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ENTERPRISE ARCHITECTURE FRAMEWORK ADOPTION BY FINNISH APPLIED UNIVERSITIES' NETWORK

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Keywords
Enterprise architecture, e-administration, corporate governance, IT-strategy

Enterprise architecture (EA) way of thinking is currently becoming an essential part of universities daily life. This article presents some piloted experiences and university visions from Finland, where a new national law focusing on mandatory EA-adoption in public sector has just launched. The law emphasizes systems and information compatibility. It will bind also universities to make their EA-plans and –descriptions. Holistic framework of EA augmenting corporate governance (first presented by J. A. Zachman 1987), should now be taken seriously not only by CIOs, but also among university top-managers. This is an international trend as well. In many European countries various public sector EA-activities has been occurred, like eGovernance issues in Nordic countries, IT-politics of UK and Netherlands, Estonian Informatics Center, etc., not forgetting EU 2020 strategy "Digital Agenda for Europe".

In spring 2009 the CIO-network (called AAPA) of Finnish Universities of Applied Sciences decided to start a particular pilot project to adopt the EA-concept. Ten applied universities and two universities were involved. The project activities got started in autumn 2009 and they lasted till February 2011. Under the one single umbrella project six separate networked subprojects were formed to adapt the EA-concept in practice, all focusing slightly different topics. Two of the networks concentrated on organizational issues - first one to loosely coupled co-operative organization between the universities, another to organizational merger contract. An important topic how to combine quality assurance work and the enterprise architecture was practiced within few networks. Some of subprojects build more confined reference architectures, for example on adult education, on education process planning and on freedom of student movement between the universities.

In addition, main project aimed to enchange discussion between CIOs and rectors and to find a common language between the parties. CIOs lead the operational EA-subprojects but a special steering group was established to involve also the top-managers of the universities.

The piloted enterprise architecture model conforms loosely to Togaf-framework. It includes particular EA-framework with documentation templates, model to maintenace the framework and a model to test orgazation's EA-maturity level. EA-framework is focused into four practice areas: Levels or domains of Business architecture, Information architecture, Applications-, and Technology

architecture. Business architecture includes issues like organizations' strategy maps, corporate policies, operational processes and workflows. Correspondingly Information architecture includes different data models, metadata definitions and holistic view on the flow of information. Applications architecture includes software components and applications, and Technology architecture for example network infrastructures, hardware, platforms, hosting and inter-application mediating software or middleware.

Generally, one of the main ideas of EA is to give the holistic view on organizations' operational environment and recognize the dependencies. When any processes, data structures, software applications or technical infrastructures are changed while the organization is developed, EA-documentation is an essential tool to systematically find out all effects between and within the issues situated to these architecture domains. EA-model is useful for it documents and simplifies the topic and divides it into smaller particles, depending on each other.

The findings of the project brought to light important viewpoints. In future, legislation may be the stick but many practical carrots can be found. In addition to organizational learning processes we noticed the strenght of networked peer group, guideline to focusing on limited target areas and importance of gradual, long term vision when EA is adopted. It is obvious adopting EA will offer several practical benefits, like improved documentation quality, abilities to view the big picture of operational systems or understanding better the effects of planned changes, as mentioned above. Still one of the most essential points is mutual communication. Top-managers must understand the importance of EA adoption and support it. EA shall not be owned only by data administration professionals, it must be owned by top management and develop managers.

Thinking about the future, the common Finnish public sector EA-framework includes also various anticipatory pre-conditions to be taken in account. These include for example common architectural principles of public sector, various stakeholders' architectures and data security politics. All these effect mutual dependencies which should be noticed when structures and future steps are planned by universities.

First, in Finland due to the new law, architectural principles will form a hierarchical structure. The basis is formed by the common public sector EA-principles, next in priority will follow the ones by ministry-level (Ministry of Education), then the shared principles of universities and in the end organizational EA-principles. On the one hand, Ministry of Education is responsible in Finland for all school levels' EA-principles. Thus the role it takes - or possibly do not take - will be very important. On the other hand Finnish universities have their own autonomy, so the shared architecture principles of universities must be formed by voluntary basis.

Secondly, stakeholders' architectures will bring more viewpoints alike. Stakeholders' architectures to be noticed could include for example the definitions of EA-policy of other ministries, new legislation (like EU competition directives) or demands concerning co-operation with other school degrees.

Thirdly, last but not least important point is the relationship between data security policies. We will have various potential new concepts like mobile

networks, Software as a Service/Cloud-services, video calls and instant messaging, social media access demands, identity management techniques with federations, etc. They enable totally new kind of operational processes in Business architecture -level, but these concepts are heavily tangled in data security issues as well. It is very important persons in charge for process development are familiar and recognize the restrictions set by the secured use of information systems and IT-services.

In this rapidly changing environment the long tradition of CIO networks as co-operational forum and trust the members have with each other will be very valuable. However, keeping that status also in future, existing EA-change should be perceived more carefully. What we need, is for example, understanding broader than only technology-oriented way the customer's problems and needs and having clear and understandable communication also with business/operational process owners of universities. It is important to initialize own internal EA-activities and having more systematic documentation build on common EA-templates basis. One most promising idea to consider is to connect the EA-development work up to already existing continuous improvement practices, like the university quality assurance system.