

Connecting EAI-Domains via SOA– Central vs. distributed approaches to establish flexible architectures

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The following article defines adaptability as the main target to solve the problem of enterprise architecture sustainability. Flexibility is an important steering mechanism to develop adaptability. Organisational modularisation is used to flexibilise enterprise structures. Business processes are changing permanently according to business requirements. Unfortunately it is a matter of fact that IT is disabling this business-driven change. Integration Technology is being introduced to improve the situation. Establishing step by step a multi service integration architecture creates new issues as handling internal charging routines, service monitoring and service life cycle management. The CC for EAI at Technical University is working on an approach and prototype of a service management module addressing the mentioned issues.

1. NECESSITY OF FLEXIBLE ENTERPRISE ARCHITECTURES

The system “enterprise” is exposed to complex changes of its environment. The three essential environmental dimensions are complexity, dynamics and interdependence [Jurkovich, 1974: 380]. As described in figure 1 particularly the dimensions complexity and dynamics [Krystek, 1999: 266] increased by current developments like globalisation and automation [Frese, 2000] confront companies with diverse problems.

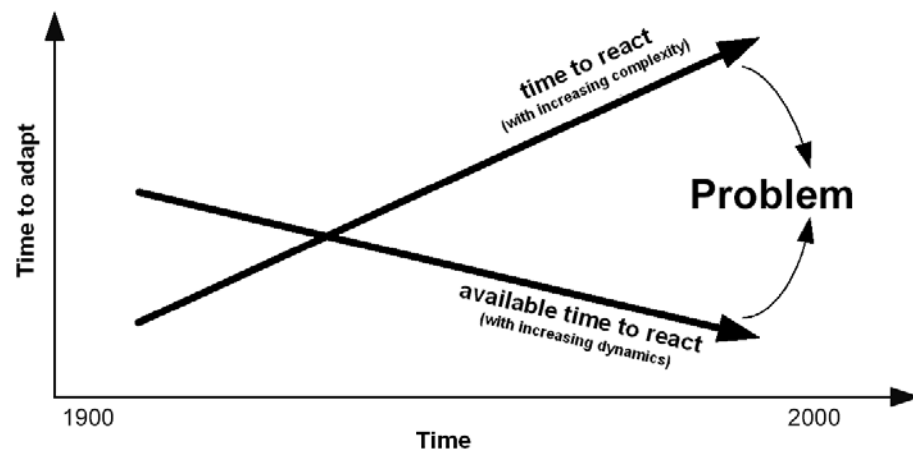


Figure 1: Complexity and dynamics as a current management problem

To solve the problem they have in principle two possibilities to react [Kieser & Kubicek, 1992]:

- They can take measures to influence the environment with the target to reduce dynamics and complexity by decreasing the interdependences.
- Or they can increase the adaptability of the enterprise.

In this article the second aspect – the increase in adaptability – is continued to be examined. For this the architecture components organisation and IT are brought into reference with each other after characterising the flexibility as a planning target in order to draw up an approach for the modularisation of the organisation and IT-architecture within the context of Enterprise Application Integration (EAI).

2. FLEXIBILITY AS AN ORGANISATIONAL TARGET

The understanding that “enterprise modification has changed or will have to change from an event, which has to be organised in longer time intervals, into a permanent state” [Krueger, 1998: 227] is accepted today to a large extent. The task is now to make companies more flexible for this change. Krueger distinguishes the change of companies depending on the requirement, willingness and capability of change. [Krueger, 1998: 227] The capability of change represents the core of the considerations of this article. In order to deal effectively with internally and externally caused requirements of change corresponding structures and organisational instances for the institutionalisation of change are to be created in the companies. In addition to institutional measures structural measures to increase the capability of change – measures for an increase in flexibility – are discussed in the following. The term of flexibility comes from Latin and means changeability, agility or ductility. A system is flexible if a requirement of change is completed by a potential of change in the system, which can be activated in an appropriate time [Kieser & Kubicek, 1992; Gronau, 2000: 125]. The requirement of change includes a factual and a temporal dimension. The temporal dimension not only requires the ability to react of an enterprise but also the capability of anticipative adaptation. Hill/ Fehlbaum/ Ulrich describe this as productivity of second order [Hill, Fehlbaum & Ulrich, 1994]. Kieser/ Kubicek identify the following tendencies of the structure of companies as suitable to increase their flexibility [Kieser & Kubicek, 1992]:

- low specialisation on jobs and department level
- strong decentralisation
- flat hierarchies
- minimisation of strength of central supporting departments (staffs)
- simple, which means no extensive matrix structures

The mentioned tendencies aim at decoupling the structures and processes by means of a reduction of interfaces. In the following, these thoughts are further developed in order to facilitate decoupling and flexible reconfiguration through modularisation on different levels of the enterprise.

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4. CONCLUSION

A lot of publications, which are technically focussed, currently discuss decentralised architectures for the integration of complex IT-infrastructure. Companies again deal with the subject of re-use, although some years ago it almost completely disappeared from the experts discussion under the name of business process repositories, which were planned to implement business processes that can be reconfigured. Platforms with higher performance partly give reason for this unexpected renaissance. The subject EAI also contributes to the current discussion, which is led on an enterprise architecture level. In the first step, it deals with the technical definition of the modules (or services), only in the following, technologies for implementation will play a role. In this sense the article particularly concentrates on the modularisation on a specialist level and its transformation into a technical level.

5. References

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