Towards Critical Success Factors for Enterprise Architecture

AISA Project
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Objectives of the Study

- To determine what quality means in the context of enterprise architecture (EA)
- To identify the potential/candidate critical success factors (CSFs) for EA
- To prioritize the potential CSFs for EA: an example of prioritization is given
Enterprise Architecture (EA)

- Identifies the main components\(^1\) of the organization, the ways in which these components work together in order to achieve defined business objectives, and the way in which the information systems support the business processes of the organization.

- It takes a holistic view of the enterprise's IT resources rather than an application-by-application view.

\(^1\) E.g. Staff, business processes, technology, information, financial and other resources, information systems (Kaisler et al., 2005)
Some Characteristics of an EA of High Quality

- Conforms to the agreed and fully understood business requirements and business strategies
- Fits for the purpose (e.g. more efficient ICT decision making)
- Satisfies the various stakeholder groups’ (e.g. the top management, IT management, architects, developers) expectations in a cost-effective way
- Understands both the current needs and the future requirements
- Is understood, accepted and used in every day business functions
- Brings value to the organization
CSFs\textsuperscript{1} for EA were derived from...

1 Things that must be done exceedingly well in order to gain a successful EA
Potential CSFs for EA

- Commitment
- Communication
- Governance
- Common Language
- Scoping & Purpose
- Development Methodology
- Business Driven Approach
- Tool Support
- Assessment/Evaluation
- EA Model/Artifacts
- Training/Education
- Project Management
- Skilled Team
- Organizational Culture

EA Success & Quality
Potential CSFs for EA

Commitment
- Top management leadership, involvement
- Organizational buy-in, acceptance
- Thought leader

Overcoming the barriers; silo thinking, profit responsibilities, politics etc.

Role of EA affects the commitment; EA as a guide and a mentor rather than a controlling mechanism

Governance
Development Methodology
Tool Support
EA Model/Artifacts
Project Management
Skilled Team
Evaluation
Training/Education
Organizational Culture
Potential CSFs for EA

- Commitment
- Communication
- Common Language

- Communication essential in gaining a common understanding, agreement and a shared view → commitment
- Communication is needed between all the diversified stakeholder groups, and projects implementing EA conformant information systems
- Proactive, various channels used, regular, frequent, feedback channels available, ongoing process, documented (communications plan/strategy)
- A common, well-defined vocabulary of architecture terms and concepts to help communication
- Enterprise architect as an interpreter between the various stakeholder groups, also able to speak “business language”
Potential CSFs for EA

- **Commitment**
  - Governance structure and processes; defined, established, repeatable, auditable
  - Governance team, e.g. the architecture board, ensures the implementation of EA is conducted in conformance to the transition strategy
  - Architecture policies, principles, architecture compliance strategy, "EA statute book"
  - Change management, risk management

- **Governance**

- **Development Methodology**

- **Tool Support**

- **EA Model/Artifacts**

- **Project Management**

- **Skilled Team**

- **Organizational Culture**
Potential CSFs for EA

- Mission, goals and direction, objectives of the organization, why it wants to apply the EA approach, what is the existing or future problem it wants to solve/be prepared for
  - “declaration of will”, mission statement
- To get everyone to share the same architectural vision
- EA scope clearly defined; how wide, how deep, how detailed, how fast an EA should be developed
  - continuous improvement approach
  - prioritization of sub-projects
  - holistic in scope
  - specific to the enterprise
Potential CSFs for EA

- **Commitment**
  - Structured, well-defined and documented incl. e.g. processes, guidelines, best practices, drawing standards

- **Governance**
  - Business-strategic-driven, customer-focused, practice-oriented, situational, model-based, repeatable, future-oriented, widely usable with reasonable costs

- **Development Methodology**
  - Architecture principles; simple, direct statements of how an organization wants to use IT, establishing a context for architecture decisions

- **Tool Support**
  - Guiding principles provide consistent, shared vision for developing architecture, ensuring the development initiatives to be in line with the organization’s strategic goals

- **EA Model/Artifacts**

- **Project Management**
• Defining the business requirements and ensuring they are met → clear alignment between business and IT

• EA initiatives traceable to business strategies

• Requirements set by external stakeholders (legislation, standards, business owners, partners) should also be considered and defined

• Architecture visions are needed
  • They should be compatible with the business vision and objectives
  • When the limited resources (time, money, skills) are considered, realistic and realizable objectives are reached
Potential CSFs for EA

- **Commitment**: Set of tools that work together, compatible with e.g. business process modeling tools, software development tools.

- **Governance**: Some features needed in EA tools:
  - Framework support/generation
  - Repository
  - Unrestricted ability to link information

- **Development Methodology**: Web publishing/access

- **Tool Support**: Graphical and textual data

- **EA Model/Artifacts**: Graphical navigation paradigm

- **Project Management**:
Potential CSFs for EA

- Questions to be asked
  - Why measurement is needed?
  - What is measured?
  - How? Which metrics are used?
  - Who does the work?
- Continuous process, proactive
- Metrics should be developed as early as possible in the development process
- Post-mortem analysis, lessons learned
- No established metrics available

Common Language
Scoping & Purpose
Business Driven Approach
Assessment/Evaluation
Training/Education
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Potential CSFs for EA

- Commitment
- Governance
- Development Methodology
- Tool Support
- EA Model/Artifacts
- Project Management

- All the necessary levels or views of the architecture are modeled
- Coherent, concise picture of the enterprise
- Current and future architecture, transition plan, architecture decisions
- Other requirements for EA models, e.g.
  - must meet the business requirements
  - traceability between the models and business requirements
  - conformance to standards and business strategies
  - well documented, current and available
  - efficient and complete enough, clear, readable, verified and validated
• Training is an important part of enhancing quality, also a continuous process
• One way of gaining EA awareness and acceptance
• Training is needed e.g. in the following levels:
  • General EA education; frameworks etc.
  • Best-practices, methods, tools for architects
  • Business training for IT people, IT training for business people
  • Education on the possibilities new technologies may offer
• Things architects teach to other stakeholders
• Avoid using the term education when communicating with the top management
Potential CSFs for EA

Commitment
Governance
Development Methodology
Tool Support
EA Model/Artifacts
Project Management

- EA development is conducted through projects → project management skills are needed
  - Realistic scope, size, plans, scheduling
  - Requisite financial and human resources
  - Risk management
  - Organizational structure
  - Continuous measurement of project success
  - Leadership, commitment
  - Clear milestones
  - Lessons learned gathered
  - Program management; managing, coordinating and supporting several various development projects
Teamwork is essential in EA development

- Representatives from all key stakeholder groups, e.g. business experts, business management, system development experts, data, infrastructure and security system architects, partners

- Chief architect assigned, should be able to work in various roles, e.g. visionary, translator, system designer, auditor, consultant, interpreter

- Various skills needed, e.g. criticism, abstract thinking, courage to question things, able to sell ideas/thoughts, capable of expressing himself/herself both in writing and visually
Potential CSFs for EA

- Organization’s readiness to develop and use EAs is an essential issue
- Cultural readiness; integration of EA and the company culture
- Attitudes towards change, managing the organizational change
- Organization’s structure affects the success of EA; e.g. silo thinking is too narrow a perspective
- Communication environment; should encourage to challenge each others view, especially regarding the architecture, allow everyone to participate and to discuss, debate

Common Language
Scoping & Purpose
Business Driven Approach
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An Example of Prioritization – “Top 10 CSFs for EA”

1. Communication
2. EA Model/Artifacts
3. Commitment
4. Common Language
5. Business Driven Approach
6. Organizational Culture
7. Training/Education
8. Scoping and Purpose
9. Governance
10. Assessment

Vital issues in the initial steps of EA development taken into consideration as the EA development advances.
Conclusions

- Quality of EA is still an open issue
  - Maturity is a more familiar term in this context
- The success of EA is influenced and enabled by several various and to some extent interrelated factors
  - Dependencies or interactions between the CSFs were not studied
- Prioritization of the factors dependable on the organization’s EA maturity?
  - Prioritization example implies that in the beginning of the EA journey it is vital to gain understanding and commitment through effective communication and a common language, utilizing the EA models and other artifacts in this effort