*Questioning* on the Google+ platform is used to seek clarification but also to suggest change. It is deployed within a communicative episode either as a post to seek ideas from the entire community or as a comment on a post to seek clarity on an issue. Figure 31 below illustrates *questioning* after the analytic process from the netnography.

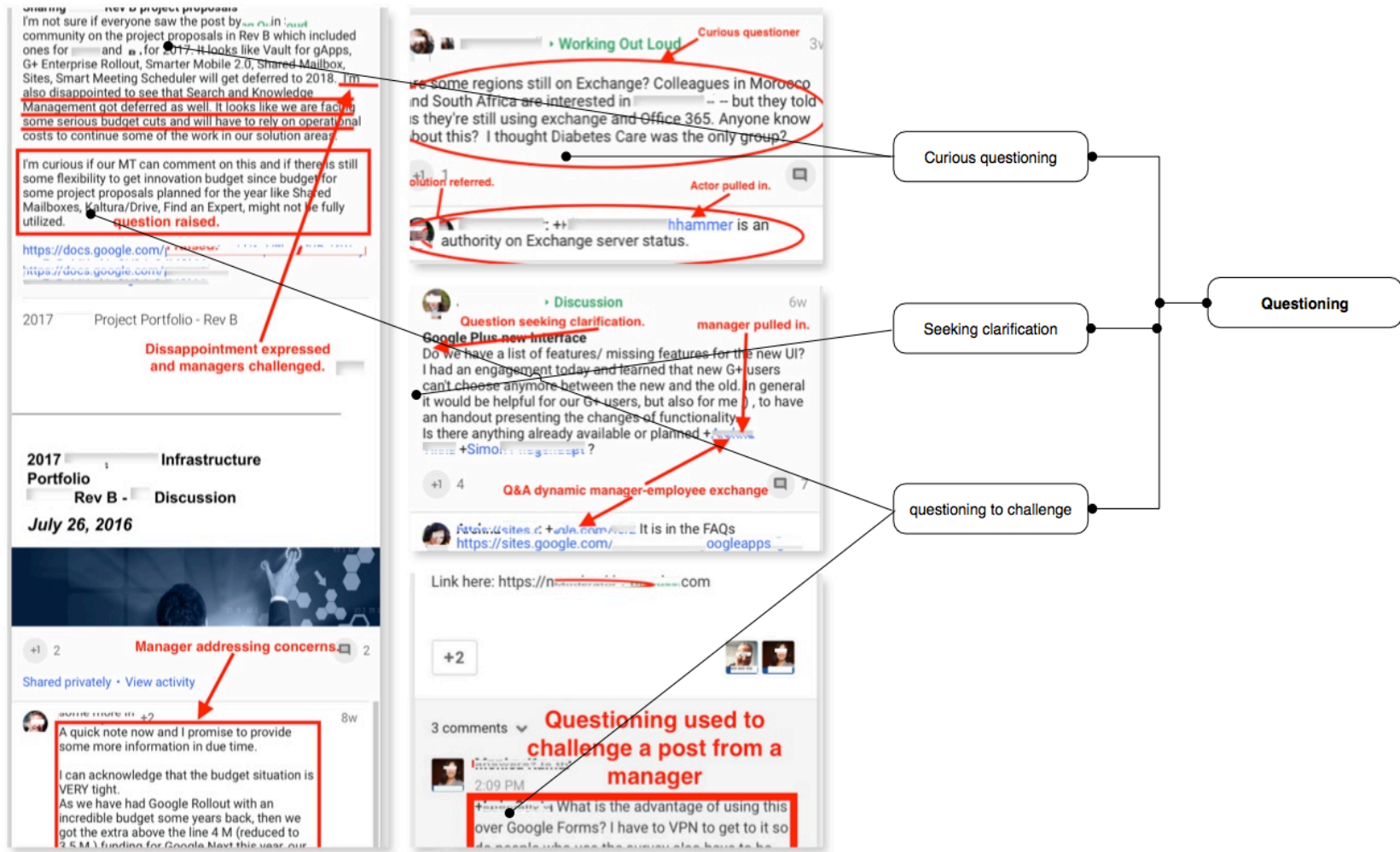


Figure 31: An illustration of netnographic analysis leading to 'questioning'.

Questioning is also a way of mildly critiquing or challenging another’s work. Unlike *reporting*, which is more of a manager practice, both managers and employees deploy *questioning* to challenge ideas raised on the platform or solely to stimulate conversations around a topic.

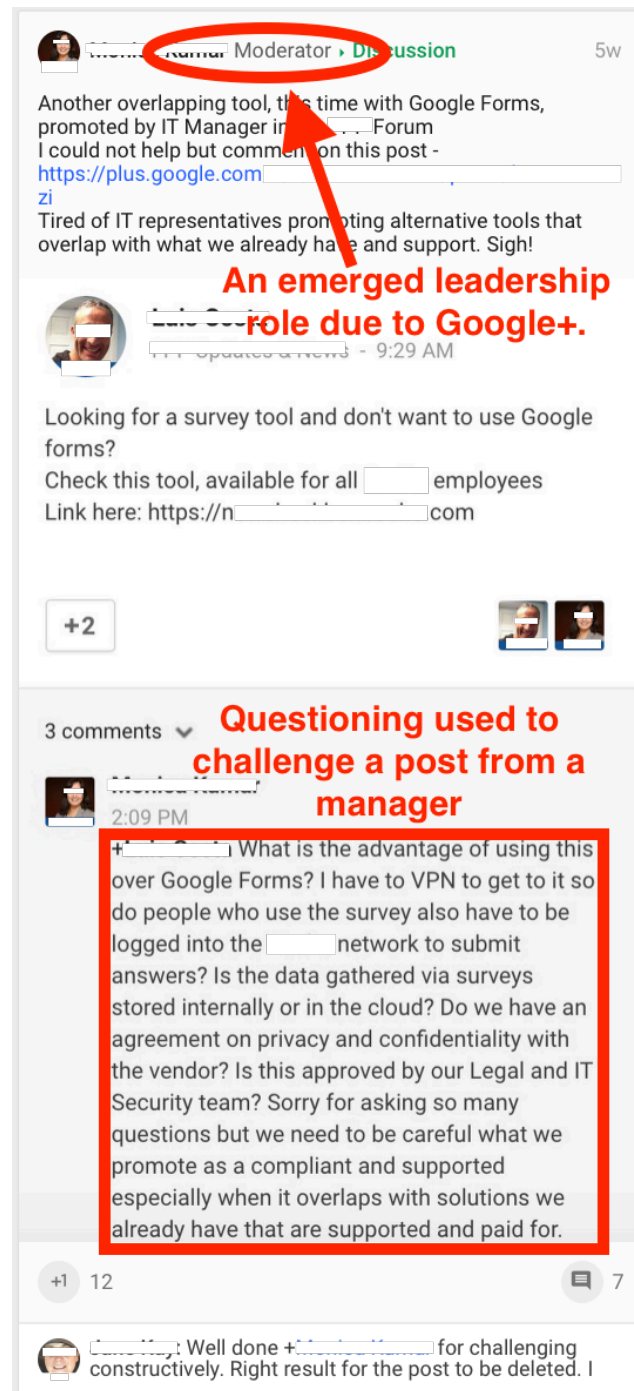


Figure 32: 'Questioning' as a relational practice in Google+



Figure 32 illustrates a Google+ communicative episode in which an employee deploys *questioning* to openly challenge the IT Manager as well as critique his proposal. As a self-correcting mechanism, another manager prompts the IT Manager for the removal of his post. The findings show other instances in which *questioning* is used only to seek answers or like in this case to protest or suggest a change. Managers respond to these practices in ways that encourage employee voice in the network while also making their own shifts to in order to stabilise the network.

#### 6.4.7.3 Pulling

*Pulling* is a relational practice of drawing an actor into a conversation either to openly acknowledge their achievement, request an answer to a question, seek their opinion on a topic being discussed, cheer for work done, or direct traffic to another space. In directing traffic elsewhere, the actor deploying the *pulling* uses hyperlinks to ‘pull’ others away from the community’s open space into an area the hyperlink leads to. Here, the actor doing the pulling is implicitly saying ‘I have done some work outside of this Google+ space and you all have to come along to see it’. The analytic process is illustrated in Figure 33 below. Here, both managers and employees engage *pulling* for all the reasons mentioned.



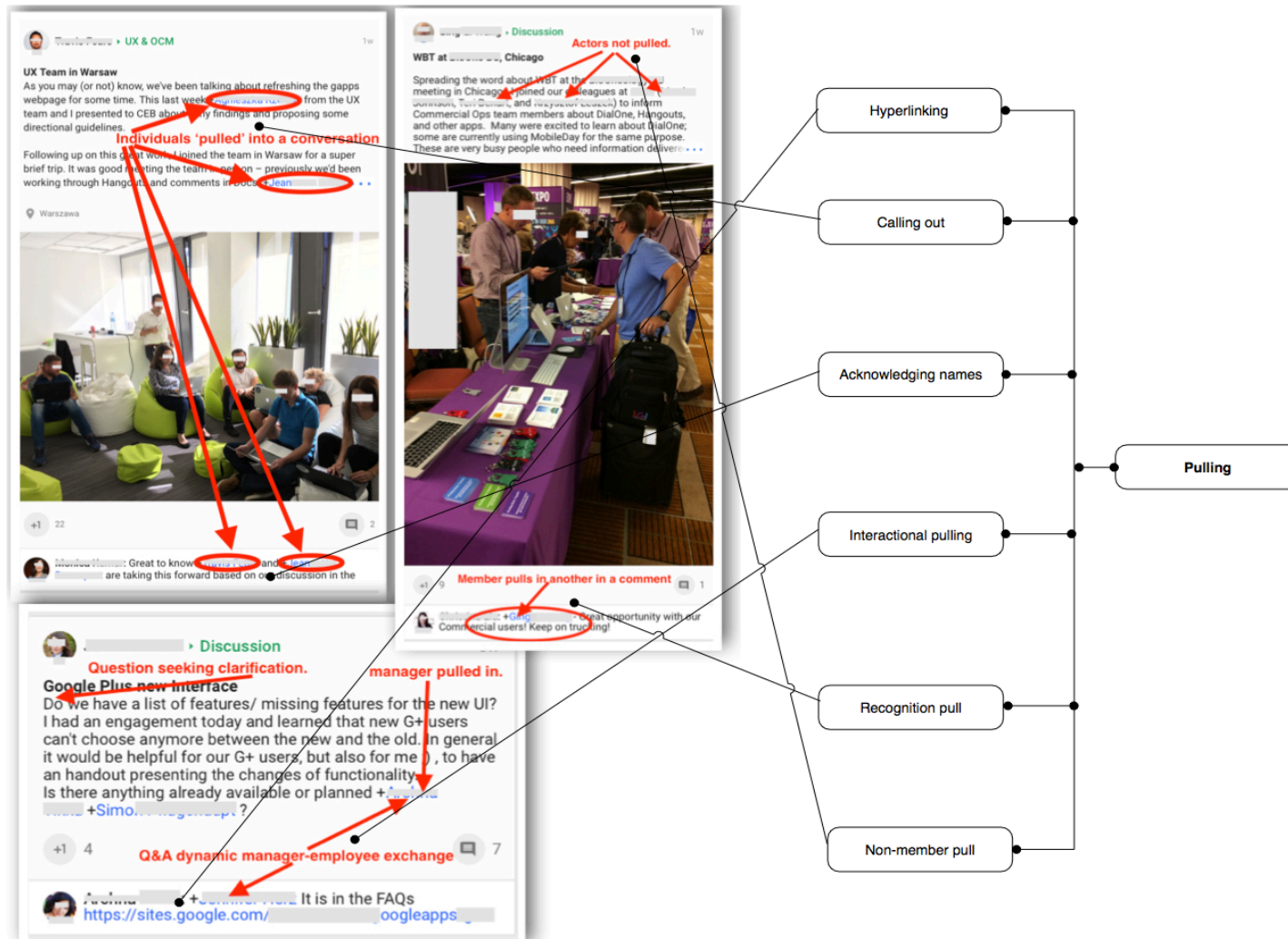


Figure 33: An illustration of netnographic analysis leading to 'pulling'.

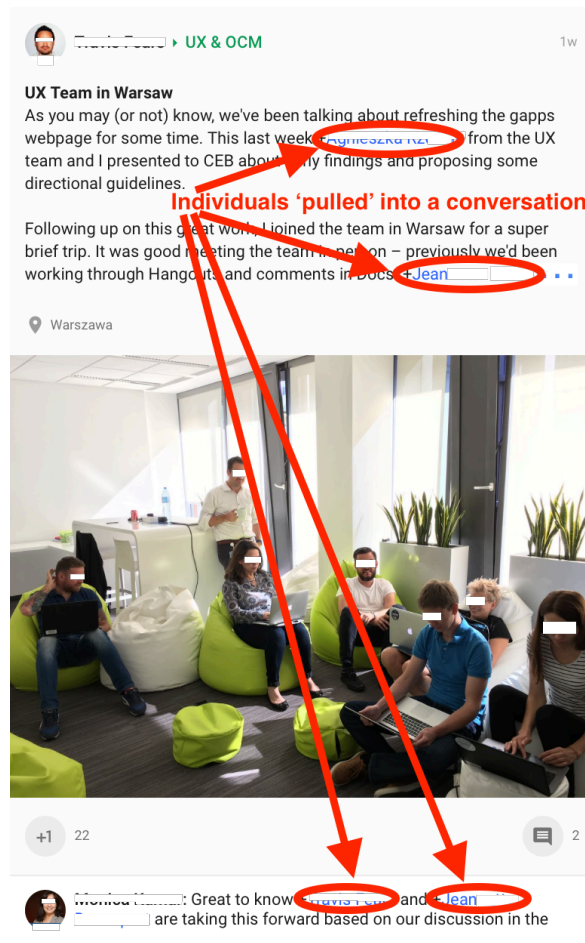


Figure 34: A practice of pulling others into a conversation on Google+.

The Figure 34 above demonstrates how an actor pulls others into a conversation. In this example, *pulling* occurred at both the stage of the initial conversation and the second stage of comments from another employee. While the former *pulls* actors to acknowledge their achievement, the latter draws them into a comment that implicitly gives credit to the real source of the initiative taken by those *pulled*. As a result, managers are able to make the necessary shifts in their minds as to whom to reward (or not ignore) by the dynamic interactions within the Google+ network. *Pulling* is achieved when an actor 'plusses' another community member. In Figure 34, '+Jean' (indicated in the screenshot) means that Jean is *pulled* into or tagged into the conversation.

#### 6.4.7.4 Measuring

Like *reporting*, the practice of *measuring* is engaged by managers<sup>24</sup> to convey the state of affairs as enabled by the platform itself or other technological allies that are linked to the platform. It is a practice in which quantitative data is generated in order to show progress and/or retrogress of activity or work done within the community.

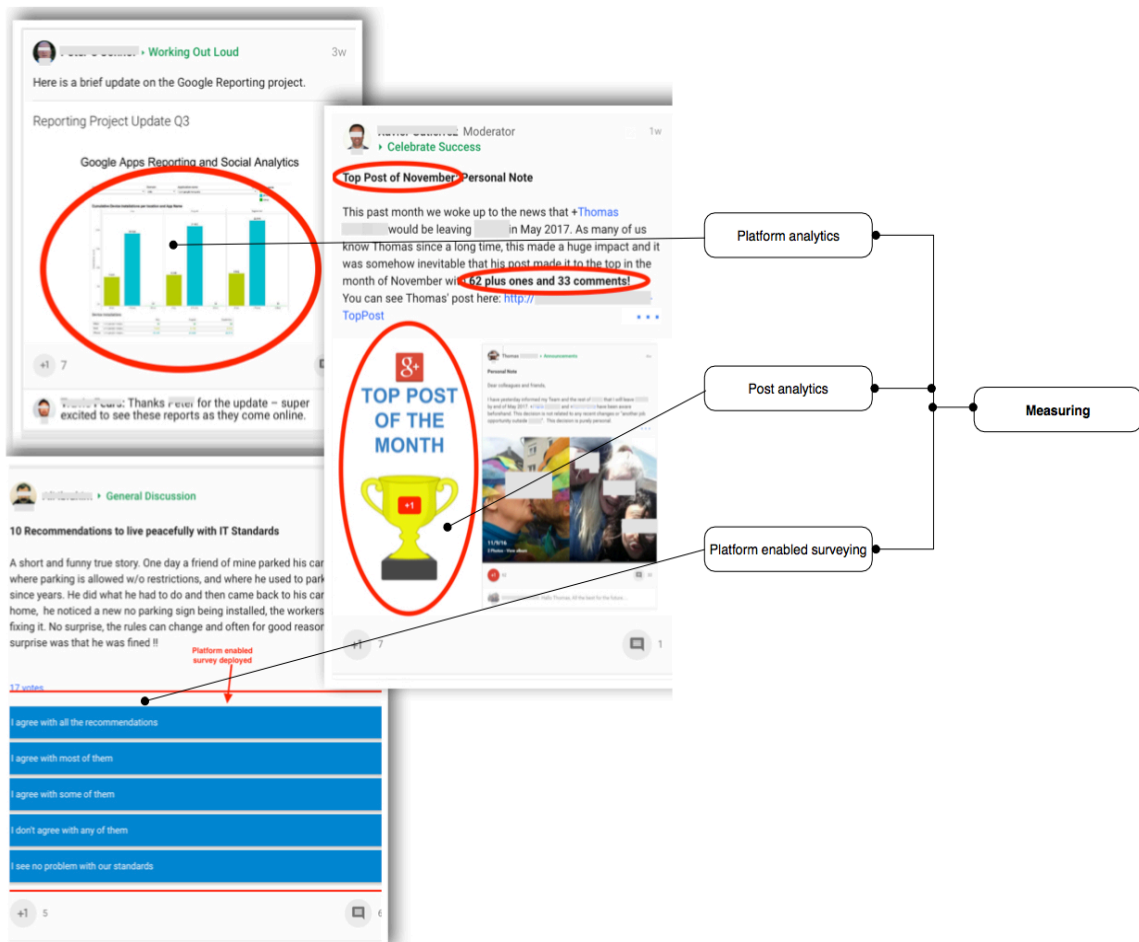


Figure 35: An illustration of netnographic analysis leading to 'measuring'.

In *measuring*, the survey feature of the platform is deployed to gather data on life in the community or on other topics of relevance to managers. *Measuring* is also engaged when other technological allies to Google+ are used to analyse a community behaviour or trend, example, showing members a graph of the number of posts in a month compared with the previous month and so on.

<sup>24</sup> Employees are also involved in this practice but I have found this to be predominantly practised by those in managerial roles.

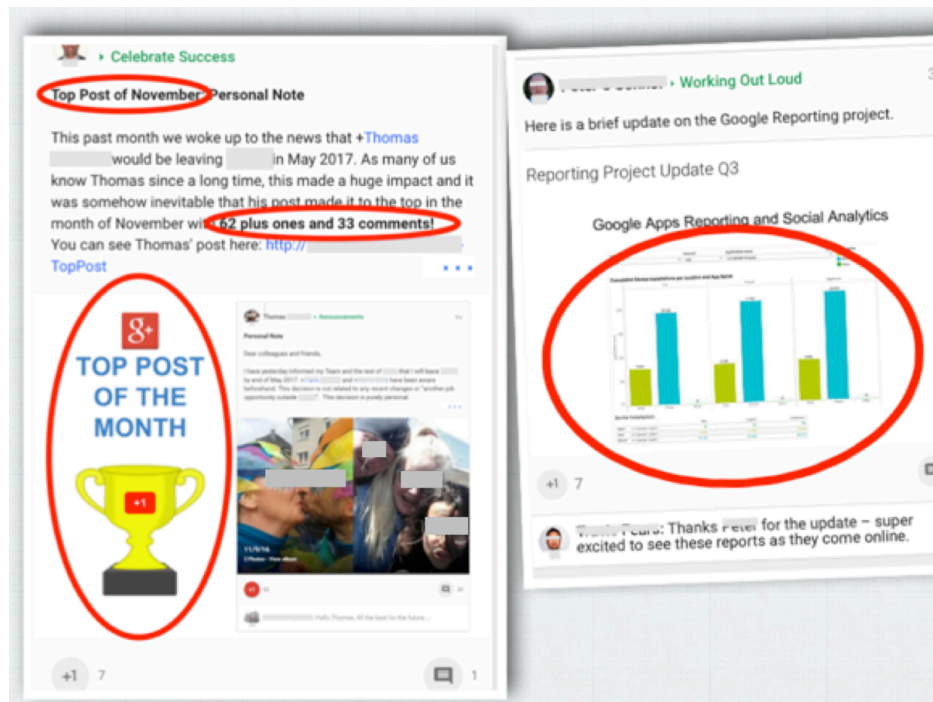


Figure 36: The practice of measuring in a Google+ community.

At the level of individual actors, *measuring* is used to identify whose post had the highest number of engagements in a month to receive the award of ‘the top post of the month’ as a means of encouraging community participation (see Figure 36). With the practice of *measuring*, managers obtain data from Google+, that is the technology they are networked with. The technology does the work by providing the analytics and managers take advantage of its utility to influence employee behaviour. In *measuring*, the heterogeneity of the network of relations in the practice of leadership is directly observable even by those who may have taken it for granted. In Figure 35, I illustrate the analytic process in which platform analytics, post analytics and survey features lead into the practice of *measuring*.

#### 6.4.7.5 Cheering

*Cheering* is a form of open celebration by community members but it is also used to commend individuals for work done. In the practice of *cheering*, employees do not wait for their managers to congratulate them or officially write a post to acknowledge their achievement.



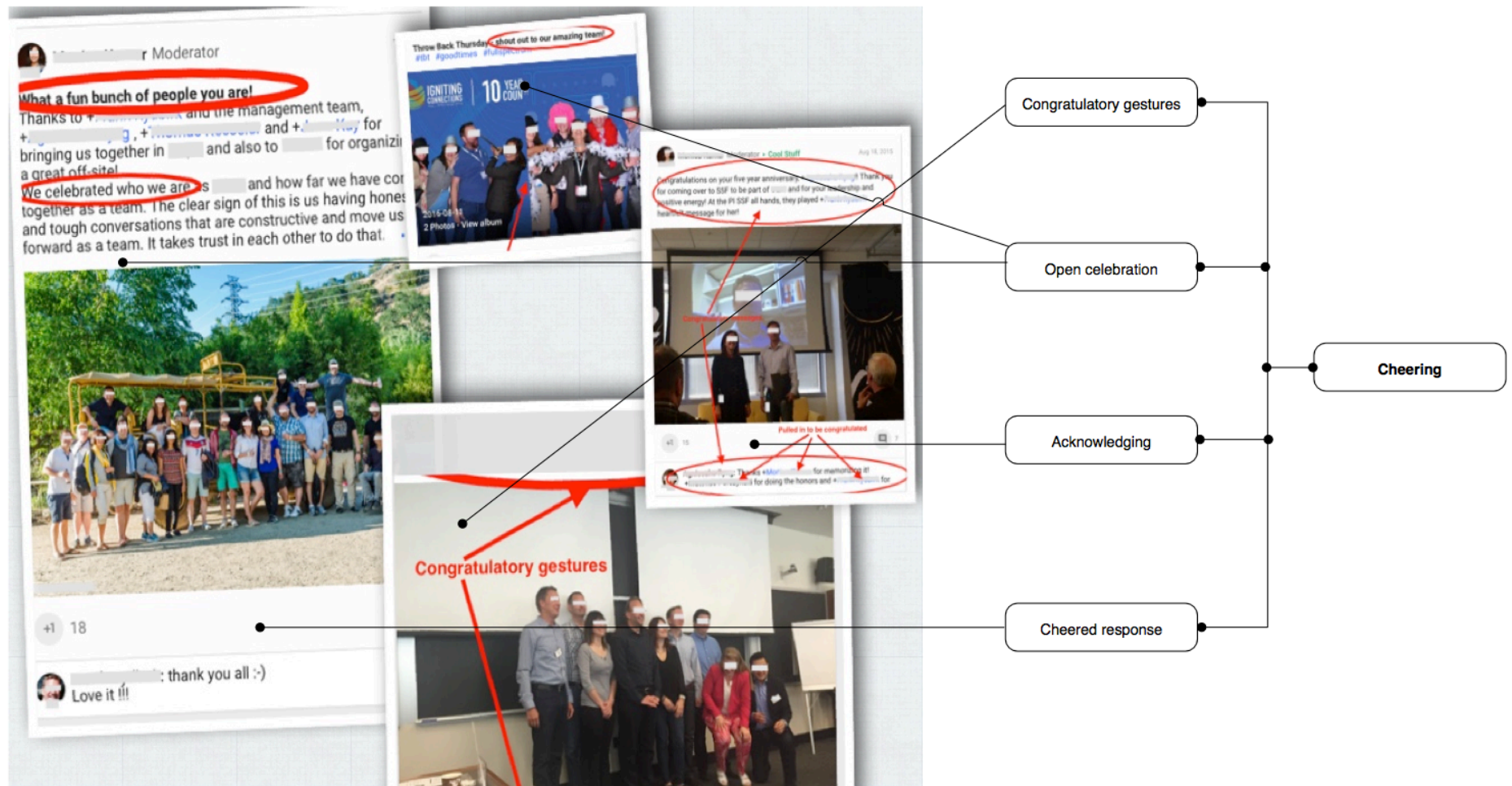


Figure 37: An illustration of netnographic analysis leading to 'cheering'.

In Figure 37 above, I illustrate how various practices were coded into the practice of ‘cheering’. As shown earlier in Figure 28, individuals in the Google+ communities are encouraged to ‘#ShareSuccess’ stories. By sharing their success stories, they congratulate themselves or are congratulated by other members of the community.

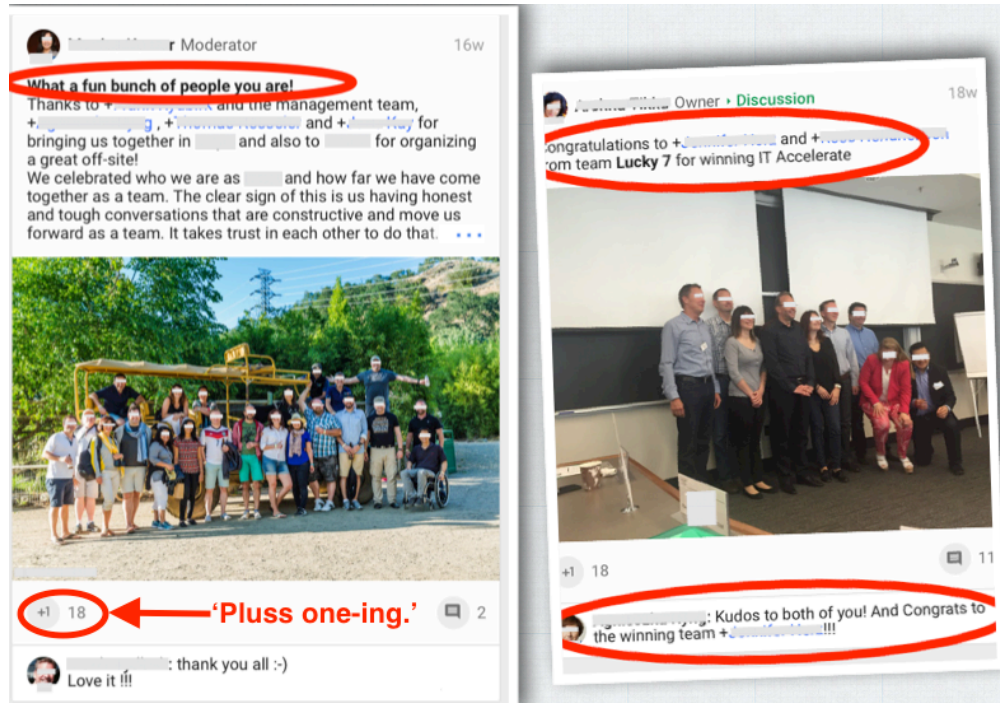


Figure 38: The practice of cheering in Drugster's Google+ platform.

In *cheering*, employees *cheer* themselves for their achievements with(out) a manager’s praise (see Figure 38). Others cheer by ‘plus one-ing’ a post, that is, by giving it a ‘thumbs-up’ or ‘liking’ the achievement posted onto the platform. In Figure 38 above (see annotation), eighteen ‘plus-ones<sup>25</sup>’ were given by the time the data was screenshot. That is, eighteen community members have shown their ‘liking’ or ‘thumbs-up’ for the post. In fact, a divisional manager at Drugster intimated how he sets high standards for his team but finds his weakness in not congratulating his employees enough when they deliver outcomes. In *cheering*, a manager’s recognition is irrelevant as long as other actors are involved in the practice.

<sup>25</sup> This is also explained as ‘+1’ (plus-one) in Section 6.4.6.

#### 6.4.7.6 Mourning

Unlike the practice of cheering which is a happy moment, *mourning* is an expression of sadness, often in situations that involve the resignation of an employee or a manager from the organisation. Although it is not known whether individuals are actually sad about such resignations, *mourning* is used to bid farewell to a team member who leaves the organisation or is transferred to another team or department. *Mourning* is also engaged in reporting the closeout of a project or the disbandment of a project team. Both managers and employees participate in this practice. It is also a way of keeping community members informed about what has gone bad regarding work or their personal lives as they engage with one another.

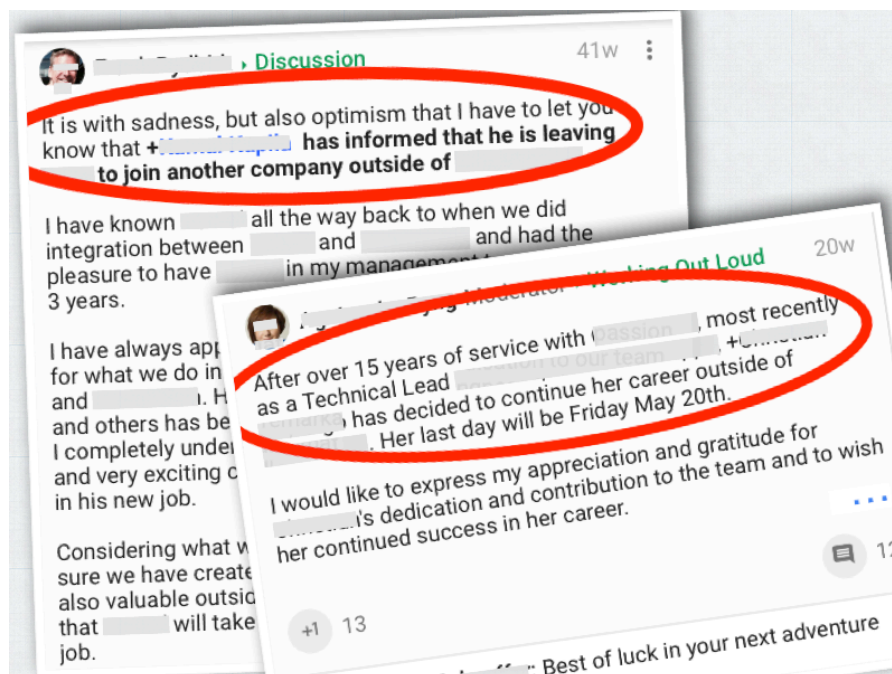


Figure 39: The practice of mourning in the Google+ network illustrated.

Although *mourning* is deployed towards some kind of a loss or departure as illustrated in Figure 39, it is also used to acknowledge the services of the departing actor. Simultaneously, managers make the necessary shifts in the network to accommodate such loss in order to stabilise the network. For example, in the same post that announces the departure of a colleague, managers sometimes encourage employees by informing them of steps taken to fill up the role. Such dynamic self-adjusting mechanisms characterise the various practices in an attempt to sustain network stability.

### 6.4.7.7 Heartening

In the practice of *heartening*, actors make posts to amuse or simply create humour about work or about themselves. Heartening is also used in announcing one's joy of going for a holiday and therefore out of work for a period. Although both managers and employees engage in heartening, the practice also breaks formality in the manager-employee relationship in that managers inform their employees that they also like to have a break away from work and enjoy time with their families.

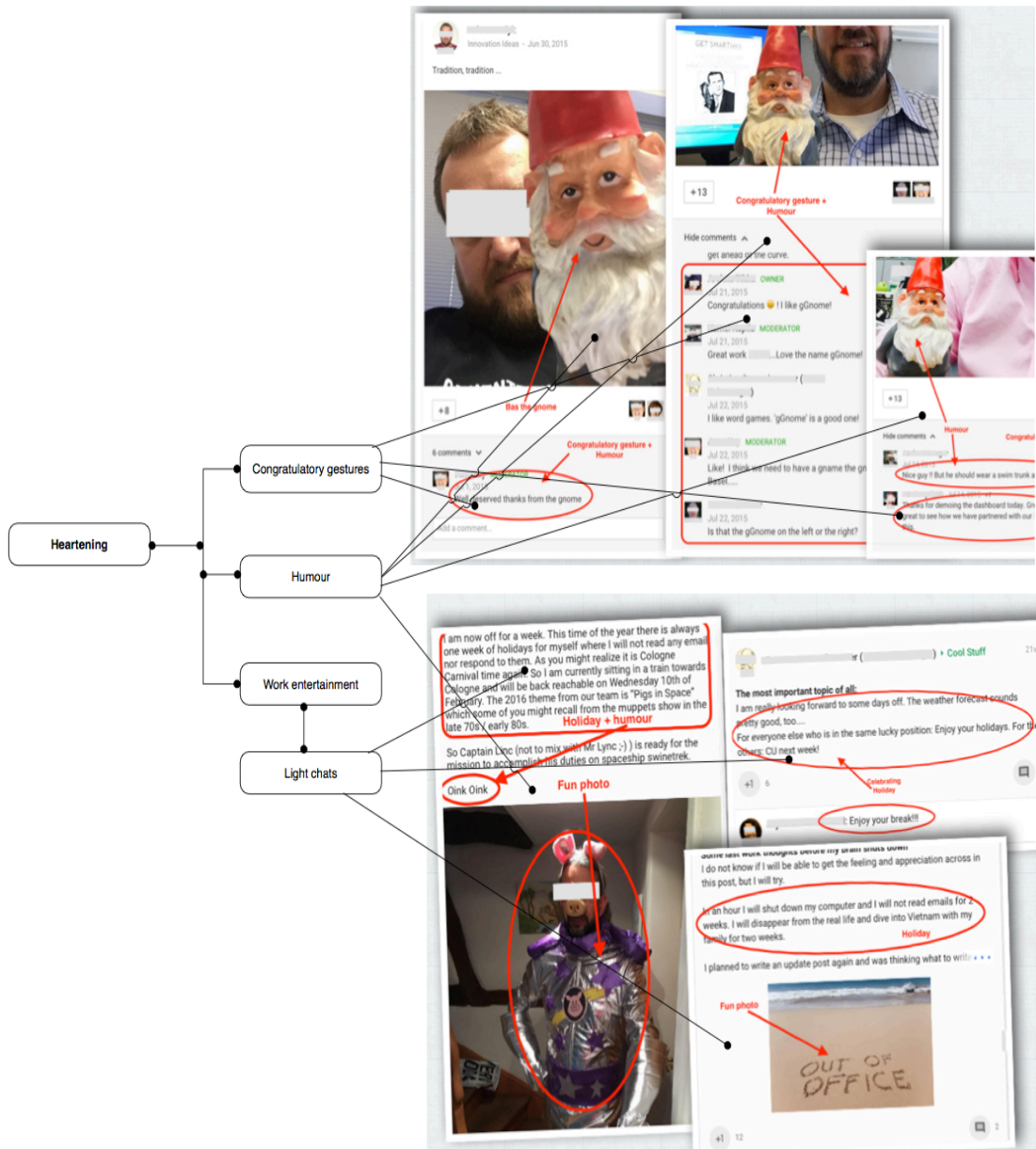


Figure 40: Illustration of netnographic analysis leading to 'heartening'.



In coding this practice of *heartening*, shown in Figure 40 above, I considered my own feelings as a member of the community. These posts made me happy or smile to see managers and employees engaging with one another with humour. Although this practice may seem similar to *cheering*, what I felt emotionally in engaging with the posts was different from *cheering* (in Section 6.4.7.5) hence identified as a separate relational practice. I elaborated on the analytic process in Section 5.6.2 in which I used heartening as an example.

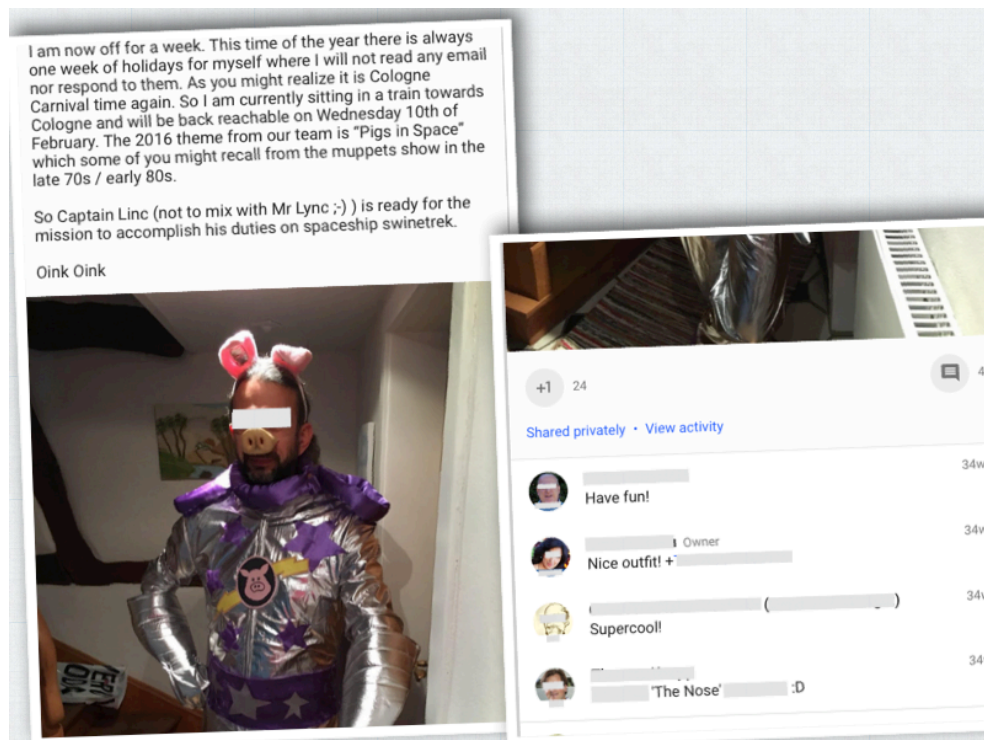


Figure 41: A practice of heartening in Google+ community.

*Heartening* also encourages transparency, and as mentioned earlier, managers believe that it breaks the wall of formality between them and their employees. The Google+ component manager for instance states that the Google+ platform is also, a 'water cooler environment where people can just interact with each other or see each other' (INV-B-L1). For a community like the L-M Community, a special forum called 'Cool Stuff' is created inside the community to encourage and allow members to share 'cool' stuff or create humour as part of the community's activities. In Figure 41 above, a manager in a 'pigs theme' attire announces his involvement in a Cologne carnival as he reports he is

on holiday and will not read or respond to any emails. This practice of *heartening* gives leadership a human face as he quickly draws many +1s to show a liking for the post as well as comments from employees and other managers to *hearten* him on.

#### 6.4.7.8 Showcasing

The practice of *showcasing* is one in which employees openly stage work done to the admiration of their colleagues and managers. However, *showcasing* is also used to relieve oneself of work undone due to an obstacle outside of one's control. In other words, an employee announces how s/he has acted to deliver a task but for some hindrances that has to do with another actor or a situation that is outside of his or her control. In *showcasing*, an employee asserts his or her sense of duty and implicitly draws managers' attention to himself or herself in the presence of all community members.

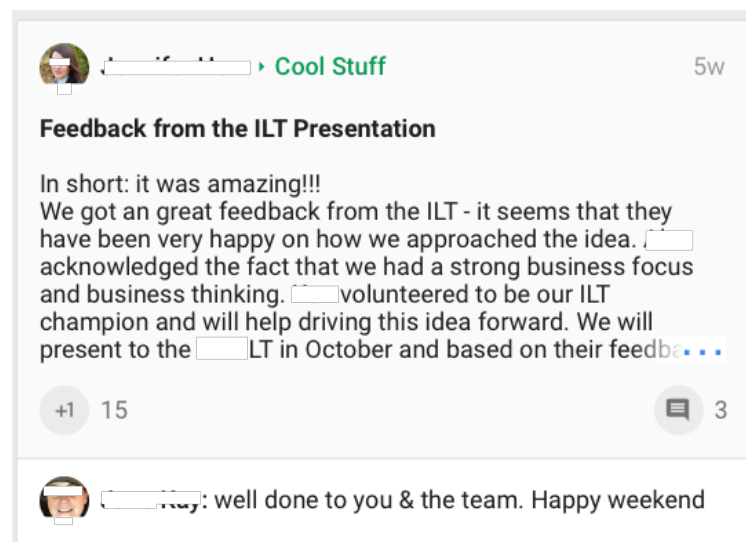


Figure 42: A practice of showcasing in a Google+ community.

In the illustration shown in Figure 42 above, an employee *showcases* her work as 'amazing!!!'. The attention of a manager is drawn, who then congratulates her for the good work done. *Showcasing* also demonstrates an employee's skills or abilities in executing tasks. That is, they engage in this practice to show their creativity in solving tasks and thus demonstrate their abilities to managers who wish to delegate tasks involving their expertise.

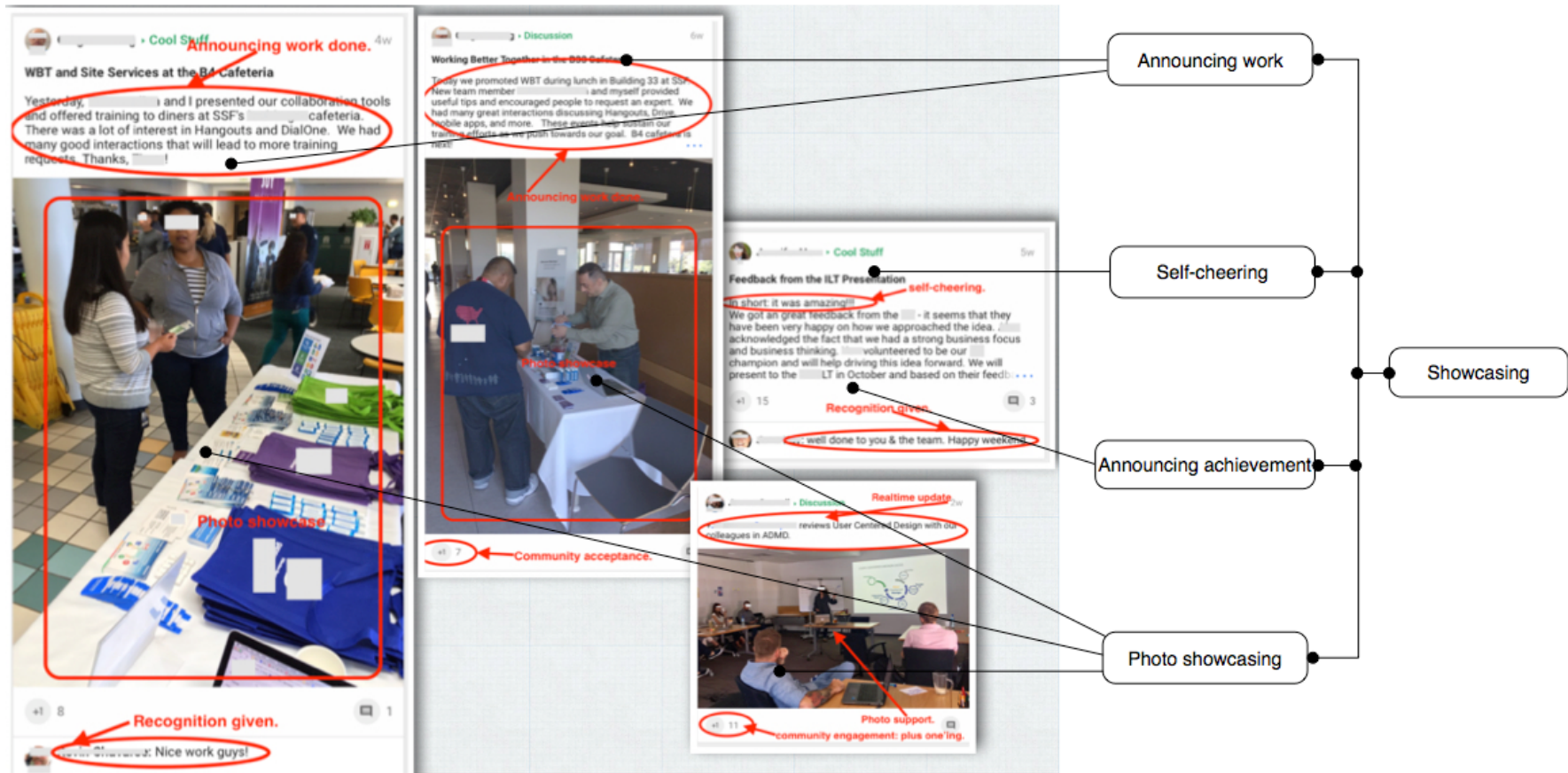


Figure 43: An illustration of netnography leading to 'showcasing'.

As shown in Figure 43, codes such as ‘announcing work’, ‘self-cheering’, ‘announcing achievement’ and ‘photo showcasing’ all demonstrate how individuals display their abilities as well as achievements. In *showcasing*, an actor (usually employees as the data suggests) in the manager-employee relationship makes himself or herself available to take up tasks that others in the network may be able to do but are not known as having the ability to deliver.

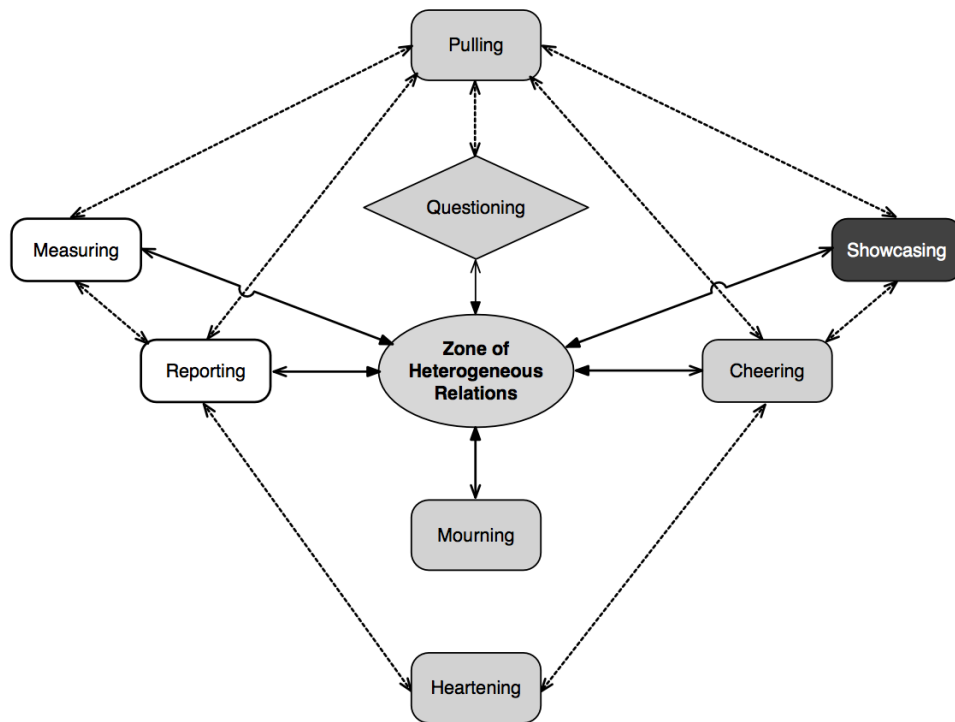
All these practices (see Table 14) – reporting, questioning, pulling, cheering, heartening, mourning, measuring, and showcasing – interact with one another in the Google+ platform (see Section 6.4.8) in a way that generates a new kind of leadership practice in this online space. This and other forms of leadership that emerge as a result of the implementation of this non-human actor are shown in the next section.

<b>Relational Practice</b>	<b>Actor attribute</b>	<b>Meaning</b>
<b>Reporting</b>	Managers & Google+	A form of up-to-the-minute open accountability.   Also a show of relevance.
<b>Questioning</b>	Managers, employees & Google+	Used to seek clarification or to suggest change.   Also a way of mildly critiquing another’s work.
<b>Pulling</b>	Managers, employees & Google+	Used to openly ‘call out’ or draw an actor into a conversation.   Also a way of directing traffic.
<b>Measuring</b>	Managers & Google+	Used to generate data in order to show progress or retrogress on activity.   Also a way of encouraging participation.
<b>Cheering</b>	Managers, employees & Google+	A form of open celebration.   Also a way of commending individuals for work done.
<b>Mourning</b>	Managers, employees & Google+	Used to express regret or sadness.
<b>Heartening</b>	Managers, employees & Google+	Used to entertain or for humour.   Also a way of breaking formality in the relationship.
<b>Showcasing</b>	Employees & Google+	Used to openly stage work done.   Also a way to absolve oneself of work undone.

Table 14: Table summarising Google+ relational practices.

#### 6.4.8 Leadership in the Google+ online space

As highlighted already, the practices of reporting, pulling, measuring, cheering, heartening, mourning, questioning, and showcasing do not occur as mutually exclusive practices. They contain and interact with each other at the zone of heterogeneous relations, which is the technological platform (see Appendix 6 and Figure 44 below).



Key	
↔	May involve or be a form of (the practice at both ends of the arrow heads)
↔	Practice (involving other practices) that are directly made visible at the zone of heterogeneous relations and/or emerging out of the zone of heterogeneous relations.

Figure 44: Interaction of manager-employee relational practices on a Google+ platform.

At the zone of heterogeneous relations, leadership is observed, albeit in a different fashion. Google+, a non-human actant, from the stage of its implementation to the stage of it enabling or rather participating in real-time manager-employee relations, has triggered leadership practices in which the technology is an integral part. In all eight Google+ platform relational practices mentioned in the previous sections, influence is distributed and exerted by all actors – managers, employees and the technological

platform – in the network of heterogeneous relations. Managers influence employees, employees challenge and influence managers, and the technology provides data that informs and influences manager decisions as well as employee and manager behaviour. Here, the manager-employee relationship now has a third actor, Google+. In other words, a multi-relational influence emerges in this Google+ online environment, the zone of heterogeneous relations. As a result, actors make necessary shifts in their response to other actors in order to stabilise the network. For example, an employee can *pull* a manager in order to get the manager to speak on some issue that needs clarification. The *pulled* manager responds answering the concerns raised on the platform and so on.

In the leadership relationships between managers and employees in the zone of heterogeneous relations, hierarchical positions held by managers in the organisation are not explicitly espoused. On the platform, no one manager is privileged when discussions are held. However, actors engage in relational practices that uniquely position or identify them as either managers or employees to the outside observer. Example, an analysis of the pattern of manager-employee relational practices shows that *reporting* and *measuring* are often engaged by managers while employees often practise *showcasing*. This is illustrated with white and black colours respectively in Figure 44 above. The grey-coloured practices – *pulling*, *questioning*, *cheering*, *heartening*, and *mourning* – are those involving both managers and employees. Arguably, all actors engage in all practices to some extent. However, through ‘contextual positioning<sup>26</sup>’ (see Section 5.6.2.4) in the netnographic analysis, it became clear that some practices are more connected to managers and others to employees as already highlighted. For example, the average employee just wants to do their work, as reported earlier that ‘...at the end of the day, I wanna get my work done’ (INV-B-E36)<sup>27</sup>. An employee like INV-B-E36 is not particularly concerned about *measuring* engagement patterns on the platform.

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<sup>26</sup> Contextual positioning is that stage of the analytic process in which the researcher evaluates his/her netnographic insights with his or her platforms notes and crosschecks with participants in the online community. Here, the researcher ‘returns to the field for the next wave of data collection in order to isolate, check, and refine the understanding of the patterns, processes, commonalities, and differences’ (Kozinets, 2010, p.119). This is further detailed in Section 5.6.2.4.

<sup>27</sup> This participant, INV-B-E36, made this statement in the context of his dislike for Google+ since other ‘tools’ already existed for the same thing. However, he is also a (reluctant) member of the community.

Nonetheless, the absence of hierarchy on the platform allows everyone in the zone of heterogeneous relations to exert influence whether they are managers or employees. Accordingly, the multi-relational influence observed means that leadership is devolved and no one particular actor is a 'hero leader' on the platform, which is also now a part of the relationship. Conversely, employees with leadership roles defined by the platform like 'moderators' and 'owners' are advantaged in that they are recognised as 'leaders'. They exert influence in their platform enabled leadership capacities by showing users the how-tos of the technology if new Google updates are installed, coordinating platform rules and discussions, directing what posts must go to what forum, cross-posting from other communities and so on. Although 'owners' and 'moderators' seem to be advantaged, all actors engage at a level that allows everyone to influence others as they interact in the zone of heterogeneous relations. Leadership is thus a generated effect in the zone of heterogeneous relations and is made prominent when the intermediations within the network allow an actor to exercise leadership or their actions to be recognised as particularly influential. This is further explored in Chapter Seven.

#### 6.4.8.1 Leadership in multiple Google+ platforms

As indicated earlier in the findings, Drugster has several Google+ communities. In fact, over 200 communities exist in the organisation and this is partly because of the auto-interessement that occurred during the implementation stages of the technology. These 'auto-interested' actors got enrolled as advocates, community owners and moderators. They then went on to expand the network by setting up communities in (and for) their various departments within the organisation. With over 90,000 employees and departments spanning across functional units and geographic locations in 150 countries, over 200 communities with memberships ranging from thirty (30) to 1,000 are present in the organisation.

With such high number of Google+ communities, a new challenge emerges for managers and employees. The idea that Google+, a social technology, opens up the organisation and allows employees and managers to interact across functional and geographic



locations is threatened. This is because the various communities that are present are closed communities and no one community fully represents the entirety of Drugster in a flat manner. In fact, the findings show that most<sup>28</sup> communities have sprung up along departmental lines and they do not talk to each other (see Section 6.2.4). Consequently, the communities replicate the physical organisational structure rather than modify it. The intention to create cross-functional online spaces in which individuals from various spectra of the organisation talk to one another has inadvertently created closed digital spaces. These closed digital spaces thus replicate the physical organisational 'silos' that the controlling actors and the implementation team set out to break in the first place. This is a case of what I refer to as *digital silos* that have emerged as an unintended consequence.

Furthermore, some managers who are also community owners or moderators run more than one community. They are 'owners' in some communities and 'moderators' in other communities. In some instances, they are simply 'members' in other communities that are of interest to them. In such instances, they inadvertently contribute to the building of *digital silos* by the multiple closed communities they 'own', 'moderate', or are members of, the very situation they set out to crack in the physical realm using Google+ as the *tool*. However, being in multiple communities, this group of managers deploy one of two strategies. First, they realise that topics under discussion in one community are often relevant to members in other communities. Therefore they copy and paste posts from one community into another, or initiate similar conversations from one community, in the other communities they are a part of (see Figure 45 below). In other words, they form bridges between silos, which I describe as showing multiple presences across communities. In effect, they make the *digital silos* porous in order to ensure cross-fertilisation in the organisation. By being present across multiple communities, they hold a panoramic view of the organisation's digital landscape.

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<sup>28</sup> This excludes communities like photography community, hiking community and other communities for hobbies, which are open for everyone in the organization. These communities were excluded in this study, as they did not the selection criteria discussed earlier in Chapter 5.



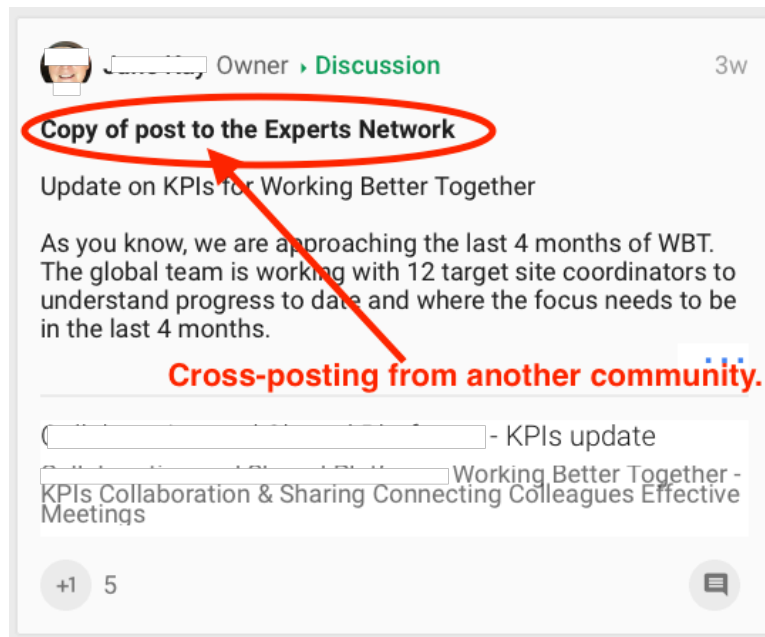


Figure 45: Example of cross posting between communities.

As a consequence, the practice of leadership is dislocated from a single point or position as multiple leadership presences are dispersed. By cross-fertilising in multiple communities, managers engage with employees across functional and geographic boundaries and exert leadership influence. This scenario is what I refer to as *digital multidirectional leadership* – that is, a model of leadership in which actors (often managers) digitally engage with others (often employees) in multiple social technology platforms in order to show presence and exert influence.

Second, managers show presence across multiple communities in order to have a panoramic view of the organisation’s digital landscape but are unable to engage meaningfully with employees in these multiple platforms. As a team manager concedes ‘we needed a technology that made you present but not present’ (SC-B-L28). I describe this scenario as stretching one’s ‘tentacles’ across multiple communities without engaging with actors in the communities. Although the ‘tentacular’ presence of managers across multiple communities carries along with it leadership influence, it is not with a label of any hierarchical position in the organisation. For example, a supply chain manager (SCM) in the organisational hierarchy who is a community ‘owner’ or ‘moderator’ or ‘member’ in one community does not stretch tentacles as a SCM in other communities, especially if these other communities have nothing to do with supply

chain. His or her hierarchical position as a supply chain manager is largely irrelevant to his/her relational activities in the various multiple communities s/he is a part of. Rather, s/he is present in other communities as an ‘ordinary member’ making posts like everybody else in those communities. To exert leadership influence as an ‘ordinary member’, s/he must go the extra mile by increasing his or her engagement with members in those communities as in the case of *digital multidirectional leadership*.

However, in this scenario, managers who are spread across multiple communities find it overwhelming to be able to engage meaningfully with employees across the multiple platforms. In some cases, managers are actively engaged with employees in one community but are only detached observers in other communities. Moreover, by stretching one’s tentacles in various communities, a manager’s positional status is lost or at best weakened as seen in the example of the SCM who is an ‘ordinary member’ in other communities. Here, the practice of leadership thus takes a form in which managers are present in multiple communities, acquire a panoramic view of the digital landscape but do not exert leadership influence due to limited engagement with employees over the multiple platforms. This model of leadership is what I refer to as *digital tentacular leadership*. It is a kind of distant leadership even though the actor is digitally ‘there’ with his or her ‘followers’.

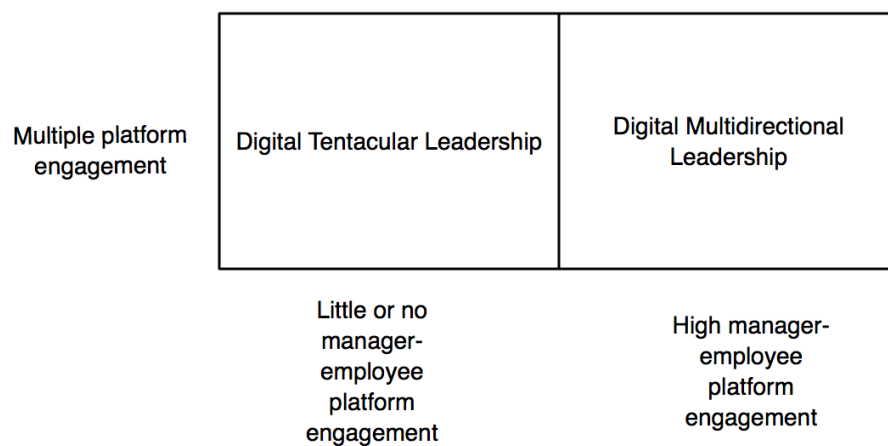


Figure 46: 2X1 matrix for leadership in multiple digital platforms.

Figure 46 above illustrates the two models of leadership in multiple digital platforms in a 2x1 matrix for visual clarity. However, not all managers subscribe to multiple platforms and these are discussed in the next section.

#### 6.4.8.2 Two sides of the same coin of leading digitally on Google+

While the ideas of *digital multidirectional leadership* and *digital tentacular leadership* discussed in the previous section have to do with multiple digital platforms seen in Google+, the study also finds that in single Google+ platforms, a manager is faced with two models of leadership. First, there are actors that find it unnecessary to be present in multiple Google+ communities. They argue that one community alone generates enough email notifications and it is counterproductive to have such information overload from multiple communities. Moreover, the one community they 'own' or 'moderate' or are simply 'members' of is what is relevant to their work. These are often communities that are directly related to their respective departmental units and most members discuss issues relating to that department. In effect, they are present in the digital silos that have replicated the organisational structure (see paragraph 2 of Section 6.4.8.1 above). However, in these single Google+ communities, most actors are actively engaged with others and partake in all relational practices in the zone of heterogeneous relations discussed earlier in Section 6.4.7. Here, the practice of leadership relationally involves managers, employees, as well as the technology, all act on one another in the zone of heterogeneous relations and no one actor is a 'hero leader' in the community. Figure 26 in Section 6.4.6 shows the user-interface of one of such communities in which actors are actively engaged relationally with one other. The model of leadership expressed here is what I refer to as *digital relational leadership*. That is, one in which all actors are actively participating in the leadership relationship in only one digital community.

However, there are also actors that do not engage with others in their communities. They do not participate in discussions. As mentioned earlier, not everyone in the organisation fully embraces the 'social media' Google+ technology. They are present in the community because their department is on there. The controlling actors and their implementing team acknowledge this and accept that in a large organisation like Drugster, not everyone will be convinced about Google+. The findings show that the lack of manager participation in a community affects life in the community. As already highlighted in Section 6.3, the implementation team argued that the involvement of those in upper management was important to network advancement (INV-B-L1). In cases where there is little participation, actors are silent in the community. As a result, the community often lacks the dynamic interactions seen in other active communities.

Individuals do not talk to each other and life goes on as usual. Here, when a post is made, it is often to issue a statement or an announcement and the platform becomes like a place for ‘bulk emailing’. The model of leadership observed here is what I refer to as *digital silo leadership*. It is one in which managers and employees are digitally present on the platform but do not engage with one another in a meaningful way.

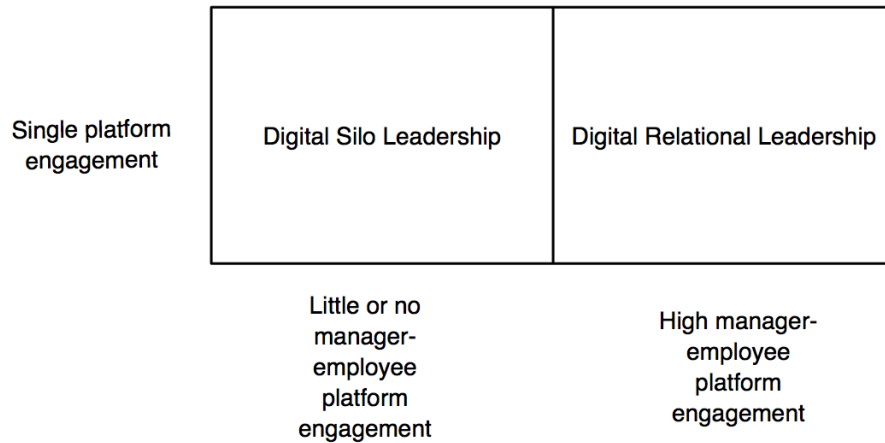


Figure 47: 2x1 matrix for leadership in single digital platforms.

Figure 47 above illustrates the two models of leadership in single digital platforms in a 2x1 matrix for visual clarity. For heuristic simplicity, all four models of leadership in the social technology online space found in this study are presented in the 2x2 matrix below (see Figure 48).

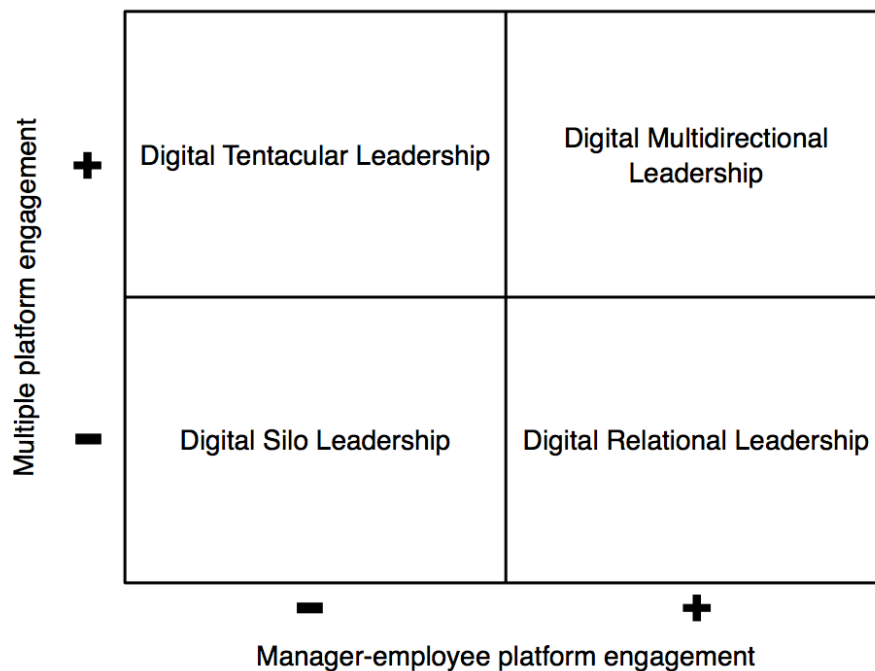


Figure 48: Social technology leadership matrix in the organisation.

In revisiting the research questions below,

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager-employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology in the organisation?*

The findings so far demonstrate answers to the first two questions through intermediations of what I have observed in my diary as *selves, things, processes or strategies, trials, assemblages, and practices* (see textbox below). The final question of the unintended consequences is examined next in Section 6.5.

Actors, both human and non-human seem to engage various strategies that allow them to interact in their capacities as they claim their place in the network of relations. INV-B-L28 seems to be leading from behind, allowing others to shine although everyone recognises his leadership. He shows servant leadership by hopping onto the back of the van to bring down everyone's bags as we arrive for the workshop. It seems normal to him.

Reflecting on the workshop, I can see various

1. *Selves* in this network of relations: managers and employees with unique desires, intentions and needs that they each project onto the technology.
2. *Things* like Google+, Jive, Yammer, Google Hangouts, Webex, Drugster's own Intranet, documents, etc.
3. *Strategies* like workshops, presentations, meetings, video communications, Google+ implementation planning, and so on that either seek to establish the Google+ network or make the technology less daunting to others.
4. *Trials* representing the disruptive events within the network of relations, like the discussions on the formation of Google+ communities and how to make it more effective. Other trials observed are the technological, legal, and human challenges faced in the implementation process.
5. *Assemblages* like what I was invited to be a part of; this L-M Community.
6. *Practices* like the array of technologically mediated activities that permeate this organisation's work.

Will this network survive? I need to watch these in the long term.

**(08/06/2016 after workshop in California | My Diary notes).**

## 6.5 Unintended consequences

As already mentioned in Section 6.2(.1), the intention to implement Google+ stems from a desire to open conversations across Drugster and Biomed. This metamorphosed into mundane practices of sharing stories ranging from sports to humour until it made its official entry into the organisation. Having now become an actant in the manager-employee relationship, Google+ has generated some unintended consequences, which in my subjective view are both positive and negative.

### 6.5.1 Positive unintended consequences

First, although the findings do not suggest a radical change in manager-employee relations *outside* of the Google+ platform, there is evidence of *new relationships* that are formed because of the technology. The new relationships are formed from the relational practices of actors in the Google+ communities and then carried on into the physical space. Individuals discover each other's hobbies, skills, and interests through their Google+ interactions and meet in person to explore their common interests. This has inadvertently made the water-cooler area a busy place as individuals come together in person to have a coffee and continue conversations from the platform (SC-B-L2; SC-B-L28). A manager said,

‘You find that oh we have the same hobby let’s go for lunch sometime talk about it you know, then you already start networking with other people umm you didn’t know before.’ (INV-B-L3).

In the course of this study, it was also found that events are sometimes organised using Google+. Individuals sign up for these events and meet in a physical space to interact in the flesh. In fact, in my own experience, I got a lot of ‘ice-breakers’ from the Google+ platform when relating with research participants or when meeting community members for the first time. The technology has helped to easily ‘connect’ when individuals meet in person as they already have something to talk about (INV-B-L28).

Second, the technology has created *new leadership roles* – ‘owners’ and ‘moderators’ – that did not exist at Drugster before its implementation. This is annotated in Figure 25 under Section 6.4.5. Although Drugster’s organogram has no place for community ‘owners’ or ‘moderators’, these actors gain recognition by these technology-enabled roles. Employees who hold these new roles freely exert leadership influence right in the

presence of their managers who are simply ‘members’ in the community. It is equivalent to a new ‘virtual organisational structure’ that has emerged alongside the physical one and both co-exist within the organisation.

Third, textual material on the platform is seen as an embodied delegate of its author. What an actor in the community **posts** is considered as what the individual **says**. In reference to posts, individuals often said, ‘Joe Bloggs **said** or **did**, rather than Joe Bloggs **wrote** or **posted**...’ The technology has engendered a new kind of self whose presence is made known by its textual posts. As a result, individuals carefully think through what they wish to post because it is a representation of their entire selves and they will be judged as such. They are careful to present a good image of themselves on the platform and to not embarrass other ‘selves’ on the platform. The following quote exemplify this.

‘There’s definitely confidential, private, personal information, umm I’m very careful not to embarrass **anybody** umm you know make a joke out of **somebody** or you know **do** something that’s kind of inappropriate. Umm you know being a good **citizen**.’ (INV-B-L2, emphasis added).

Here, the actor does not say, ‘I’m very careful not to embarrass anybody’s **posts**...’ or ‘**write** something...’ or be ‘a good **poster**.’ Rather, ‘I’m very careful not to embarrass **anybody**...’ and ‘**do** something...’ and be ‘a good **citizen**.’ By considering their posts as embodied delegates of themselves, community members exercise self-awareness and engage in respectful ways that cannot be usually said of a ‘social media’ environment. Figure 49 below gives a visual presentation of the positive unintended consequences engendered from the Google+ environment at Drugster.

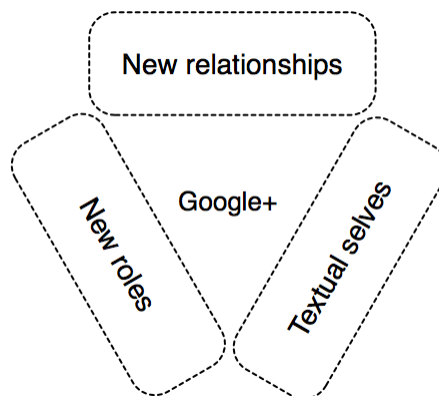


Figure 49: Positive unintended consequences of Google+ at Drugster.

## 6.5.2 Negative unintended consequences

These are divided into two kinds: at the organisational level and at the level of the individual.

### 6.5.2.1 Organisational level

First, I observed that the implementation of Google+ generated a situation in which it ended up replicating the very thing – silos – that it was intended to modify. The communities are closed communities. Most emerge along departmental lines, shown in Figure 19 under Section 6.2.4. No one individual is omnipresent in all communities. Communication between communities is thus at the mercy of individuals who are in multiple platforms (see Section 6.4.8.1). As a result, the closed communities simultaneously create digital silos alongside the organisation's physical silos.

Second, managers reckon Google+ enhances transparency, in that employees are able to see in real time what work others are doing. Members are able to challenge what they do not understand. Reports from managers are now available for all to see and not for only a privileged few. However, the presence of managers in the communities has also carried with it the idea that employees are being watched. Nonetheless, my own subjective feeling from conversations with participants does not necessarily give evidence to a fearful kind of surveillance. Rather, it is the idea that what they do is seen by all and therefore one is careful to be seen in a good light (INV-B-L28). In the positive unintended consequence highlighted earlier, actors are careful to *not* be seen in a bad light by their *textual selves*; here, they are careful to be seen in a good light. While the former makes them reflect on their posts before posting, the latter creates inertia and makes them not to post at all until they are confident enough about their posts. The idea of transparency has thus also engendered a kind of 'soft' surveillance.

Third, rather than reduce emails, the technology contributes to emailing by sending notifications of community posts as already discussed in Section 6.3.2. Until the user turns off this feature, the email burden is increased. Additionally, email archives can be searched quite easily for a past email. In Google+, past posts are not 'searchable'; the user must manually scroll downwards in the community's platform and continue to scroll until s/he finds the post s/he is looking for. As an unintended consequence, the



organisation has moved from a situation of email archives to a digital ‘dungeon’ of Google+ community posts. Figure 50 below juxtaposes these unintended consequences at both the organisational and individual levels for visual clarity.

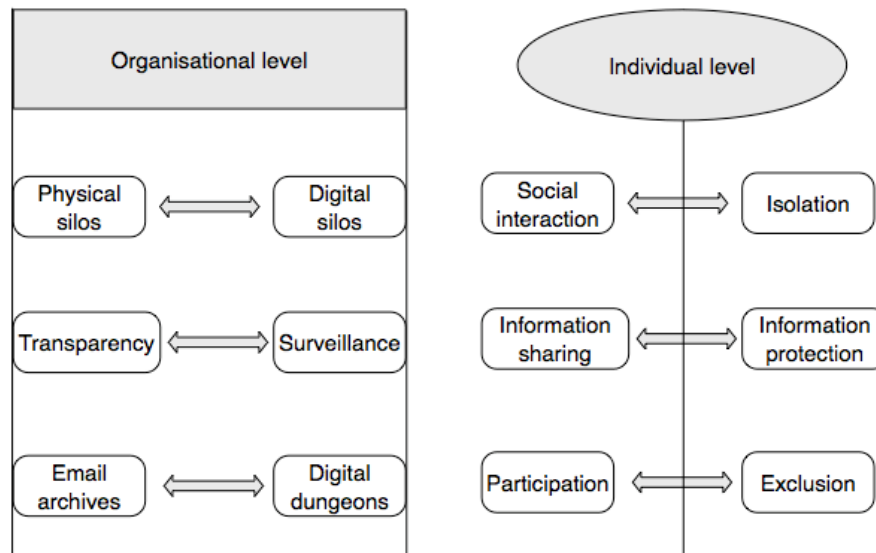


Figure 50: Unintended consequences at the organisational and individual levels.

#### 6.5.2.2 Individual level

First, it is indicated earlier that not everyone in the organisation appreciates the utility of Google+. Meanwhile, communities have been formed and at the zone of heterogeneous relations, participation is what drives the relational practices as managers engage with employees. Individuals do not *hearten* alone, or *cheer* alone or *mourn* alone or *question* alone or *pull* alone and so on. Non-members are thus excluded. Similarly, individuals who are mobilised as community members somehow feel compelled to participate. Example, one feels excluded if one does not post an achievement for others to *cheer* and that achievement thus fails to be recognised. For this, a controlling actor argued that employees must be encouraged to ‘brag’ about their achievement so that others can recognise their work and be challenged. He said,

‘If you [*sic*] in an enterprise context and you are bragging about good practices or something that works well I think it is in the interest of the enterprise that people brag because it can help others see their way’ (INV-B-L28).

Second, as highlighted earlier in Section 6.5.1, it was found that events are sometimes organised using Google+. Individuals sign up for these events and meet in a physical space to interact in the flesh. The signing up process to attend these events involves clicking 'opt-in' or 'opt-out' buttons inside the platform. Consequently, non-members are not able to make this choice. They are thus isolated from these social interactions by the very technology that has helped put the events together.

Third, as indicated earlier, Google+ has made information sharing possible in real time. The information shared is visible for all community members. Here, individuals are evicted from the privacy of their email inboxes into the open space where everything is available for all to see. As a result, some withhold information they deem inappropriate or too sensitive for the 'public space'. A manager said,

'I'm very careful about what information I put in there so I don't disclose confidential information, I don't disclose personal information, you know there are some things at the management level that you just can't disclose to everybody.' (INV-B-L2).

The judgment to not share something is subjective. It may be useful for everyone but if the individual feels it is not, then that information gets withheld. Figure 50 above also indicates these unintended consequences at the individual level.

## 6.6 Conclusion

This chapter has offered an account of the findings from the study while also answering the research questions in this investigation. As a reminder, the research questions are:

How do(es) the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?

- *What practices are involved when relational activities of manager/employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*
- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

In answer to the overall research question, 'How does the implementation (and/or use) of Web 2.0 (social) technologies influence leadership practice within the organisation?' it is observed that the technology finds its way as an actant in leadership practice. In its implementation, the technology is often referred to as a 'tool' but in its use, the idea of it being a 'tool' fades into something more. It exerts its agency on the human that has engaged its utility, partakes in leadership and influences the human. It pays no attention to the leadership climate it has come into; instead, it enters the leadership relationship and imposes its own environment on the human and makes its own appointments of who should be called a 'leader' – in this case, 'owner' or 'moderator'. Additionally, the technology shows its influence by imposing what language those it is networked with must use. From 'owner' to 'moderator' to 'plussing' or 'plus-oneing (+1ing)' – which is a form of tagging someone and so on (see Figure 34 under Section 6.4.7.3 for 'plussing' and Figure 38 in Section 6.4.7.5 for 'plus-oneing'). Striking in this study is that, even without a compelling argument for its implementation, this non-human actant inspired various narratives (see Table 10 in Section 6.3.2) that eventually allowed it to have a footing in the organisation, thus beating the humans who opposed it.

Furthermore, the technology has engendered and is part of a model of leadership practice which is relational, allowing actors to influence others who may even be more highly placed positionally than them in the organisation's hierarchy. By virtue of the technology's agency, managers not only respond *in relation with* those they are seeking to influence, they also respond *in relation to* those they are networked with in order to exert influence. The findings show how, in the case of the former, managers align themselves *with* the objectives of senior or top managers as they attempt to establish the technology as an OPP. In the case of the latter, the findings show how managers made necessary shifts in the network of relations in responding to posts or in accommodating issues raised in the network in order to sustain their positions of influence or in order to advance the network. In its actual use, the technology becomes a participant, not just a tool but an actant that actively participates in the manager-employee relationship where the practice of leadership occurs in four ways, leading to answering the second (sub) research question:

- *What practices are involved when relational activities of manager-employee networks in a Web 2.0 environment are analysed as a heterogeneous network of relations?*

In answering this research question, the findings show that relational practices among actors emerge from how activity is organised as well as how members are organised in the network of relations, of which the technology is a part. However, in analysing this network of relations, the door to the Google+ community, manifesting as the community logo, plays two roles. First, it places an identity on the network allowing it to be named and letting others outside of it recognise it as a unique network. Second, because the door is closed to outsiders, gaining entry allows the researcher to, in ANT terms, *punctualise* the network in order to make researching it manageable. In other words, it allows the researcher to draw a boundary around the network as an ANT network is potentially endless and some meaningful boundary is needed in order to understand it as a whole.

As the findings show, activity is organised in conversational blocks (or in communicative episodes) around tasks and not around individuals. For instance, all roads do not lead to one particular individual's page where conversations are held<sup>29</sup>. Rather, conversations are held in the open space where no one particular actor is a target of posts. As a result, no one particular human is a 'hero leader' who everyone else 'follows'. Following, the findings show that membership is organised according to their respective organisations and not according to their hierarchical positions. In other words, no member has a label of a 'MANAGER' in the heterogeneous network neither does the technology's own affordances allow this labelling of individuals. The labels they carry rather identify them as employees of Drugster or of Biomed. By considering the network's heterogeneity, the findings demonstrate that leader positionality is lost and leadership becomes a generated effect emerging from the relational practices among all actors.

Furthermore, the findings illustrate that manager-employee networks in a social technology environment allow all actors to engage in relational practices that enable

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<sup>29</sup> For comparative clarity, Facebook for instance has individuals' 'walls' where people can write posts to this individual in the view of all members in the network of that individual. Every other member can engage with this post on that individual's Facebook wall.

them to influence one another. Here, managers influence employees, employees influence managers, both influence the technology and the technology influences both as they all relate together. The relational practices of *reporting, questioning, pulling, cheering, heartening, mourning, measuring, and showcasing* interact to engender a multi-relational influence out of which four models of leadership emerge. These are:

- Digital tentacular leadership – a model of leadership in which the actor is present in multiple digital communities but does not sufficiently engage with employees.
- Digital multidirectional leadership – a model of leadership in which the actor is present in multiple digital communities and exerts influence as s/he engages with employees across the multiple communities.
- Digital relational leadership – a model of leadership in which the actor is present in a digital community and exerts influence as s/he engages with employees in that community.
- Digital silo leadership – a model of leadership in which the actor and employees are present in a digital community but do not engage with each other in that community.

Finally, although the four models of leadership highlighted above are implicit unintended consequences, the findings also provide answers to the third (sub) research questions which is:

- *What unintended consequences emerge for the manager-employee relationship as a result of the use of this technology (Web 2.0) in the organisation?*

Here, the findings identify that unintended consequences that emerge are both positive and negative at both the individual and the organisational levels. The positive unintended consequences are threefold and include,

- The development of new relationships that was not before possible without the technology.
- The emergence of new leadership roles that was not before available in the organisational chart.
- The recognition of individuals' textual materials as digital selves that are projected through reflective practice.

Following, the negative unintended consequences at the level of the individual are found to be:

- Exclusion from the manager-employee interactions that are enabled by the platform.
- Isolation from social activities that are organised, or for the isolated individual, made absent by the technology.
- Withholding of potentially useful information due to subjective judgement of the information's inadequateness for public space.

At the organisational level, the negative unintended consequences are found to be:

- The development of digital silos that reinforce the physical silos they are meant to break.
- The notion of (soft) surveillance in an organisation that has a high reputation for being an excellent employer.
- The emergence of the digital dungeon as past posts sink to bottommost spaces on the digital platforms.

Overall, the research findings provide insight into the phenomenon that the research questions set out to explore and gain an understanding into. The next section discusses the findings even more deeply in light of the literature.

# Chapter Seven

## Discussion

*'If there is anything in the universe that can't stand discussion, let it crack.'*  
-Wendell Phillips

### 7.1 Introduction

The findings in the previous chapter provide insights that answer the research questions but they also deliver ideas that challenge our current thinking in theory. In this chapter, these findings are further explored in the light of literature. Furthermore, those that provide contribution to theory are also discussed. In the concluding section of the previous chapter, a deliberate choice is made to summarise the findings that directly answer the research questions. In this chapter, however, the discussions focus on the findings as a whole. Particular attention is paid to findings that are related to the four moments of translation with the theoretical contributions highlighted.

Additionally, this chapter also discusses the 'taken-for-granted' that are in the findings in order to remain true to the underpinning theory of the ANT. Highlighted here is the discussion on the reference to the technology as a *tool* (not an actant) by all research participants. The implications of this description of technology in leadership practice are examined in this chapter thus settling the arguments made all the way from the introduction (Chapter One) to the findings (Chapter Six)<sup>30</sup>. As a road map, the chapter begins by discussing the findings on ANT's moments of translation. It then challenges the idea of technology as a *tool* that the researcher encountered in the study. Following, the findings on the technology's role in leadership are discussed as well as the unintended consequences that emerged.

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<sup>30</sup> An ANT thread running through the thesis is the idea that technology is an actor in the social space of the human, exercising agency and influencing leadership practice. This call has been sustained from a Latourian point of view from the introductory chapters all through to the literature review to the methodology. Eventually, the findings also justify such conceptualisation of this non-human actant.

## 7.2 The theoretical resources of the ANT versus the phenomenon under study.

In Chapter 3, the theoretical resources of the ANT are detailed. As a thread, ANT has run through this thesis in its approach as an ontology as well as a method. In other words, this study and its findings resonate ANT's positioning by its proponents as both a way of seeing reality and a method of knowing that reality. While ANT does not lay claim on *explaining* cause and effect in social science, it allows us to understand social phenomenon. In this study, ANT has helped us to understand, first, that the process of obtaining the mandate to implement the technology requires relational strategies that enable a bottom-up influence. Second, it allows us to see at various stages the unintended consequences that emerge as humans engage with the social technology. Here, it implicitly challenges the notion of 'social' in the tagging of Google+ as a 'social technology'. For instance, it is ironical that a 'social technology' ends up isolating or excluding some individuals from 'social interactions' that the technology itself has helped organise. Third, it challenges us to review our understanding of leadership. That is, leadership is no longer a concept involving only a human 'leader' and a human 'follower'. The understanding gained from the theoretical resources of the ANT emerges when its moments of translation are deployed as discussed below.

### 7.2.1 Problematisation in Drugster's Google+ experience

Problematisation is ANT's first moment in the sociology of translation (Callon, 1986). Here, one or more actors is engaged in **defining and exploring the nature of a problem** that the actor wishes to promote as having a particular solution. The actor advances a problematic with its potential solution as an OPP in a bid to rally allies that see the potential solution as indispensable in the network. From the findings, it was surprising to see that at Drugster, the controlling actors do not advance a problematic for which Google+ is the solution. They drive the implementation on the wings of a positive message by selling its benefits to the organisation. The nature of the problem for which Google+ is the solution is left unexplored but the solutions – offered as benefits – are strongly argued.



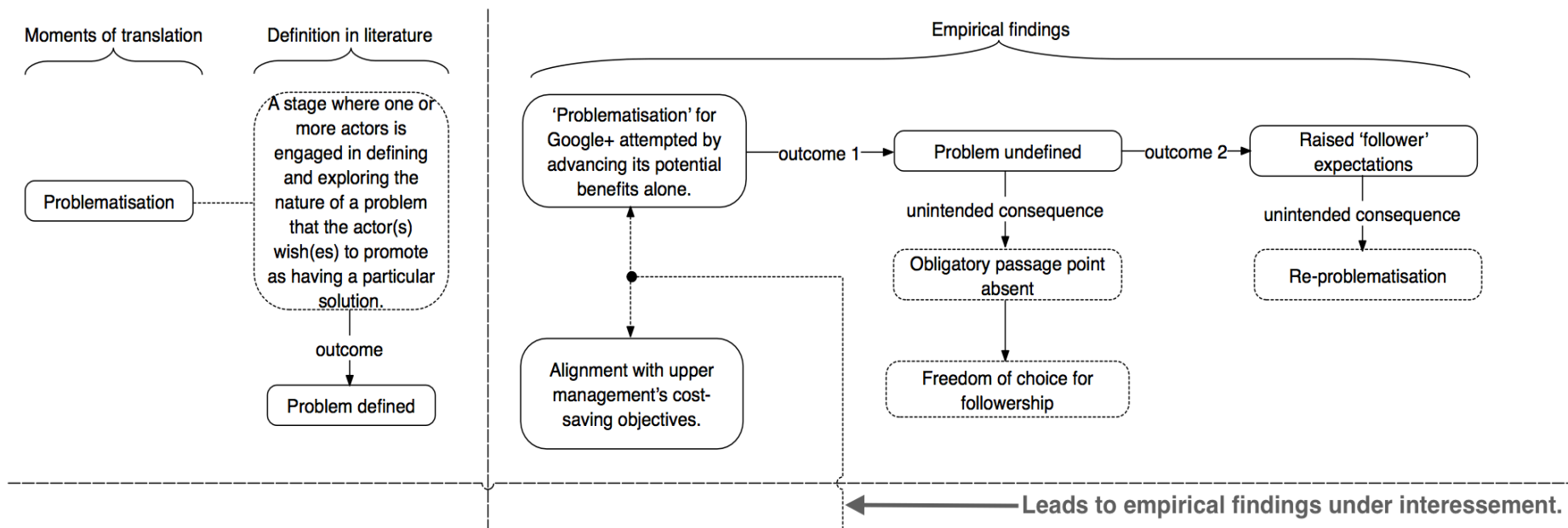


Figure 51: Problematisation in empirical findings.

By advancing solutions without a problem, the nature of the problem is left undefined. The implication is that Google+ never gets positioned as an OPP, leaving room for other competing social technologies in the organisation. Here, it is shown that in the absence of an OPP, actors have the freedom to choose what they want as long as it satisfies a need. This is because there are other available social technologies that already provide the benefits being driven for Google+. However, this leads to raised expectations for Google+. That is, although individuals are aware of the presence of other competing technologies, they also wonder what more there is to Google+ that the controlling actors seek to implement it in spite of the other similar technologies. The raised expectations thus trigger further questions about what more Google+ can do. It becomes a search for solutions that are not found in other technologies rather than an answer to a problem that Google+ solves.

For *problematization* to occur, Callon (1986) argues the controlling actor may utilise all sorts of resources available to it as 'raw materials' with which to draw others into its OPP. The materials he argues may include 'texts of all sorts, machines or other physical objects, and people, sometimes separately but more frequently in combination' (p.255). In the case of Drugster, the 'raw materials' used as controlling actors attempt to establish the OPP are positive messages. These messages are meant to create an appetite for the technology. It is deemed that by making people hungry for its reward, the OPP may be established. Elsewhere, the process can involve compromise, negotiation or 'mutual adjustments' among actors in a bid to establish an OPP (Callon, 1991, p. 143), or tensions that can result in disagreements in the organisation (Linde, Linderoth and Räisänen, 2003).

However, disagreements are avoided at Drugster as controlling actors seek to establish the OPP, but the appetite they create by their positive messages becomes too big to satisfy. This is especially so because other competing technologies deepen such appetite for something more. Here, an attempt to problematize in the presence of already available solutions raises expectations of individuals and ends up in a loop of re-problematization. That is, the controlling actors are forced to continue to offer newer and better solutions, which is a never-ending exercise because individuals continue to

ask for more. It becomes a mixed bag of positives about the technology and hypes the assumption that technology delivers solutions albeit to non-existent problems.

An analogy is seen in a buffet meal served on a long table for a group of friends. Everybody picks what he or she finds attractive on the table without ever exhausting the full length of the table. However, when they sit together to eat, they tend to desire what others have picked and/or ask others about the tastes of their choice. In their desires, are they still hungry? Or are they being greedy? Or are they jealous about others' choices? Or do they just have no knowledge of how the other plate tastes like? Or are they just being friendly? Only those at the meal can answer these for themselves. Similarly, from the findings, actors offer various positive reasons for the deployment of Google Plus at Drugster. Everyone picks what he or she deems beneficial at the buffet offered by this technology but at the dining table, they wonder what more they are missing. This desire, because it is not satisfied, creates a never-ending quest in individuals. This is exemplified in the internal tension observed in this actor's words below:

'To be honest I mean, you know, I might be [a] **very old-schooler** here, right? I have a mobile phone, I have Hangouts, I have Skype, I have Messenger, I have an Internet page, so what the heck else do I need? Sorry to be that honest, you know, if someone can convince me, yes that's the one, I'll accept it, right? But so far, I don't know what it's [i.e. Google+ is] for. Okay, there might be one thing when it comes to internal marketing of certain functions, might be okay, but still, is that beyond what the tools we have on-hand today? I don't know, right? But, when it comes to collaboration or sharing or whatever, I get too much information already, right? So, yeah, **I don't know what really can convince me, to be honest.**' (INV-Si-L17, emphasis added).

As seen above, this actor laments, '...I don't know what really can convince [or satisfy] me...' As a result, he questions his own identity in relation to the technology by asking '...I might be very old-schooler here, right?' He, although young, cynically ponders himself an 'old-schooler' – as one lacking knowledge of new technologies. This questioning of identity stemming from a hunger for more is from the assumption that technology must solve a problem. In this case, however, the problems are unseen but many solutions are offered. Accordingly, he seeks to know more of what the technology can do for him that he is not already getting from what he already has. He is loaded with its positives and

desires something more. This creates a hyper-loop of positives or solutions that the technology offers, but not a solution tailored to a specific problem. Accordingly, because the problem is undefined, the outcome is one of re-problematisation (see Figure 51) – that is, a recycling of problematisation – until individuals obtain some satisfaction. Furthermore, the lack of a problematic in initiating Google+ provides a more nuanced understanding of Callon's (1986) moment of problematisation. It implies that problematisation can involve a decision to initiate action for its own sake and not because there is necessarily the presence of a problematic.

Furthermore, the findings show that the controlling actors use a two-tier approach in their attempt to establish the technology as an OPP, one of which is discussed in the previous paragraphs. In the other approach, they align with upper management's objectives in order to get them as allies, which also leads to the next stage in the sociology of translation – *Interessement* (see next section). By engaging in relational practices of dialogue, discussions, presentations, and questioning, the controlling actors identify what is important and leverage cost saving in order to exert influence. This strategy is further explored below.

### **7.2.2 *Interessement in Drugster's Google+ experience***

In *interessement*, a controlling actor who is seeking to persuade others advances how a particular solution solves a challenge or a problem for those actors being influenced (Callon, 1986). The findings show how the controlling actors align themselves with upper management objectives in order to get them interested in the implementation of the technology. By making an argument for its cost saving benefit, upper management is *interested*. Here, they stand with upper management on a common ground, which is to save costs. They demonstrate that *interessement* is a relational process and for those in upper management, it is to stand *in relation with*, in order to win their interests (Cunliffe and Eriksen, 2011).

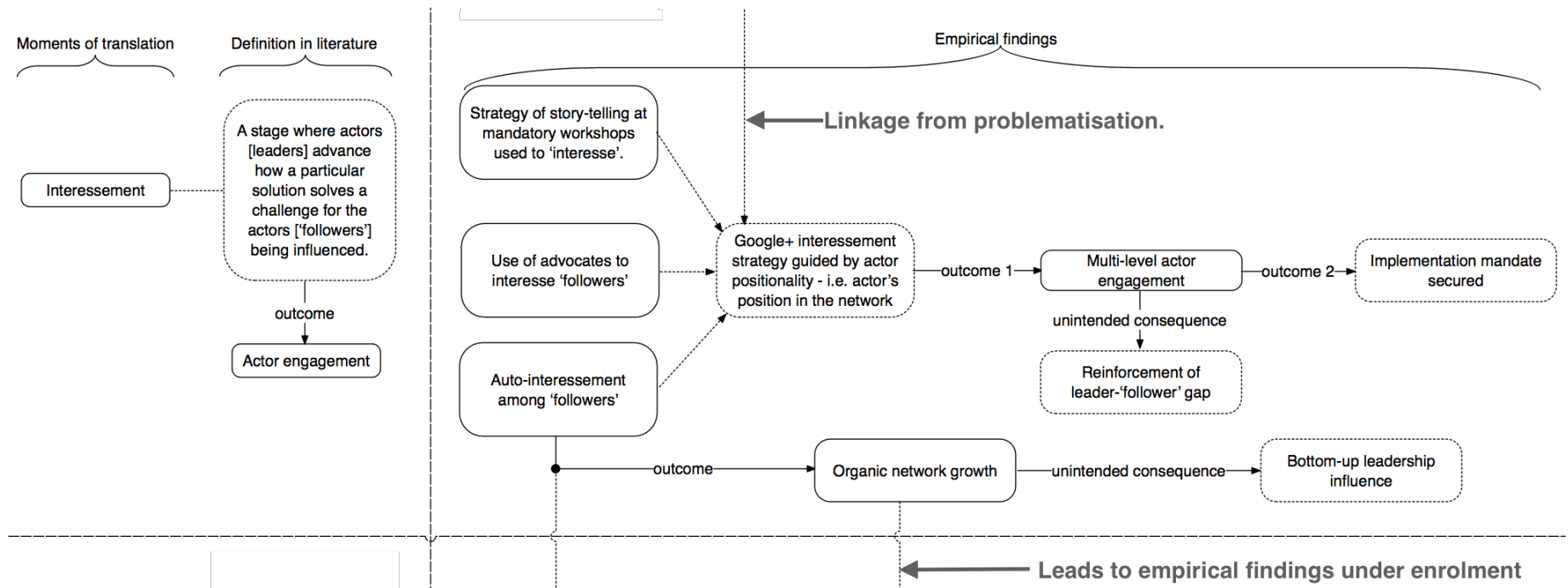


Figure 52: Interessement in empirical findings.

However, the controlling actors deploy other strategies in order to *interesse* employees. They realise that what is of interest to upper management is not necessarily what the employee base wants. As a result, they engage advocates and organise mandatory workshops as *interessement* devices. From the etymology of the word ‘*interesse*’, the relational process at play here is understood. To *Interesse* from the Latin is to be in between; *inter* meaning ‘in between’ and *esse* meaning ‘to be’ (Callon, 1986). To *interesse* therefore depicts an actor standing in between other actors in the network in order to impute its interests. Callon (1986) thus argues ‘to interest other actors is to build devices which can be placed between them and all other entities who want to define their identities otherwise’ (p.208). *Interressement* is therefore a group of actions through which an actor attempts to ‘impose and stabilize’ those that it previously defined through *problematization*. Here the findings show how the use of workshops and advocates as *interessement* devices seek to impute the interests of the controlling actors for network advancement.

However, it is illustrated in the findings how the process is clad with challenges from the very beginning. That is, they are faced with questions about the technology’s usefulness as ‘another tool’, a perception of the technology’s casualness, a fear of intrusion from outsiders, legal challenges, and issues concerning the technology’s compatibility with existing intranet as well as long-term support from its developer, Google. By engaging the workshops as *interessement* devices, controlling actors use stories of successful implementations from the pilot stage as well as from other organisations to generate interest. A controlling actor states:

‘...a lot of what we’re doing is actually selling our new stories and our value proposition...’ (INV-B-L2).

Here the findings show that by using stories, the controlling actors *interesse* others by *responding to* their worries about the technology. They paint a picture of how useful the technology will be in their daily work. They allay their fears about outsider intrusion, they also assure them of steps taken to ensure adherence to the EU’s GDPR, and they reassure them of Google’s continuing support for the technology and so on. Compared with the strategy for ‘*interesting*’ upper management, a different relational approach is observed here.

On this occasion, the controlling actors do not stand on a common ground *with* those

they seek to interesse. They stand *in relation to*, that is, by *responding to* the needs of the actors being interested in order to win their trust for network advancement. Here, the concept of relationality argued in Cunliffe and Eriksen (2011) as actors standing *in relation with* others thus making them morally accountable to others is pushed further. Actors who seek to impute their interests on others for network advancement can deploy strategies that are relationally-responsive to those they wish to interesse. The use of stories of successful implementation becomes a relationally responsive way to allay fears and generate interest in the technology. Proponents of story-telling argue that the human is more appropriately a *Homo fabulans* – makers and tellers of stories – than a *Homo sapiens* because they relate as social animals in a sea of stories (Currie, 1998; Cooper, 2003; Schiffrin, De Fina and Nylund, 2010; Szabo, 2013). As an interessement device, stories ‘weave our *weltanschauung* which then forms basis for individual and collective action’ (Soga, 2016, p. 19).

By using advocates, workshops and stories as interessement devices to generate interest among the employee base as opposed to the other dialogic practices of meetings, presentations, and discussions at the upper management level, the controlling actors reveal a multi-level actor engagement strategy at Drugster. Indeed, actors have different positions and interests in the network of relations. Interessement recognises this and seeks to construct a system of alliances through what actors are, what they want, what their different interests are, and what or who they are associated with in the network of relations (Callon, 1986). In the case of Drugster, the end goal is to have a Google+ network that treats all actors as equals on a flat platform hierarchy for open conversations. However, the controlling actors deploy an interessement strategy that treats actors according to their positions in the organisational hierarchy thus reinforcing the very thing they intend to avoid. The implication is that, an interessement strategy for its own sake, that is, without the overall objective of what the network seeks to achieve generates an unintended consequence that potentially threatens the objective it sets out to achieve. To circumvent this situation, Smith, Kempster and Barnes (2016) argue that the controlling actors ‘...*should* know why they wish a network to exist’ (p. 18, author’s emphasis).

Following, the findings also show how the technology seems to exert its own agency in interessement, as individuals who having heard about the technology, show interest in

becoming an ally for the controlling actors. These individuals are not interested by any other human actor. On the contrary, they interesse themselves. Implicitly, they are interested by the technology. This is because the auto-interessement observed is only possible because the technology involved is part of the network. It is also easy to conjecture that it is because the technology is Google+ as it is uncertain if actors will auto-interesse should the technology be Twitter or Facebook or Reddit or any other social technology. Nonetheless, no auto-interested actor reported it was specifically because of Google+ that they got interested. In fact, as shown in Section 6.2.3, some individuals did not even know how Google+ worked, yet they were auto-interested as shown in this manager's words, "The early requests were like, 'Give me the tool. I don't know what it does, but I want it. Someone else has that I don't have, I want it'" (INV-B-L1). Auto-interessement therefore emerges as a (sub-)moment of translation in which actors are intrinsically stimulated to present themselves as allies in the construction of an actor-network. From its Greek etymology, 'auto' means 'self'; therefore auto-interessement indicates self-interessement, which in the case of Drugster led to organic network growth within the organisation. Nevertheless, the technology's agency shines elsewhere in enrolment discussed later in Section 7.2.3.

In an argument that is akin to auto-interessement, Linde, Linderoth and Räisänen (2003) posit that interessement makes the developing network generate some form of *incitement* about what an actor wishes to advance thus locking other actors into fixed roles while at the same time weakening the influences of other competing entities that may threaten the developing network. While a controlling actor may instigate interessement-induced *incitement*, auto-interessement may cause same incitement without an active role from a controlling actor. In other words, auto-interessement can take a life of its own and if not managed can be chaotic for an organisation. This idea of auto-interessement potentially offers some understanding into spontaneous protests like the Arab Spring, Occupy Wall Street, Greenpeace, and so on. At Drugster, it leads to an organic network growth that challenges those in upper management in a bottom-up fashion to take the Google+ network seriously. Figure 52 offers a diagrammatic flow of interessement as seen in the findings and discussed so far. The next stage in the process of translation as Callon (1986) argues is enrolment, which is discussed next.



### 7.2.3 Enrolment in Drugster's Google+ experience

As indicated earlier under *interessement*, a phenomenon occurs at Drugster in which actors *auto-interesse*. As a self-evoked process, failure to manage it would potentially let it run its own course. As a result, actors must be enrolled and given specific assignments in order to bring direction to the growth of the network. In fact, Callon (1986) argues that *interessement* will only be successful if enrolment is accomplished. Enrolment is the stage where actors are assigned specific roles in the emerging network (Callon, 1986). At Drugster, controlling actors enrol individuals as community 'owners' and 'moderators'. These individuals together with the advocates are tasked with the responsibility to advance the network. A highly auto-interested group of candidates means a high number of owners and moderators and by consequence several communities spring up across the organisation as the findings show.

The literature indicates that enrolment may sometimes also involve seduction and or coercion (Callon, 1986; Latour, 1987), displacements (Bloomfield and Vurdubakis, 1999), or obstructive battles of wills (Linde, Linderoth and Räisänen, 2003), that is, tensions resulting from competing networks in which some win and others lose or are forced to take on roles assigned them. At Drugster, the findings do not show enrolment as forced upon individuals. However, it involves the appointment of new leadership roles – community owners and moderators – that challenges established hierarchy. These newly 'created' actors exercise leadership alongside those in positions of leadership, who also lose their positional labels or titles in the communities. Here, leadership is devolved across the network and is not consolidated around one individual.

Additionally, the appointments of these new roles are not made by upper management. They are made by controlling actors who now assume another level of influence with the power to appoint through enrolment. This shows the process of enrolment as a network advances is a political one. It is clad in both *displacement* of actors (Bloomfield and Vurdubakis, 1999) as some lose their positions of influence and *placement* of other actors who attain new levels of influence.

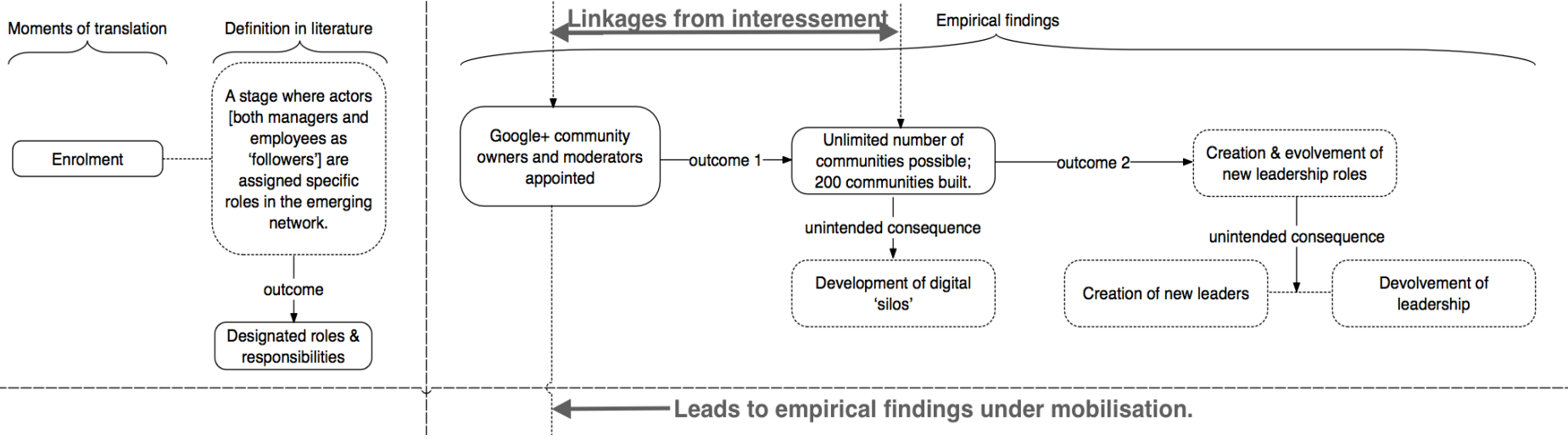


Figure 53: Enrolment in Drugster's Google+ experience.

However, enrolment at Drugster as the findings show (see Figure 53) leads to the development of digital silos. Newly created roles – owners and moderators – seek to advance the network and sustain their positions in the network but they also inadvertently generate silos in the digital space. This situation results in other unintended consequences for leadership practice discussed later in the next sections. Nonetheless, enrolment is illuminated as a process that can open up the network of relations as the network advances but also one in which the network can be made static with no flow of *tokens* across actors. Tokens are transmissions in the actor-network that ensure that dynamic interchanges remain in the network as actors negotiate to sustain their shifting positions for network stability (Latour, 1986a). The outcome observed is the dual nature of enrolment in which enrolled actors can become forces for network assembly or breaking points for network disorganisation or immobility.

Furthermore, it is counterintuitive that silos, which are mainly associated with physical organisations, are now projected onto ‘virtual’ spaces. This is because digital spaces are often shown to be open, without restraints and flat, in that they open up the organisation for transparency (Coine and Babbitt, 2014). On the contrary, Turkle (2008, 2011) shows this assumption does not necessarily hold. She argues that individuals in digital spaces are often alone, locked up in their own ‘private media bubbles’ without engaging meaningfully with their human counterparts. That is, it is worse for the bonds that bind us together than it looks (Kellaway, 2013). The implication is that, in the organisation, individuals in digital silos may claim to be working together because they are all present in the community. They can see one another’s profiles, they can perhaps see who is online and who is offline, and they can even make a post into the community and believe that their posts are seen by everyone. However, it is only an illusion; in reality, they are present in the community but they are absent from one another as also expressed in the unintended consequences (Section 7.5). They are working ‘together’ in the community but they are only working-alone-together. It is only an assemblage of actors without any flow of tokens.

#### *7.2.4 Mobilisation in Drugster's Google+ experience*

Mobilisation is the last moment in the sociology of translation. In mobilisation, enrolled actors are rallied or displaced from their original positions thus rendering them mobile. To maintain commitment towards a 'shared goal', all enrolled actors are mobilised to form alliances that ensure stabilisation of the network. 'Shared goal' is used cautiously here because the network remains a precarious one as competing interests usually remain (Law, 1992). It is in this regard that mobilisation ensures that actors are connected to form alliances that ensure network stabilisation. At Drugster, this is seen along departmental lines as communities are formed; this is also what has simultaneously engendered the digital silos discussed earlier. However, it is worth highlighting its positive side in that such assemblage of actors into digital silos at least ensures network stabilisation. That is, actors are not dispersed but are assembled in these communities albeit without flow of tokens.

In fact, Tett (2015) shows that the idea of silos is not necessarily a bad thing as it is often purported to be, in that it is in the evolutionary history of the human as they seek to congregate and build communities as social animals. Durkheim's (1984) thesis on the division of labour for instance offers a continuum starting from the primitive human who operates with what he terms mechanical solidarity. That is one in which an individual's consciousness is connected with the larger society's and all operate as one entity as against the other end of the continuum, what he calls organic solidarity, in which the individual expresses its own individuality. In both cases, the human seeks its own distinctiveness either as part of a social entity where they are separate from other unique social groups, or at the level of the self, the human seeks to express its own identity apart from another. In both cases, the human looks inwardly. In mobilisation, such reasoning is disregarded because it seeks to displace actors from their comfort zones in order to render them mobile (Callon 1986). Accordingly, the development of silos in digital spaces as observed in the findings is both an effect of mobilisation and a defiance to it.

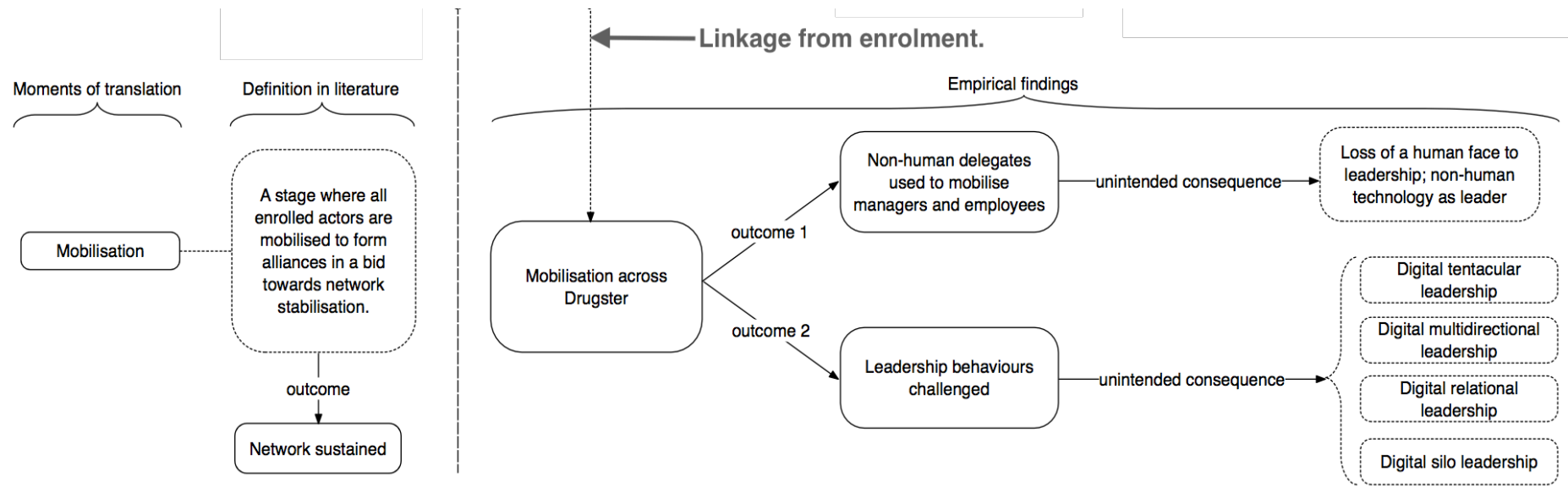


Figure 54: Mobilisation in Drugster's Google+ experience.

Because mobilising allies can have elements of defiance, Callon (1986) observes that mobilisation sometimes requires the introduction of new intermediaries that establish equivalences with actors in order to make their displacement and subsequent reassembly easy. For instance, at Drugster, the QR Code (see Figure 18 in Section 6.2.5) is an intermediary that establishes equivalence with controlling actors seeking to mobilise employees. It is a technological delegate of the human actor who uses it as a representative to speak for it (i.e. for the human). Here, there is no need for the human actor to engage another human and go through a range of discussions and negotiations in order to persuade him or her to get mobilised. Instead, all such (often) longwinded negotiations are pre-empted and all the human who is being mobilised has to do is to scan the QR Code.

Furthermore, it is clear that the human actor has placed confidence in the technological delegate to perform a role that the human should have done. By delegating such role to the QR Code, the human tasks the QR Code to assemble enough allies into the network to the extent that is desired by the human. The QR Code also has the responsibility to ensure that the assemblage of actors it has mobilised is organised in a way that the human wishes. In other words, this technological delegate must ensure that the intentions of its appointer are fulfilled as it rallies actors in the network of relations without silencing the latter. Example, an ambassador represents his or her country and performs his or her duties in the name of the country s/he represents. The ambassador, although a single individual and not the entire country, does not act in his or her own name but projects the image of the country s/he represents. Similarly, a technological delegate, although has got its own identity as a software or an algorithm or even a hardware, must 'simultaneously perform whatever it is that is being represented' (Law, 2014, p. 338).

Law (2014) recognises that representation is a difficult task. In the case of the QR Code at Drugster, it represents the human actor and assembles allies, but it does not mention to those mobilised the one who has appointed it neither does it speak about how those assembled are expected to relate together in the network. As a result, actors who are mobilised have the freedom to organise themselves in ways they deem appropriate without any external influences. Whereas some organise themselves to reflect the intentions of the human actor behind the technological delegate, others remain static

and continue 'business as usual' resulting in digital silos. Here, the face of the human behind the delegate is hidden and the delegate is left alone to offer leadership, which it does but only to the extent observed. For this reason Ashmore (1993) argues that the technology must rather be granted what he calls an intermediate ontological status of a *behave*r – that is, able only to perform the external stimuli delivered onto it by humans – in his critique of Latour.

Conversely, Latour (1993) argues that conceptualising the non-human representatives as intermediaries make them lose their ontological status, as they possess no transformative power over what they are transmitting to. Instead, he argues they must be seen as *mediators* – having the capacity to translate, to assemble, to redeploy, and to transform that which they transport. As intermediaries, they only bring together or perhaps keep apart (Bloomfield and Vurdubakis, 2000), but as mediators, they exercise agency and act on the other. For example, at Drugster the QR Code is tasked to rally allies into the network but it also silences what it represents and redeploys actors to their own way of organising. Consequently, the human actors that employ these non-human actants as representatives are forced to react in order to ensure that their interests are fulfilled. The representatives thus act both ways; they act on the one they represent as well as on what they are tasked to do, a concept that pushes their ontological status from mediators to *intermediators* (Bloomfield and Vurdubakis, 2000).

Following, the findings show how the technology acts on managers and employees at Drugster so as to induce new leadership behaviours (see Figure 54) and by consequence four new models of leadership practice within the social technology environment. These are discussed in the sections following, but first, the next section takes a closer look at the conceptualisation of technology as a *tool* by all (human) actors involved in leadership by taking a critical stance per the Latourian viewpoint.

### 7.3 Technology: tool or actant? What has happened to us?

The literature review provides insight into some of the various conceptualisations of technology as well as the ANT from which position this discussion is made. It is noted in the findings how **every** actor that the researcher encountered at Drugster made reference to the technology as a *tool*. Perhaps it is considerably safe to conjecture that as in Drugster, a Fortune 500 organisation, most organisations see the technologies they are networked with as tools that aid them in accomplishing their work. Clearly, most people do not call technology an actor, let alone actant, as this study has positioned it. In fact, most academic critiques of the ANT as shown in Chapter 3 also disagree with any attribution of agency to technology, a non-human that does (not) have intentionality. But the mundane framing of technology as a tool catches the attention as this potentially impacts attitudes to all things technology in contemporary organisations. In this section, this conceptualisation of technology as a tool is challenged, basing the arguments on the findings as well as the researcher's experiences in Drugster.

The view of technology as a tool makes our approach to technology as something that must be learned in order to use it optimally. The use of a 'complex' tool like a car must be learned just as is the use of a simple tool like a knife. Indeed the findings show that training workshops are organised as part of the successful implementation of the technology, to show humans the various ways that the technology can be used. Because its use must be learned, it is not a one-day affair. Learning is better conceived as a process that takes time (Kolb, 1984; Easterby-Smith and Lyles, 2011). Drugster for instance makes the training workshops mandatory in order to ensure that the technology is used optimally.

Unlike technology, most managers do not think of employees as tools that they use to accomplish work. They think of employees as fellow workers who are tasked with responsibilities. At Drugster, they provide employees with the necessary support, engage them as fellow humans with respect, accommodate their unique needs and weaknesses, identify their key strengths and deploy their abilities for the benefit of the organisation, even if it means allowing people to work remotely or at odd hours (Duxbury *et al.*, 2007). This is shown in Section 5.4 as well as the leadership climate I experienced at Drugster. Accordingly, a clear distinction is made between the human as



employee and the technology as a tool.

Tools are often used and forgotten about. They are easily relegated to the background after the work is done and their input in the work accomplished is often not recognised (Latour, 1992). The human who has used the tool receives praise for getting the job done and the tool is left to itself. Tools are seen as passive. Until they are engaged, they are deemed as not having the ability to act. Even while they are being used, their activity is often not realised (Latour, 1992). In the mind of the user, it is not the tool doing the activity but the human using the tool. However, when the tool breaks down and work gets halted, the passivity of the tool is called into question. At this point, the human recognises that it is not only the human at work but the tool is also at work together with the human (Latour, 1987, 1995). Here, the tool is recognised as a collaborator, a co-worker in a relationship with the human. At the point of tool breakdown, the attention of the human is turned onto the tool (Latour, 1995). This time, the tool must be fixed. Until it is fixed, the job cannot continue. If something new has to be learned about the tool in order to fix it, it must be learned. As shown in the findings, the mandatory training workshops found at Drugster was also a forum for addressing some of these concerns.

While the tool gets fixed, a level of importance is imputed onto it. The human recognises that the tool is as important as the work s/he was doing with the tool. Measures are taken to prevent future breakdowns. At Drugster, preventing these breakdowns means ensuring that software updates are rolled as soon as they are made available from Google. In fact, individuals are employed with a job description that ensures that all organisational tools are in working condition. This is found in such functions as IT support, Google Services Suite Management, and so on. At Drugster, there are also Google+ component owners, project managers, technical leads, and so on.

These functional units are involved in organising the training workshops to teach other members of the organisation how to properly use these tools. They write memos about the tools and their working conditions to users. They inform users about the tool's software updates and if it means work must stop temporarily for these upgrades, this is done. In reality, what the human is saying at this point is that its work is in the hands of the tool without which it cannot accomplish anything. In effect, the human allows the

tool to dictate when work must be done having now become tethered to the tool (Turkle, 2008), or is held bound by its electronic tags (Bloomfield, 2001) or by the pinging of its notifications (seen in the findings, e.g. Figure 23).

In other cases, the human swears at the tool for halting work but it does not possibly fight it and win. It is like the force of nature; the human swears at an oncoming storm but it cannot possibly prevent or anticipate its effects when it arrives. The human respects that and often calls it an act of God. Similarly, the human shows it is helpless when it comes to the tool; it is as though its fate is in the hands of the tool. The findings show this when an interviewee swears in frustration at the invasion of the many tools in his life by stating, 'what the heck else do I need?' (INV-Si-L17). A similar emotional outburst is seen elsewhere:

'Shortly after midnight, a resident of a small town in southern California called the police to report hearing a man inside a house nearby screaming "I'm going to kill you! I'm going to kill you!" Officers arrived on the scene and ordered the screaming man to come out of the house. The man stepped outside, wearing shorts and a Polo shirt. The officers found no victim inside the house. The man had been yelling at his computer' (Fogg, 2003, p. 89).

Such interaction with the tool in the organisation parallels this force of nature. If work must stop or a change is required in how work is done because of the tool, the human has to comply. In their frustration they swear but they eventually comply.

Furthermore, humans that are employed to take care of the tool ensure that the right documentation about the tool is made. They keep files to document when the tool needs to be upgraded, when it was last upgraded, and when any present issues are raised about it. At Drugster, they also measure the usage of the tool (as observed in the relational practice of *measuring*). These documentations are often reviewed and the necessary updates or improvements to the usage of the tool are made (Bloomfield and Vurdubakis, 2000). In some cases, managers require reports on the tool. As a result, individuals are tasked to report on the status of the tool, they prepare presentations about how the tool is operating or being used, and deliver these presentations to management teams. This is observed in the pilot survey conducted at Drugster about Google+ as also reported in the findings (see Sections 5.4 and 6.2.1). If a manager has a question about the tool, answers are sought. Here, managers seek the voice of the tool in

order to make or inform a decision.

The tool thus makes input in decision-making. The decision may be something that either positively or negatively affects work (Phillips and Reddie, 2007). The decision could be solely about users of the tool, in this case, employees as seen in the recognition given to those with 'Top Post of the Month' awards in the relational practice of *measuring* (see Section 6.4.7.4). Whatever the decision to be taken, the voice of the tool is involved. Those bookkeeping activities about the tool, the documentation of its performance, usage, maintenance, and the reporting of it all highlight its importance. Here the tool emerges as an integral part of the organisation and has shown that it is stable, tangible, and real.

However, for lack of attention paid to it as an actor, the tool simultaneously presents itself as unstable, giving it a protean character for which humans either embrace it or express dislike for; the findings show that not everyone at Drugster accepted the technology. As only a tool, technology is considered inert, neutral, silent, passive, and mundane. However, it is this perceived mundanity, inertness, silence and passivity that also give it the very hidden character it possesses. That is, it makes it inconspicuous and enables it to invade the space of the human within the organisation. When its disguise is uncovered, it evokes emotion, making the user swear at it and in some cases, scream at it as mentioned earlier (Fogg, 2003).

But there are times when the tool is so carefully camouflaged that it fuses itself with the human in practice. In those moments, it metamorphoses into a hidden participant. For example, when a manager speaks with an employee over a video technology like Google Hangouts, is it only the voice of the human actors that is heard across the technology? No, in reality the voice of the tool can also be heard. If its voice is not heard, it is because it is itself part of the message being transmitted from manager to employee. As a result, only the voices of the humans are audible and it is as though the technology is silent. However, it is actively participating in the discussions, merging itself with the voice of the humans who called for the meeting. At the same time, it fuses itself with the thoughts of the human as he or she ponders what to say. At a point when one human actor says, 'hello, hello', 'can you hear me?' or 'the video seems to have frozen' or 'the sound is bad' etc, he or she is still pondering what to say but this time, the silence of the technology is

broken. However, the meeting is not instantly cancelled because of a temporary hitch in the technology, which is surnamed a tool. Instead, both human actors acknowledge the technical glitch in the video tool and assume at telepathic speed that it will resolve once the Internet connection is stable. At this point, the voice of the tool is made prominent although it is still not explicitly acknowledged. In other words, it is ignored but the tool continues to remain in the moment with the humans, participating and sometimes interfering in the communicative process when its technical hitches arise. In other words, it remains obdurate and the perception that it is not interfering or blocking out the video feed reinforces its obstinacy in the space of the human. It is there.

In my own experience as researcher, I encountered many technical glitches. These included Internet slow-downs, computer freezes, video call freezes, cloud back-up failures, and so on. In all such cases, the voice of the tool is loud as ever. It has always been loud, only this time it catches the attention because something is wrong. In reality, what is wrong is not that a technical glitch has occurred; it is that the technology has been ignored as a mere tool. It has been given a wrong name. It has been relegated to the background and like a human, it also seeks attention in that it has been taken for granted for too long (Latour, 1992). This informs the observer how important the tool is, so that at Drugster for instance, whole functional units and teams are set up to ensure its proper function within the organisation.

In the organisation, the technology is only a tool but for the technology, it is both a tool and a participant in organisational practices. In other words, it allows itself to be considered and used as a tool but it simultaneously uses its position to play its own role within the organisation as an actor. The technology allows itself to be a tool in the hands of the organisation's human actors while also acting on them, influencing their decisions, sneaking upon their conversations, holding most of their communications, changing their practices, impacting their emotions, and in some cases altering their roles (e.g. community 'owners' and 'moderators'). However, because it is still seen as only a tool, the human gives himself or herself the illusion of being in control, that is, as the user of the tool, a master of it, and a decider of all action. While this illusion of control remains, the tool's entry into the organisation only becomes a stimulus for the human to rise as its master. Here, the human draws up plans for implementation, to deliver pilot rollout, and to eventually establish its usage within the organisation as found at Drugster.

In so doing, the human brings in others in defining and exploring a problem that the tool can solve for them. Implicitly the human acknowledges that they are not all-powerful after all, they need someone to help solve their problems and that 'someone' is the tool. ANT has supplied the lens to see it as a process of problematisation in Callon's (1986) sociology of translation. Here one or more actors is engaged in defining a problem that the actor wishes to promote as having a particular solution. In the case of Drugster, it is not just one actor. Therefore a decision is needed among the upper managers at this point. This decision-making process is necessary in order to bring closure as to what problem the tool solves. Closure refers to how relevant actors come to agree on what technology to adopt (Pinch and Bijker, 1987). At Drugster, managers reach closure by agreeing the tool's ability to save money for the organisation. Here what is considered a tool reveals its other character, that it is intelligent enough to help save money.

Here, the human is working together with the tool and both are intertwined in practice, and they are acting on one another (Orlikowski and Scott, 2008). The tool is not a passive participant in the relationship. It is not taking anything away from the human. If for nothing at all, it is also contributing to the bottom line. It is true that at Drugster, its implementation does not come cheap. There is a cost to it and vast amounts of time are spent to get it to work. The researcher for instance has spent four years seeking to understand the role of the tool and has satisfied himself by answering the research questions that drove him, a satisfaction that is worth the pain of those years. In the process, one's view of the material world is impacted as well as how to account for objects or artefacts methodologically.

Finally, it would be inconsistent to ignore what the choice of this tool, Google+, has had on other tools in the organisation. This is because the thesis argues that the tool, in its relationship with the human generates unintended consequences, which must not be limited to only humans when the claim is that tools are also active. Moreover in the 'tool world', incompatibilities also exist. For instance, the findings show how Google+ is incompatible with Drugster's legacy Intranet, one of the technological challenges reported (Section 6.2.2.1.5). Furthermore, a tool may not affect the inherent capability of the human, but it certainly obfuscates the human's ability to deploy other tools. Example, the human is not able to drive a car and a train at the same time. S/he is limited by his or her humanity. Similarly, the choice of this tool at Drugster obfuscates

the choice and use of others, perhaps even of its human counterparts; unfortunately, this is a limitation to this study as is highlighted later in the next sections. But as discussed, all human actors that partake in the manager-employee-technology relationship, refer to their new relational actor as a tool. The findings have shown how this new actor changes their concept of leadership. It is an actant and ANT has justified it; even more, humans have now come to terms with it when a computer convinces a panel it is human (*Computer AI passes Turing test in 'world first', 2014*). The next section now discusses this actant's role in changing the leadership landscape of its human counterparts.

#### 7.4 Relational Leadership in the 'technologized' manager-employee relationship

In the previous section, the idea of technology being only a 'tool' is discussed in that it is not merely an instrument that is used but an actor that is present and active in organisational practices. In this section, attention is drawn to the practice of leadership that the findings at Drugster give insight to. Importantly, the chapter discusses how the newly identified actant – technology – intermediates the manager-employee relationship. For heuristic application, this relationship is now referred to as a technologized manager-employee relationship in that it is now a *manager-technology-employee* relationship. It is also rightly a *manager-employee-technology* relationship or a *technology-manager-employee* relationship and so on. The permutations can continue because choosing one over the other implies privileging one actor in the relationship over the other. Example, a *manager-technology-employee* relationship connotes the idea of the technology as an intermediary in the relationship when the arguments so far refute such view.

As seen from the literature review, the position of leadership taken for this study is one that argues that leadership occurs in relationships (see Chapter Four). And in the technologized manager-employee relationship that is observed at Drugster, this relational leadership is shown to occur in many forms. Elsewhere, these social technologies have been shown to impact leadership in the following ways: They enable participative and consultative styles of leadership rather than directive approaches (Korzynski, 2013), they enhance knowledge sharing among employees for product

innovation (Bughin, Chui and Miller, 2009), they offer managers the opportunity to quickly engage with employees and adapt to changing business needs (Bennis, 2013), and they enable managers to leverage technology for establishing leadership among their peers (Luo, Jiang and Kulemeka, 2015).

At the same time, these technologies also tend to replace face-to-face human interactions, which also have advantages of spotting nuances of non-verbal cues (Turkle, 2011). As a result, the argument suggests that technology becomes an *intermediary* in the manager-employee relationship which might increase the relational gap, thereby distancing the manager from the employee (Shamir and Ben-Ari, 1999; Turkle, 2011). On the surface, the findings seem to show some evidence to support this claim in that it is discussed how the QR Code, a technological delegate exerts its own agency without showing the face of the human who deployed it (see Section 6.2.5). However, this is only the case when the technology is taken as an *intermediary*. In the case of it being an actor in the relationship, then the argument instead is that, the technology does the leadership in the place of the human, or at least engages in leadership with the human in a hybrid manner (Grint, 2005a).

It is the case that at Drugster, individuals are geographically dispersed and therefore face-to-face physical interactions with managers at distant locations is costly. As a result, the organisation risks relational crises when these technologies are not in place. In fact, some have suggested that organisations risk losing young talent – millennials – altogether if they fail to engage with these technologies (Kouzes and Posner, 2007; Warner and Sandberg, 2010; Coine and Babbitt, 2014). Although there is little evidence in the findings to support the claim of millennial attrition, there is enough evidence to show that the technology enables relational practices among managers and employees across Drugster's dispersed locations. A case in point is the Drugster-Biomed merger in which Europe connects with America over Google+. Here, the technology provides avenues through which managers transmit their influence onto employees in real time (Avolio and Kahai, 2003; Avolio *et al.*, 2014). It also empowers employees to relate with and influence their managers without any limitations of hierarchical positioning (Tredgold, 2014). In the organisation, the findings show that the technology engenders a digital environment in which all participants in the technologized relationship engage new sets of relational practices that either encourage or constrain the manager-

employee relationship (Mohammad, 2009).

Additionally, the very architecture of the digital environment that the technology engenders is one that is *a participatory medium of exchange* (O'Reilly, 2007; Facci *et al.*, 2017), not merely a medium transporting messages as argued elsewhere (see Barry and Fulmer, 2004). In the former, the medium is part of the exchange among managers and employees whereas in the latter, the medium is a 'tool' that either party in the relationship leverages as a means to an end. This new digital environment in the organisation thus engenders relational practices that differ from what is usually experienced in the physical world (Mohammad, 2009; Facci *et al.*, 2017). The relational practices – *reporting, measuring, cheering, pulling, heartening, questioning, mourning, and showcasing* – that emerged from the digital environment, for instance, arguably occur in some form in the physical world but are fundamentally different in how they occur in the digital space. Accordingly, it is far-fetched to assume that the models of leadership practice deployed in the physical world can be superimposed on participants in the digital realm without empirical justification. In other words, the participatory medium of exchange that characterises the organisation's digital environment is generative of a set of relational practices that constrain our existing relational leadership models, but they engender new approaches to the concept of *relationality* in leadership.

The present conceptualisation of *relationality* in leadership studies has shown it to be a product of two perspectives. First, the *entity* perspectives that focus on the individual as a social agent with his or her 'perceptions, intentions, behaviors, personalities, expectations, and evaluations relative to their relationships' with other human actors (Uhl-Bien, 2006, p. 655). Second, the *relational* perspectives that focus on the processes by which individuals enact the leadership relationship rather than the individual properties of actors in the relationship (Uhl-Bien, 2006). Whereas in the former, the unit of analysis focuses on *individuals*, the latter takes the *relationship* as its unit of analysis. From an ANT perspective, both conceptualisations emerge when one considers that the unit of analysis is the *actor-network* that comprises of 'actors-in-relational-processes' involved in creating, sustaining, or (dis)organising the relationship. Here, both the actor and the relationship are important in the analysis in that actors create the relationship and are in themselves generated effects of that relationship (Law, 1992).



Additionally, because the notion of the actor in a technologized relationship extends beyond the human, the concept of *relationality* in that leadership relationship invites a third dimension, which emerges from the findings. In the technologized relationship observed in Drugster's digital environment, one observes, first, *selves* – managers and employees with unique desires, intentions and needs that they each project onto the technology, example cost-saving or connecting Drugster to Biomed or other unmet needs. Second, *things* – Google+, Jive, Yammer, Google Hangouts, Webex, Drugster's own Intranet, documents, and so on that either compete for attention or present themselves as answers to the needs of others. Third, *processes* or *strategies* – workshops, presentations, meetings, video communications, Google+ implementation planning, and so on that either seek to establish the Google+ network or make the technology less daunting to others. Fourth, *trials* – 'disruptive' events within the network of relations, e.g. formation of Google+ communities. *Trials* also represent how things hold together while overcoming resistances in the network, e.g. the technological, legal, and human challenges faced in the implementation process. In fact, ANT theorists argue trials are a necessary ingredient of all actor-networks since 'no description of a setting is possible or even thinkable without the mediation of a trial' (Akrich and Latour, 1992, p. 260). Fifth, *assemblages* – made up of the various departments in the organisation, working teams, management boards e.g. Drugster's upper management, and so on. These also include the various Google+ communities that emerged within the organisation. Sixth, *practices* – these are the array of materially mediated activities within the organisation, some of which become routinized and embedded in how people work, e.g. the practices of reporting, cheering, heartening, mourning, showcasing, measuring, pulling, questioning and so on.

Following, a *network* perspective for *relationality* thus emerges from the findings. It is so called because it draws into the analysis all actors in the relationship. Individuals alone do not make up the network. Additionally, relationships alone, in the sense of (how) who is connected to whom do not also constitute the network. Instead, *relationality* in the network is an intermediation among *selves*, *things*, *processes*, *trials*, *assemblages*, and *practices* that constantly create, sustain, advance, or dissolve the network. This *network* perspective deviates from network theory which Uhl-Bien (2006) identifies as only concerned with 'description (e.g., who talks to whom, who is friends with whom) and

taxonomy (e.g., friendship network, advice network, ego network) of relational links, focusing primarily on “mapping” network interconnections (e.g., identifying the number and types of links that occur among individual actors)’ (p.660). Instead, this *network* perspective embraces the emergent properties of the relationship among all actors and how their ‘social’ influence process is formed, shaped, sustained or constrained by the technological intermediation within the heterogeneous network. As a result, the findings push further the distinction made from the literature on relational leadership (see Table 2) in Chapter Four. Table 15 below therefore adds another row to what is offered in Table 2 from Chapter Four.

<b>Relational Leadership</b>	<b>Physical environment</b>	<b>Digital (social technology) environment</b>
<b>Entity Perspective</b>	<i>Relationships</i> are analysed but <b>individuals</b> remain the focus as the unit of analysis.	Networks are analysed; individuals receive no privileged ontology.
<b>Relational Perspective</b>	Relational <i>processes</i> occur in the <i>social</i> – among individuals or between individuals & <i>context</i> .	Relational <i>processes</i> occur among individuals & <i>things</i> (i.e. technology), or among individuals, <i>things</i> & the digital context.
<b>Network Perspective</b>	Networks are analysed; <i>Intermediation</i> among <i>selves, things, processes, trials, assemblages, and practices</i> .	
<b>Definitional Propositions</b>	<i>‘Relational leadership as a social influence process through which emergent coordination (i.e., evolving social order) and change (i.e., new values, attitudes, approaches, behaviors, ideologies, etc.) are constructed and produced’ (Uhl-Bien, 2006, p.668).</i>	<i>Relational leadership as an enactment of influence in a heterogeneous network of relations in which evolving social order and change are produced, sustained, and or constrained through intermediations in order to stabilise the network.</i>

**Table 15: Relational leadership in three perspectives.**

With this third dimension of the *network* perspective, the concept of relational leadership is then an enactment of influence in a heterogeneous network of relations in which evolving social order and change are constructed, sustained, and or constrained through intermediations that seek to stabilise the network. Here, the practice of leadership in the technologized manager-employee relationship becomes one in which the intermediation of technology positions actors in configurations that enable all to

influence one another.

Moreover, at Drugster, the context of the digital environment within which the technologized relationship thrives jettisons the labelling of actors as either managers or employees. Thus, it refutes positional claim to leadership and enables everyone to exert influence. However, if the digital context labels actors as either managers or employees, or perhaps grants them their positional hierarchical designations, so that everyone on the technological platform visibly identifies an actor as a 'leader' and another as a 'follower', then an internal contradiction will be evoked. This is because the technological platforms in a Web 2.0 era all seek to render actors as being on the same level without any hierarchies (O'Reilly, 2007), although this idea is also critically examined later in sub-Section 7.4.1. Consequently, a future study into such a context must examine why such labelling of actors is done and how it has influenced relational practices in the digital environment and indeed the organisation as a whole.

In fact, as highlighted in Chapter Four, the human actors in this digital environment are not 'leaders' and 'followers' per se; such conceptualisation only reinforces one as influencing the other and not the other way around. Rost (1995) for instance believes this leader-follower distinction is an archaic idea and expresses in his own words: 'I have since given up on the concept of followers as hopelessly irredeemable, that is, inherently industrial in its denotation' (Rost, 1995, p. 133). From an ANT perspective, the same argument holds in that all actors in the relationship are analytically equals. John Law for instance asserts, 'Napoleons are no different in kind to small-time hustlers, and IBMs to wheel-stalls. And if they *are* larger, then we should be studying *how* this comes about – how, in other words, size, power, or organization [or leadership] are generated' (Law, 1992, p. 380) [author's italics].

However, it will be implausible to argue that in Drugster or any organisation, there are no persons with designations that place them in leadership roles or defer leadership to them. Accordingly, the consideration of no 'leader' or 'follower' is an analytic decision that is supported in theory. Empirically, leadership involvement is seen as critical for the implementation of the technology at Drugster hence the strategies of interessement, enrolment and mobilisation discussed in the preceding sections. Implicitly, this recognises that without, for instance, upper management's support or approval, there

will be no success. Upper management is highly ranked in the hierarchy and shows how palpable leadership positionality remains critical to the network. Nonetheless, as the findings show, this hierarchical positionality is non-existent within the digital environment and does not have a bearing on how actors are organised on the technological platform. As a result, at both the analytical and empirical levels, the idea of 'leader' and 'follower' within the digital environment continues to disintegrate 'hopelessly and irredeemably' (Rost, 1995).

From that discussion on how the findings push the boundary of relational leadership in the technologized manager-employee relationship, the next section details the various forms in which the concept emerges in the digital environment as observed in the findings.

#### *7.4.1 How does relational leadership look like in the digital environment?*

In the previous section, it is argued how the network perspective on *relationality* brings the concept to the fore as an intermediation among *selves, things, processes, trials, assemblages, and practices*. As an *intermediation*, all actors are active in the relationship. For instance, it is observed in the findings how the technology, although referred to as a *tool*, exerts its influence on the network of relations as an actant. The emergence of new roles such as 'owners' and 'moderators' are prominent examples of this technological intermediation. These platform-enabled leadership positions confer power on individuals holding such roles. This power is conferred by the technology in that these individuals are the only ones who can approve or disallow entry into the community. They are also the only actors that can change the 'look and feel' of the community by accessing the community's technological settings or control panel. By default, they are also the point of call for community members who wish to seek clarity on the community's technological features, agreed codes of conduct, and so on. That is, they police the community and also educate members on new developments. These leadership roles emerged as a result of the Google+ network and are ratified by the technology. Whereas a longitudinal examination of the consequence of this shift in

power is beyond the scope of this study, it is worth highlighting that the technology has initiated an *ordering* (Law, 1992) in the digital environment.

Meanwhile, as a social technology, it is argued to jettison hierarchies and embrace flat organisational structures (Coine and Babbitt, 2014). Here, the story is different and the technology has a part to play. Although it does not label all actors so that everyone can visibly see who is a 'leader' and who is a 'follower', it is still not neutral. In the technologized manager-employee relationship, it has acted in a way that triggers shifts in leadership influence. The technology has privileged some actors over the rest of the community membership. It has conferred positional power on owners and moderators and has enabled a leadership shift in the network away from those with hierarchical positions within the organisation.

Leadership is thus devolved to the network, and is enacted in the zone of heterogeneous relations where actors make the necessary shifts to exert influence and or maintain their desired levels of influence. In other words, leadership takes no account of who is high in the organisational hierarchy and who is not; it is black-boxed and only made available to those actors that are able to unpack it. Opening this black box involves the relational practices that an actor is able to draw on while taking into account other actors s/he is networked with. Here, what is at play is a relational, self-correcting model of leadership in which actors in the heterogeneous network of relations respond to one another's actions in real time in order to improve and/or sustain their positioning in the network (Raelin, 2015). No one actor is a heroic leader and leadership becomes a generated effect. It is self-correcting in that it is enacted through 'textpretation' – that is, interpretation made from reading the textual (and other) posts made onto the platform by other actors – which may not equate the interpretation intended by the author of the post. As a result, through the practice of *questioning*, clarifications are made in order to correct what was beforehand perhaps ambiguous. In that moment, the actor seeking to influence makes the necessary shifts in the network in order to achieve its aims.

Following, four models of relational leadership in the digital environment emerge from the findings.

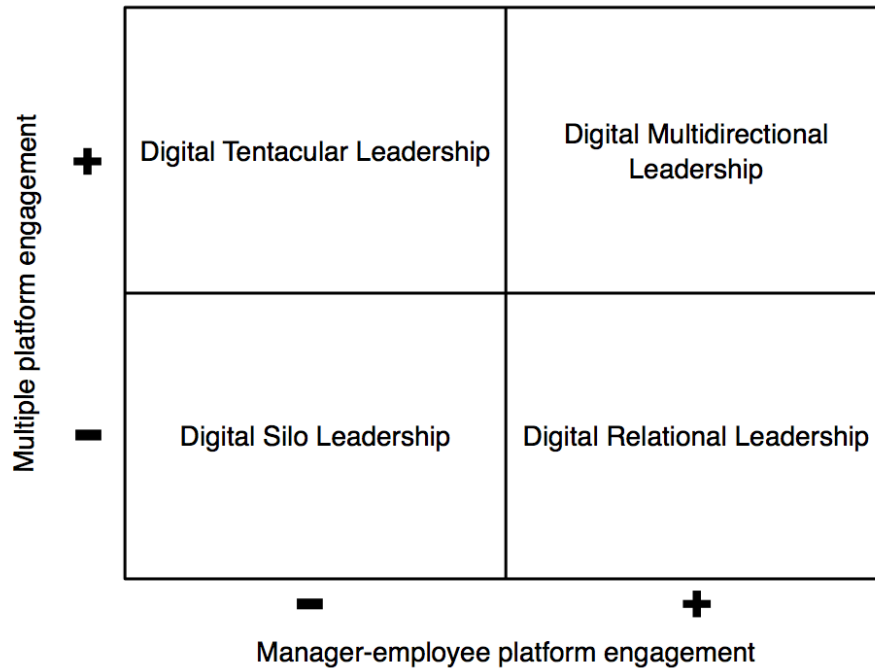


Figure 55: Social technology leadership matrix in the organisation.

These leadership models depend largely on the levels of engagement that actors bring to the relationship as well as the number of unique technological communities| groups| fora| platforms etc. that are within the organisation. As in Drugster, most large contemporary organisations have several departments that either talk to each other or not. The specialty of their operations may causes them to operate in ‘silos’ or work across functions. This differs from organisation to organisation (see Gibbons *et al.*, 1994; Tett, 2015). As a result, managers seeking to participate in leadership in the digital environment have a choice as to what their aims are. Simultaneously, employees also have a choice to actively participate in the leadership process or not engage. As illustrated in Figure 55, the actor is either involved in multiple platforms\ communities\ groups\ fora and so on or is only present in one community. In an organisation where only one technological community exists, like in most start-ups (Coine and Babbitt, 2014), then the actor who is part of this community either chooses to actively engage with other actors or not. As already explained in the findings, actors either engage in digital tentacular leadership, digital silo leadership, digital relational leadership, or digital multidirectional leadership, as illustrated in the four quadrants of the matrix.

Finally, it is shown in the findings how not all actors in Drugster appreciate the

technology. It is safe to conjecture that this is also the case in most contemporary organisations even if all organisational members are millennials. In fact, the generalisation that millennials are technophiles as against the rest of us who are not technology savvy is challenged in a recent study (see Kirschner and De Bruyckere, 2017). As a result, in each of those quadrants, the network of relations may be loosely held, accommodating ambivalence, ambiguities, disparate perspectives, indeterminacies, and the dual status of 'insiders' and 'outsiders' in the heterogeneous network (Singleton and Michael, 1993) as is also expressed in the unintended consequences that these technological intermediations bring to leadership.

### 7.5 Unintended consequences for the technologized manager-employee relationship

As recorded in the findings, the new technological entrant in the manager-employee relationship comes with its unintended consequences for the relationship. Often, managers in organisations tend to focus on external usage of social technologies like engaging with customers via Twitter, Facebook, Google+, etc. that they lose sight of the true impact these technologies bring to leadership relationships *within* the organisation (Chui, Dewhurst and Pollak, 2013). In fact, Newman *et al.* (2016) detail a retrospective analysis of social technologies over the past eleven years and make no mention of its role in manager-employee relationships. The findings from this study thus offer some insight into how these technologies impact what I have referred to as the technologized manager-employee relationship (see Section 7.4). This section therefore discusses these unintended consequences in detail, which in the findings are classified as both positive and negative.

The findings show how the technology has enabled interactions among organisational members while also fostering new relationships (see Section 6.5.1). For the technologized relationship, this accords a wider reach of influence as other relationships are formed that are not beforehand possible. Theoretically, the digital space is one that expands to accommodate actors but not so much for physical spaces (Castells, 2010). A physical space can only take so much and it becomes cramped. However, in this instance where the technology enables new relationships that translate into the physical

space, it has conceptually chipped off the borders of the physical space, expanding it and enabling relational influence to outgrow such physical boundaries. In effect, managers who engage in leadership in the digital space may be advantaged in the physical space. This is because although physical distance among individuals is shown to improve task-related work, physical contact is also shown to enhance social ties and people's feelings of fondness which can be advantageous for managers (Siebdrat, Hoegl and Ernst, 2009). However, this propositional claim warrants further study.

The findings also show the emergence of new leadership roles as a positive unintended consequence (Section 6.5.1). Although this can be considered negative by some or perhaps threatening for others in the hierarchy, I make this claim of it being a positive subjectively per the atmosphere I encountered at Drugster. Elsewhere, emergent roles due to these social technologies are also recognised and these are often positive (see D'Agostino and Cone, 2007; Fleming and Waguespack, 2007). By empowering employees with leadership roles, the technology distributes leadership and allows everyone to participate rather than consolidate influence in one single individual in the hierarchy. Arguably, this context may not be agreeable to all organisations like in the military where ranks ensure social order. However, as to whether these 'newly appointed leaders' eventually benefit the technologized relationship in the long-term is a limitation for this study.

Additionally, issues of identity also arise in the findings, as individuals tend to project textual selves onto the technological platform (Section 6.5.1). To bring a balance into one's work life, individuals are encouraged to cultivate and define themselves by multiple non-work selves, e.g. a sports self, a civic self, a religious self and so on (Reid and Ramarajan, 2016). These various selves allow the individual to organise his or her life in order to achieve 'balance' in his or her work life (Reid and Ramarajan, 2016). With technological intermediation, a *textual self* is added to the work lives of individuals as this study finds. However, what these technological intermediations mean for people's sense of self, for their human (not just technological) communities, and as Winner (1993) also argues, for the quality of their everyday living, and for the broader distribution of power in society are not usually of explicit concern (see Winner, 1993, p. 368). Admittedly, this is also a limitation for this research and opens up areas for further exploration.



Furthermore, the technologized manager-employee relationship sustains itself by the continual participation of all actors in the relationship. Managers and employees must engage each other for the relationship to hold. The technology must also remain *active* for the relationship to be sustained. For Bradley and McDonald (2011), the benefits that come from the implementation of these technologies are realised when employees actively participate in the technologized manager-employee relationship. Other arguments position participation by both managers and employees as necessary for anything meaningful to come out of the relationship, be it transparency (Bennis, 2013), identification of leadership capability (Bilgram, Brem and Voigt, 2008), collaborative work (Newcombe, 2009), or even non-collaborative work in forcing one's interest on others (Leonardi, Neeley and Gerber, 2012). Avolio et al. (2014) also point out that the participatory systems that are now common in social technology platforms allow managers and employees the freedom to self-disclose and share details about their work and other aspects related to their personal lives with one another. Here, the outcome is a transmission of leadership influence by reason of these technologies. However, these arguments in the literature all assume full participation of all organisational members in the technologized relationship. Consequently, exclusion from leadership influence in the relationship lurks, when for some reason individuals are not technologically connected. Arguably, this may be a positive although it is positioned as a negative in this research thus opening up new areas for research.

Similarly, just as participation inadvertently engenders exclusion from the technologized relationship, the findings also point to isolation as an unintended derivative of the social interaction that the technology generates. From the study, this is categorised as negative although it is possible that some individuals may not want to be part of 'social interactions' intentionally. Susan Cain for instance argues how introverts find their energy in quiet. That is, while social interactions may seem useful for some, they may be simply 'noise' for others (Cain, 2012). In fact, high employee engagement may just not be for everyone as it provides unfair disadvantage for personality types who are more introverted (Garrad and Chamorro-Premuzic, 2016). Nonetheless, there may also be extroverts who may not prefer high employee engagement activities. Understanding these paradoxes in the digital environment goes beyond the scope of this study.

Moreover, in approaching these technologies as 'tools', managers can inadvertently create avenues for isolating employees if they become so dependent on it as a tool that they risk isolating themselves from the employees they are supposed to be interacting with (Turkle, 2011). For instance, Shamir and Ben-Ari (1999) coin the term, *teleleadership* to depict a manager using technology like a military leader involved in the reading and interpretation of electronic information and transmitting instructions to his/her followers. This notion, the authors argue, presents a form of distant leadership isolating the leader from followers without any social interaction. The implication is that, if technology becomes the only means through which manager-employee distances are bridged, especially in today's 'boundaryless' organisations, leadership influence potentially risks becoming weakened by the very technologies that are deployed to strengthen it (Shamir 1999; Gajendran & Joshi 2012; Lojeski & Reilly 2010).

Another unintended consequence that confirms the literature is that of information withholding. Research participants highlighted there are some things they would rather not post onto what they consider a public domain. For Cramton and Orvis (2003), information shared can be either of *social* nature – relating to individual relationships, aspirations, personal motivations and so on – or *contextual* – relating to the milieu surrounding tasks. The challenge here is that it is the individual who decides what falls in what category for him or her to be comfortable at sharing it. As a result, withholding information in the digital space is largely subjective and may be a good thing for the individual. However, it may also lead to self-surveillance if the information is perceived as having the ability to negatively impact the individual sharing it when that may not be the case (Lupton, 2013). These are thorny areas in the digital space and actors must decide for themselves how they wish to run their technologized relationships (Mesmer-Magnus *et al.*, 2011).

In withholding information, employees with ideas that may be good for the organisation may not be heard or empowered to execute tasks (Chan, 2013). Additionally, withholding information has also been shown to encourage a culture of silence (Milliken, Morrison and Hewlin, 2003) in which employees cannot challenge certain organisational practices including leadership (Detert and Burris, 2007) or relate with peers – *speaking out* – as well as with those in managerial positions – *speaking up* (Liu, Zhu and Yang, 2010). As a result, confidence and trust in leadership may be eroded (Gao,

Janssen and Shi, 2011). Chan (2013) thus proposes that managers create more open channels of communication through which information can be shared freely in order to encourage voice activities in the organisation. However, because the technologies themselves are active in the relationship, they also play a role in the information distribution patterns (Takaragawa and Carty, 2012) and can therefore be used to withhold information from certain group of employees. For instance, the findings posit how the Google+ communities at Drugster are all closed communities for which an employee in one community has no access to information in another community. In effect, these social technologies that have fostered information sharing in the technologized manager-employee relationship can potentially be used to 'control the resulting flow of information' that they have generated (Florini, 2007, p. 5).

Finally, the idea of being 'watched' in the digital space as a potential side effect of the deployment of these technologies, as shown in the literature, also features in the findings although in a different form. In the literature, surveillance is presented as detrimental to the leadership relationship. Here, it is shown to break trust in the relationship (Westin, 1992), reduce employees' perception of personal control thus decreasing task performance and job satisfaction (Stanton and Barnes-Farrell, 1996), and militate against managers' ability to influence when employees get the impression that they are being monitored (Subašić *et al.*, 2011). Elsewhere, it is not only managers who deploy surveillance over employees but employees also monitor their peers (Andrejevic, 2004), or their own selves either individually (Lupton, 2013) or in a participatory manner (Best, 2010).

However, although what is observed from the findings at Drugster is one that is indicative of the idea of surveillance in the organisation, it is more nuanced than it looks. As explained in the findings (see Section 6.5.2), this kind of surveillance observed does not put people 'in check' for fear but repositions individuals so they are seen in a good light. Unlike the panopticon, where those who are watched do not see those watching them, the situation with Google+ at Drugster allows everyone to see others and also be seen in return, everything is visible to all participants in the relationship in what would perhaps be referred to as the 'omni-opticon' – a form of 'soft' multidirectional surveillance.

## 7.6 Conclusion

This chapter has examined the findings of this study in the light of the literature. It has also highlighted what is taken for granted, yet critical in how technology is perceived. It explicates that our perception and approach to technology impacts our theorising of its effects in the manager-employee relationship. Furthermore, the chapter has discussed from an ANT perspective how the implementation of the technology came to be and how the newly established network of relations influences the practice of leadership in the organisation. In the discussions, how ANT has been useful as a lens is weaved into the arguments made, in that it has, first of all, engaged the technology as an actor; second, it has enabled a third dimension to the concept of relationality in leadership studies – the network perspective – which also improves the definition of relational leadership as a concept; third, it has inspired an investigation into potential unintended consequences when technology is engaged by the human and indeed proven to be so; fourth, it has offered a new understanding to the concept of leadership by throwing light on how the concept of relational leadership in the digital space looks like. Here, it presents relational leadership in the digital space as a function of an actor's engagement over (multiple) technological platforms as well as the actor's engagement on the platform(s) with those s/he seeks to influence. Finally, the discussions offered in this chapter also recognises some limitations to issues raised which also form part of the study's limitations presented in the next chapter. Similarly, this chapter also pushes the boundary on the concepts discussed thus offering some contributions to theory and these are also presented in the final chapter below.

# Chapter Eight

## Conclusion

*\*While I was still a boy, I came to the conclusion that there were three grades of thinking; and since I was later to claim thinking as my hobby, I came to an even stranger conclusion - namely, that I myself could not think at all.'*  
- William Golding

### 8.1 Introduction

As shown in Chapter One, this study begins with some aims and objectives. In this concluding chapter, those aims and objectives are revisited in order to ascertain how they are met. Additionally, the study makes some contribution to both theory and methodology, which are also stated here. Nevertheless, like any undertaking, the study makes no claim to perfection but also identifies some limitations that are also opportunities for further investigation. The chapter also highlights what implications for practice this study generates. It then concludes with some final thoughts of the researcher. To begin with, a summary of what the study is about is presented in the next section.

### 8.2 What was this study about? A summary.

This study was conducted at a Fortune 500 organisation, Drugster, which had recently merged with another organisation, Biomed. With both organisations headquartered widely apart geographically, that is, Europe and the United States respectively, managers thought of how they could network the entire organisation across the continents. With Google's services already in use at both organisations, employees connected with one another informally using Google+ (pronounced *Google Plus*), a Web 2.0 (social) technology. In this study, I followed the actors as they moved from what was initially a fun project into implementing the technology as a 'tool' for work within the organisation. Here, a social media application with its associated 'stigma' of informality becomes part of an award-winning organisation.

By interviewing the technology’s implementing actors and users, that is, managers and employees, I followed how the technology became an integral part of the organisation. In following the actors involved, I investigated how the practice of leadership was done from the perspectives of actor-network theory (ANT) and relational leadership theory. Because I was interested in understanding the process in full, I followed the actors all the way into the online spaces where they ‘lived’ together with the technology and did their daily jobs. In those digital spaces, I conducted a netnography, which complemented the interviews and also threw light on the concept of relational leadership in the online space. The methodological principle of an ANT study is to *follow the actor(s)* (Latour, 2005), which was what this study has accomplished by doing so even into their online spaces. The journey was exciting, difficult, but also refreshingly rewarding. I started the study with some aims and objectives, which I evaluate in the next section.

### 8.3 Revisiting the aims and objectives

Aims	Evaluation
To expand the ontological basis for current leadership thinking with a unit of analysis that goes beyond a purely human phenomenon.	The unit of analysis in this study has been the actor-network, which comprises of managers, employees, and the technology – the non-human actor.
To understand manager-employee relational practices in a Web 2.0 (social) technology environment.	Through netnographic observations, some light is thrown into how managers and employees relate over a social technology platform in what is a zone of heterogeneous relations.
To explore the (usually not considered) unintended consequences of the deployment of these technologies in the organisation.	The fundamental belief of the ANT of non-human agency means that the researcher is open to see these unintended consequences as also uncovered in the study.

**Table 16: Table evaluating the study’s aims.**

In addition to the aims of the study (Table 16 above), some specific objectives are also drawn out in Chapter One. These are also re-examined in Table 17 below.

Objectives	Evaluation
To apply the theoretical resources of the ANT to analyse leadership as a heterogeneous network of relations.	The objective of the ANT is met as it forms basis for the analysis, the methodology, the findings, as well as the discussions thus forming part of the thread that runs through this thesis.
To advance an understanding into unintended consequences of the deployment of the technology for leadership.	This objective is realised.
To contribute to the emerging area of leadership research that argues for the inclusion of praxeological family of theories (Carroll, Lester and Richmond, 2008).	This objective is realised by the deployment of the ANT, simultaneously pushing the boundaries of relational leadership theory.

**Table 17: Table evaluating study objectives.**

As part of its aims and objectives, this study answered the research questions it set out to understand as also shown in Chapters Six and Seven. In doing so, some contributions to theory and methodology are made as outlined in Section 8.4 below, although these are also expressed in Chapters Five, Six and Seven. In the following section, the contributions made are succinctly put together.

#### **8.4 Research contribution**

The contributions made in this study are found in three main areas. The first is in the field of leadership, particularly for the concept of *relational leadership theory*. Being a broad area of work, only one aspect – relational leadership – is taken for this study as explained in Chapter Four. This is an emerging area of leadership research and the study has pushed its boundaries. The second area of contribution for this study is the ANT, which has also challenged the concept of relationality in leadership studies. The third area of contribution is in methodology and this is also highlighted in the following sections.

#### 8.4.1 Theoretical contributions to relational leadership theory

To begin with, it is shown in Chapter Three how ANT is largely ignored in leadership studies. In fact, only a few studies have deployed the ANT in the field of leadership although experts in the field call for it. In Chapter Three, the extent of this lack of attention to the ANT is mentioned. Collinson and Grint (2005) consider ANT as one of the areas that attention must be paid to in leadership studies but twelve years on, their call remains largely unheeded. They assert, 'We believe that increasingly sophisticated theorizing can significantly enhance the intellectual integrity of leadership studies' (Collinson and Grint, 2005, p. 7). This study positions itself as among the few that have heeded that call (others highlighted in Section 3.4 of Chapter Three).

The idea of leadership has long been conceptualised as a purely human phenomenon. Whereas this study is not the first to argue for or posit technology as also actively participating in leadership (see Grint, 2005a), it has empirically justified such assertion while also contributing to the theory in **two** ways. First, the study argues that the manager-employee relationship in an organisation that has deployed social technologies (like Google+) is no longer merely a relationship of managers and employees. Instead, the relationship is now, what the study calls a *technologized* manager-employee relationship, giving it a character that is emergent, ambiguous, heterogeneous, and relational in nature. It is emergent in that it is generative of practices that allow all actors in the relationship to express themselves within the context it is a part of. It is ambiguous in that it is unclear who is *doing* the leadership in the relationship since all actors are on an equal footing influencing one another multidirectionally. It is heterogeneous in that the actors involved in the relationship are made up of humans and non-humans. This (technological) heterogeneity is unique and separates this leadership relationship from that occurring in a pre-digital or a non-digital environment. Finally, it is relational in that all actors in the relationship are networked in a way that allows them to influence one another, thus leading to the second contribution.

The second contribution has to do with *relationality* in relational leadership theory. Here, the contribution unfolds in **three** ways. First, by positioning relational leadership in the digital environment, it extends how the two perspectives in the literature – *entity* and *relational perspectives* – look like in this new technological environment. In the former, the study argues that *networks* are analysed as against *individuals* who would



have remained as the unit of analysis. Here, individuals receive no privileged ontology. In the latter, the study argues that relational processes occur among individuals and *things* (i.e. technology), or among individuals, *things* and the digital context. This pushes the boundary in the literature where the relational processes occur in the *social* – among individuals or between individuals and their ‘social’ contexts.

Second, the study contends that a third perspective on relationality in leadership is needed, which it also grounds in the empirical findings. This third perspective is the *network perspective*. The network perspective positions *relationality* as an intermediation among *selves, things, processes, trials, assemblages, and practices* that constantly create, sustain, advance, or dissolve the network. As an *intermediation*, all actors are active in the relationship. For instance, it is argued and empirically supported how the reference to technology as a *tool* only tends to hide its true identity as an actant but it remains obdurate in the relationship no matter what name it is called. This *network perspective* embraces the emergent, ambiguous, relational and heterogeneous properties of the relationship and how its ‘social’ influence process is formed, shaped, sustained or constrained by the intermediation in the network. This then leads to the next contribution to the concept of relational leadership.

Third, from that position of the third aspect being the *network perspective*, the study contributes to relational leadership in the digital space by illustrating it as a function of an actor’s engagement over (multiple) technological platforms alongside the actor’s engagement on the platform(s) with those s/he seeks to influence. Here, it contributes to theory by showing how the technologized manager-employee relationship engenders relational practices – *reporting, measuring, pulling, cheering, heartening, mourning, questioning, and showcasing* – that interact in a zone of heterogeneous relations to generate multi-relational influence (see Figure 44). This contribution impacts the nature of relational leadership in the digital space as one that is devolved to the network and is enacted in the zone of heterogeneous relations with actors making the necessary shifts to exert influence and or maintain their desired levels of influence. Here, it takes no account of the organisational hierarchy and no one actor is a ‘heroic leader’.

Additionally it reveals that individuals do not only act *in relation with* others in order to exert influence, a concept observed in Cunliffe and Eriksen (2011), but they also act *in*

*relation to* how others have shifted in the network of relations. Accordingly, this kind of leadership observed here is a relational, self-correcting model of leadership in which actors in the heterogeneous network of relations respond to one another's actions in real time in order to improve and/or sustain their positioning in the network. Here, leadership influence becomes a generated effect of those dynamic interactions in the network. This contribution is also consistent with the ANT that defines the actor as a generated effect of the network of relations of which it is a part (Law, 1992). As a self-correcting model, the dynamic shifts in the network are enacted through what the study calls 'textpretation' – that is, interpretation made from reading the textual (and other) posts made onto the digital platform by other actors – which may not equate the interpretation intended by the author of the post.

Furthermore, the study contributes to theory by illustrating four ways in which this relational leadership in the digital environment, that is so far conceptually argued, might be deployed in practice. These four are like a heuristic for addressing the practical elements to managers seeking to implement these technologies in their organisations. These are shown below but better represented in Figures 48 and 55.

- *Digital tentacular leadership* where the actor (potentially a manager) is present in multiple digital communities but does not sufficiently engage with others (more likely employees).
- *Digital multidirectional leadership* where the actor is present in multiple digital communities and exerts influence as s/he engages with others across the multiple digital communities.
- *Digital relational leadership* where the actor is present in a digital community and exerts influence as s/he engages with others in that particular community.
- *Digital silo leadership* where all actors are present in a digital community but have little or no engagement with each other in that community.

Overall, these contributions made to the concept of *relationality* in relational leadership theory also challenge its very definition. Accordingly, the new definition, which was conceptually argued in Chapter Four is empirically supported. This definition positions relational leadership as *an enactment of influence in a heterogeneous network of relations in which evolving social order and change are constructed, sustained, and or constrained*

through intermediations that seek to (de)stabilise the network. Previously the definitional claim to the concept was: 'A social influence process through which emergent coordination (i.e., evolving social order) and change (i.e., new values, attitudes, approaches, behaviors, ideologies, etc.) are constructed and produced' (Uhl-Bien, 2006, p.668). Following, the differences that these two definitions bring to the fore are offered in Table 18 below:

<b>Relational leadership theory</b>	
<b>Previous definition</b>	<b>Proposed (new) definition</b>
<i>'A social influence process through which emergent coordination (i.e., evolving social order) and change (i.e., new values, attitudes, approaches, behaviors, ideologies, etc.) are constructed and produced' (Uhl-Bien, 2006, p.668)</i>	<i>An enactment of influence in a heterogeneous network of relations in which evolving social order and change are constructed, sustained, and or constrained through intermediations that seek to (de)stabilise the network.</i>
The 'social' in this definition is without non-human actants.	Heterogeneity is recognised here, which also involves non-human agency.
This has a definite end goal which it aims to <i>construct</i> and <i>produce</i> .	The end goal here is left for the outcome of the intermediations, which either stabilise or sometimes destabilise the network.
Both recognise emergent interactions in the relationship or an <i>evolving</i> social order. This is also consistent with the network perspective in that there is no social 'order' but <i>orderings</i> or configurations resulting in dynamic shifts that are <i>in relation with</i> and <i>in relation to</i> others.	

**Table 18: Differences in definitions of relational leadership.**

#### 8.4.2 Theoretical contribution to ANT

In Chapter Three, the ANT and its processes of translation that also underpin it as a method – not just a 'theory' – are explained. This study makes contribution to ANT in two ways, the first being at the moment of *problematization* and the second at the moment of *interessement*. According to the theory, problematization ensures that a controlling actor defines a problem and then advances an obligatory passage point (OPP) to persuade others as being the solution to the problem (Callon, 1986). Without a

problem definition, an OPP is not established. However, in this study, it is observed that no OPP is established at the start of the process for implementing actors seeking to promote Google+ as the OPP. This is because there are other competing technologies already available at Drugster that offer the same benefits as Google+. Somehow, with no problem defined and therefore no OPP in place, the controlling actors still manage to construct the network. They achieve this by gaining enough political support from upper management and continue to face the challenge of 're-problematisation' throughout the implementation process until they are relieved by enough support from employees who are interested in the technology for its own sake. The contribution here is that:

*The absence of an OPP triggers a cycle of re-problematisation until interestment is strong enough to advance the network.*

The second ANT contribution stems from the first, and it is in the moment of interestment. Here, the controlling actors advance how a particular solution solves a challenge for those being influenced (Callon, 1986). From its very definition, a controlling actor is assumed to be at one end and those it seeks to interest are at the other (receiving) end of the process of interestment. In this study, it is observed how individuals *auto-interested* – that is, they get interested in Google+ themselves just by hearing about the technology; no actor external to them takes any special steps to *interesse* them. The contribution here is that:

*Auto-interestment can result in organic network growth when individuals are self-motivated for network advancement.*

Here, interestment is placed at the level of the *self*. Accordingly, it challenges the very idea of translation in ANT, in that a *controlling actor*, that is, the actor seeking to advance the network does not necessarily have to deploy any strategy to influence others. That is, no *tokens* – which are the transmissions in the network of relations (Latour, 1986a) – are needed to flow from a controlling actor to another actor. Rather, when it comes to leadership in the technological environment as the study suggests, the network is able to sustain itself with self-motivated humans. By implication, the devolved nature of leadership in the network of relations as argued earlier is also sustained as *auto-interested* individuals relationally engage themselves. It also suggests that an *auto-interested* group of actors does not necessarily need *problematisation* but would in

themselves *enroll* others and *mobilise* allies for network advancement.

### 8.4.3 Methodological contributions

This study has also made an impact methodologically in that it has shown that actors can be followed even in their digital spaces. Here, interviewing actors alone in order to trace their path in network construction means that the researcher must creatively device means by which actors can be followed wherever they are. Latour (1996) admits a lack of clarity in how actors must be followed as ‘it is not said *how* to follow them’ (p.238, author’s emphasis). ANT theorists have left the ‘following’ to the researcher to device a means by which this can be done meaningfully in order to generate data. This research has shown that it is possible to follow actors in the digital space by adapting netnographical principles. In fact, it opens up a new area of methodology in leadership studies in the digital space and argues that *researching leadership in the digital era must leverage the digital in order to fully understand the phenomenon in its digital contexts.*

Consequently, by combining ideas from Braun and Clarke’s (2006) thematic coding and Kozinets’ (2010) netnography, an analytic framework (see Figure 12) for analysing the netnographic data emerged, which is also applicable to other contexts. Here, the framework brings together the stages of *data classification, memoing, analytic coding, contextual positioning, searching for themes, evaluating with further data, and reporting outcomes.* In *data classification*, the netnographic data is classified as either primarily contextual or informational in order to separate it from those that are primarily social or non-contextual. This aids in preventing data overload and draws a boundary around what the researcher is interested in. In *memoing*, the researcher captures his or her reflections about the data as well as other remarks that emerge. These memos are crucially useful for the next stages of the process. In *analytic coding*, the researcher assigns codes to the data. Here, annotations are often helpful or a computer assisted software like nVivo can also be helpful. In *contextual positioning*, the researcher refers to his/her memoing and also returns to the (online) field in order to speak to the online community members. By engaging the field and participants in an iterative manner, the researcher is able to position his or her assigned codes well to ensure that they are representative of the context of the data. In *searching for themes*, the researcher develops themes from the codes assigned in analytic coding. In *evaluating with further*

*data*, the researcher seeks to refine and safeguard reliability of the generated themes, by 'testing' or evaluating them with further data. This can be done by evaluating with another online community (that has the same purpose as the primary one studied) or by supporting with a lot more data in the same community, that is, if access into another community is a challenge. Finally, in *reporting outcomes*, the researcher reports the outcomes of the research to his/her community, either as a thesis like this one, conference papers or published articles and so on. Because the researcher also becomes a part of the network in ANT studies, s/he must account reflexively for his or her own actions, thoughts, and reflections (often captured in a research diary). This is important in that the researcher is not detached from the participants in his or her study but is networked with them, having an impact on the network of relations and is in turn also influenced. In this study, I have provided some of my diary notes and in the next section, I show how I have also been impacted by the study.

### 8.5 Being a reflexive researcher

I was an 'outsider' who gained access into Drugster. Having entered the organisation, I was now a part of the network of relations at Drugster and my actions potentially impacted the heterogeneous network. As part of my memoing, I indicated:

'In conversation with [name withheld], he mentioned how the interview made him reflect on his own work. He thanked me and said 'it is not everyday that I get to talk about my work so this was very good and it helped me to reflect on what I actually do so thank you for that.' It felt good to hear this from a participant but I also wonder how this might impact his next actions on the network? Only God knows.' (My MEMOING, 09/07/15).

In another instance, I changed my own dress code from wearing a blazer to just a shirt. At the meeting in California, I would have gone with my own instincts and worn a suit but I decided to ask what dress code everyone would be in before going ahead. In memoing I indicated this note to myself:

'It seems to me that everyone is either dressed informally or semi-formally. Speaking to people in a jacket when they are not in a jacket feels like I am interviewing them for a job! Lebene, kindly divorce your jacket.' (My MEMOING, 20/05/16).

I realised the need to identify with participants in order not to create a power gap inadvertently (see Section 5.5.1.3). Furthermore, having chosen the option to be a silent observer in the Google+ community and not to add to any conversation was a wise decision in that members forgot about my presence and went about their normal activities in the community. Finally, from an ANT perspective, the research has changed me in that my view of reality has changed. I started the process as an objectivist, having trained as a pharmacist – who follows the scientific method – and a project manager – who follows a structured approach –, as well as being a Christian pastor – who believes in God. Now, my view of reality is one that remains theologically objectivist but methodologically inter-subjectivist, one that also includes God’s non-human creations.

#### 8.6 Research limitations and opportunities for future research

This research is not without its own limitations. Like any undertaking, perfection is always a difficult or impossible reach, particularly in a world of different subjective views. The criticism of ANT as merely a descriptive ‘theory’ without any explanatory power extends to all research deploying the ANT including this undertaking. This stems from the accusation that ANT theorists seem to be both objectivist and relativist in their conceptualisation of reality, which appear as a contradiction in itself (Collins and Yearley, 1992). ANT theorist, Latour (2005) himself complicates things for ANT when he asserts that ANT is not so much a theory but a method (He implicitly held the opposite view in his earlier work, (see Latour, 1999)). He argues ANT does not claim to explain the social but to offer a way by which those examining the social can relate with it, but how that is possible without explanation of the social is difficult to grasp, at least for me! Earlier, the same author argues that the task of description is actually one of *de-description* so that in describing a setting, one is actually tracing backwards the ‘script’ that formed the setting (Akrich and Latour, 1992), which is an act of explanation.

The ANT idea that actors must be allowed to speak for themselves, to make their own associations and contexts (Callon, 1986) also questions ANT as being without any critical stance but only describing actors’ activities. This argument holds; it only fails when it is considered that ANT portrays the social as ‘flat’ with all actors networked so

that even the 'micro' interactions potentially become the sources of power in the network and not necessarily macro social 'structures' dictating the rules (Law, 1992). Unfortunately, this particularity of worldview is not held by everyone. As seen in this study, no hypothesis or proposition is posited, after which it is researched and then explained. Rather, the researcher simply follows actors in their own setting to acquire a 'summing up of [their] interactions through various kinds of devices, inscriptions, forms and formulae, into a very local, very practical, very tiny locus' (Latour, 1999, p. 17, author's emphasis). However, this 'limitation' of 'de-description' in this study also presents an opportunity for researching the phenomenon in other ways through the advancing of a proposition. Example, a proposition that *the introduction of social technologies causes a decentralisation of leadership influence* can be investigated in other contexts. Another proposition for a future investigation is that *social technology transforms the conceptualisation of leadership in the social*. In the former, a positivistic experimental research design with two groups (with one group as a control) can provide some understanding whereas in the latter, an interpretivist qualitative research design can help challenge our assumption of the very conceptualisation of leadership.

Another limitation for this study is the idea that the researcher cannot lay claim to generalizability, having only studied the phenomenon in 'one' setting – Drugster – and interacted with less than a hundred individuals when Drugster has more than 90,000 employees. Indeed, ANT studies do not lay claim to generalizability but to understanding a particular setting. However, insights drawn from one setting are often applicable to others. E.g. the sociology of translation emerges from research into only 'one' setting (see Callon, 1986). Nonetheless, this study also presents an opportunity to research in other organisations seeking to deploy social technologies in order to gain further understanding or confirm or perhaps disannul the findings made in this study, as this is what social research is about.

Finally, some of the findings only seem to scratch the surface of a much deeper phenomenon and require further investigation. Example, the findings hint at the 'textual self' who implicitly suffers some kind of 'reputational stress' in order to appear in its best character to others. This finding opens up a whole new area of identity research, which is a limitation in this study. Another area for further study is the long-term impact that the newly appointed 'leaders' – owners and moderators – have on the organisation.



Do these individuals get promoted to higher ranks in the physical organisational hierarchy as a result of what they do or how they are perceived in the digital space? This calls for a longitudinal study or a follow up study at Drugster in order to answer these emergent questions. Similarly, whether managers who are active participants in the digital space are advantaged in any way compared to those that are not present in the digital communities is another area for future research. In conclusion, I made some moral decisions by calling some of the unintended consequences negative and others positive. I admit that although these positions are argued, they remain subjective labels and the reader is invited to take a side.

### 8.7 Research implications for practice

This study has made various contributions that have an impact on the practice of leadership in contemporary organisations. First, the study has shown that leadership is not a concept that is limited to only an individual. In other words, it is not only managers that practice leadership. Here, leadership is shown to be a concept that is relational, occurring in what I have referred to as the technologized manager-employee relationship. Accordingly, managers and employees who are the human actors in the leadership relationship may have to take responsibility for leadership, while engaging technology in ways that benefit all actors in the relationship. As a relational concept, the practice of leadership must be seen as what occurs in the leadership relationship and not what titles or roles the organisation's hierarchy confers on individuals.

Second, the study has shown that exerting influence involves standing in relation with others as well as being relationally responsive to the actions of other actors in the leadership relationship. This means that managers and employees must work together on a level that jettisons power gaps due to hierarchical structures and be ready to work *with* and respond *to* each other's actions. This also includes working with and responding to technology, which is also now a *part* of the relationship and not a tool for leadership.

Third, human actors in the technologized manager-employee relationship may have to change how they conceptualise technology in the organisation. Here, the study has

shown that whereas individuals consider the technology as a *tool*, it has acted in ways that refute such conceptualisation of it as a tool; rather, it is an actor that must be taken seriously. It implies that policies surrounding humans in the organisation must also include the technologies they work with. An example is a law passed in France (went into effect 1<sup>st</sup> January 2017) that allows employees to disconnect from technologies that tied them to work (like emails) when they are not at work (Morris, 2017).

Fourth, managers and employees may now have to accept the idea that the technologies they deploy in a Web 2.0 era generate an environment that requires a different approach to leadership. Here, the study has offered digital tentacular leadership, digital multidirectional leadership, digital silo leadership, and digital relational leadership as heuristics for training on leadership in digital spaces within the organisation.

Finally, this study challenges contemporary organisations to be ready for unintended consequences that may either be positive or negative for the organisation as they deploy these social technologies. Consequently, practitioners must be aware of the unintended consequences these technologies pose for the leadership climate in their organisations. The findings from this study also show that there are ethical implications for firms as they develop protocols for engagement with social technologies in practice. Here, the relational commitments that take account of who is included or excluded as well as who is participating or isolated become an ethical tightrope that organisations need to think about. Finally, in the last section of this thesis below, I offer my closing remarks.

## **8.8 Final comments**

In these concluding remarks, I wish to acknowledge the words of Irish Poet, James Stephens in Irish Fairy Tales, that ‘we get wise by asking questions, and even if these are not answered we get wise, for a well-packed question carries its answer on its back as a snail carries its shell’. Indeed, this thesis, although it has answered its research questions, has also raised more questions than it offers answers and such is the task of translation.

Following, it can be seen throughout this thesis that the words ‘leader’ and ‘follower’ are

almost always placed in inverted commas. They illustrate the unease the researcher feels for these words, and this was expressed in the process. Rather, 'manager' is chosen as the vocabulary in place of 'leader' on most occasions. It is no doubt that a distinction has long been settled between what it means to be a leader and what it means to be a manager and this thesis does not seek to reject that *per se*. However, it is truism that managers in corporate organisations invariably carry the task of leadership. Therefore, calling leaders managers in this undertaking does not seek to change their roles nor equate both concepts. After all, the task of translation makes leadership a generated effect to which anyone can lay claim.

Finally, having concluded this thesis, I feel like I am now at an obligatory passage point. I must say that I am *auto-interested* and now I hope to be *enrolled* as a Doctor of Philosophy in Leadership, Organisations and Behaviour. I am grateful to the reader of this text, who has also entered this world of the thesis as a networked actor.

# References

- Akrich, M. (1992) 'The Description of Technical Objects', in Bijker, W. E. and Law, J. (eds) *Shaping Technology / Building Society: Studies in Sociotechnological Change*. MA: MIT Press, pp. 205–224.
- Akrich, M. and Latour, B. (1992) 'A Convenient Vocabulary for the Semiotics of Human and Nonhuman Actors', in Bijker, W. and Law, J. (eds) *Shaping Technology / Building Society Studies in Sociotechnological Change*. Cambridge, MA: MIT Press.
- Alberghini, E., Cricelli, L. and Grimaldi, M. (2010) 'Implementing Knowledge Management Through IT Opportunities: Definition of a Theoretical Model Based on Tools and Processes Classification.', *Proceedings of the European Conference on Intellectual Capital*, pp. 21–33.
- Albion, P. and Gutke, H. J. (2010) 'Successful succession through shared leadership: preparing a new generation of educational leaders', in *Sydney Symposium The Future of Teacher Education and School Leader Education. Creating the Vision*, Sydney, Australia.
- Altamimi, L. (2013) 'A Lexical Analysis of Social Software Literature', *Informatica Economica*, 17(1), pp. 14–26.
- Alvesson, A. and Sköldböck, K. (2009) *Reflexive Methodology*. 2nd edn. London: SAGE.
- Amsterdamska, O. (1990) 'You Must be Joking, Monsieur Latour!', *Science, Technology and Human Values*, 15(4), pp. 495–504.
- An, Y.-J. and Frick, T. (2006) 'Student perceptions of asynchronous computer-mediated communication in face-to-face courses', *Journal of Computer-Mediated Communication*, 11(2), pp. 485–499.
- Andersen, S. M. and Chen, S. (2002) 'The relational self: An interpersonal social-cognitive theory', *Psychological Review*, 109(4), pp. 619–645. doi: 10.1037//0033-295X.109.4.619.
- Andrejevic, M. (2004) 'The Work of Watching One Another: Lateral Surveillance, Risk, and Governance', *Surveillance and Society*, 2(4), pp. 479–497.
- Andriole, S. J. (2010) 'Business impact of Web 2.0 technologies', *Communications of the ACM*, 53(12), pp. 67–79. doi: 10.1145/1859204.1859225.
- Arsenault, P. M. (2004) 'Validating generational differences: A legitimate diversity and leadership issue', *Leadership and Organization Development Journal*, 25(2), pp. 124–141.
- Ashmore, M. (1993) 'Behaviour Modification of a Catflap: a contribution to the Sociology of Things', *Kennis en Methode*, 17, pp. 214–229.
- Avolio, B. J., Sosik, J.J., Kahai, S.S. and Baker, B. (2014) 'E-leadership: Re-examining transformations in leadership source and transmission', *The Leadership Quarterly*, 25(1), pp. 101–131.
- Avolio, B. J. and Kahai, S. S. (2003) 'Adding the "E" to E-leadership: How it may impact your leadership', *Organizational Dynamics*, 31(4), pp. 325–338.
- Avolio, B. J., Kahai, S. S. and Dodge, G. E. (2000) 'E-Leadership: Implications For Theory, Research, And Practice', *Leadership Quarterly*, 11(4), pp. 615–668.

- Avolio, B. J., Walumbwa, F. O. and Weber, T. J. (2009) 'Leadership: Current Theories, Research, and Future Directions', *Annual Review of Psychology*, 60(1), pp. 421–449. doi: 10.1146/annurev.psych.60.110707.163621.
- Balkundi, P. and Kilduff, M. (2006) 'The ties that lead: A social network approach to leadership', *The Leadership Quarterly*, 17(4), pp. 419–439. doi: 10.1016/j.leaqua.2006.01.001.
- Balsamo, A. (2011) 'The Digital Humanities and Technocultural Innovation', in Winget, M. A. and Aspray, W. (eds) *Digital Media: Technological and Social Challenges of the Interactive World*. Lanham, Toronto, Plymouth: Scarecrow Press.
- Barley, S. R., Meyerson, D. E. and Grodal, S. (2011) 'E-mail as a Source and Symbol of Stress', *Organization Science*, 22(4), pp. 887–906.
- Barry, B. and Fulmer, I. S. (2004) 'The Medium and the Message: The Adaptive Use of Communication Media in Dyadic Influence', *The Academy of Management Review*, 29(2), pp. 272–292. doi: 10.2307/20159033.
- Beer, D. and Burrows, R. (2010) 'Consumption, Prosumption and Participatory Web Cultures An introduction', *Journal of Consumer Culture*, 10(1), pp. 3–12.
- Bennis, W. (2013) 'Leadership In A Digital World: Embracing Transparency And Adaptive Capacity', *MIS Quarterly*, 37(2), pp. 635–636.
- Bennis, W. and Nanus, B. (2003) *Leaders: Strategies for Taking Charge*. New York: HarperCollinsPublishers.
- Berthon, P. R., Pitt, L.F., Plangger, K. and Shapiro, D. (2012) 'Marketing meets Web 2.0, social media, and creative consumers: Implications for international marketing', *Business Horizons*, 55, pp. 261–271.
- Best, K. (2010) 'Living in the Control Society: Surveillance, Users and Digital Screen Technologies', *International Journal of Cultural Studies*, 13(1), pp. 5–24.
- Bijker, W. (1995) *Of Bicycles, Bakelites, and Bulbs: Towards a Theory of Sociotechnical Change*. MA: MIT Press.
- Bilgram, V., Brem, A. and Voigt, K. (2008) 'User-Centric Innovations In New Product Development-Systematic Identification Of Lead Users Harnessing Interactive And Collaborative Online Tools', *International Journal Of Innovation Management*, 12(3), pp. 419–458.
- Bimber, B. (1994) 'Three Faces of Technological Determinism', in Smith, M. R. and Marx, L. (eds) *Does Technology Drive History? The Dilemma of Technological Determinism*. Cambridge: MIT Press, pp. 79–100.
- Bingham, T. and Conner, M. (2010) *The New Social Learning: A Guide to Transforming Organizations Through Social Media*. CA: Berrett-Koehler Publishers Inc.
- Bloomfield, B. (2001) 'In the right place at the right time: electronic tagging and problems of social order/disorder', *Sociological Review*, 49(2).
- Bloomfield, B. P. and Vurdubakis, T. (1994) 'Re-Presenting Technology: IT Consultancy Reports as Textual Reality Constructions', *Sociology*, 28(2), pp. 455–477.

- Bloomfield, B. P. and Vurdubakis, T. (1995) 'Paper Worlds: A Note on the Role of Textual Analysis in Technology Research', *Technology Studies*, 2(2), pp. 364–368.
- Bloomfield, B. P. and Vurdubakis, T. (1999) 'The Outer Limits: Monsters, Actor Networks and the Writing of Displacement', *Organization*, 6(4), pp. 625–647.
- Bloomfield, B. P. and Vurdubakis, T. (2000) 'Paper Traces: Inscribing Organizations and Information Technology', in Bloomfield, B. P. et al. (eds) *Information Technology and Organizations: Strategies, Networks, and Integration*. Oxford: Oxford University Press, pp. 85–111.
- Bradbury, H. and Lichtenstein, B. M. B. (2000) 'Relationality in Organizational Research: Exploring The Space Between', *Organization Science*, 11(5), pp. 551–564.
- Bradley, A. J. and McDonald, M. P. (2011) *The Social Organization: How to Use Social Media to Tap the Collective Genius of Your Customers and Employees*. Boston, MA: Harvard Business Review Press.
- Braun, V. and Clarke, V. (2006) 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101.
- Brown, J. S. and Duguid, P. (2000) *The Social Life of Information*. Cambridge: Harvard University Press.
- Brown, S. D., Middleton, D. and Lightfoot, G. (2001) 'Performing the Past in Electronic Archives: Interdependencies in the Discursive and Non-Discursive Ordering of Institutional Rememberings', *Culture and Psychology*, 7(2), pp. 123–144.
- Buber, M. (1970) *I and Thou*. Translated by R. G. Smith. Edinburgh: T&T Clark.
- Bughin, J., Chui, M. and Miller, A. (2009) *How companies are benefiting from Web 2.0: McKinsey Global Survey results | McKinsey & Company*. Available at: [http://www.mckinsey.com/insights/business\\_technology/how\\_companies\\_are\\_benefiting\\_from\\_web\\_20\\_mckinsey\\_global\\_survey\\_results](http://www.mckinsey.com/insights/business_technology/how_companies_are_benefiting_from_web_20_mckinsey_global_survey_results) (Accessed: 23 October 2015).
- Burns, T. and Stalker, G. M. (1994) *The Management of Innovation*. Oxford: Oxford University Press.
- Cain, S. (2012) *Quiet: The Power of Introverts in a World That Can't Stop Talking*. London: Penguin Books Ltd.
- Callahan, J. L. (2014) 'Writing Literature Reviews: A Reprise and Update', *Human Resource Development Review*, 13(3), pp. 271–275.
- Callon, M. (1986) 'Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay', in J. L. (ed.) *Power, Action and Belief*. London: Routledge, pp. 196–233.
- Callon, M. (1987) 'Society in the Making: The Study of Technology as a Tool for Sociological Analysis', in Bijker, W. E., Hughes, T. P., and Pinch, T. J. (eds) *The social construction of technological systems: New directions in the sociology and history of technology*. Cambridge, MA: MIT Press, pp. 83–103.
- Callon, M. (1991) 'Techno-Economic Networks and Irreversibility', in Law, J. (ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*. London: Routledge, pp. 132–161.

- Callon, M. (1992) 'The Dynamics of Techno-Economic Networks', in Coombs, R., Saviotti, P., and Walsh, V. (eds) *Technological Change and Company Strategies*. London: Academic Press.
- Callon, M. and Latour, B. (1992) 'Don't Throw the Baby Out with the Bath School! A Reply to Collins and Yearley', in Pickering, A. (ed.) *Science as Practice and Culture*. Chicago: Chicago University Press, pp. 343–368.
- Carroll, B., Lester, L. and Richmond, D. (2008) 'Leadership as Practice: Challenging the Competency Paradigm', *Leadership*, 4(4), pp. 363–379.
- Carson, J., Tesluk, P. and Marrone, J. (2007) 'Shared leadership in teams: An investigation of antecedent conditions and performance', *Academy of Management Journal*, 50(5), pp. 1217–1234.
- Cascio, W. F. and Montealegre, R. (2016) 'How Technology Is Changing Work and Organizations', in Morgeson, F. P. (ed.) *Annual Review of Organizational Psychology and Organizational Behavior*, Vol 3. Palo Alto: Annual Reviews, pp. 349–375.
- Cassell, C. and Symon, G. (2004) *Essential Guide to Qualitative Methods in Organizational Research*. London: Sage Publications.
- Castells, M. (2001) *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford: Oxford University Press.
- Castells, M. (2010) *The Rise of the Network Society: The Information Age: Economy, Society, and Culture*. 2nd edn. Chichester: Wiley-Blackwell.
- Celko, J. (1999) *Joe Celko's data and databases: concepts in practice*. San Francisco, CA: Morgan Kaufmann Publishers Inc. Available at: <http://dl.acm.org/citation.cfm?id=318096> (Accessed: 8 September 2017).
- Chan, S. C. H. (2013) 'Paternalistic Leadership and Employee Voice: Does Information Sharing Matter?', *Human Relations*, 0(0), pp. 1–27.
- Chang, K. K. and Kane, G. C. (2013) 'Walking the Legal Tightrope of Social Business', *MIT Sloan Management Review*. Available at: <http://sloanreview.mit.edu/article/walking-the-legal-tightrope-of-social-business/> (Accessed: 12 November 2013).
- Chesley, N., Moen, P. and Shore, R. P. (2003) 'The new technology climate', in Moen, P. (ed.) *It's About Time: Couples and Careers*. NY: Cornell University Press, pp. 220–241.
- Cheuk, B. and Dervin, B. (2011) 'Leadership 2.0 in Action: a Journey from Knowledge Management to "Knowledging"', *Knowledge Management & E-Learning: An International Journal*, 3(2), pp. 119–138.
- Chui, M., Dewhurst, M. and Pollak, L. (2013) *Building the Social Enterprise*. McKinsey. Available at: [http://www.mckinsey.com/insights/organization/building\\_the\\_social\\_enterprise](http://www.mckinsey.com/insights/organization/building_the_social_enterprise) (Accessed: 22 February 2014).
- Church, A. H., Gilbert, M., Oliver, D.H., Paquet, K. and Surface, C. (2002) 'The Role of Technology In Organization Development and Change', *Advances in Developing Human Resources*, 4(4), pp. 493–511.
- Clough, P. and Nutbrown, C. (2002) *A student's guide to methodology: justifying enquiry*. London: Sage Publications.

- Coine, T. and Babbitt, M. (2014) *A World Gone Social: How Companies Must Adapt to Survive*. New York, NY: AMACOM.
- Colbert, A., Yee, N. and George, G. (2016) 'The Digital Workforce and the Workplace of the Future', *Academy of Management Journal*, 59(3), pp. 731–739. doi: 10.5465/amj.2016.4003.
- Collins, H. M. and Yearley, S. (1992) 'Epistemological Chicken', in Pickering, A. (ed.) *Science as Practice and Culture*. Chicago: Chicago University Press, pp. 301–326.
- Collinson, D. (2003) 'Identities and insecurities: selves at work', *Organization*, 10(3), pp. 527–547.
- Collinson, D. and Grint, K. (2005) 'Editorial: The Leadership Agenda', *Leadership*, 1(1), pp. 5–9.
- Computer AI passes Turing test in 'world first'* (2014) *BBC News*. Available at: <http://www.bbc.co.uk/news/technology-27762088> (Accessed: 4 August 2017).
- Cooper, C. C. (2003) 'Myth, rumor, and history: The yankee whittling boy as hero and villain', *Technology and Culture*, 44(1), pp. 82–96.
- Cordella, A. and Shaikh, M. (2006) *From epistemology to ontology: challenging the constructed 'truth' of ANT*. London: Dept. of Information Systems, London School of Economics and Political Science (Working Paper Series, 143). Available at: <http://is2.lse.ac.uk/wp/pdf/WP143.PDF> (Accessed: 29 December 2016).
- Costea, B., Crump, N. and Amiridis, K. (2008) 'Managerialism, the therapeutic habitus and the self in contemporary organizing', *Human Relations*, 61(5), pp. 661–685.
- Cotterrell, R. (1999) 'Transparency, mass media, ideology and community', *Journal for Cultural Research*, 3(4), pp. 414–426.
- Cramton, C. D. and Orvis, K. L. (2003) 'Overcoming Barriers To Information Sharing In Virtual Teams, In Gibson, C. & Cohen', in Gibson, C. and Cohen, S. (eds) *Virtual Teams That Work: Creating Conditions For Virtual Team Effectiveness*. San Francisco: Jossey-Bass.
- Cressman, D. (2009) 'A Brief Overview of Actor-Network Thoery: Punctualization', *Heterogeneous Engineering & Translation, ACT Lab/Centre for Policy Research on Science & Technology (CPROST), School of Communication, Simon Fraser University*, pp. 1–17.
- Creswell, J. W. (2007) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Second. Los Angeles, London, New Delhi, Singapore, Washington DC: Sage Publications Ltd. Available at: <https://uk.sagepub.com/en-gb/eur/qualitative-inquiry-and-research-design/book235677> (Accessed: 24 May 2017).
- Creswell, J. W. (2014) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th edn. Los Angeles, London, New Delhi, Singapore, Washington DC: Sage Publications.
- Crosby, B. C. and Bryson, J. M. (2010) 'Integrative leadership and the creation and maintenance of cross-sector collaborations', *The Leadership Quarterly*, 21(2), pp. 211–230. doi: 10.1016/j.leaqua.2010.01.003.
- Cunliffe, A. L. and Eriksen, M. (2011) 'Relational Leadership', *Human Relations*, 64(11), pp. 1425–1449.
- Currie, M. (1998) *Postmodern Narrative Theory*. London: Macmillan.



- Dachler, H. P. and Hosking, D. M. (2013) 'The Primacy of Relations in Socially Constructing Organizational Realities', in Hosking, D. M., Dachler, H. P., and Gergen, K. J. (eds) *Management and Organization: Relational Alternatives to Individualism*. Chagrin Falls, Ohio: Taos Institute Publications, pp. 1–28.
- D'Agostino, D. and Cone, E. (2007) 'Taking the Lead.', *CIO Insight*, (80), pp. 49–55.
- De Hertogh, S., Viaene, S. and Dedene, G. (2011) 'Governing Web 2.0', *Communications Of The ACM*, 54(3), pp. 124–130.
- Denzin, N. and Lincoln, Y. (2005) 'The Discipline and Practice of Qualitative Research', in Denzin, N. and Lincoln, Y. (eds) *The Sage Handbook of Qualitative Research*. 3rd edn. Thousand Oaks, London, New Delhi: SAGE.
- DeSanctis, G. and Poole, M. S. (1994) 'Capturing the complexity in advanced technology use: Adaptive Structuration Theory', *Organization Science*, 5(1), pp. 121–147.
- Detert, J. R. and Burris, E. R. (2007) 'Leadership behaviour and employee voice: Is the door really open?', *Academy of Management Journal*, 50(4), pp. 869–884.
- Dinh, J. E., Lord, R.G., Gardner, W.L., Meuser, J.D., Liden, R.C. and Hu, J. (2014) 'Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives', *The Leadership Quarterly*, 25(1), pp. 36–62. doi: 10.1016/j.leaqua.2013.11.005.
- Durkheim, É. (1984) *The Division of Labour in Society*. Translated by W. . Halls. Houndmills, Basingstoke, London: Macmillan.
- Dutta, S. and Fraser, M. (2009) 'Global leadership in a Web 2.0 world', *OECD Observer*, 273, pp. 35–36.
- Duxbury, L. E., Towers, I., Higgins, C., Thomas, J.A. and Law, W.K. (2007) 'From 9 to 5 to 24/7: How technology has redefined the workday', in Law, W. (ed.) *Information Resources Management: Global Challenges*. Hershey, PA: IGI Global, pp. 305–332.
- Ean, L. C. (2010) 'Face-to-face Versus Computer-mediated Communication: Exploring Employees' Preference of Effective Employee Communication Channel', *International Journal for the Advancement of Science & Arts*, 1(2), pp. 38–48.
- Easterby-Smith, M. and Lyles, M. A. (eds) (2011) *Handbook of Organizational Learning and Knowledge Management*. Sussex: Wiley.
- Easterby-Smith, M., Thorpe, R. and Jackson, P. R. (2008) *Management Research*. Edited by 3rd. SAGE, London.
- Easterby-Smith, M., Thorpe, R. and Jackson, P. R. (2012) *Management Research*. 4th edn. London: SAGE.
- Eberly, M. B. and Fong, C. T. (2013) 'Leading via the heart and mind: The roles of leader and follower emotions, attributions and interdependence', *The Leadership Quarterly*, 24(5), pp. 696–711. doi: 10.1016/j.leaqua.2013.05.003.
- Edgerton, D. (1999) 'From Innovation to Use: Ten Eclectic Theses on the Historiography of Technology', *History and Technology*, 16(1), pp. 111–36.

- Elam, M. (1999) 'Living Dangerously with Bruno Latour in a Hybrid World', *Theory, Culture and Society*, 16(4), pp. 1–24.
- Erskine, L. (2009) 'A question of leadership: What does effective leadership look like in a virtual work environment, and can Web-based leadership operate the same way that face-to-face leadership does?', *Leadership In Action*, 28(6), pp. 12–13.
- Faci, N., Maamar, Z., Burégio, V., Ugljanin, E. and Benslimane, D. (2017) 'Web 2.0 applications in the workplace: How to ensure their proper use?', *Computers in Industry*, 88, pp. 1–11. doi: 10.1016/j.compind.2017.03.003.
- Fairhurst, G. T. and Cooren, F. (2009) 'Leadership as the Hybrid Production of Presence(s)', *Leadership*, 5(4), pp. 469–490.
- Fiegerman, S. (2015) *Inside the sad, expensive failure of Google+, a very expensive attempt to unseat Facebook*, Mashable. Available at: <http://mashable.com/2015/08/02/google-plus-history/> (Accessed: 10 July 2017).
- Fisher, C. (2010) *Researching and Writing a Dissertation: An essential guide for business students*. 3rd edn. Essex, England: Pearson Education Ltd.
- Fleming, L. and Waguespack, D. M. (2007) 'Brokerage, Boundary Spanning, and Leadership in Open Innovation Communities.', *Organization Science*, 18(2), pp. 165–180.
- Florini, A. (2007) 'The battle over transparency', in Florini, A. (ed.) *The Right To Know: Transparency for an Open World*. NY: Columbia University Press, pp. 1–18.
- Fogg, B. . (2003) *Persuasive technology: using computers to change what we think and do*. San Francisco, CA: Morgan Kaufmann Publishers.
- Fombrun, C. J. and Rindova, V. P. (2000) 'The Road To Transparency: Reputation Management at Royal Dutch/Shell', in Schultz, M., Hatch, M. J., and Larsen, M. H. (eds) *The expressive organization: Linking Identity, Reputation, and The Corporate Brand*. Oxford: Oxford University Press, pp. 77–96.
- Gajendran, R. S. and Joshi, A. (2012) 'Innovation in globally distributed teams: The role of LMX, communication frequency, and member influence on team decisions', *Journal of Applied Psychology*, 97(6), pp. 1252–1261.
- Gao, L., Janssen, O. and Shi, K. (2011) 'Leader trust and employee voice: The moderating role of empowering leader behaviors', *Leadership Quarterly*, 22(4), pp. 787–798.
- Garrad, L. and Chamorro-Premuzic, T. (2016) *The Dark Side of High Employee Engagement*, *Harvard Business Review*. Available at: <https://hbr.org/2016/08/the-dark-side-of-high-employee-engagement> (Accessed: 8 August 2017).
- Garrety, K. (2014) 'Actor Network Theory', in Hasan, H. (ed.) *Being Practical with Theory: A Window into Business Research, THEORI, Wollongong, Australia*, pp. 15–19. Available at: <http://tinyurl.com/o5xhx93>.
- Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P. and Trow, M. (1994) *The New Production Of Knowledge: The Dynamics Of Science And Research In Contemporary Societies*. London: SAGE.

- Google+ Help (2016) *Connect with people on Google+ - Computer - Google+ Help*. Available at: [https://support.google.com/plus/answer/6320398?hl=en-GB&visit\\_id=1-636367455345173740-3264278415&rd=1](https://support.google.com/plus/answer/6320398?hl=en-GB&visit_id=1-636367455345173740-3264278415&rd=1) (Accessed: 20 April 2016).
- Gooty, J., Connelly, S., Griffith, J. and Gupta, A. (2010) 'Leadership, affect and emotions: A state of the science review', *The Leadership Quarterly*, 21(6), pp. 979–1004. doi: 10.1016/j.leaqua.2010.10.005.
- Graen, G. B. and Uhl-Bien, M. (1995) 'Relationship Based Approach to Leadership: Development of Leader Member-Exchange (LMX) Theory of Leadership Over 25 Years: Applying a Multi-Level Multi-Domain Perspective', *Leadership Quarterly*, 6(2), pp. 219–247.
- Grimmelikhuijsen, S. (2012) 'A good man but a bad wizard. About the limits and future of transparency of democratic governments', *Information Polity: The International Journal Of Government & Democracy In The Information Age*, 17(3/4), pp. 293–302.
- Grint, K. (2005a) *Leadership: Limits and Possibilities*. Basingstoke: Palgrave Macmillan.
- Grint, K. (2005b) 'Problems, problems, problems: The social construction of "leadership"', *Human Relations*, 58(11), pp. 1467–1494.
- Grint, K. (2010) *Leadership: A Very Short Introduction*. Oxford: Oxford University Press. Available at: [https://books.google.com/books/about/Leadership\\_A\\_Very\\_Short\\_Introduction.html?id=p8rlkkcjbwkC](https://books.google.com/books/about/Leadership_A_Very_Short_Introduction.html?id=p8rlkkcjbwkC) (Accessed: 8 September 2017).
- Gronn, P. (2002) 'Distributed leadership as a unit of analysis', *The Leadership Quarterly*, 13(4), pp. 423–451.
- Gronn, P. (2008) 'The future of distributed leadership', *Journal of Educational Administration*, 46(2), pp. 141–158.
- Grübler, A. (2003) *Technology and Global Change*. Cambridge: Cambridge University Press.
- Guchait, P., Ruetzler, T., Taylor, J. and Toldi, N. (2014) 'Video interviewing: A potential selection tool for hospitality managers – A study to understand applicant perspective', *International Journal of Hospitality Management*, 36, pp. 90–100. doi: 10.1016/j.ijhm.2013.08.004.
- Habermas, J. (1970) 'Knowledge and Interest', in Emmett, D. M. and Macintyre, A. C. (eds) *Sociological Theory and Philosophical Analysis: a collection*. London: Macmillan.
- Hammersley, M. (2006) 'Ethnography: problems and prospects', *Ethnography and Education*, 1(1), pp. 3–14. doi: 10.1080/17457820500512697.
- Hammersley, M. (2007) 'The issue of quality in qualitative research', *International Journal of Research and Method in Education*, 30(3), pp. 287–306.
- Hart, C. (1998) *Doing a Literature Review: Releasing the Social Science Research Imagination*. London: Sage.
- Heeks, R. and Stanforth, C. (2015) 'Technological change in developing countries: opening the black box of process using actor–network theory', *Development Studies Research*, 2(1), pp. 33–50. doi: 10.1080/21665095.2015.1026610.

- Heidegger, M. (1977) *The Question Concerning Technology & Other Essays*. Translated by W. Lovitt. New York: Harper and Row.
- Heilbroner, R. (1994) 'Do Machines Make History?', in Smith, M. R. and Marx, L. (eds) *Does Technology Drive History?: The Dilemma of Technological Determinism*. Cambridge: MIT Press, pp. 53–66.
- Hersey, P. and Blanchard, K. H. (2012) *Management of Organizational Behavior*. 10th edn. Englewood: Prentice Hall.
- Hine, C. (2000) *Virtual Ethnography*. London, Thousand Oaks, New Delhi: Sage Publications Ltd.
- Hogan, R. and Kaiser, R. (2005) 'What We Know About Leadership', *Review of General Psychology*, 9(2), pp. 169–180.
- Hollander, E. P. (1958) 'Conformity, status, and idiosyncrasy credit.', *Psychological Review*, 65(2), pp. 117–127.
- Hollander, E. P. (2009) *Inclusive Leadership: The Essential Leader-Follower Relationship*. New York: Routledge. doi: 10.1007/BF03395688.
- Holmberg, R. (2000) 'Organizational learning and participation: Some critical reflections from a relational perspective', *European Journal of Work and Organizational Psychology*, 9(2), pp. 177–188. doi: 10.1080/135943200397932.
- Holstein, J. A. and Gubrium, J. F. (2005) 'Interpretive Action and Social Practice', in Denzin, N. and Lincoln, Y. (eds) *The Sage Handbook of Qualitative Research*. 3rd edn. Thousand Oaks, London, New Delhi: SAGE.
- van House, A. N. (2004) 'Science and Technology Studies and Information Studies', *Annual Review of Information Science and Technology*, 38(1), pp. 3–86.
- Howard, P. N. (2006) *Communication, Society, and Politics: New Media Campaigns and the Managed Citizen*. Cambridge: Cambridge University Press.
- Howell, J. M. and Shamir, B. (2005) 'The Role of Followers in the Charismatic Leadership Process: Relationships and Their Consequences', *The Academy of Management Review*, 30(1), pp. 96–112. doi: 10.2307/20159097.
- Hughes, T. P. (1998) 'Technological Momentum', in Smith, M. R. and Marx, L. (eds) *Does Technology Drive History?: The Dilemma of Technological Determinism*. Cambridge: MIT Press, pp. 1–36.
- Huxham, C. and Vangen, S. (2000) 'Leadership in the shaping and implementation of collaboration agendas: How things happen in a (not quite) joined up world', *Academy of Management Journal*, 43(6), pp. 1159–1175.
- Huxham, C. and Vangen, S. (2005) *Managing to collaborate*. London: Sage.
- IDC (2017) *Social threads the customer experience*. Available at: <http://www.idc.com/promo/thirdplatform/fourpillars/socialbusiness> (Accessed: 5 September 2017).

- Iszatt-White, M. (2011) 'Methodological crises and contextual solutions: An ethnomethodologically informed approach to understanding leadership', *Leadership*, 7(2), pp. 119–135. doi: 10.1177/1742715010394734.
- Iverson, K. and Vukotich, G. (2009) 'OD 2.0: Shifting from Disruptive to Innovative Technology', *OD Practitioner*, 41(2), pp. 43–49.
- James, W. (1948) *Essays In Pragmatism*. Hafner Publishing Co.
- Jaradat, M. H. (2013) 'The Notion Of Administrative Transparency Among Academic Leaderships At Jordanian Universities', *Education*, 134(1), pp. 74–81.
- Joerges, B. (1999) 'Do Politics Have Artefacts?', *Social Studies of Science*, 29(3), pp. 411–431.
- Johnson, P., Buehring, A., Cassell, C. and Symon, G. (2006) 'Evaluating qualitative management research: Towards a contingent criteriology', *International Journal of Management Reviews*, 8(3), pp. 131–156. doi: 10.1111/j.1468-2370.2006.00124.x.
- Judge, T., Bono, J., Ilies, R. and Gerhardt, M. (2002) 'Personality and leadership: A qualitative and quantitative review', *Journal Of Applied Psychology*, 87(4), pp. 765–780.
- Kahai, S. S. (2013) 'Leading in a digital age: What's different, issues raised, and what we know', in Bligh, M. C. and Riggio, R. E. (eds) *Exploring distance in leader-follower relationships: When near is far and far is near*. NY: Routledge, pp. 63–108.
- Kallinikos, J. (2011) 'The "Age of Smart Machine": A 21st Century View'. Available at: [http://personal.lse.ac.uk/kallinik/new/IntheAgeof\\_the\\_SmartmachineFinal.pdf](http://personal.lse.ac.uk/kallinik/new/IntheAgeof_the_SmartmachineFinal.pdf) (Accessed: 24 October 2013).
- Kaushik, R., Kline, S., David, P. and Oaks, D.J. (2002) 'Differences between computer-mediated and face-to-face communication in a collaborative fiction project', *International Journal of Cognition and Technology*, 1(2), pp. 303–326.
- Kellaway, L. (2013) 'End of the line for the landline', *Financial Times*. 10th February. Available at: <http://www.ft.com/cms/s/0/3ad74288-6fa7-11e2-956b-00144feab49a.html#axzz2RfxjGaEl> (Accessed: 27 April 2013).
- Kim, S. and Lee, H. (2006) 'The Impact of Organizational Context and Information Technology on Employee Knowledge-Sharing Capabilities', *Public Administration Review*, 66(3), pp. 370–385.
- King, S. A. (1996) 'Researching Internet Communities: Proposed Ethical Guidelines for the Reporting of Results', *The Information Society*, 12(2), pp. 119–127.
- Kipnis, D. (1993) 'Unanticipated Consequences of Using Behavior Technology', *The Leadership Quarterly*, 4(2), pp. 149–171.
- Kirkpatrick, S. A. and Locke, E. A. (1991) 'Leadership traits do matter', *Academy Of Management Executive*, pp. 44–60.
- Kirschner, P. A. and De Bruyckere, P. (2017) 'The myths of the digital native and the multitasker', *Teaching and Teacher Education*, 67, pp. 135–142. doi: 10.1016/j.tate.2017.06.001.
- Klein, H. K. and Kleinman, D. L. (2002) 'The Social Construction of Technology: Structural Considerations', *Science, Technology, and Human Values*, 27(1), pp. 28–52.

- Knights, D., Murray, F. and Willmott, H. (2000) 'Networking as Knowledge Work: A Study of Strategic Inter-Organizational Development in the Financial Services Industry', in Bloomfield, B. P. et al. (eds) *Information Technology and Organizations: Strategies, Networks, and Integration*. Oxford: Oxford University Press, pp. 137–159.
- Kolb, D., A. (1984) *Experiential Learning: Experience as the source of learning and development*. New Jersey: Prentice Hall Inc.
- Korzynski, P. (2013) 'Online social networks and leadership: Implications of a new online working environment for leadership', *International Journal of Manpower*, 34(8), pp. 975–994. doi: 10.1108/IJM-07-2013-0173.
- Kouzes, J. M. and Posner, B. Z. (2007) *The Leadership Challenge*. 4th edn. CA: Jossey-Bass.
- Kozinets, R. V. (1998) 'On Netnography: Initial Reflections on Consumer Research Investigations of Cyberculture', in Alba, J. . and Hutchinson, J. . (eds) *Advances in Consumer Research*. Provo, UT: Association for Consumer Research, pp. 366–371.
- Kozinets, R. V. (2002) 'The Field Behind the Screen: Using Netnography for Marketing Research in Online Communities', *Journal of Marketing Research*, 39(1), pp. 61–72.
- Kozinets, R. V. (2010) *Netnography: Doing Ethnographic Research Online*. Los Angeles, London, New Delhi, Singapore, Washington DC: Sage Publications Ltd.
- Latour, B. (1986a) 'The Powers of Association', in Law, J. (ed.) *Power, action and belief: a new Sociology of Knowledge?* London: Routledge and Kegan Paul, pp. 264–280.
- Latour, B. (1986b) 'Visualisation and cognition: Drawing things together', in Kuklick, H. (ed.) *Knowledge and Society: Studies in the Sociology of Culture Past and Present*. Greenwich, CT: JAI Press, pp. 1–40.
- Latour, B. (1987) *Science In Action: How To Follow Scientists And Engineers Through Society*. Cambridge, MA: Harvard University Press.
- Latour, B. (1992) 'Where are the missing masses? A sociology of a few mundane artifacts', in Bijker, W. E. and Law, J. (eds) *Shaping Technology/Building Society: Studies in Sociotechnical Change*. MA: MIT Press, pp. 225–258.
- Latour, B. (1993) *We Have Never Been Modern*. Translated by C. Porter. MA: Harvard University Press.
- Latour, B. (1995) 'Mixing humans and nonhumans together: The sociology of a door-closer', in Star, S. L. (ed.) *Ecologies of knowledge: Work and politics in science and technology*. NY: University of New York Press, pp. 257–277.
- Latour, B. (1996) 'On Interobjectivity', *Mind, Culture, and Activity*, 3(4), pp. 228–245.
- Latour, B. (1999) 'On Recalling ANT', in Law, J. and Hassard, J. (eds) *Actor Network Theory and After*. Oxford: Blackwell Publishers, pp. 14–25.
- Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-network Theory*. Oxford: Oxford University Press.
- Latour, B. and Crawford, T. H. (Thomas H. (1993) 'An Interview with Bruno Latour', *Configurations*, 1(2), pp. 247–268. doi: 10.1353/con.1993.0012.

- Law, J. (1986a) 'Editor's introduction: Power/Knowledge and the dissolution of the sociology of knowledge', in Law, J. (ed.) *Power, action and belief: a new Sociology of Knowledge?* London: Routledge & Kegan Paul, pp. 1–19.
- Law, J. (1986b) 'On power and its tactics: a view from the sociology of science', *The Sociological Review*, 34(1), pp. 1–38.
- Law, J. (1986c) 'On the methods of long distance control: vesels, navigation and the Portuguese route to India', in Law, J. (ed.) *Power, Action and Belief A New Sociology of Knowledge?* London: Routledge and Kegan Paul, pp. 234–263.
- Law, J. (1987) 'Technology and heterogeneous engineering: the case of Portuguese expansion', in Bijker, W. E., Hughes, T. P., and Pinch, T. J. (eds) *The social construction of technological systems: New directions in the sociology and history of technology*. Cambridge, MA: MIT Press, pp. 111–134.
- Law, J. (1992) 'Notes on the theory of the actor-network: ordering, strategy, and heterogeneity', *Systems Practice*, 5(4), pp. 379–393.
- Law, J. (1994) *Organizing Modernity*. Oxford: Blackwell Publishers.
- Law, J. (2004) *After Method: Mess in Social Science Research*. London and New York: Routledge.
- Law, J. (2009) 'Actor-network theory and material semiotics', in Turner, B. S. (ed.) *The New Blackwell Companion to Social Theory*. 3rd edn. Chichester: Wiley-Blackwell, pp. 141–158.
- Law, J. (2014) 'Indistinct Perception Coopmans, C., Vertesi, J., Lynch, M., & Woolgar, S...', in Coopmans, C. et al. (eds) *Representations in Scientific Practice Revisited*. Cambridge, MA: MIT Press.
- Lawson, C., Lawson, C., Latsis, J.S. and Martins, N.M.O. (2007) 'Technology, technological determinism and the transformational model of technical activity', in *Contributions to Social Ontology*. Oxon: Routledge, pp. 32–49.
- Lee, N. and Brown, S. (1994) 'Otherness and the Actor Network: the Undiscovered Continent', *American Behavioural Scientist*, 37(6), pp. 772–790.
- Leonardi, P. M. (2009) 'Why do people reject new technologies and stymie organizational changes of which they are in favor? Exploring misalignments between social interactions and materiality', *Human Communication Research*, 35(3), pp. 407–441.
- Leonardi, P. M., Neeley, T. B. and Gerber, E. M. (2012) 'How Managers Use Multiple Media: Discrepant Events, Power, and Timing in Redundant Communication', *Organization Science*, 23(1), pp. 98–117.
- Li, M. (2013) 'Social network and social capital in leadership and management research: A review of causal methods', *The Leadership Quarterly*, 24(5), pp. 638–665. doi: 10.1016/j.leaqua.2013.04.005.
- 'Liking Social Business: Thinking out loud and evolving together' (2015). Henley Forum for Organisational Learning and Knowledge Strategies, Henley Business School.
- Linde, A., Linderöth, H. and Räisänen, C. (2003) 'An actor network theory perspective on IT-projects: A battle of wills', in *Proceedings Action in Language, Organisations and Information Systems. ALOIS 2003*, University of Linköping, Sweden, pp. 237–250.

- Liu, W., Zhu, R. and Yang, Y. (2010) 'I warn you because I like you: Voice behavior, employee identifications, and transformational leadership', *The Leadership Quarterly*, 21(1), pp. 189–202.
- Livingstone, S. (2005) 'In defence of privacy: mediating the public/private boundary at home', in Livingstone, S. (ed.) *Audiences And Publics: When Cultural Engagement Matters For The Public Sphere, Changing Media, Changing Europe*. Bristol: Intellect Books, pp. 163–186.
- Livingstone, S. and Bober, M. (2003) 'UK children go online: listening to young people's experiences [online]', *LSE Research Online*. Available at: <http://eprints.lse.ac.uk/archive/0000388> (Accessed: 1 October 2014).
- Lojeski, K. S. and Reilly, R. R. (2010) *Leading the virtual workforce: how great leaders transform organizations in the 21st century*. Hoboken, N.J.: John Wiley & Sons, Inc.
- Lord, R. G. and Hall, R. J. (2005) 'Identity, deep structure and the development of leadership skill', *The Leadership Quarterly*, 16(4), pp. 591–615.
- Lucas Jr, H. . and Olson, M. (1994) 'The impact of information technology on organizational flexibility', *Journal of Organizational Computing*, 4(2), pp. 155–176.
- Luo, Y., Jiang, H. and Kulemeka, O. (2015) 'Strategic Social Media Management and Public Relations Leadership: Insights from Industry Leaders', *International Journal of Strategic Communication*, 9(3), pp. 167–196. doi: 10.1080/1553118X.2014.960083.
- Lupton, D. (2013) 'The Digitally Engaged Patient: Self-Monitoring and Self-Care in the Digital Health Era', *Social Theory & Health*, 11(3), pp. 256–270.
- MacKenzie, D. A. and Wajcman, J. (eds) (1999) *The Social Shaping of Technology*. 2nd edn. Buckingham: Open University Press.
- Marx, L. (1997) 'Technology: The Emergence of a Hazardous Concept', *Social Research*, 64(3), pp. 967–994.
- Marx, L. (2010) 'Technology: The Emergence of a Hazardous Concept', *Technology and Culture*, 51(3), pp. 561–577.
- McCabe, D. (2007) *Power at Work: How Employees Reproduce The Corporate Machine*. London: Routledge.
- Meindl, J. R. (1995) 'The romance of leadership as a follower-centric theory: A social constructionist approach', *The Leadership Quarterly*, 6(3), pp. 329–341.
- Mesmer-Magnus, J.R., DeChurch, L.A., Jimenez-Rodriguez, M., Wildman, J. and Shuffler, M. (2011) 'A meta-analytic investigation of virtuality and information sharing in teams', *Organizational Behavior and Human Decision Processes*, 115(2), pp. 214–225.
- Meyer, C. and Kirby, J. (2010) 'Leadership in the Age of Transparency', *Harvard Business Review*, 88(4), pp. 38–46.
- Michael, M. (2000) *Reconnecting Culture, Technology and Nature: From Society to Heterogeneity*. London: Routledge.
- Milliken, E. W., Morrison, E. W. and Hewlin, P. F. (2003) 'An exploratory study of employee silence: Issues that employees don't communicate upward and why', *Journal of Management Studies*, 40(6), pp. 1453–1476.



- Mitchell, B. (2017) 'Thinking of the actor-network theory interview: Who/what/why are you interviewing?', *ProPEL Matters*, 4 April. Available at: <http://propelmatters.stir.ac.uk/2017/04/04/thinking-of-the-actor-network-theory-interview-whowhatwhy-are-you-interviewing/> (Accessed: 4 April 2017).
- Mohammad, K. (2009) 'E-Leadership: The Emerging New Leadership for the Virtual Organization.', *Journal of Managerial Sciences*, 3(1), pp. 1–21.
- Monippally, M. M. and Pawar, B. S. (2010) *Academic Writing: A Guide for Management Students and Researchers*. Thousand Oaks, London, Singapore: Sage Publications.
- Morley, I. and Hosking, D. (2003) 'Leadership, learning and negotiation in a social psychology of organizing', in Bennett, N. and Anderson, L. (eds) *Rethinking educational leadership: Challenging the conventions*. London: Sage Publications Ltd., pp. 43–60.
- Morris, D. Z. (2017) *New French Law Bars Work Email After Hours, Fortune*. Available at: <http://fortune.com/2017/01/01/french-right-to-disconnect-law/> (Accessed: 5 September 2017).
- Mulcahy, D. and Perillo, S. (2011) 'Thinking Management and Leadership within Colleges and Schools Somewhat Differently: A Practice-based, Actor- Network Theory Perspective', *Educational Management, Administration & Leadership*, 39(1), pp. 122–145.
- Müller, R. and Turner, R. (2010) 'Leadership competency profiles of successful project managers', *International Journal of Project Management*, 28(5), pp. 437–448.
- Mumford, T. V., Campion, M. A. and Morgeson, F. P. (2007) 'The leadership skills strataplex: Leadership skill requirements across organizational levels', *The Leadership Quarterly*, 18(2), pp. 154–166.
- Murray, W. C. and Rostis, A. (2007) 'Who's running the machine? A theoretical exploration of work, stress and burnout of technologically tethered workers', *Journal of Individual Employment Rights*, 12(3), pp. 249–263.
- Musselwhite, K., Cuff, L., McGregor, L. and King, K.M. (2007) 'The telephone interview is an effective method of data collection in clinical nursing research: A discussion paper', *International Journal of Nursing Studies*, 44(6), pp. 1064–1070. doi: 10.1016/j.ijnurstu.2006.05.014.
- Myers, M. D. and Newman, M. (2007) 'The qualitative interview in IS research: Examining the craft', *Information and Organization*, 17(1), pp. 2–26. doi: 10.1016/j.infoandorg.2006.11.001.
- Newcombe, T. (2009) 'From Obscurity to OVERDRIVE', *Public CIO*, 7(5), pp. 12–17.
- Newman, R., Chang, V., Walters, R.J. and Wills, G.B. (2016) 'Web 2.0—The past and the future', *International Journal of Information Management*, 36(4), pp. 591–598. doi: 10.1016/j.ijinfomgt.2016.03.010.
- Ng, E. S. W., Schweitzer, L. and Lyons, S. T. (2010) 'New generation, great expectations: A field study of the millennial generation', *Journal of Business and Psychology*, 25(2), pp. 281–292.
- Nixon, P., Harrington, M. and Parker, D. (2012) 'Leadership performance is significant to project success or failure: a critical analysis', *International Journal of Productivity and Performance Management*, 61(2), pp. 204–216.

- Norman, S., Avolio, B. and Luthans, F. (2010) 'The impact of positivity and transparency on trust in leaders and their perceived effectiveness', *Leadership Quarterly*, 21(3), pp. 350–364.
- Obstfeld, D. (2005) 'Social Networks, the Tertius Iungens Orientation, and Involvement in Innovation', *Administrative Science Quarterly*, 50(1), pp. 100–130.
- Offstein, E. H., Madhavan, R. and Gnyawali, D. R. (2006) 'Pushing the frontier of LMX research: The contribution of triads', in Graen, G. B. and Graen, J. A. (eds) *Sharing Network Leadership*. Greenwich, CT: Information Age Publishing Inc., pp. 95–117.
- O'Reilly, T. (2007) 'What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software', *Communications And Strategies*, 65(1), pp. 17–37.
- Orlikowski, W. J. (2000) 'Using Technology And Constituting Structures: A Practical Lens For Studying Technology In Organizations', *Organization Science*, 11(4), pp. 404–428.
- Orlikowski, W. J. and Baroudi, J. J. (1991) 'Studying Information Technology in Organizations: Research Approaches and Assumptions', *Information Systems Research*, 2(1), pp. 1–28. doi: 10.1287/isre.2.1.1.
- Orlikowski, W. J. and Gash, D. C. (1994) 'Technological frames: Making sense of information technology in organizations', *ACM Transactions On Information Systems*, 12(2), pp. 174–207.
- Orlikowski, W. J. and Scott, S. V. (2008) 'The Entanglement of Technology and Work In Organizations', *Information Systems and Innovation Group*, (Department of Management, LSE, Working Paper Series, No 168). Available at: <http://eprints.lse.ac.uk/33898/1/wp168.pdf> (Accessed: 24 October 2013).
- Pellegrini, E. K. and Scandura, T. A. (2008) 'Paternalistic Leadership: A Review and Agenda for Future Research', *Journal of Management*, 34(3), pp. 566–593.
- Perillo, S. J. (2008) 'Fashioning leadership in schools: an ANT account of leadership as networked practice', *School Leadership & Management*, 28(2), pp. 189–203.
- Petre, M. and Rugg, G. (2010) *The Unwritten Rules Of Phd Research*. 2nd edn. Maidenhead, England: Open University Press.
- Phillips, J. G. and Reddie, L. (2007) 'Decisional style and self-reported email use in the workplace', *Computers In Human Behavior*, 23(5), pp. 2414–2428.
- Pierides, D. and Woodman, D. (2012) 'Object-oriented sociology and organizing in the face of emergency: Bruno Latour, Graham Harman and the material turn', *British Journal Of Sociology*, 63(4), pp. 662–679.
- Pinch, T. (1998) 'The Social Construction of Technology: A Review', in Fox, R. (ed.) *Technological Change*. Oxon: Routledge, pp. 17–36.
- Pinch, T. J. and Bijker, W. E. (1987) 'The Social Construction of Facts and Artifacts: Or How the Sociology of Science and The Sociology of Technology Might Benefit Each Other', in Bijker, W., Hughes, T., and Pinch, T. (eds) *The Social Construction of Technological Systems: New Directions In The Sociology and History of Technology*. Cambridge, MA: MIT Press, pp. 17–50.
- Pinch, T. J. and Bijker, W. E. (1989) 'The Social Construction of Facts and Artifacts: Or How the Sociology of Science and The Sociology of Technology Might Benefit Each Other', in Bijker, W. E.,

- Hughes, T. P., and Pinch, T. (eds) *The Social Construction of Technological Systems: New Directions In The Sociology and History of Technology*. Cambridge, MA: MIT Press, pp. 17–50.
- Pisarski, A., Chang, A., Ashkanasy, N., Zolin, R., Mazur, A., Jordan, P. and Hatcher, C.A. (2011) 'The contribution of leadership attributes to large scale complex project success', in *Academy of Management Annual Meeting Proceedings*. Academy of Management, San Antonio, Texas. Available at: <http://eprints.qut.edu.au/46801/> (Accessed: 15 October 2013).
- Raelin, J., A. (2015) 'Rethinking Leadership', *MIT Sloan Management Review*. Available at: <http://sloanreview.mit.edu/article/rethinking-leadership/> (Accessed: 5 October 2015).
- Randel, A. E. and Ranft, A. L. (2007) 'Motivations to Maintain Social Ties With Coworkers: The Moderating Role of Turnover Intentions on Information Exchange', *Group & Organization Management*, 32(2), pp. 208–232.
- Rauner, F., Rasmussen, L. and Corbett, J. M. (1988) 'The Social Shaping of Technology and Work: Human Centred CIM Systems', *AI & Society*, 2(1), pp. 47–61.
- Reckwitz, A. (2002) 'Toward a Theory of Social Practices: A Development in Culturalist Theorizing', *European Journal of Social Theory*, 5(2), pp. 243–263. doi: 10.1177/13684310222225432.
- Reid, E. and Ramarajan, L. (2016) *Managing the High-Intensity Workplace*, *Harvard Business Review*. Available at: <https://hbr.org/2016/06/managing-the-high-intensity-workplace> (Accessed: 8 August 2017).
- Renaud, K., Ramsay, J. and Hair, M. (2006) "'You've got email!'" ...Shall I deal with it now? Electronic mail from the recipient's perspective', *International Journal of Human-Computer Interaction*, 21(3), pp. 313–332.
- Robins, K. and Webster, F. (1999) *Times of The Technoculture: From The Information Society To The Virtual Life*. London: Routledge.
- Rost, J. C. (1995) 'Leadership: A Discussion about Ethics', *Business Ethics Quarterly*, 5(1), pp. 129–142. doi: 10.2307/3857276.
- Rubin, A. and Babbie, E. R. (2011) *Research Methods for Social Work*. 7th edn. Belmont, CA: Cengage Learning.
- Rubin, H. J. and Rubin, I. S. (2012) *Qualitative Interviewing: The Art of Hearing Data*. 3rd edn. Los Angeles, London, New Delhi, Singapore, Washington DC: SAGE.
- Saldanha, T. J. V. and Krishnan, M. S. (2012) 'Organizational Adoption of Web 2.0 Technologies: An Empirical Analysis', *Journal of Organizational Computing and Electronic Commerce*, 22(4), pp. 301–333.
- Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research Methods for Business Students*. 5th edn. Essex: Pearson Education Ltd.
- Schiffrin, D., De Fina, A. and Nylund, A. (eds) (2010) *Telling Stories: Language, Narrative, and Social Life*. Washington DC: Georgetown University Press.
- Schultze, U. and Avital, M. (2011) 'Designing interviews to generate rich data for information systems research', *Information and Organization*, 21(1), pp. 1–16. doi: 10.1016/j.infoandorg.2010.11.001.

- Semple, E. (2012) *Organizations don't Tweet... People Do: a Manager's Guide to the Social Web*. Chichester: John Wiley & Sons, Ltd.
- Shamir, B. (1999) 'Leadership in Boundaryless Organizations: Disposable or Indispensable?', *European Journal of Work and Organizational Psychology*, 8(1), pp. 49–71.
- Shamir, B. and Ben-Ari, E. (1999) 'Leadership in an open army? Civilian connections, interorganizational frameworks, and changes in military leadership', in Hunt, G. J., Dodge, G. E., and Wong, L. (eds) *Out-of-the-box leadership: Transforming the twenty-first century army and other top-performing organizations*. Stanford: JAI Press, pp. 15–40.
- Shamir, B., Bligh and Uhl-Bien, M. (2007) *Follower-centred perspectives on leadership: a tribute to the memory of James R. Meindl*. USA: Information Age Publishing Inc.
- Shapin, S. (1998) 'Placing the View from Nowhere: Historical and Sociological Problems in the Location of Science', *Transactions of the Institute of British Geographers*, 23(1), pp. 5–12.
- Sharf, B. F. (1999) 'Beyond Netiquette: The Ethics of Doing Naturalistic Discourse Research on the Internet', in Jones, S. (ed.) *Doing Internet Research: Critical Issues and Methods for Examining the Net*. CA: Sage, pp. 243–256.
- Sidle, C. and Warzynski, C. (2003) 'A New Mission for Business Schools: The Development of Actor-Network Leaders', *Journal Of Education For Business*, 79(1), pp. 40–45.
- Siebrat, F., Hoegl, M. and Ernst, H. (2009) 'How to Manage Virtual Teams', *MIT Sloan Management Review*. Available at: <http://sloanreview.mit.edu/article/how-to-manage-virtual-teams/> (Accessed: 8 August 2017).
- Simmel, G. (1950) 'The Isolated Individual and the Dyad', in Wolff, K. H. (tran.) *The Sociology of Georg Simmel*. New York: The Free Press, pp. 118–142.
- Singleton, V. and Michael, M. (1993) 'Actor-networks and ambivalence: General practitioners in the UK cervical screening programme', *Social Studies of Science*, 23(2), pp. 227–264.
- Skaržauskienė, A., Tamosiūnaitė, R. and Žalėnienė, I. (2013) 'Defining Social Technologies: evaluation of social collaboration tools and technologies', *Electronic Journal Of Information Systems Evaluation*, 16(3), pp. 232–241.
- Smith, M. R. (1998) 'Technological determinism in American culture', in *Does Technology Drive History?: The Dilemma of Technological Determinism*. Cambridge, MA: MIT Press, pp. 1–36.
- Smith, M. R. and Marx, L. (1994) *Does Technology Drive History?: The Dilemma of Technological Determinism*. Edited by M. R. Smith and L. Marx. Cambridge: MIT Press.
- Smith, M. R. and Marx, L. (1998) 'Technological Determinism in American Culture', in *Does Technology Drive History? The Dilemma of Technological Determinism*. Cambridge: MIT Press, pp. 1–36.
- Smith, S., Kempster, S. J. and Barnes, S. (2016) 'Up the ANTe: understanding entrepreneurial leadership learning through actor-network theory', *Industry and Higher Education*, In Press. Available at: [http://eprints.lancs.ac.uk/83200/1/Up\\_the\\_ANTe\\_accepted\\_submission\\_11\\_11\\_16.pdf](http://eprints.lancs.ac.uk/83200/1/Up_the_ANTe_accepted_submission_11_11_16.pdf).
- Smola, K. W. and Sutton, C. D. (2002) 'Generational differences: revisiting generational work values for the new millennium', *Journal of Organizational Behavior*, 23(4), pp. 363–382.

- Soga, L. R. (2016) 'Is it The Soul of a New/Lost Machine?', *International Journal of Actor-Network Theory and Technological Innovation (IJANTTI)*, 8(2), pp. 18–31. doi: 10.4018/IJANTTI.2016040102.
- Spector, P. (2014) 'Introduction: The Problems and Promise of Contemporary Leadership Theories', *Journal of Organizational Behavior*, Wiley Online Library(Early View).
- Stanton, A. and Stanton, W. (2013) 'Digital Natives Or Digital Neophytes: Business Student Perspectives On Course-Based Web 2.0 Applications', *Academy Of Educational Leadership Journal*, 17(1), pp. 119–137.
- Stanton, J. M. and Barnes-Farrell, J. L. (1996) 'Effects of electronic performance monitoring on personal control, task satisfaction and task performance', *The Journal of Applied Psychology*, 81(6), pp. 738–745.
- Star, S. L. and Griesemer, J. R. (1989) 'Institutional ecology, translations and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39', *Social Studies of Science*, 19(3), pp. 387–420.
- Stogdill, R. M. (1974) *Handbook of leadership: A survey of theory and research*. Free Press, New York.
- Subašić, E., Reynolds, K.J., Turner, J.C., Veenstra, K.E. and Haslam S.A. (2011) 'Leadership, power and the use of surveillance: Implications of shared social identity for leaders' capacity to influence', *The Leadership Quarterly*, 22(1), pp. 170–181.
- Szabo, C. (2013) 'Homo Fabulans (Storymaker)'. Available at: <http://colleenszabo.com/PDF/Homo-Fabulans.pdf> (Accessed: 23 June 2013).
- Takaragawa, S. and Carty, V. (2012) 'The 2008 U.S. Presidential Election and New Digital Technologies: Political Campaigns as Social Movements and the Significance of Collective Identity', *Tamara Journal For Critical Organization Inquiry*, 10(4), pp. 73–89.
- Tett, G. (2015) *The Silo Effect: The Peril of Expertise and the Promise of Breaking Down Barriers*. New York: Simon & Schuster.
- Thomas, D. R. (2006) 'A General Inductive Approach for Analyzing Qualitative Evaluation Data', *American Journal of Evaluation*, 27(2), pp. 237–246. doi: 10.1177/1098214005283748.
- Thorpe, R. and Holt, R. (2008) *The Sage Dictionary of Qualitative Management Research*. Los Angeles, London, New Delhi, Singapore: Sage Publications.
- Toffler, A. (1980) *The Third Wave*. First Edition First Printing edition. New York: William Morrow.
- Torres, E. N. and Mejia, C. (2017) 'Asynchronous video interviews in the hospitality industry: Considerations for virtual employee selection', *International Journal of Hospitality Management*, 61, pp. 4–13. doi: 10.1016/j.ijhm.2016.10.012.
- Tredgold, P. G. (2014) 'Are you connected? Leadership in the era of social media', *Development and Learning in Organizations: An International Journal*, 28(6), pp. 9–11. doi: 10.1108/dlo-05-2014-0032.
- Turkle, S. (2005) *The Second Self: Computers And The Human Spirit*. 20th Anniversary. Cambridge, MA: MIT Press.

- Turkle, S. (2008) 'Always-on/Always-on-you: The tethered self', in Katz, J. (ed.) *Handbook of Mobile Communication Studies*. Cambridge, MA: MIT Press, pp. 121–137.
- Turkle, S. (2011) *Alone Together: Why We Expect More from Technology and Less from Each Other*. New York: Basic Books.
- Turner, R. and Müller, R. (2005) 'The Project Manager's Leadership Style As A Success Factor On Projects: A Literature Review', *Project Management Journal*, 36(2), pp. 49–61.
- Tushman, M. L. and Murmann, J. P. (2003) 'Dominant designs, technology cycles, and organizational outcomes', in Garud, R., Kumaraswamy, A., and Langlois, R. N. (eds) *Managing in the Modular Age: Architectures, Networks, and Organizations*. MA: Blackwell Publishers Ltd, pp. 316–347.
- Tyran, K. L., Tyran, C. K. and Shepherd, M. (2003) 'Exploring Emerging Leadership in Virtual Teams', in Gibson, C. and Cohen, S. (eds) *Virtual Teams That Work: Creating Conditions For Virtual Team Effectiveness*. San Francisco: Jossey-Bass.
- Uhl-Bien, M. (2006) 'Relational Leadership Theory: Exploring the social processes of leadership and organizing', *The Leadership Quarterly*, 17(6), pp. 654–676.
- Valcour, P. M. and Hunter, L. W. (2005) 'Technology, Organizations and Work-life Integration', in Kossek, E. . and Lambert, S. . (eds) *Work and Life Integration: Organizational, Cultural, and Individual Perspectives*. NJ: Lawrence Erlbaum, pp. 61–84.
- Venters, J. W., Green, M. T. and Lopez, D. M. (2012) 'Social Media: A Leadership Challenge', *Business Studies Journal*, 4(Special Issue 1), pp. 85–93.
- Vodanovich, S., Sundaram, D. and Myers, M. (2010) 'Digital Natives and Ubiquitous Information Systems', *Information Systems Research*, 21(4), pp. 711–723.
- van Wamelen, J. and de Kool, D. (2008) 'Web 2.0: A Basis for the Second Society?', in Janowski, T. and Pardo, T. A. (eds) *Proceedings of the 2nd international conference on Theory and practice of electronic governance. ICEGOV '08*, New York: ACM, pp. 349–354.
- Warner, J. and Sandberg, A. (2010) *Generational leadership*. Los Angeles, CA: ReadyToManage Inc., pp. 1–12.
- Weierter, S. J. M. (1997) 'Who wants to play "Follow the leader?" A theory of charismatic relationships based on routinized charisma and follower characteristics', *The Leadership Quarterly*, 8(2), pp. 171–193. doi: 10.1016/S1048-9843(97)90015-1.
- Wenig, R. (2004) 'Leadership Knowledge and Skill: An Enabler for Success as a Technology Education Teacher-Leader', *Journal Of Technology Studies*, 30(1), pp. 59–64.
- Westin, A. F. (1992) 'Two key factors that belong in a macroergonomic analysis of electronic monitoring: Employee perceptions of fairness and the climate of organizational trust or distrust', *Applied Ergonomics*, 23(1), pp. 35–42.
- Westwood, R. (1997) 'Harmony and patriarchy: The cultural basis for paternalistic headship among the overseas Chinese', *Organization Studies*, 18(3), pp. 445–480.
- Westwood, R. and Chan, A. (1992) 'Headship and leadership', in Westwood, R. (ed.) *Organisational behaviour: Southeast Asian perspectives*. Hong Kong: Longman, pp. 118–143.

- Williams, R. (2000) “All that is solid melts into air”: historians of technology in the information revolution’, *Technology and Culture*, 41(4), pp. 641–668.
- Winget, M. A. and Aspray, W. (eds) (2011) *Digital Media: Technological and Social Challenges of the Interactive World*. Lanham, Toronto, Plymouth: Scarecrow Press.
- Winner, L. (1986) *The whale and the reactor: a search for limits in an age of high technology*. Chicago: University of Chicago Press.
- Winner, L. (1993) ‘Upon Opening the Black Box and Finding It Empty: Social Constructivism and the Philosophy of Technology’, *Science, Technology & Human Values*, 18(3), pp. 362–378.
- Woolgar, S. (1991) ‘The Turn to Technology in Social Studies of Science’, *Science, Technology, & Human Values*, 16(1), pp. 20–50.
- Woolgar, S. and Pawluch, D. (1985) ‘Ontological Gerrymandering: The Anatomy of Social Problems Explanations’, *Social Problems*, 32(3), pp. 214–227.
- Wyatt, S. (2008) ‘Technological Determinism Is Dead; Long Live Technological Determinism’, in Hackett, E. J. et al. (eds) *The Handbook of Science and Technology*. 3rd edn. Cambridge: MIT Press, pp. 165–180.
- Yin, R. K. (2003) *Case Study Research: Design and Methods*. 3rd edn. London: Sage.
- Yin, R. K. (2011) *Qualitative Research from Start to Finish*. New York, London: The Guildford Press.
- Yukl, G. (2010) *Leadership in Organizations*. 7th edn. NJ: Pearson.
- Zaccaro, S. (2007) ‘Trait-based perspectives of leadership’, *American Psychologist*, 62(1), pp. 6–16.
- Zammuto, R., Griffith, T., Majchrzak, A., Dougherty, D. and Faraj, S. (2007) ‘Information Technology and The Changing Fabric of Organization’, *Organization Science*, 18(5), pp. 749–762.
- Zuboff, S. (1988) *In The Age of The Smart Machine: The Future of Work and Power*. Basic Books Inc., NY.
- Zuboff, S. (1996) ‘The Emperor’s New Information Economy’, in Orlikowski, W. J. et al. (eds) *Information Technology and Changes in Organizational Work*. London: Chapman and Hall, pp. 13–17.

*\*For referencing purposes, all (interesting) quotes placed at the top right corner at the beginning of the Chapters in this thesis are taken from brainyquotes.com. Although the authors of the quotes are cited, I wish to acknowledge that they are collated at this given source, except the quote at the top right corner of Chapter Six which was taken from the Holy Bible.*

# Appendices

## Appendix 1: Interview guide used for employees

Interview Questions	Justification from the literature	Target Interviewee/actant	Notes for analysis
Can you please tell me about your role in the organisation, its structure, etc.?		Employee participant	
<p>Now let's talk about leadership..</p> <ul style="list-style-type: none"> <li>- What activities do you consider as leadership episodes in the organisation? (In general, and then in the social technology?)</li> <li>- What activities do you consider as critical to the success of the collaborative environment? Why? Any example and its related outcome?</li> </ul>		Employee participant	
Why do you think the decision to implement a social technology in the company was made?		Employee participant	
Could you share your experience with any issues/challenges that came up with the implementation process and how these were resolved?	Four stages in the sociology of translation.	Employee participant	
<p>At what point did you decide to use the technology? Why?</p> <ul style="list-style-type: none"> <li>- Did you encourage other colleagues to use it? How did you accomplish this?</li> </ul>	Callon (1986) argues "to interest other actors is to build devices which can be placed between them and all other entities who want to define their identities otherwise" (p.208).	Employee participant & platform netnography	<i>Investigate the devices of interessement used; look out for technological 'delegates' in the platform. Could be</i>



			<i>generated from the 'textual reality' ...</i>
<p>What does this technology mean to you as an individual?</p> <ul style="list-style-type: none"> <li>- Do you use this technology yourself?</li> <li>- For what purposes?</li> <li>- How often do you use it?</li> <li>- Would a unique name to the technology mean anything to you?</li> </ul>	<p>"What the introduction of new artifacts [technology] means for people's sense of self, for the texture of human communities, for qualities of everyday living, and for the broader distribution of power in society [and I will add, for management and leadership in organisations] – these are not of explicit concern" (Winner, 1993, p.368).</p>	<p>Managers and later employees using the technology.</p>	<p><i>Lack of commonality of meaning? (Bijker, 1995)</i>  <i>Explore unintended meanings of the technology to individuals.</i></p> <p><i>Also investigate any 'boundary object' in the differing meanings (Star &amp; Greisemer, 1989).</i></p>
<p>Have you heard about the technological platform in the organisation? How did you get to know about this?</p>	<p>This is basically a yes/no answer to aid in report writing to the company as part of the promise for gaining access.</p>	<p>Employees (targeted via 'snowball' logic)</p>	
<p>How do you feel about using this technology?</p> <p>Subs:</p> <ul style="list-style-type: none"> <li>- <i>Why</i> do you feel this way about the technology?</li> <li>- What limitations do you face in using the technology?</li> <li>- <b>How would you describe the technology's ease of use?</b></li> </ul>	<p>Instead of asking why do you NOT use the technology I hope to elicit deeper insight with a rephrase of the question this way.</p> <p>The need to compare "<i>the world inscribed in the object and <u>the world described by its displacement</u></i>" (Akrich, 1992, p.209)</p>	<p>Both users and non-users.</p>	<p><i>Investigate arguments of ease of use of the technology (Kim &amp; Lee, 2006)</i></p> <p><i>Also of interest is 'the big brother effect'.</i></p>

<p>What kind of information would you normally post to the platform? Why?</p> <p>- What things do you feel are unimportant or would rather hold back from posting?</p>	<p>Through political redlining, individuals can share or withhold information (Howard, 2006) while Web 2.0 plays a role in distribution patterns of information (Takaragawa &amp; Carty, 2012).</p>	<p>Actors 'followed' from the platform.</p>	<p><i>Information withholding vs information sharing.</i></p>
<p>How has the technology influenced your perception of other users?</p> <p>Sub:</p> <ul style="list-style-type: none"> <li>- or in what ways do you feel the technology has affected you?</li> <li>- How has it affected your sense of self?</li> </ul>	<p>Technology is argued to influence leader perceptions of followers (Kipnis, 1993) but leaves a gap of how 'followers' perceive leadership.</p>	<p>Managers and employees.</p>	<p><i>Investigate user perceptions with regards to the translation process.</i></p>
<p>Could you please describe your typical usage of the technology for me?</p> <p>i.e. walk me through from your time in front of the computer to leaving the computer on a typical day..(e.g. logging in, etc...)</p> <ul style="list-style-type: none"> <li>- Is there mobile access?</li> <li>- Access from home?</li> <li>- What time of day would you normally access/post something?</li> <li>- Finally, how is the technology meeting your needs? Give me some specific examples.</li> </ul>	<p>Theory on Sociomateriality and practice</p>	<p>Managers and employees.</p>	
<p>Demographics:</p> <p>Age range:</p> <p>&lt;1981 1981-1997 &gt;1997?</p> <p><i>[The last question]</i></p>	<p>Venters et al (2012) argue generational differences account for exclusion in Web 2.0 participation.</p>	<p>Managers &amp; employees (both those actively using the technology and those who do not).</p>	<p><i>Generational differences critiqued in the thesis as not merely a cause for exclusion. Empirically verify this</i></p>

			<i>assertion...</i>
Investigate the organisation of the technological platform (affordances).	The need to compare " <i>the world inscribed in the <u>object</u> and the world described by its displacement</i> " (Akrich, 1992, p.209)	Platform netnography	<i>Investigate how the technology works (folders, icons, groups, special access, use screenshots)</i>
Examine the data with respect to the nature of information posted.	Cramton and Orvis (2003) posit that information could also be of a social nature – that is, relating to individual relationships, aspirations, motivations and so on – or contextual – that is, information relating to the milieu surrounding tasks.	Platform Netnography	<i>Kozinets (2002)</i>
De-brief after interview and <b>ask if anything is missed?</b>			

## Appendix 2: Interview guide used for managers

Interview Questions	Justification from the literature	Target Interviewee/ Actant.	Notes for analysis
Can you please tell me about your role in the organisation, its structure, etc.?		Managers and employees.	
Now let's talk about leadership.. <ul style="list-style-type: none"> <li>- What activities would you normally undertake as part of your leadership? (In general, and then in the social technology?)</li> <li>- What activities do you consider as critical to the success of the collaborative environment? Why? Any examples of a leadership episode and its related outcome?</li> <li>- [has this been informed by their technical background, experience, etc?]</li> </ul>		Managers and employees.	
Why did you decide to implement a social technology in the company?		Managers involved in the decision to implement the technology.	
When and How did you come to agree on what technology to adopt?	The 'relevant social group' achieves 'closure' when a common interpretation of the technology becomes agreed upon. (Pinch & Bijker, 1989)	Managers	<i>What repercussions did these privileged managers trigger as a result of any contradictions with regards to the adoption of the technology? Inquire about the 'irrelevant social</i>

			<i>group' (Winner, 1993)</i>
How did you get others (colleagues or employees) on board to use the technology? OR How do you plan to do this?	Callon (1986) argues “to interest other actors is to build devices which can be placed between them and all other entities who want to define their identities otherwise” (p.208).	Managers & platform netnography	<i>Investigate the devices of interessement used; look out for technological ‘delegates’ in the platform. Could be generated from the ‘textual reality’ ...</i>
What issues did you encounter with regards to the implementation and acceptance of the technology? [Could also be what they’ve experienced among individuals at various levels of the organisation?]		Managers	
What did you hope to achieve with this technology and <i>any thoughts about giving it a special name?</i>	Callon’s sociology of translation	Follow relevant actor to see how the technology was <i>problematized</i> per ANT	<i>Problematization, interessement, enrolment, &amp; mobilisation (Callon 1986)</i>
What does this technology mean to you as an individual?  <ul style="list-style-type: none"> <li>- Do you use this technology yourself?</li> <li>- For what purposes?</li> <li>- How often do you use it?</li> </ul>	“What the introduction of new artifacts [technology] means for people’s sense of self, for the texture of human communities, for qualities of everyday living, and for the broader distribution of power in society [and I will add, for management and leadership in organisations] – these are not of explicit concern” (Winner, 1993, p.368).	Managers and later employees using the technology.	<i>Lack of commonality of meaning? (Bijker, 1995) Explore unintended meanings of the technology to individuals.</i>  <i>Also investigate any ‘boundary object’ in the differing meanings (Star &amp; Greisemer, 1989).</i>
How do you feel about using <i>the technology?</i>	Instead of asking why do you	Both users and	<i>Investigate</i>

<p>Subs: - <i>Why</i> do you feel this way about the technology?</p> <ul style="list-style-type: none"> <li>- What limitations do you face in using the technology?</li> <li>- <b>How would you describe the technology's ease of use?</b></li> </ul>	<p>NOT use the technology I hope to elicit deeper insight with a rephrase of the question this way.</p> <p>The need to compare "<i>the world inscribed in the object and <u>the world described by its displacement</u></i>" (Akrich, 1992, p.209)</p>	<p>non-users.</p>	<p><i>arguments of ease of use of the technology (Kim &amp; Lee, 2006)</i></p> <p><i>Also of interest is 'the big brother effect'.</i></p>
<p>What kind of information would you normally post to the platform? Why?</p> <p>What things do you feel are unimportant or would you rather hold back from posting?</p>	<p>Through political redlining, individuals can share or withhold information (Howard, 2006) while Web 2.0 plays a role in distribution patterns of information (Takaragawa &amp; Carty, 2012).</p>	<p>Actors 'followed' from the platform.</p>	<p><i>Information withholding vs information sharing.</i></p>
<p>How has the technology influenced your perception of other users?</p> <p>Sub: - or in what ways do you feel the technology has affected you?</p>	<p>Technology is argued to influence leader perceptions of followers (Kipnis, 1993) but leaves a gap of how 'followers' perceive leadership.</p>	<p>Managers and employees.</p>	<p><i>Investigate user perceptions with regards to the translation process.</i></p>
<p>Could you please describe your typical usage of the technology for me?</p> <p>i.e. walk me through from your time in front of the computer to leaving the computer on a typical day..(e.g. logging in, etc...)</p> <ul style="list-style-type: none"> <li>- Is there mobile access?</li> <li>- Access from home?</li> <li>- What time of day would you normally access/post something?</li> <li>- Finally, how is the technology meeting your needs? Give me some specific examples.</li> </ul>	<p>Theory on Sociomateriality and practice.</p>	<p>Managers and employees.</p>	

<p>Demographics:</p> <p>Age range:</p> <p>&lt;1981 1981-1997 &gt;1997? <i>[The last question]</i></p>	<p>Venters et al (2012) argue generational differences account for exclusion in Web 2.0 participation.</p>	<p>Managers &amp; employees (both those actively using the technology and those who do not).</p>	<p><i>Generational differences critiqued in the thesis as not merely a cause for exclusion. Empirically verify this assertion...</i></p>
<p>De-brief after interview and ask if anything is missed?</p>			

### Appendix 3: A cropped sample of the interview schedule (anonymised names).

Name	Role / Function	Location	Nominated by	Briefing	schedule d
Melanie Gotschky-Meyer	Comms Mgr (Grp Fun)	Basel	Commy	sent	Jul 21
Martin Kuech	Group Comms (CEC-2)	Basel	Commy	sent	Jul 21
Florian Zuber	Group Legal	Basel	Commy	sent	Jul 23
Melanie Gotschky-Meyer	IT & Workers Council intermediaries	Mannheim	Commy	on hold	
Martin Kuech	DIA IT	Mannheim	Commy	sent + accepted	Jul 27
Melanie Gotschky-Meyer	Supply Chain	Basel	Commy	sent + accepted	Jul 27

### Appendix 4: Google Drive Links to Google+ Survey results at Drugster

Google+ documents for the study research ☆

File Edit View Insert Format Data Tools Add-ons Help Last edit was made on July 13 by [redacted] Comments Share

Document

	A	B	C	D	E	F	G	H	I
1	Document	About	Date of Creator	Typ	Notes				
2	<a href="#">Business Pilot Use Cases</a>	1st use cases survey	30-Nov-2014	Use Cases					
3	<a href="#">Google+ Business Pilot Survey Results</a>	presentation with new data	7-Jul-2015	Survey					
4	<a href="#">G+ Business Pilot Feedback</a>	Answers from the Business Survey	31-Oct-2014	Survey					
5	<a href="#">G+ Business Pilot Feedback Results</a>	Summary of the Business User Survey	31-Oct-2014	Survey					
6	<a href="#">G+ Users IT Pilot Feedback</a>	Answers from the IT User Survey	1-Aug-2014	Survey					
7	<a href="#">G+ Users IT Pilot Feedback Results</a>	Summary of the IT User Survey	1-Aug-2014	Survey					
8	<a href="#">G+ IT Pilot Participant Survey Results</a>	Pdf of the Results	27-Jan-2015	Survey					



**Appendix 5: One section of non-disclosure agreement signed by the researcher; other sections are cut out to protect names.**



**Placement Non-Disclosure Agreement**

Upon taking up a postgraduate research project with the University of Reading, you are required to sign this Non-Disclosure Agreement because you may have access to confidential information. This Agreement requires you to protect confidential information and trade secrets that you may come into contact with as a result of a postgraduate research project.

I hereby agree as follows:

**1. Definitions**

- 1.1 In this Agreement the following terms have the following meaning:
- (i) "I", "You" "your" or "me" mean the person undersigned.
  - (ii) "Confidential Information" includes, without limitation, confidential and proprietary information including customer, collaborator or patient details, know-how, processes, computer software, Intellectual Property and related documentation, employees' details, methods of doing business, financial affairs and other confidential business information which belongs to the University of Reading, its clients, sponsors, contracted third parties or collaborators.

**2. Confidentiality Obligations**

- 2.1 I agree to retain all Confidential Information in the strictest confidence. I will not disclose any Confidential Information to any person other than as necessary for purposes of the research project, nor will I use the Confidential Information for my own purposes or for purposes other than those required by the research project.
- 2.2 I acknowledge that the obligation not to disclose to others or use the Confidential Information continues in effect following the termination of the research project regardless of the reason for termination.
- 2.3 I agree that upon the request of the University of Reading, for whatever reason, I will immediately return to the University of Reading all of the materials, including all copies in whatever form, containing Confidential Information which are in my possession or under my control.

**3. Exceptions to the Confidentiality Obligations**

- 3.1 I understand my obligations under this Agreement, not to disclose to others any Confidential Information, shall not apply to any Confidential Information that:
- (i) Can be shown, by me, to be previously known;
  - (ii) Is or becomes publicly known, other than as the result of a breach of the terms of this Agreement by me or by anyone to whom I disclosed it; or
  - (iii) Is received in good faith from a third party that is not subject to obligations of confidence in relation to the information.
  - (iv) Is required to be disclosed by legal or regulatory obligation.

**4. Termination**

- 4.1 The rights and obligations contained in this Agreement shall survive the termination of the research project.

**5. General**

- 5.1 No waiver of any default or breach of this Agreement shall be deemed to be a continuing waiver or a waiver of any other breach or default pertaining to this Agreement
- 5.2 I acknowledge and agree that damages may not be an adequate remedy to compensate the University of Reading for any breach of my obligations contained in this Agreement, and accordingly I agree that in addition to any and all other remedies available, the University of Reading shall be entitled to obtain relief by way of a temporary or permanent injunction to enforce the obligations contained in this Agreement.
- 5.3 This Agreement constitutes the entire agreement between the parties with respect to the protection by of Confidential Information and cancels and supersedes any prior understandings and agreements regarding confidentiality between the parties. There are no representations, warranties, forms, conditions, undertakings or collateral agreements, express, implied, or statutory between the parties other than as expressly set forth in this Agreement with respect to the protection of any Confidential Information.
- 5.4 If any provision of this Agreement is wholly or partially unenforceable for any reason, such unenforceable provision or part thereof shall be deemed to be omitted from this Agreement without in any way invalidating or impairing the other provisions of this Agreement.
- 5.5 This Agreement shall be governed by the laws of England and Wales and each party submits to the exclusive jurisdiction of the courts of England and Wales.

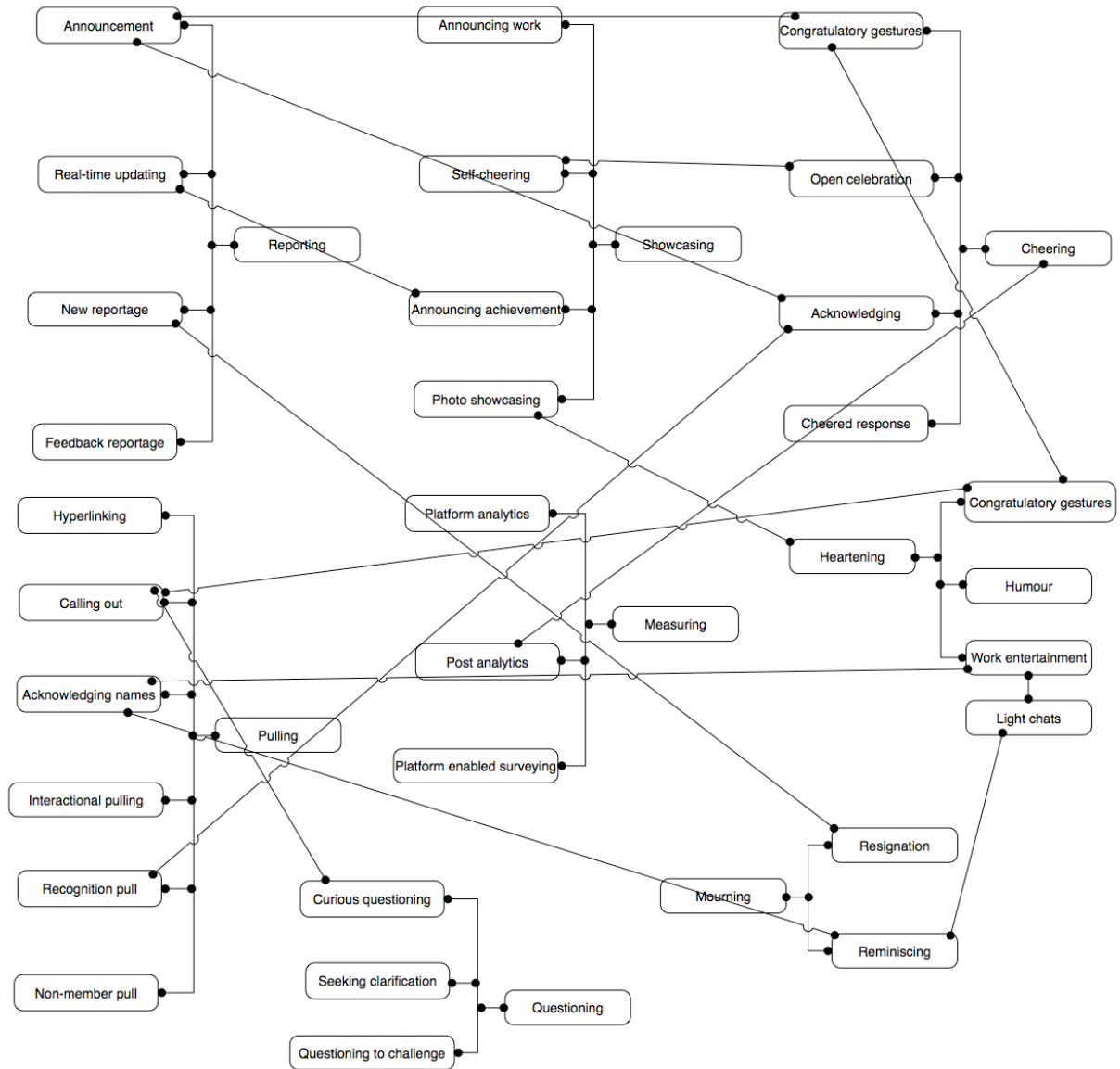
Signed and accepted by:

Signature: 

Name: Lebene Richmond Soga

Date: 30th June 2015


Appendix 6: Google+ relational practices contain and interact with one another.



## Appendix 7: Sample email sent post interview.


[Update] Interview with Lebene Soga for Social Study 📌 ⌚ 🗑️ ✓ ⋮

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 [Redacted] 7/30/15 ▾

Hi Lebene, Here's the link: [http://\[Redacted\]](http://[Redacted]) It was great to "virtually" meet you. Best, [Redacted] Interview with Lebene Soga for Social StudyDear [Redacted],

---

 **me to** [Redacted] 7/30/15 ⋮

Hi [Redacted],

Many thanks for your time for our conversation. That was really insightful!

The link is solid. Going to watch that now.

Thank you once again. I'll be in touch should I need any more clarifications.

Best,  
Lebene.  
...

## Appendix 8: Sample of informed consent for participants of the study.

### INFORMATION SHEET AND INTERVIEW CONSENT FORM

Dear participant,

As you may have already been informed, this study seeks to gain an understanding into the role of Web 2.0 technologies (i.e. social technologies) in shaping evolving leadership practices within a digital environment. Additionally, the study aims to unravel any unintended consequences (either beneficial or detrimental) that arise as a result of the deployment and subsequent use of these technologies in the organisation. This will be an anonymous data collection process. Your participation is very much appreciated and this interview is expected to take not more than one hour of your time.

#### Consent Text for Anonymous Data Collection

Your identity will not be revealed to anyone other than the interviewer collecting this data. To fully capture your ideas for the analysis, this interview may be recorded and if so, it will be encrypted immediately to protect your identity and it will only be used for transcription and data analysis purposes.

You are free to withdraw from this interview and study at any time you feel uncomfortable or unwilling to participate, and you do not have to specify a reason.

Any contribution can be withdrawn at any stage and removed from the research if desired. If you wish to withdraw, please do not hesitate to let me know.

If at any stage you wish to receive further information about the interview or project, please do not hesitate to contact me at [l.r.soga@pgr.reading.ac.uk](mailto:l.r.soga@pgr.reading.ac.uk) or via the telephone at ~~+44 7576 555~~

By answering the interview questions you are acknowledging that you understand the terms of participation and that you consent to these terms.

This application has been reviewed according to the procedures specified by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.

Please do you wish to continue?

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