Antwerp Management School

Enterprise Architecture practices that bring value to Agile IT projects

Master Project

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Peter Wuytack

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Executive Summary

Companies in the Belgium finance industry started to adopt Agile at a larger scale in more recent years to be able to address the need for a faster time to market for products and services. Agile originated around 2001 with the Agile Manifesto but Enterprise Architecture has been here since the 1960s and the Enterprise Architecture practices that have been developed adhere more to waterfall principles because of this longer history. Original Enterprise Architecture practices are more sequential of nature and rely strongly on documentation whereas Agile is more sequential in nature and relies on lean documentation. Because of this historical contradiction there is tension between Agile practitioners who see enterprise architecture more as a blocker than as an enabler and enterprise architects who struggle to show the real value Enterprise Architecture can bring for Agile. This thesis sets out to investigate if original Enterprise Architecture practices can bring value to Agile IT projects as it can help organizations to better understand and organize the Enterprise Architecture practice and what value it can bring to Agile IT projects. The outcome can also help Agile practitioners to better understand the value Enterprise Architecture can bring to their Agile IT projects and support a culture of respectful collaboration. Using a Qualitative research methodology, a set of 34 Enterprise Architecture practices was extracted from existing literature and evaluated based on the value they bring to Agile IT Projects. Evaluation of these practices was done by 23 experts from both Agile and Enterprise Architecture practices, working in the finance industry in Belgium. The top tree Enterprise Architecture practices that were confirmed by experts to bring the highest value to Agile IT projects are:

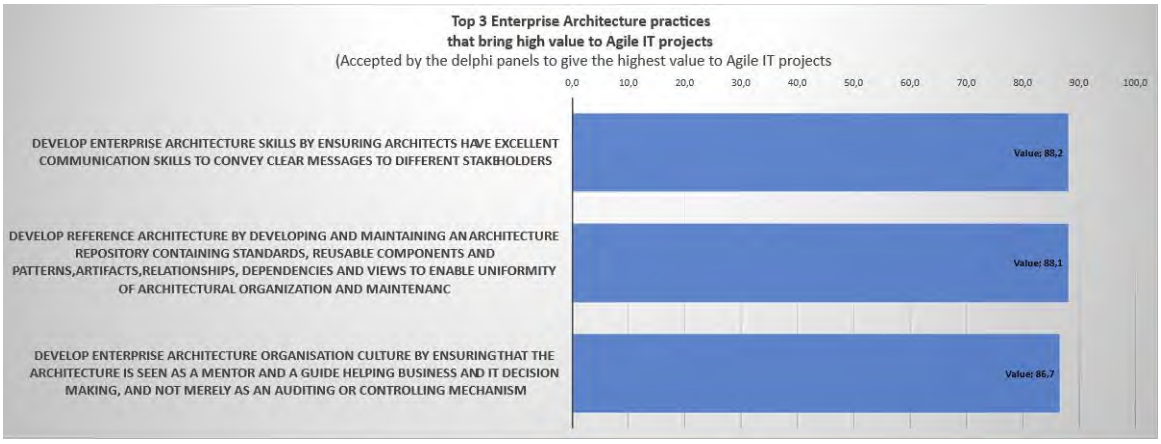

Figure 1 Top 3 Enterprise Architecture practices that bring high value to Agile IT Projects

These experts provided practical evidence and experience and confirmed that 16 out of the 34 Enterprise Architecture practices listed bring high value to Agile IT projects. In fact, a very interesting finding is the fact that all the 16 confirmed high value practices contribute positively to one of the important critical success factors for Agile IT projects which is: communication. Enterprise Architecture can certainly support a higher chance of success.

1. Introduction

Although project management has been around for thousands of years dating back to the Egyptians, it was first introduced in the IT sector in the 1970s with methodologies such as PROMPT developed by Simpact Systems Ltd. (SIMION, 2012), (Haughey, 2010) and was more widely adopted by the IT sector in the 1980s with frameworks such as PMBOK. and PRINCE2 (Garel, 2012), (Haughey, 2010). Systems that need to evolve and adapt to a changing environment usually generate more complexity (Chan, 2001). Project management can create the enabling conditions required to take decisions and carry out actions on behalf of the organization, to deal with these complex evolving systems (Mitleton-Kelly, 2003). In comparison with the Egyptians though, IT Project management is still a young practice and cannot profit from thousands of years of experience and lessons learned.

Data from research shows that the IT sector still must learn and improve how it manages projects. Organizations like The Standish Group who have been publishing reports on how successful software development and implementation projects are between 1994 and 2022, reveal that the IT sector has barely improved. Still 19% of IT projects failed in 2022 according to The Standish Group (Johnson, 2022). And it seems that companies that have projects that run a multimillion budget have a very low chance of creating the expected value. The bigger the project, the higher the chance of failure (Johnson, 2022).

But there is also some good news. The Standish Group reports also shows that when applying Enterprise Architecture principles in IT projects the chance of success increases. According to these reports this is because the number of decisions during a project seems to be reduced when using Enterprise Architecture principles and technical diversity is controlled, which increases the skill level of the team (Johnson, 2022). Studies show that Enterprise Architecture does bring added value to IT projects (Kurek, Johnson, & Mulder, 2017).

There is still some discussion on when Enterprise Architecture originated. In general, it is stated that Enterprise Architecture originated in 1987 when John Zachman published his Framework (Zachman, 1987). Some, however, argue that Enterprise Architecture originated in the Business Systems Planning methodology led by P. Duane Walker from IBM in the 1960s (Svyatoslav, 2016). Either way, we can surely state here that Enterprise Architecture is still a young practice in comparison with other practices such as project management and is still evolving (Op 't Land, Proper, Waage, Cloo, & Steghuis, 2009).

Bottom up, another popular way-of-thinking and way-of-working for IT projects was emerging. In 2001 the "Agile Manifesto" (Agile Manifesto, 2001) was formulated by a group of experienced software developers who were looking for different ways to develop software. They had a strong belief that the original way of developing software which was strongly "Waterfall" oriented was holding them back. "Waterfall" seems to originate from the 1970s. The principles were introduced by Dr. Winston W. Royce where he describes managing the development of large software systems (Royce, 1970). The term "Waterfall" however, was only used years later and represents a sequential development model where requirements need to be clear before moving on to the next phase. It relies heavily on documentation to be passed on between designers, developers, architects, testers, and operation engineers in a sequential follow-up of predefined phases.

The group of experts that created the "Agile Manifesto" believed that the sequential nature and the heavy documentation of "Waterfall" did not answer to the expectations of a challenging market where speed and flexibility was required to answer to changing customer needs quickly: They needed another way of managing IT projects.
Overall, the Agile Manifesto contains 12 principles, but it contains four main important statements:

"We have come to value:
- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan" (Agile Manifesto, 2001)

When organizations first adopted the Agile principles, they showed both successful and unsuccessful results. But over the years reports like the Chaos report from The Standish Group showed that applying rapid execution principles like Agile to IT projects will provide a higher rate of success (Johnson, 2022). This higher rate of success seems to be related to the iterative process and focusing only on what is needed (Johnson, 2022).

But how does Enterprise Architecture relate to Agile? Can traditional Enterprise Architecture practices who originally adhere more to "Waterfall" principles such as strong documentation and sequential structure (Hensema, 2015) , bring value to Agile IT projects? Agile does not provide an excuse to do no documentation or no planning (Rosenberg, et al., 2020), but these Agile IT Projects seem to value speed, flexibility, results, and customer intimacy over documenting and following a plan.

The research conducted for this thesis and that of others (Canat, et al., 2018) has shown that there is little study and analysis done on how Enterprise Architecture influences Agile. There is more research to be found on how to apply Agile practices to Enterprise Architecture. Based on the articles reviewed in this research, we can conclude that there is value in making the Enterprise Architecture practice more Agile. It does, however, say little about the existing Enterprise Architecture practices and their practical use in Agile IT Projects. Do they bring value to Agile IT projects or not at all?

This thesis will bring new findings to the field of Enterprise Architecture and its relation to Agile.

1.1. Context

Digital Transformation triggered the bigger organizations in the Belgian finance industry to adopt Agile practices in recent years (Calnan & Rozen, 2019), (Kerr, Gabrieli, & Moloney, 2018) (Cumps & Viaene, 2015). They needed a way to adopt innovation and deliver innovative products and solutions to their customers in a timely manner. Enterprise Architecture, however, originated somewhere between 1960 and 1987 (Svyatoslav, 2016) (Zachman, 1987). Enterprise Architecture has a longer history than Agile practices and therefore traditional Enterprise Architecture practices relate more to waterfall principles (Hensema, 2015). This causes friction and tension between Agile practitioners and Enterprise Architects in these organizations. Agile practitioners often believe that Architectural work is time consuming and does not contribute to early and continuous delivery of valuable software (Agile Manifesto, 2001). Agile is often used as an excuse for not documenting, not recording a minimum of knowledge, or not planning (Zykov & Singh, 2020), (Rosenberg, et al., 2020)
Enterprise Architects on the other hand are occupied with designing and documenting, and experience difficulties in adapting and reorganizing the Enterprise Architecture practice so it can bring value to Agile IT projects. Although there is knowledge available on how to make Enterprise Architecture more Agile, little knowledge can be found on what existing Enterprise Architecture practices really fit well with Agile. To enrich this knowledge, interviews have been conducted with professionals from organizations in the finance industry in Belgium working in both Agile and Enterprise Architecture practices.

The purpose of this thesis is to investigate which Enterprise Architecture practices do bring value to Agile IT projects and so provide guidance to organizations on what Enterprise Architecture practices to further use and develop to support their Agile IT projects.

1.2. Problem Statement

Enterprise Architecture organized and done in a traditional way is aimed at trying to accurately predict the future upfront. Traditional Enterprise Architecture adheres more to waterfall principles like strong documentation and a sequential structure (Hensema, 2015) (Barbazange, et al., 2018) (Wissal, Doumi, & Kjiri, 2020) (Canat, et al., 2018).

There are several definitions of Enterprise Architecture; most of them introduce notions such as describing baselines and targets, creating views and models, describing structures and making descriptive representations (ISACA, 2019), (Zachman, 1987). This all involves planning, describing, and documenting the as-is but also the to-be.

This all seems to be in contrast with the Agile way of thinking which embraces the fact that the future is subject to change and only tries to predict the near future in small increments. With Agile, the focus is more on adhering to customer needs, collaborating with people, and quickly adapting to changes (Agile Manifesto, 2001).

These different viewpoints and ways of working often lead to disagreements and conflicts between Enterprise Architects and Agile practitioners (Canat, et al., 2018) (Barbazange, et al., 2018) (Bouwens, et al., 2019) (Hanschke, Ernsting, & Kuchen, 2015). Enterprise Architecture organized and done in a traditional way is regularly seen by Agile practitioners as an inhibitor rather than an enabler because it is believed not to bring value to Agile IT projects.

Problem Statement:
Enterprise Architecture organized and done in a traditional way is not bringing value to Agile IT projects.

1.3. Research Question

During the time of conducting research for this thesis, I was working in the finance industry in Belgium and had access to people and relevant information. This way I was also able to have more focus and do research that could be more relevant and applicable for these companies.

The main objective of this research is to determine which Enterprise Architecture practices from literature bring value to Agile IT projects conducted in large sized companies in Belgium in the Finance Industry.

Different definitions can be found of Enterprise Architecture throughout literature (Op 't Land, Proper, Waage, Cloo, & Steghuis, 2009) (Kurek, Johnson, & Mulder, 2017) (Dietz & Hoogervorst, 2015). Also, for Agile different definitions can be found. It seems that there is no consensus as to what these concepts are. Some define Enterprise Architecture for instance as a limitation to design freedom to provide guidance on how the design must be accomplished, while others define it as a set of design descriptions. To be able to conduct this research it was important to choose definitions of these concepts and use only these definitions throughout this thesis.

Enterprise Architecture is part of IT Governance (ISACA, 2019). Governance is often referred to as putting in place structures and mechanisms to manage and implement decisions. There is even proof that having good IT Governance practices in place enables better alignment between business and IT which generates a higher chance that IT will deliver real business value (De Haes, Van Grembergen, Joshi, & Huygh, 2020). But Enterprise Architecture is also about documenting, describing, and designing. In the search for a good, comprehensive definition I came across the definition from Martin Op ‘t land and others (2009) which in essence was also derived from several other definitions:

“*Enterprise Architecture is a coherent set of descriptions, covering a regulations-oriented, design-oriented and patterns-oriented perspective on an enterprise, which provides indicators and controls that enable the informed governance of the enterprise’s evolution and success.”* (Op 't Land, Proper, Waage, Cloo, & Steghuis, 2009)

Since this definition seems to grasp the essence of what Enterprise Architecture is, we decided to use this definition throughout this thesis.

Definition:
Enterprise Architecture: Enterprise Architecture is a coherent set of descriptions, covering a regulations-oriented, design-oriented and patterns-oriented perspective on an enterprise, which provides indicators and controls that enable the informed governance of the enterprise's evolution and success (Op 't Land, Proper, Waage, Cloo, & Steghuis, 2009).

There are no clear definitions for Agile IT Projects to be found in literature. In the case of Agile, it seems that everybody has their own opinion and definition of what Agile really means. (Abrahamson, Maarit, & Similä, 2013). Some relate Agile to changes and praise the iterative nature of Agile (Agile Alliance, 2023). A project on the other hand is often described as an organization of some kind that has a beginning and a clear end (Turner & Müller, 2002)

Combining the definitions of (Turner & Müller, 2002) and (Agile Alliance, 2023) about projects and Agile found in literature gives us our own definition of an Agile IT project: "a repetitive organization of software development activities to which resources are assigned to undertake a unique, novel and transient endeavor managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of small incremental changes".

Definition:
Agile IT Project: "A repetitive organization of software development activities to which resources are assigned to undertake a unique, novel and transient endeavor managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of small incremental changes."

Value is described in ethics or social science as something that is important and best to do (Wikipedia: Value in ethics and social sciences, n.d.). The Oxford English Dictionary describes value as “the regard that something is held to deserve; the importance, worth, or usefulness of something” (Oxford English Dictionary, n.d.). We use value in the context of Agile IT projects where we want to investigate if Enterprise Architecture practices bring value to Agile IT projects. In other words, are these practices important and best to do, in order to contribute positively to critical success factors of Agile IT projects.

Definition:
Value: “value denotes the degree of importance of some thing or action, with the aim of determining which actions are best to do or what way is best to live (normative ethics in ethics), or to describe the significance of different actions (Wikipedia: Value in ethics and social sciences, n.d.)”

The following list of critical success factors for Agile software development is described by Subhas C. Misra, Vinod Kumar and Uma Kumar in their paper: "Success Factors of Agile Software Development" (Vinod, Uma , & Subhas, 2006). We took this list of critical success factors as a good starting point. We will not investigate in detail how Enterprise Architecture practices positively influence certain critical success factors of this list. As said before, we will only focus on assessing whether EA practices bring value or not to Agile IT projects. But it remains important to understand these critical success factors as it could help to intuitively relate them to certain Enterprise Architecture practices. This we will do in a later phase when analyzing the results coming out of our Delphi study.

Critical Success factor for Agile IT projects	Explanation
Customer Commitment	Customer Collaboration, where the customer feels highly motivated, active and a responsible element in the project.
Decision Time	Important project decisions are likely to be made in a short timeframe, autonomously by the Agile team.
Team Distribution	Centralization and co-location of Agile teams is important for successful communication
Corporate Culture	An organization cannot be Agile if the culture is not right. It requires to be allowed to take control of one's own destiny to the maximum possible extent.
Planning & Control	The nature of organizational, management, and project planning and control. Internalized plans and qualitative control are considered to succeed organizations adopting Agile practices.
Dynamism and Uncertainty	Value responding to change over following a plan. Be dynamic in nature and feel comfortable with a certain degree of uncertainty.
Competency	One has real-world experience and possess good interpersonal and communication skills.
Personal Characteristics	Having honesty, a collaborative attitude, sense of responsibility, readiness to learn and able to work with others.
Communication and Negotiation	Fast and effective communication between developers, operations, support, customers, management, and business areas
Team Composition	Having 25-33% of experts in technology and building of systems. These experts do not necessarily need to have high experience with Agile methodologies.
Societal Culture	Things like honesty, collaboration, responsibility, motivation is affected by societal cultural factors.

Critical Success factor for Agile IT projects	Explanation
Training and Learning	People should be eager to continuously learn and share information with each other.
Requirements	Welcome changing requirements, even late in development. Requirements can undergo unforeseeable changes.
Development	Simple design, short increments, and inexpensive refactoring
Testing	Test cases define the success of requirements and testing in Agile software development.

Table 1 List of Critical Success Factors for Agile IT projects. Taken from the work of Subhas C. Misra, Vinod Kumar and Uma Kumar (Vinod, Uma , & Subhas, 2006)

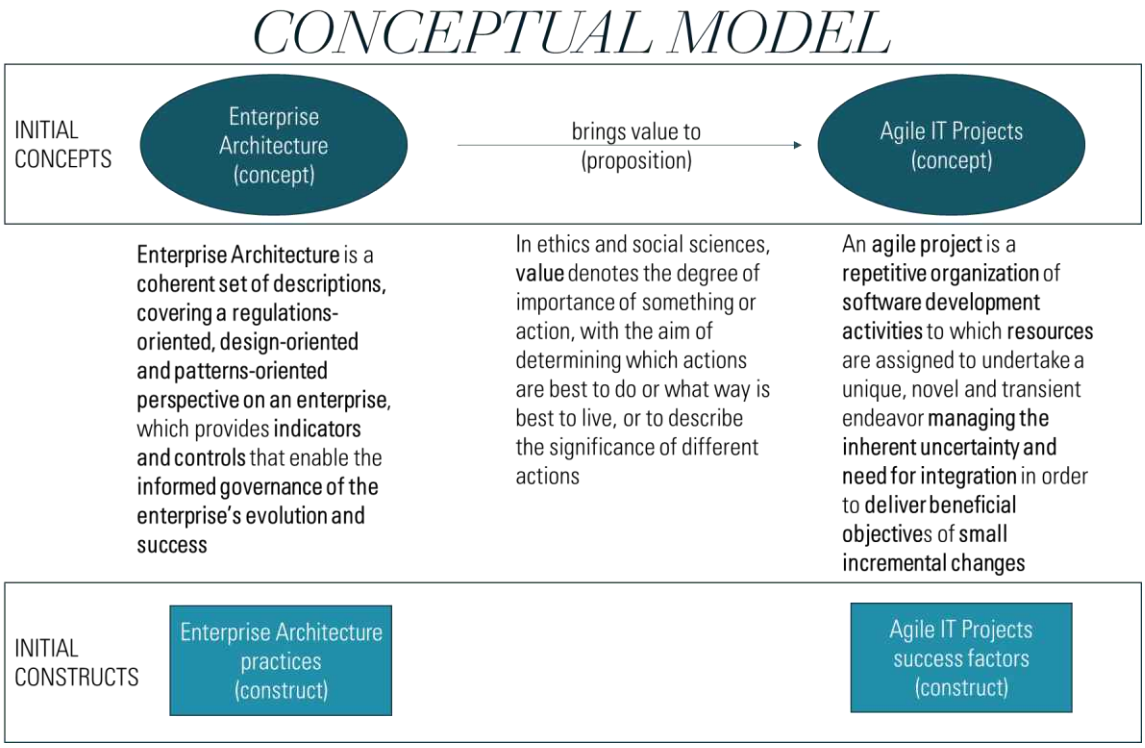

Figure 2 Conceptual model

The main research question is to examine what value Enterprise Architecture practices bring to Agile IT projects and therefore contribute positively to key success factors of Agile IT projects. To be able to provide focus we will narrow down our research to large size companies in Belgium in the finance industry.

Main research question: Which Enterprise Architecture practices bring value to Agile IT projects in large sized companies in Belgium in the Finance industry?

1.4. Research Methodology

To be able to tackle the problem specified earlier, I wanted to get the opinion of experts from both Enterprise Architects and Agile practitioners. To be able to do so, I used the Qualitative research method to study people's experiences using methods such as interviews, group discussions and analyzing content (Hennink, Hutter, & Bailey, 2020).

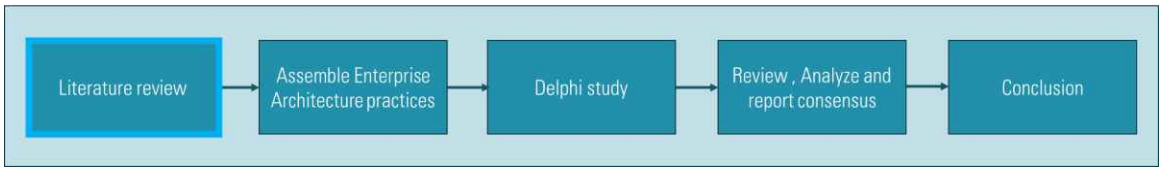

Figure 3 Research Methodology

The Enterprise Architecture practices were retrieved from conducting a literature review using academic literature, books, and studies about Management, Governance & Enterprise Architecture.

To have a structured way to conduct interviews with experts, focus group discussions, etc. the Delphi method was used to identify and rank Enterprise Architecture practices based on the value they bring to Agile IT Projects. Delphi originated in the 1950's by the Rand corporation and was originally designed to gather expert opinions on military technology and strategic planning. Over the years, Delphi has been adapted to be used in many other fields. It is used to structure communication in a way that allows a group of experts to deal with a complex problem (Linstone & Murray, 2002). Participants in a Delphi study are asked to respond to questions and their responses are analyzed and used for further discussion (Okoli & Pawlowski, 2004). The Delphi study is technologically supported by Group Support Systems to enable experts to provide their experienced opinion and use gut feeling to answer questions (Lewis & Spich, 1996).

1.5. Research Design

With the support of Group Support Systems (Lewis & Spich, 1996), two Delphi sessions with experts were conducted. Group Support Systems are tools that support collaboration and help a group to move towards a goal (Briggs, Kolfschoten, & de Vreede, 2009).
The composition of the two groups was similar and the questions posed to both groups were the same to be able to compare both results. Both groups contained both Enterprise Architecture and Agile experts. In total 23 experts participated and completed the Delphi survey. They were split into two expert groups; the first group had a size of 11 experts and the second group had the size of 12 experts. This is according to the recommendation of having experts' groups between 11-18 people for a Delphi study (Okoli & Pawlowski, 2004)
The expert groups were composed out of Chief Architects, Enterprise Architects, Tribe leads, Product Owners, Scrum Masters and Business Analysts working in the finance industry in Belgium.

1.6. Research Data Collection

Data collection was done according to the following phases.

- Enterprise architecture practices were assembled from literature and divided into seven topics:
  - Develop the enterprise architecture vision.
  - Develop reference architecture.
  - Select opportunities and solutions.
  - Develop architecture implementation.
  - Provide enterprise architecture services.
  - Develop Enterprise Architecture Organization culture.
  - Develop Enterprise Architecture Skills.
- Delphi: Two Delphi sessions were organized and supported by a presentation. The sessions followed the following agenda:
  - Introduction
  - Presentation of the master thesis
  - Rating of the Enterprise Architecture practices.
  - Structured feedback, discussion, and consensus
  - Lost & Found
- Rating: per topic the expert group was asked to rate each presented practice in relevance to Agile IT projects. 100 was very valuable for Agile IT projects, 0 was no value for Agile IT projects. Experts were also asked to provide extra context when they rated 0, to know why they believed this practice does not bring value to Agile IT projects.
- Consensus: The following feedback was presented to the group of experts:
  - Overall average rating of individual Enterprise Architecture practices
  - Overall average variance in answers per Enterprise Architecture practice

  Enterprise Architecture practices with high variance were then discussed in the expert groups to see why there was a high variance and if experts were able to come to consensus.
- The outcome of the Delphi study was then further analyzed, and findings are described in this thesis.

2. Theoretical Foundation & Literature review

2.1. Approach

The literature review was conducted based on a lecture that was given by Prof. Dr. Tim Huygh: ”Research Methodology for Executive Masters in 2022”. He explains the use of forward and backward snowballing techniques (Wohlin, 2014) to find relevant literature based on the reference lists in literature. The literature review for this thesis consisted of several sources such as books, academic articles, reports, white papers, websites etc. These were collected based on internet searches using google, google scholar and the web of science of the University of Antwerp. Keywords like “enterprise architecture”, “Agile”, “project”, “Agile IT project” were derived from the research question and problem statement”. The conclusion and summary sections were first read to determine if this seemed to be an interesting piece of literature before the complete article or paper was read. The list of references in these articles was used to retrieve additional relevant articles and studies based on the snowballing techniques discussed earlier. Only literature in English were taken into consideration.

Risks to this approach

- Interesting articles in other languages will be neglected.
- Subjective reading brings own biases and experiences which might lead to misinterpretation of the literature.
- Subjective reading may lead to simple acceptance without critical thinking.

2.2. Literature review

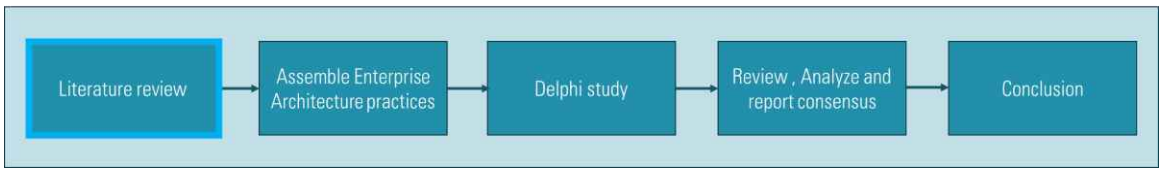

Figure 4 Literature Review phase in the research methodology

Enterprise Architecture:

As already stated in the introduction of this thesis, there are several opinions on when Enterprise Architecture originated. Based on the literature we can state that it probably originated somewhere between 1960 and 1987. There are also several opinions on what Enterprise Architecture is, and you can find several different definitions throughout the literature. Martin Op ’t land and Erik Proper listed 7 definitions found in literature in their book “Enterprise Architecture, creating value by informed governance” (Op 't Land, Proper, Waage, Cloo, & Steghuis, 2009). They also indicate that all these definitions have a reference to structure and relationships in common in combination with a reference to a set of governing principles that provide guidance and support. So, there seems to be some common understanding.

Agile IT projects:

Agile originated in 2001 with the Agile Manifesto and it contains a set of principles and statements. You can see however that over time, different definitions of Agile have emerged throughout literature. All of these definitions refer in some way to concepts such as incremental or iterative development, customer centric or focused, flexible or rapid and responding to change (Abrahamson, Maarit, & Similä, 2013), (Agile Manifesto, 2001), (Agile Alliance, 2023), (Spundak, 2014). We can conclude that there seems to be some common understanding of what Agile is among experts.
Project Management for IT, according to literature, originated somewhere around 1975 (Haughey, 2010) (SIMION, 2012) and you can find different definitions throughout literature. Also, here you can see that there exists some common understanding (Spundak, 2014)
Although you can find some definitions on Agile IT projects, academic definitions of Agile IT projects are almost non-existent.

Agile Enterprise Architecture:

Quite some literature can be found on Agile Enterprise Architecture and the focus of this literature is mainly on how to make the Enterprise Architecture practice more Agile. The Open Group for instance has published a standard called the “Open Agile Architecture” or “O-AA” where they promote the adoption of certain Agile practices for Enterprise Architecture. (The Open Group, 2022). In several whitepapers, they argue that architecture practices are contested and come under pressure because they are perceived as inhibitors that slow down iterative development and early delivery (Barbazange, et al., 2018). They also argue that Enterprise Architects need to be concerned with early delivery of minimal viable products (MVP) and need guidance to keep that focus (Bouwens, et al., 2019). This seems to support the problem statement formulated in this thesis but does not answer the question of whether existing Enterprise Architecture practices still bring value for Agile IT projects. In fact, these whitepapers seem to suggest that traditional Enterprise Architectures should be replaced by new, more Agile ones.

Literature that speaks about “Enterprise Architecture positively contributing to the success of Agile IT projects”, seems almost non-existing. I did find, however, some interesting articles that lean towards the research I am conducting, but still do not answer the research question.
In an article published in 2001 called “Enterprise Architecture and Agile Development, Friends or Foes?” (Canat, et al., 2018) , they argue that there is still a lot of confusion about whether Enterprise Architecture and Agile development can and should be used together, but conclude based on qualitative interviews with professionals that both can be combined. They state however, that there are still communication issues among architects, different teams, and project owners. They suggest shortening the distance between architects and developers but do not make recommendations or suggest practices to close this gap. The research question in this thesis is not answered in this article.

And in the article “Adaptation of enterprise architecture efforts to an Agile environment” (Duijs, Ravesteyn, & Steenbergen, 2018) they bring forward five instructions for architects to close the gap that, according to their research, exists between Enterprise Architecture and Agile teams. They also seem to support the problem statement in this thesis but propose new instructions on how to adapt Enterprise Architecture to an Agile environment. This, however, does not answer the research question.

Enterprise Architecture practices:

To be able to come to a good list of Enterprise Architecture practices, I used the practices described in Cobit 2019 (ISACA, 2019) for Managed Enterprise Architecture, and cross referenced this with critical success factors described in the article: “potential critical success factors of Enterprise Architecture” (Ylimäki, 2006). I also used the global skills and competency framework SFIA framework version 8 (SFIA, 2021) and the e-competency framework from IT Professionalism Europe ITPE (IT Professionalism Europe ITPE, n.d.) to ensure we also cover the skills and competencies required for an Enterprise Architect and see if these are relevant in bringing value to Agile IT projects.

SFIA is a global non-profit organization which oversees the production and use of the Skills Framework for the Information age and contains useful information on professional skills and competencies required by ICT Professionals including Enterprise Architects. It works closely with several bodies of knowledge to gather and exchange information.

IT Professionalism Europe ITPE is: “a network of stakeholders committed to the advancement of IT professionalism”. The network includes public and private sector experts from critical IT domains, including policy, standards, HR and IT management, as well as education, training and other service providers that support IT professionalism. They work closely with key public actors, from the European Commission, the European Parliament, the European committee for standardization CEN and National Standards Bodies, and Member States.” (IT Professionalism Europe ITPE, n.d.). Their European e-Competence Framework E-CF provides a reference for 41 competences. Their e-CF Explorer links these competences with 30 ICT Professional Role Profiles identified by the European Committee for Standardization including the Profile for an Enterprise Architect.

2.3. Definitions

The Enterprise architecture practices collected from literature and from interviews with experts contain several concepts. To ensure a common understanding of these concepts, the following list of definitions was created and provided to the participants in the Delphi study. This way, they were able to retrieve the concepts, should they not have been clear enough during the Delphi Study.

Concept	Definition	Reference
Enterprise Architecture	**Enterprise Architecture** is a coherent set of descriptions, covering a regulations-oriented, design-oriented, and patterns-oriented perspective on an enterprise, which provides indicators and controls that enable the informed governance of the enterprise's evolution and success	(Op 't Land, Proper, Waage, Cloo, & Steghuis, 2009)
Agile IT Project	**Agile IT Project** is a repetitive organization of software development activities to which resources are assigned to undertake a unique, novel, and transient endeavor managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of small incremental changes.	(Agile Alliance, 2023) (Turner & Müller, 2002)
Architectural Principles	**Architecture principles** define the underlying general rules and guidelines for the use and deployment of all IT resources and assets across the enterprise. They reflect a level of consensus among the various elements of the enterprise and form the basis for making future IT decisions. Each architecture principle should be clearly related back to the business objectives and key architecture drivers.	(The Open Group, 2018)

Concept	Definition	Reference
Architecture Governance	**Architecture governance** is the practice and orientation by which enterprise architectures and other architectures are managed and controlled at an enterprise-wide level.	(The Open Group, 2018)
Reference Architecture	A **reference architecture** is a generic architecture that provides guidelines and options for making decisions in the development of more specific architectures and the implementation of solutions. Reference architectures can be defined at different levels of abstraction	(The Open Group, 2018) (Wikipedia: Reference Architecture, n.d.)
Information Architecture	**Information architecture** refers to the enterprise architecture (EA) activities that define a company's business information assets, as well as the assets' sources, structure, classification and associations. Information architecture enables understanding and utilizing enterprise data and analytic assets to achieve desired business outcomes.	(Gartner, n.d.)
Architecture Repository	The **architecture repository** allows an enterprise to distinguish between different types of architectural assets that exist at different levels of abstraction in the organization. This Architecture Repository is one part of the wider Enterprise Repository, which provides the capability to link architectural assets to components of the Detailed Design, Deployment, and Service Management Repositories.	(The Open Group, 2018)

Concept	Definition	Reference
Process Architecture	**Process architecture** is the structural design of general business process systems.	(Wikipedia: Process Architecture, n.d.)
Business Process	A **business process** is a collection of related, structured activities or tasks by people or equipment in which a specific sequence produces a service or product (serves a particular business goal) for a particular customer or customers. Business processes occur at all organizational levels and may or may not be visible to the customers	(Wikipedia: Business Process, n.d.)
Architecture definition document	The **architecture definition document** provides a qualitative view of the solution and aims to communicate the intent of the architects.	(The Open Group, 2018)
Transition Architecture	A **Transition Architecture** shows the enterprise at an architecturally significant state between the Baseline and Target Architectures. Transition Architectures are used to describe transitional Target Architectures necessary for effective realization of the Target Architecture.	(The Open Group, 2018)
Architecture vision	The **Architecture vision** provides a summary of the changes to the enterprise that will accrue from successful deployment of the Target Architecture. The purpose of the Architecture Vision is to provide key stakeholders with a formally agreed outcome. Early agreement on the outcome enables	(The Open Group, 2018)

Concept	Definition	Reference
	the architects to focus on the detail necessary to validate feasibility. Providing an Architecture Vision also supports stakeholder communication by providing a summary version of the full Architecture Definition.	
Architecture building blocks	**Architecture building blocks** is architecture documentation and models from the enterprise's Architecture Repository.	(The Open Group, 2018)
Architecture requirements	**Architecture requirements** provide a set of quantitative statements that outline what an implementation project must do in order to comply with the architecture. An Architecture Requirements will typically form a major component of an implementation contract or contract for more detailed Architecture Definition	(The Open Group, 2018)
Architecture Framework	An **architecture framework** establishes a common practice for creating, interpreting, analyzing and using architecture descriptions within a particular domain of application or stakeholder community. Examples of Architecture Frameworks: MODAF, TOGAF,	(The Open Group, 2018)

Table 2 Definitions

2.4. Conclusion of the Literature review

The main conclusion of the literature review is that there is little information to be found on how existing Enterprise Architecture practices influence Agile IT projects. The problem statement where we state that Enterprise Architecture is perceived by Agile practitioners as a potential blocker seems to be supported by most of the literature we found. These papers, however, mostly suggest adapting existing enterprise architecture practices to become more Agile or suggest new enterprise architecture practices in general. This does not answer the research question in where we look to existing enterprise architecture practices from literature and if they bring value to Agile IT projects.

3. Enterprise Architecture Practices

Figure 5 Assemble Enterprise Architecture phase in the research methodology.

As mentioned in section 2.2 Literature review ,the following list of classic Enterprise Architecture practices were retrieved from literature and refined by doing interviews with experts. They were divided into seven focus domains to be able to focus and guide the discussion.

Practices from literature
Develop the Enterprise Architecture Vision
Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified.
Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities
Develop the Enterprise Architecture Vision by confirming well defined, validated, documented, and clearly communicated architecture principles
Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives
Develop the Enterprise Architecture Vision by clearly documenting, approving, and communicating Business and architecture requirements.
Develop the Enterprise Architecture Vision by clearly defining and documenting the architecture mission
Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting, and mitigating risks associated with the architecture vision.
Develop Reference Architecture
Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions
Develop Reference Architecture by providing coherent, concise, and different viewpoints from the architecture repository that demonstrates to different stakeholders how their concerns are addressed in the architecture
Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.

Practices from literature
Develop Reference Architecture by finalizing business, information, data, applications, and technology domain architectures in an architecture definition document.
Develop Reference Architecture by documenting Architectural decisions
Develop Reference Architecture by developing baseline architectural domain descriptions using the scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository
Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies, and views to enable uniformity of architectural organization and maintenance
Select Solutions
Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates an incremental approach.
Define Architecture Implementation
Define Architecture Implementation by confirming increments and phases of the transition architecture (roadmap) and update these in the architecture definition document
Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements
Provide Enterprise Architecture Services
Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks
Provide Enterprise Architecture Services by providing guidance for solution development and deployment
Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance
Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements
Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology
Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events
Develop Enterprise Architecture Organization Culture

Practices from literature
Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development
Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism
Develop Enterprise Architecture Organization Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate
Develop Enterprise Architecture Skills
Develop Enterprise Architecture skills by systematically collecting and communicating Architectural lessons learned
Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills
Develop Enterprise Architecture skills by ensuring architects have profound knowledge of architecture frameworks and architecture methodologies
Develop Enterprise Architecture skills by ensuring architects have good functional/non-functional requirements analysis skills
Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills
Develop Enterprise Architecture skills by ensuring architects have excellent leadership skills
Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders
Develop Enterprise Architecture skills by ensuring architects have deep technology knowledge in several subjects and profound technology knowledge over a wide range of platforms and systems

Table 3 List of Enterprise Architecture practices retrieved from literature.

4. Results of the Delphi study

As explained previously there is tension between Enterprise Architecture practitioners and Agile practitioners because the latter believe that Enterprise Architecture practices slows things down due to their nature in trying to describe the whole future upfront. Most of the literature reviewed focuses on making enterprise architecture practices more Agile or suggesting new practices to be used and built. Research says little about existing Enterprise Architecture practices and their relation to Agile IT projects. This thesis aims to identify existing Enterprise Architecture practices that bring value to Agile IT projects and are relevant for both Enterprise Architecture practitioners and Agile practitioners. In doing so we hope to positively contribute to the knowledge gap that exists.

Figure 6 Delphi Study phase in the research methodology.

The first phase in the Delphi study involved ranking the list of practices retrieved from literature by two panels of experts in terms of how much value they bring to Agile IT projects. The second phase involved discussing Enterprise Architecture practices where a high variability was found to understand the deviation and determine if consensus could still be found.

First Phase: Ranking the list of Enterprise Architecture practices.

During the first phase the participants from the expert panels were asked to rank the individual practices based on what they think their value was to Agile IT Projects. A ranking of zero (0) meant no value at all and a value of 100 was maximum value. Participant could give a max of 100 for each individual practice. Value was not estimated based on the relative value of the list of practices but on each individual practice. The ranking was calculated based on the average value along with the variability (percentage) to see where there was low and high deviation.

Second Phase: Discuss the list of Enterprise Architecture practices with high variability.

In the second phase we elaborated with the participants on the Enterprise Architecture practices where a high variability was found and where this could be linked to two or more participants. This was mainly to understand the variability and to see if participants could come to a consensus or not.

Final Phase: Enterprise Architecture practices that bring value to Agile IT projects.

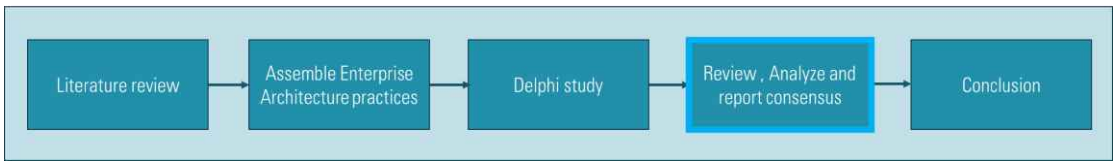

Figure 7 Review and analysis phase in the research methodology

In a final phase we analyzed the data of both Delphi interviews to identify Enterprise Architecture practices from existing literature that are bringing value to Agile IT projects based on the scored value and consensus among both groups of experts. We combined both outputs and calculated the averages for value scoring and variability.

Criteria used to determine if practices bring **high value** to Agile IT projects were the following:

- Average value scoring >= 70 in combination with a variability <= 30%.
- Average value scoring >= 70 in combination with a variability >= 30%. But only where the higher variability was caused by max 1 participant per expert group.

Criteria used to determine if practices bring **moderate value** to Agile IT projects were the following:

- Average value scoring < 70 and => 50 in combination with a variability <= 30%.
- Average value scoring < 70 and => 50 in combination with a variability >= 30%. But only where the higher variability was caused by max 1 participant per expert group.

Criteria used to determine if practices bring **low value** to Agile IT projects were the following:

- Average value scoring < 50 in combination with a variability <= 30%.
- Average value scoring < 50 in combination with a variability >= 30%. But only where the higher variability was caused by max 1 participant per expert group.

Criteria used to determine **non-consensus** about practices among experts:

- Practices with a variability >30 where the high variability was caused by more than 1 expert per group.

The following 16 practices were considered to bring high value to Agile IT projects based on an average value scoring of >= 70 and an average variability of <= 30% or lower. Practices where the variability was higher than 30%, but where this higher variability could be linked to maximum one participant per expert panel were also identified as highly valued practices for Agile IT projects.
The following list shows Enterprise Architecture practices from literature that bring high value to Agile IT projects based on the professional opinions of two expert groups:

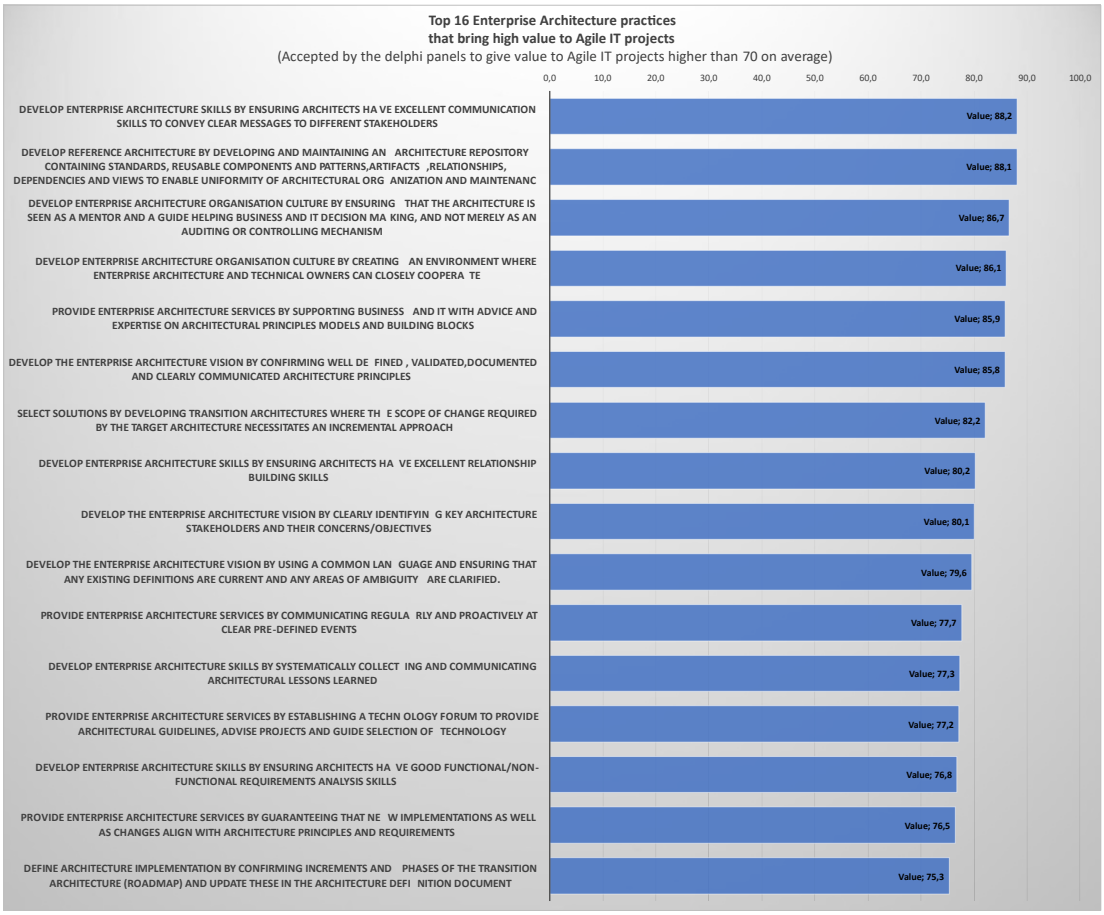

Figure 8 Enterprise Architecture Practices: list of high valued practices for Agile IT projects

None of the Enterprise Architecture practices scored lower than 50 on average in value. The Enterprise Architecture practices that on average scored lower than 70 in value, all had high variability linked to multiple participants. This indicates that there is no consensus on which of these practices bring moderate value or even low value to Agile IT projects. We were therefore unable to identify Enterprise Architecture practices from the list that bring low value to Agile IT projects according to the experts.

For completeness we included the following list of Enterprise Architecture practices from literature that bring moderate value to Agile IT projects (on average between 50 and 70). Do notice that the average variability on these practices were higher (+30%) indicating that there is no consensus among practitioners on what value this exactly brings to Agile IT projects.

Figure 9 Enterprise Architecture Practices that could bring moderate value (no consensus)

Finally, we also included the top five list of Enterprise Architecture practices that have the highest average variability (between 65% and 50%) and could be linked to more than one expert per expert group. This indicates that no consensus could be found among the participants and the experts have different opinions on what value these practices bring to Agile IT projects.

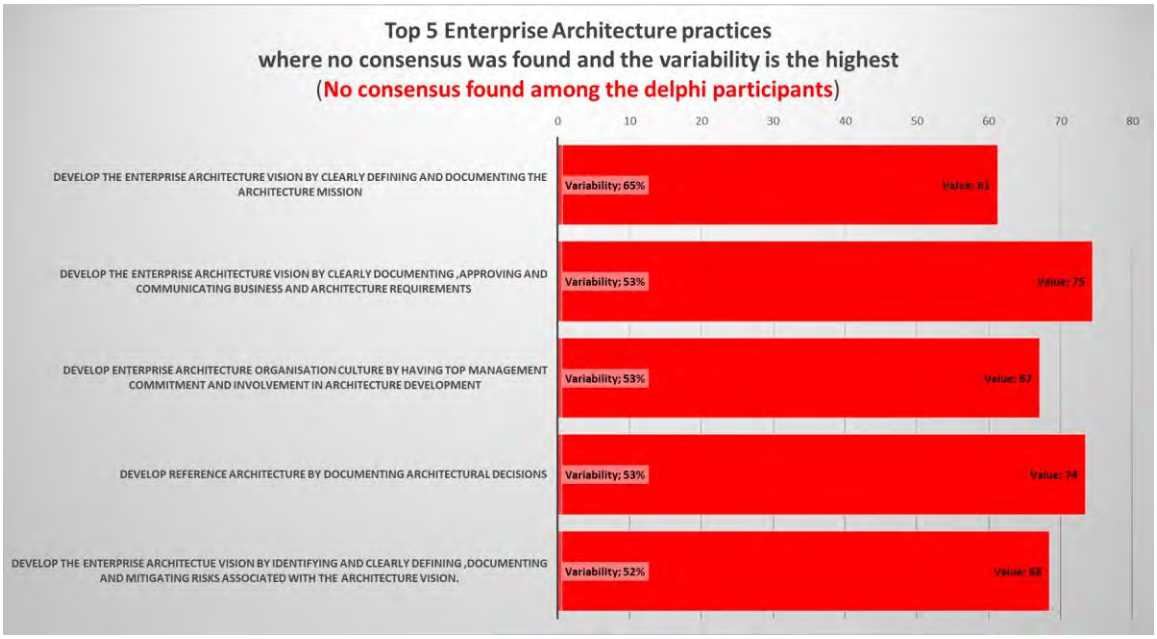

Figure 10 Enterprise Architecture Practices where no consensus was found, with the highest variability. (Between 65% and 50% variability)

5. Analysis of the surveys

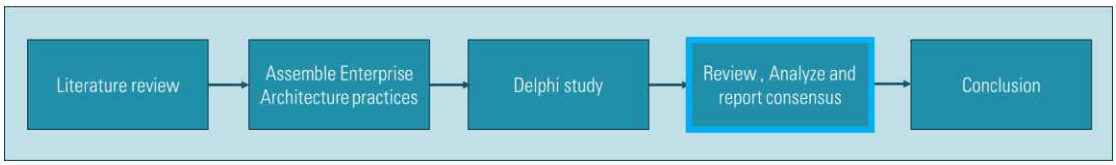

Figure 11 Review and analysis phase in the research methodology

We will now discuss the results of the ranking. It is important to point out that we calculated averages based on the output of two expert panels to come to a final list of Enterprise Architecture practices from literature that bring value to Agile IT projects. The separate outputs of each individual expert panel shows some differences, and we would have seen more or even less practices being confirmed as bringing value, if we had chosen to report on this separately. We are however convinced that combining the output of the two expert panels gives a more reliable and representable outcome.
Via the literature review we identified 34 Enterprise Architecture practices and divided these into the following categories: Develop the Enterprise Architecture Vision, Develop Reference Architecture, Select Solutions, Define Architecture Implementation, Provide Architecture Services, Develop Enterprise Architecture Organization Culture and Develop Enterprise Architecture skills. 16 of the practices out of 34 were confirmed by the experts to provide high value to Agile IT projects. This list contains at least one practice from every category, which indicates that these categories are still relevant when looking to Agile IT projects with Enterprise Architecture glasses.
Let's look at the selected practices from the different categories and see why these Enterprise Architecture practices were confirmed to bring value to Agile IT projects. To be able to do that we will intuitively relate them to the critical success factors of Agile IT projects as described earlier in this thesis.

Enterprise Architecture Practices with high value for Agile IT Projects	Critical Success factors of Agile IT Project	Customer Commitment	Decision Time	Team Distribution	Corporate Culture	Planning & Control	Dynamism and Uncertainty	Competency	Personal Characteristics	Communication and Negotiation	Team Composition	Societal Culture	Training and Learning	Requirements	Development	Testing
Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders			x					x	x			x	x			
Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies, and views to enable uniformity of architectural organization and maintenance			x		x		x		x	x				x	x	
Develop Enterprise Architecture Organisation Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism					x			x	x	x	x					
Develop Enterprise Architecture Organisation Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate								x	x	x	x					
Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks								x	x	x	x		x	x	x	
Develop the Enterprise Architecture Vision by confirming well defined, validated, documented, and clearly communicated architecture principles					x	x		x			x					
Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates an incremental approach.			x							x					x	x
Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills									x	x			x			
Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives			x							x						
Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified.					x					x						
Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events.				x				x		x			x			
Develop Enterprise Architecture skills by systematically collecting and communicating Architectural lessons learned									x	x	x	x	x			x
Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology									x	x	x	x	x			x
Develop Enterprise Architecture skills by ensuring architects have good functional/non-functional requirements analysis skills								x			x				x	x
Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements.						x		x			x					x
Define Architecture Implementation by confirming increments and phases of the transition architecture (roadmap) and update these in the architecture definition document			x								x					x

Table 4 List of Enterprise Architecture practices linked to critical success factors of Agile IT Projects

For readability we included the above table “Table 4 List of Enterprise Architecture practices linked to critical success factors of Agile IT Projects”, that only links the practices to the critical success factors. The Table in section 12.1 “List of Enterprise Architecture practices linked to critical success factors of Agile IT ” in annex, provides more detail on why these practices contribute to the critical success factors.

By linking these practices intuitively to the critical success factors of Agile IT projects, we came to the conclusion that all of the practices that were selected as to bring high value (>70) for Agile IT projects, contribute to the critical success factor for Agile IT projects of communication & negotiation (see the green selection in Table 4 List of Enterprise Architecture practices linked to critical success factors of Agile IT Projects"). So, not only was the Enterprise Practice related to excellent communication skills of the architect ranked as the practice with the highest value, all the high valued practices, contribute one way or the other to clear communication which is claimed to be by literature as one of the important critical success factors for Agile IT projects. So clear communication should be high on the agenda for companies adopting an Agile way of working where Enterprise Architecture can positively contribute to that according to this study.

We also consolidated and analyzed the results from both expert groups separately to be able to see if we could draw interesting conclusions based on the feedback from both the Agile and Enterprise Architecture experts. The first conclusion is that the top ranking of high value rated Enterprise Architecture practices does not change profoundly when only considering the Enterprise Architect or Agile experts' opinion. Agile experts rate the following practice as the one that brings the highest value to Agile IT Projects: "Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks". The following diagram shows the top 3 of Enterprise Architecture practices which bring the highest value to Agile IT projects according to the Agile experts:

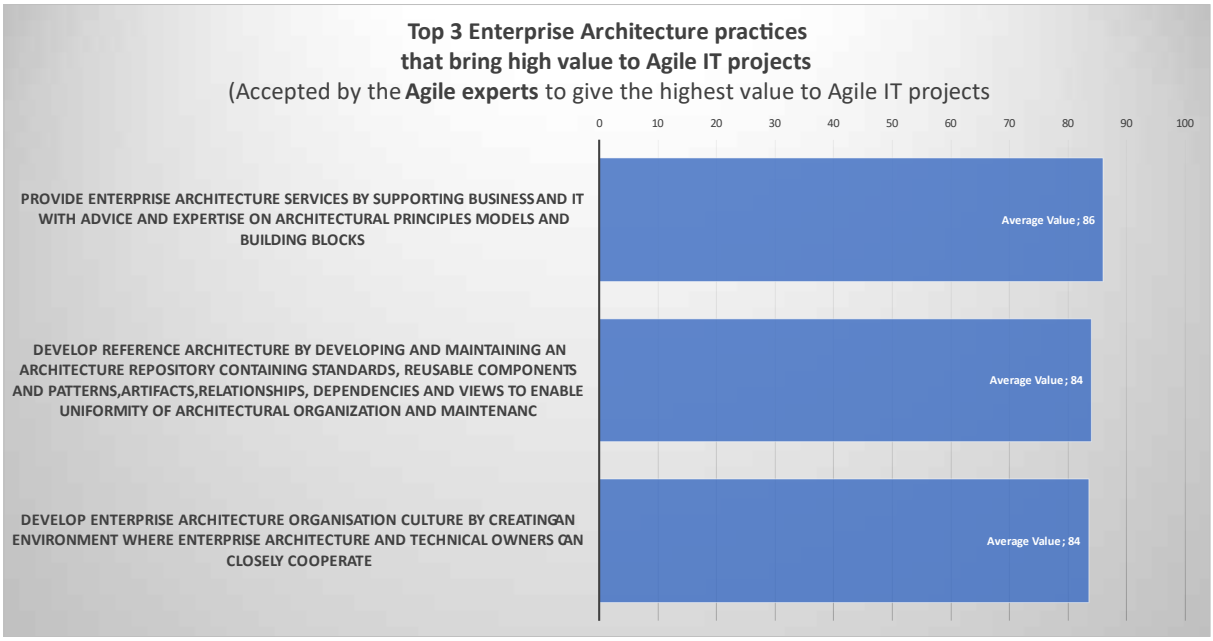

Figure 12 Top 3 Enterprise Architecture practices that bring high value to Agile IT Projects confirmed by Agile experts only.

The Enterprise Architects on the other hand, rate the following practice as the one with the highest value for Agile IT projects: “Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism”. The following diagram shows the top 3 of Enterprise Architecture practices which bring the highest value to Agile IT projects according to the Enterprise Architecture experts:

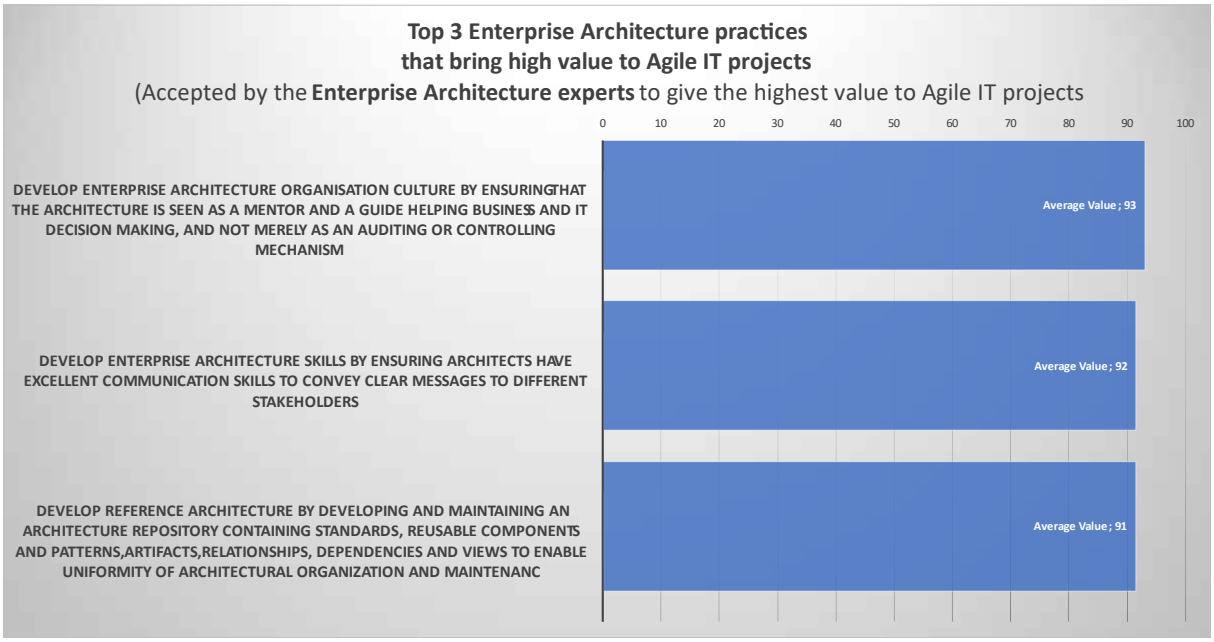

Figure 13 Top 3 Enterprise Architecture practices that bring high value to Agile IT Projects confirmed by Enterprise Architecture experts only.

Based on the output we did see a few different opinions between Agile and Enterprise Architect practitioners. It is for instance very clear that the Enterprise Architects agree that documenting architectural decisions brings high value to Agile IT projects, while there is a lot of disagreement among Agile practitioners on this.
Agile practitioners also agree that having Enterprise Architects with excellent leadership skills brings some value where Enterprise Architects indicate that this brings high value for Agile IT projects. But overall, we did not clearly see tension between Enterprise Architects and Agile practitioners as we did not find such clear distinct patterns in the answers given, and so we cannot confirm the statement from literature that states there is tension between Agile and Enterprise practitioners (Canat, et al., 2018) (Barbazange, et al., 2018) (Bouwens, et al., 2019) (Hanschke, Ernsting, & Kuchen, 2015). We were however able to conclude that for almost 50 % (18 out of 34) of the practices there is a lot of disagreement among all experts (not necessarily between Enterprise Architects and Agile practitioners) on what value these practices exactly bring to Agile IT projects. And although some of these practices were scored zero by a few experts, on average not a single practice scored lower than 50 on average in value. This means that most of the experts think there is some value in all these practices for Agile IT projects. They just cannot agree if these bring high or low value and are nice to have.

When looking at the list of practices with the highest variability we can confirm the non-consensus among experts based on the feedback and discussions we had. We will discuss the feedback we received on these five practices briefly to demonstrate the non-consensus on these practices. I quoted some of the feedback from the participants to show some opinions.

- When talking about clearly defining an architecture mission, some experts stated that having a clear mission is a must have, while others state that nobody using Agile concepts cares and that the mission should become clear through the value that architecture brings.

"Mission statement/goal statement is key."

"Mission should be clear through showing value in practice, not through documenting. Documenting does not support agility."

"I guess it's good to define, but does anyone really care?"

- When trying to understand the business, requirements are of the essence for some of the experts. Others do not believe in requirements but believe in capturing the created value.

"Requirements become clear through the process; they should not be predefined."

"Understanding the business needs is where it starts."

"it's the 'requirements' concept that is disturbing for me - value that we create would sound better to me."

- While some of the expert's state that for Enterprise Architecture to bring value to Agile IT projects, top management commitment to Enterprise Architecture development is required, other state that the top management should commit themselves to the Agile IT projects and not to Enterprise Architecture.

"Wouldn't the top management's value not be higher if they contribute to the projects themselves instead of committing them to the architecture development?"

"Enterprise Architecture has not a lot of value when it can't help at that level."

- Some of the experts believe that documenting architectural decisions fit well with Agile concepts and brings a lot of value. Others argue that documenting should be kept to the minimum and actions and decisions should be taken rather than being documented.

  "*Architecture decisions fit perfectly with the Agile concept of not over documenting (just enough architecture to guide the team)"*

  "Documentation should not take the advantage over actions and decisions themselves."

- While most of the experts stated that mitigating risk is important for Agile IT projects, some of them state that focus should be set at mitigating them, rather than documenting them.

  "Risk management is important, but the main focus in Agile is to mitigate risks through discovery and iteration."

  "Do not forget the doing approach of Agile."

As stated before, we can certainly conclude that there are a lot of different opinions among the experts about these practices.

Finally , when looking at the top tree of the Enterprise Architecture practices that according to the experts bring high value to Agile IT projects ,it is clear that the experts are convinced that having architects that are able to clearly communicate and convey different messages to different stakeholders ,using and maintaining an architecture repository , with patterns , standards , reusable components, in an environment where trust and collaboration is thriving brings a lot of value to Agile IT projects.
So, what we can conclude, based on the outcome of this thesis, that Enterprise Architecture practitioners who want to ensure they bring value to Agile IT projects, need to focus on the following:

- Train or hire architects that can convey clear messages to different stakeholders.
- Focus on maintaining a reference architecture with reusable elements that are easily available and accessible.
- Ensure together with the Agile practitioners that you create an environment where the architect is seen as a trusted advisor, who helps, guides, and supports.

6. Limitations and Future research opportunities

Before discussing future research opportunities, it is important to confirm that the research in this thesis has certain limitations. A set of Enterprise Architecture practices was extracted from literature, but we did not include all Enterprise Architecture practices from literature, and although we think we included the most important ones, we cannot claim that we have covered them all. Next to that, the research was done with the participation of two expert panels. Both panels were limited in number of participants and although the number of participants was according to Delphi best practices, we cannot deny that the output is limited in size and might not be representative for a wider population. This might also limit the generalization towards other populations or sectors. The output was generated based on experts' opinions working in the Finance Industry in Belgium. These opinions are strongly influenced by the personal experiences and the personal values of the participants in question which might affect the validity and reliability of the results. Finally, the results needed to be analyzed and interpreted, which can be based on our personal biases, values, and assumptions. This might also influence the validity and reliability of the results. Nevertheless, we are convinced that the outcome of this thesis provides first insights on what Enterprise Architecture practices from literature are still relevant for supporting Agile IT projects. The outcome will also provide some insights on what Enterprise Architecture practices are causing discussions and disagreements and might need to be adapted to provide significant value to Agile IT projects.

Future research opportunities can be found in studying the highest ranked practices and defining how to implement these taking the Agile context in mind. Take for instance implementing and maintaining a reference architecture by using a repository, how would you do this in an Agile context? Another research opportunity could be to study the list of practices where the least consensus was found. The goal here would be to try and identify if these practices need to be adapted to bring value to Agile IT projects and have expert's consensus. What is also interesting and might be useful to investigate further, is the fact that there was no consensus among experts whether gathering and documenting Business and Architecture requirements, has value for Agile IT projects or not, while having architects with good requirements analysis skills was confirmed by the experts to bring high value to Agile IT projects. And to make it even more contradictory, requirements management is at the center of the TOGAF Enterprise Architecture framework v9.x. It might be useful to investigate these contradictions and see why exactly there was no consensus found among experts here since one of the well-known architecture frameworks puts requirements management at the center of its framework. Another interesting contradiction is the fact that there was no consensus among experts on the value of documenting architectural decisions. Implementing and maintaining a reference architecture is in essence an aggregation of architectural decisions recorded in a reference repository and this practice was rated by the experts to bring high value to Agile IT projects. This is very contradictory, and it might be useful to further investigate this contradiction.

7. Applicability to other sectors or countries

As to the question whether this research can also be applicable to other sectors outside of the Finance Sector in Belgium the answer would be yes. We observed that the Enterprise Architecture practices that were confirmed by the experts as bringing value to Agile IT Projects will also be valid when used in other sectors. We also see that these results can be applicable to other European countries such as the Netherlands because of the general nature of these practices. We need to point out however that these results come from experts working in companies where both Enterprise Architecture and Agile practices are of a high maturity. So, it is unclear if we would come to the same results in sectors where either one or both practices are less mature. Based on the evidence in this study, it is arguable that the outcome of our study might be different here since the practices are less known and therefore the results of this study might not be applicable.

8. Conclusion

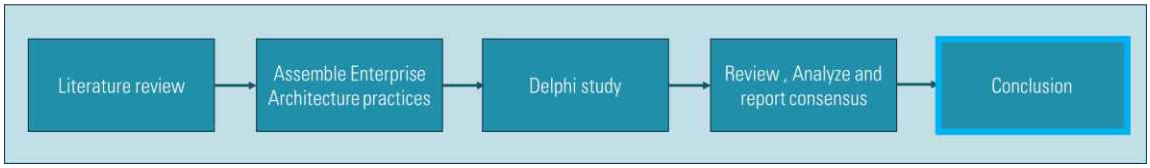

Figure 14 Conclusion phase in the Research Methodology.

This thesis wanted to answer the main research question:

Main research question: Which Enterprise Architecture practices bring value to Agile IT projects in large sized companies in Belgium in the Finance industry?

To be able to do so, 34 Enterprise Architecture practices were selected from literature like Cobit (ISACA, 2019) combined with skills and competences for Enterprise Architects from SFIA (SFIA, 2021) and ITPE (IT Professionalism Europe ITPE, n.d.).
These practices were then ranked in terms of value they bring, by interviewing 23 experts from both Enterprise Architecture and Agile practices working in the finance industry in Belgium. Conducting interviews with experts working in this specific industry, in a specific country, enabled me to narrow down the scope of the research to the finance industry in Belgium and have an applicable outcome for this scope. Ranking these practices in terms of value they bring to Agile IT projects and determining consensus on these practices based on interviews with experts, was done using the Delphi method (Linstone & Murray, 2002) (Arash, Azam, & Sedigheh, 2014) (Okoli & Pawlowski, 2004) and supported by Group Support Systems (Lewis & Spich, 1996).

The results of the study confirmed that 16 out of 34 Enterprise Architecture practices bring high value (>70) to Agile IT projects. One interesting fact that came out of this study is that all these 16 practices contribute in one way or the other to clear communication which is one of the important critical success factors for Agile IT projects according to literature (Vinod, Uma , & Subhas, 2006). In fact, the Enterprise Architecture practice that was confirmed by the experts to bring the highest value to Agile IT projects is the practice that states that Enterprise Architects need to be able to convey clear messages to different stakeholders. So, from this study we can conclude that Enterprise Architecture practices that contribute to clear communication can bring high value to Agile IT projects.

In general, we can conclude from this study that the Enterprise Architecture practices that bring the highest value to Agile IT projects, focus on the following:

- Cleary communicating and being able to clearly communicate to different stakeholders using a common language with clear definitions and clarifications.
- Developing and maintaining a repository of reference architecture (patterns, building blocks, etc.)
- Enabling an organizational culture of trust and cooperation where architects are seen as mentors, guides, and advisors and not as a controlling or auditing body.
- Allowing certain freedom and self-control within the boundaries of clearly confirmed and communicated architecture principles.
- Regularly learning from the past and regularly communicating these lessons learned.
- Providing architectural guidelines, advice, and technology selection via a technology forum.
- Developing good relationship building skills.
- Developing good functional/non-functional requirements analysis skills.
- Developing Transition architecture focused on the incremental approach.

For the remaining 18 out of 34 Enterprise Architecture practices, the experts could not find consensus on what value they bring to Agile IT projects. The average value of the practices where no consensus was found was never below 50, which indicates that the experts think there is still some value in these practices for Agile IT projects but aren't in agreement on how much value exactly. As indicated before, this could be interesting to investigate further outside of this study.

This study contributes to better understanding the relationship between Enterprise Architecture and Agile IT projects as our literature review has shown that there is little research conducted on existing Enterprise Architecture practices and how they relate to Agile IT projects. Existing literature focuses more on making the Enterprise Architecture practice more Agile, but that was not the purpose of this research. Furthermore, the results of this research can help Enterprise Architecture practitioners in organizing Enterprise Architecture to bring more value to Agile IT projects, as they are able to use the practices that were confirmed as bringing high value to Agile IT projects and there focus points. The results and insights can also help Agile practitioners to better understand the Enterprise Architecture practice and how it can help them in conducting successful Agile IT projects and further support a culture of trust and collaboration.

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10. List of Figures

11. List of Tables

12. Annexes

12.1. List of Enterprise Architecture practices linked to critical success factors of Agile IT projects.

Practices from literature that bring high value to Agile IT Projects	Critical Success Factors of Agile IT projects positively influenced by Enterprise Architecture practice
Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders	**Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Training and Learning:** People should be eager to continuously learn and share information with each other. **Personal Characteristics:** Having honesty, a collaborative attitude, sense of responsibility, readiness to learn and able to work with others. **Decision Time**: Important project decisions are likely to be made in a short timeframe, autonomously by the Agile team. By conveying clear messages decision times can be shortened. **Requirements:** Welcome changing requirements, even late in development. Being able to clearly covey messages concerning changing requirements and the architectural impact is important.
Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies, and views to enable uniformity of architectural organization and maintenance	**Decision Time**: Important project decisions are likely to be made in a short timeframe, autonomously by the Agile team. Having a repository of standards and reusable components will help in speeding up important decisions. **Corporate culture**: certain freedom to take control of own destiny. A repository of pre-approved standards and reusable components will support the freedom to take control of its own destiny by being able to choose autonomously what fits best from the repository. **Dynamism and Uncertainty:** Value responding to change over following a plan. Be dynamic in nature and feel comfortable with a certain degree of uncertainty. Having a repository with standard patterns and reusable components will help in coping with changing requirements. **Communication and Negotiation:** Fast and effective communication between stakeholders. Having a repository helps in creating views and adapting these views for different stakeholders. **Requirements:** Welcome changing requirements, even late in development. Requirements can undergo unforeseeable changes but having a repository available with standards and reusable components will help in adapting to these changes more quickly. **Development:** Having a repository available will help in simplifying the design by just choosing available standard building blocks where applicable.

Practices from literature that bring high value to Agile IT Projects	Critical Success Factors of Agile IT projects positively influenced by Enterprise Architecture practice
	Competency: One has real-world experience. Standards and reusable components are based on existing use cases and bring this to the table.
Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism.	**Corporate culture**: certain freedom to take control of own destiny (auditing and controlling vs certain freedom) **Competency**: Seen as a mentor and guide with real-world experience and good interpersonal communication skills **Personal Characteristics**: mentor and guide with collaborative attitude, readiness to learn and work with others. **Communication and Negotiation:** Fast and effective communication between all stakeholders **Team Composition**: Having 25-33% of experts in your Agile teams
Develop Enterprise Architecture Organization Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate	**Competency**: Bring real-world experience and good interpersonal communication skills to the table. **Personal Characteristics**: collaborative attitude, readiness to learn and work with others. **Communication and Negotiation:** Fast and effective communication between all stakeholders **Team Composition**: Having 25-33% of experts in your Agile teams
Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks	**Competency:** Bring real word experience to the table **Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Team Composition**: Having 25-33% of experts in your Agile teams. **Training and Learning:** People should be eager to continuously learn and share information with each other. **Requirements:** Welcome changing requirements, even late in development. Requirements can undergo unforeseeable changes and architecture can provide expertise and building blocks to cope with these changes. **Development:** Simple design, short increments, and inexpensive refactoring. Architecture can support and provide advice on to ensure simpler design and avoidance of costly refactoring. **Personal Characteristics:** Having honesty, a collaborative attitude, sense of responsibility, readiness to learn and able to work with others.

Practices from literature that bring high value to Agile IT Projects	Critical Success Factors of Agile IT projects positively influenced by Enterprise Architecture practice
Develop the Enterprise Architecture Vision by confirming well defined, validated, documented and clearly communicated architecture principles.	**Corporate culture**: certain freedom to take control of own destiny. Predefined principles will help in autonomously act upon these principles. **Communication and Negotiation:** Fast and effective communication between all stakeholders in a common language **Decision Time**: Important project decisions are likely to be made in a short timeframe, autonomously by the Agile team. Having a common language with clear principles will fully support this. **Dynamism and Uncertainty**: Responding to change can happen more quickly when well defined and communicated principles are in place.
Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates an incremental approach.	**Development:** supports short incremental building **Customer Commitment:** deliver to customers more quickly. **Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Requirements:** Welcome changing requirements, even late in development. Transition architectures are usually more flexible and adaptable to changing requirements.
Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills	**Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Training and Learning:** People should be eager to continuously learn and share information with each other. **Personal Characteristics:** Having honesty, a collaborative attitude, sense of responsibility, readiness to learn and able to work with others.
Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives	**Customer Commitment:** Customer feels a responsible element of the project and is identified as a key stakeholder. **Communication and Negotiation**: Fast and effective communication between all identified stakeholders in a common language
Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified.	**Communication and Negotiation:** Fast and effective communication between all stakeholders in a common language **Decision Time**: Important project decisions are likely to be made in a short timeframe, autonomously by the Agile team. Having a common language will support this fully.

Practices from literature that bring high value to Agile IT Projects	Critical Success Factors of Agile IT projects positively influenced by Enterprise Architecture practice
Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events.	**Decision Time**: Important project decisions are likely to be made in a short timeframe, autonomously by the Agile team. Communicating regularly and proactively will support this. **Communication and Negotiation:** Fast and effective communication between all stakeholders in a common language **Training and Learning:** People should be eager to continuously learn and share information with each other. Communicating regularly can help. **Dynamism and Uncertainty**: Responding to change can happen more quickly when communication is done regularly and proactively.
Develop Enterprise Architecture skills by systematically collecting and communicating Architectural lessons learned	**Competency:** Bring real word experience to the table **Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Team Composition**: Having 25-33% of experts in your Agile teams. **Training and Learning:** People should be eager to continuously learn and share information with each other. **Development:** Simple design, short increments, and inexpensive refactoring. Architecture can support and provide advice on to ensure simpler design and avoidance of costly refactoring. **Personal Characteristics:** Having honesty, a collaborative attitude, sense of responsibility, readiness to learn and able to work with others.
Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology	**Competency:** Bring real word experience to the table **Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Team Composition**: Having 25-33% of experts in your Agile teams. **Training and Learning:** People should be eager to continuously learn and share information with each other. **Development:** Simple design, short increments, and inexpensive refactoring. Architecture can support and provide advice on to ensure simpler design and avoidance of costly refactoring. **Personal Characteristics:** Having honesty, a collaborative attitude, sense of responsibility, readiness to learn and able to work with others.

Practices from literature that bring high value to Agile IT Projects	Critical Success Factors of Agile IT projects positively influenced by Enterprise Architecture practice
Develop Enterprise Architecture skills by ensuring architects have good functional/non-functional requirements analysis skills	**Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture. **Requirements:** Welcome changing requirements, even late in development. Requirements can undergo unforeseeable changes. Understanding requirements and the architecture impact is crucial. **Development:** Simple design, short increments, and inexpensive refactoring. Architecture can support and provide advice on to ensure simpler design and avoidance of costly refactoring. **Dynamism and Uncertainty:** Value responding to change over following a plan. Be dynamic in nature and feel comfortable with a certain degree of uncertainty. Being able to grasp and understand changing requirements and link these to architectural impact is crucial.
Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements.	**Communication and Negotiation:** Fast and effective communication between all stakeholders. Effective communication when changes are aligned or not is crucial to adapt to changes. **Corporate culture**: certain freedom to take control of own destiny (auditing and controlling vs certain freedom). Allowing this freedom but keeping the changes aligned with principles and requirements. **Dynamism and Uncertainty**: Responding to change can happen more quickly when well defined and communicated principles are in place and are followed. **Development:** supports short incremental building by ensuring that changes are aligned with architecture principles and requirements.
Define Architecture Implementation by confirming increments and phases of the transition architecture (roadmap) and update these in the architecture definition document.	**Development:** supports short incremental building. Use architecture definition document as a reference guide. **Customer Commitment:** deliver to customers more quickly. **Communication and Negotiation:** Fast and effective communication between all stakeholders. Use a common language and have a common understanding of architecture, roadmap, and increments.

Table 5 List of Enterprise Architecture practices linked to critical success factors of Agile IT projects (detailed)

12.2. Report of Expert Group Interviews 1

Enterprise architecture factors

Expert Group 1

1. Introductions

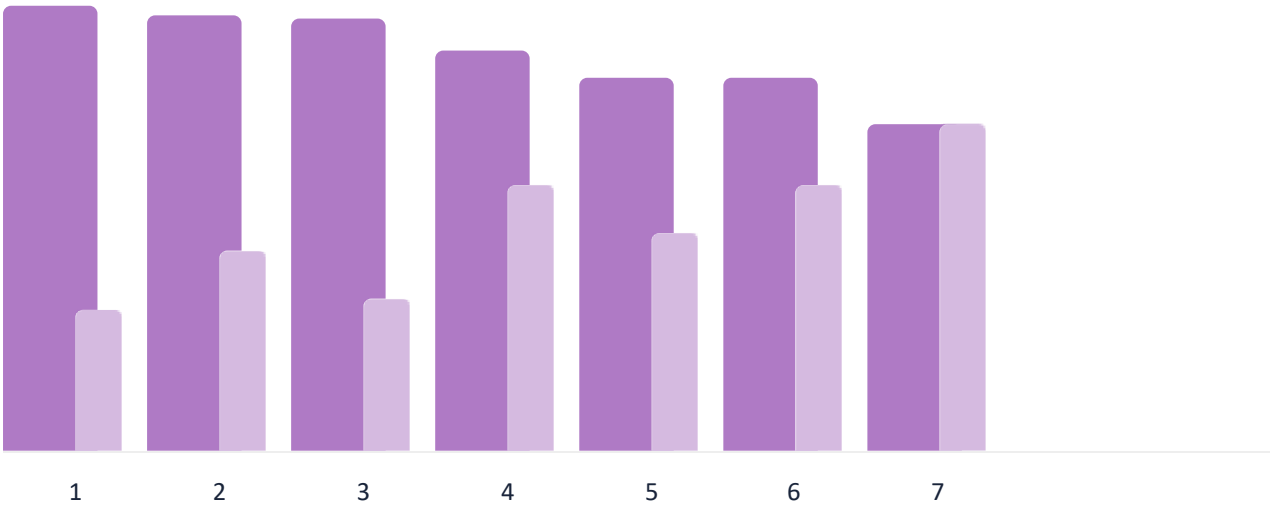
1. Introduction.
2. Presentation of master thesis.
3. Statements from literature: Develop the enterprise architecture vision.
4. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
5. Statements from literature: Develop reference architecture.
6. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
7. Statements from literature: Select opportunities and solutions.
8. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
9. Statements from literature: Develop architecture implementation.
10. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
11. Statements from literature: Provide enterprise architecture services.
12. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
13. Statements from literature: Develop Enterprise Architecture Organization culture 14. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
15. Statements from literature: Develop Enterprise Architecture Skills
16. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
17. Lost & Found

2. Presentation of master thesis

3. Statements from literature: Develop the enterprise architecture vision

1. Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified.
2. Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities.
3. Develop the Enterprise Architecture Vision by confirming well defined, validated, documented and clearly communicated architecture principles.
4. Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives.
5. Develop the Enterprise Architecture Vision by clearly documenting, approving and communicating Business and architecture requirements.
6. Develop the Enterprise Architecture Vision by clearly defining and documenting the architecture mission.
7. Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting and mitigating risks associated with the architecture vision.

4. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives	81.8	0	26%
2. Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current and any areas of ambiguity are clarified.	80	0	37%
3. Develop the Enterprise Architecture Vision by confirming well defined, validated, documented and clearly communicated architecture principles.	79.5	0	28%
4. Develop the Enterprise Architecture Vision by clearly documenting, approving and communicating Business and architecture requirements	73.6	0	49%
5. Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities	68.6	0	40%

Item	Rating	A	Variability
6. Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting and Mitigating risks associated with the architecture vision.	68.6	0	49%
7. Develop the Enterprise Architecture Vision by clearly defining and documenting the architecture mission	60	0	60%

Comments

1. Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives.
   - Should also be taken up in a more cross-function approach not only architecture stakeholders but more complete stakeholder map.

2. Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified. - Using a common language will definitely help facilitating the collaboration between business and developers and help build something everyone can understand. It also matches the "simple" philosophy of agility.

3. Develop the Enterprise Architecture Vision by confirming well defined, validated, documented, and clearly communicated architecture principles.
   - Definitely, the architecture team should be the owner of their documentation but be careful to stay effective and adjust behaviors.

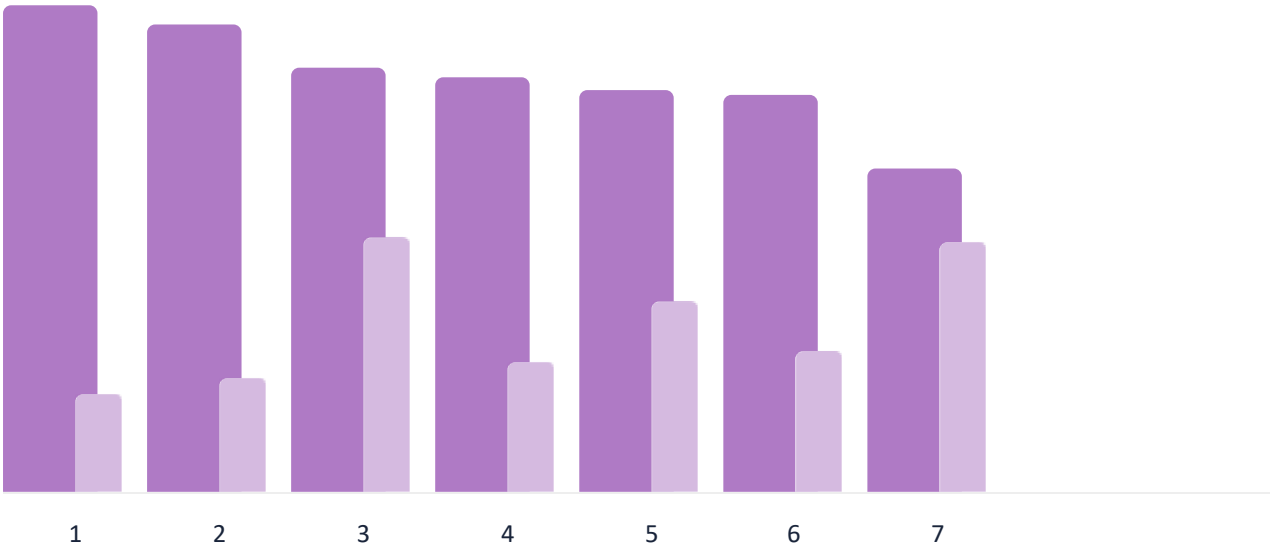
5. Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities.
   - Definitely, the architecture team should be the owner of their documentation but be careful to stay effective and adjust behaviors.

6. Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting and mitigating risks associated with the architecture vision.
   - not forget the doing approach of Agile
7. Develop the Enterprise Architecture Vision by clearly defining and documenting the architecture mission.
   - Mission statement/goal statement is key

5. Statements from literature: Develop reference architecture

1. Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions.
2. Develop Reference Architecture by providing coherent, concise and different viewpoints from the architecture repository that demonstrates to different stakeholders how their concerns are addressed in the architecture.
3. Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.
4. Develop Reference Architecture by finalizing business, information, data, applications, and technology domain architectures in an architecture definition document.
5. Develop Reference Architecture by documenting Architectural decisions.
6. Develop Reference Architecture by developing baseline architectural domain descriptions using the scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository.
7. Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies, and views to enable uniformity of architectural organization and maintenance.

6. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies, and views to enable uniformity of architectural organization and maintenance.	89.5	0	18%
2. Develop Reference Architecture by developing baseline architectural domain descriptions using the Scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository.	85.9	0	21%
3. Develop Reference Architecture by documenting Architectural decisions.	78.2	0	47%
4. Develop Reference Architecture by finalizing business, information, data, applications, and technology domain architectures in an architecture definition document.	76.4	0	24%

Item	Rating	A	Variability
5. Develop Reference Architecture by providing coherent, concise, and different viewpoints from the architecture repository that demonstrates to different stakeholders how their concerns are addressed in the architecture.	74.1	0	35%
6. Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions	73	1	26%
7. Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.	59.5	0	46%

Comments

2. Develop Reference Architecture by developing baseline architectural domain descriptions using the scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository - Maybe for not fully stable topic.

3. Develop Reference Architecture by documenting Architectural decisions.
   - Important to document decisions but documentation should not take the advantage overactions and decisions themselves.
   - Architecture decisions fit perfectly with the Agile concept of not over documenting (just enough architecture to guide the team

4. Develop Reference Architecture by finalizing business, information, data, applications, and technology domain architectures in an architecture definition document.
   - Keep it easily adaptable, again Agile It projects are constantly challenged and moving.

5. Develop Reference Architecture by providing coherent, concise and different viewpoints from the architecture repository that demonstrates to different stakeholders how their concerns are addressed in the architecture.
   - Here I rate 80 because concise makes sense, and having a repository that demonstrates to different stakeholders: indeed, any reference architecture should be easily addressed to different stakeholders.

6. Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions.

- As Agile IT project should always be evolving maintaining information can be very difficult, but indeed having target domain descriptions is relevant.

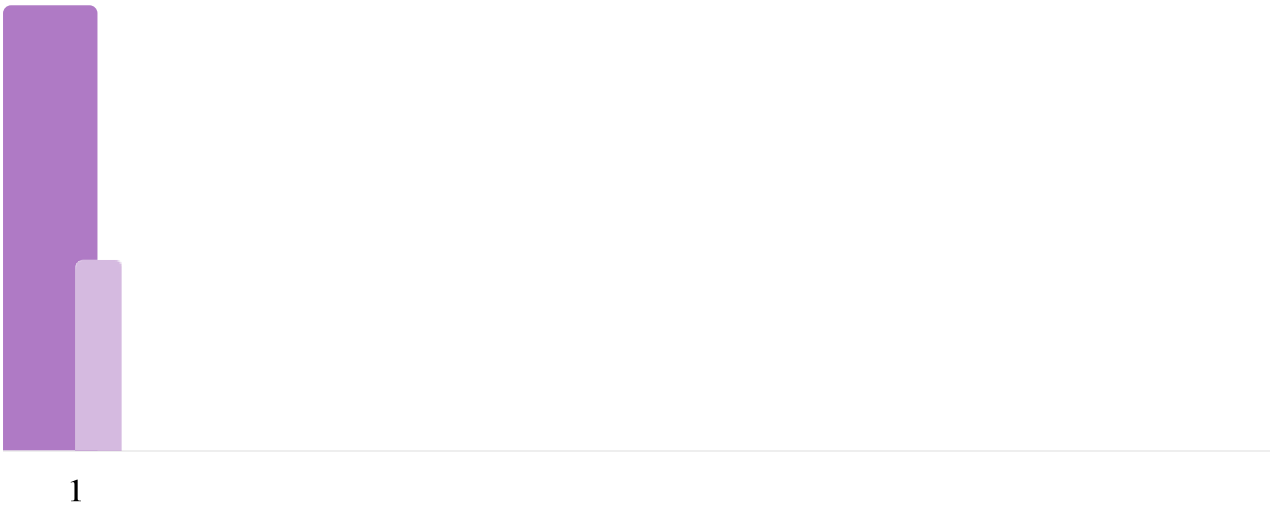
7. Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.

- Process architecture is not clear.
- Would help maintaining continuous excellence

7. Statements from literature: Select opportunities and solutions

1. Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates and incremental approach

8. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Select Solutions by developing transition architectures where the scope of change required by The target architecture necessitates an incremental approach.	81.8	0	35%

Comments

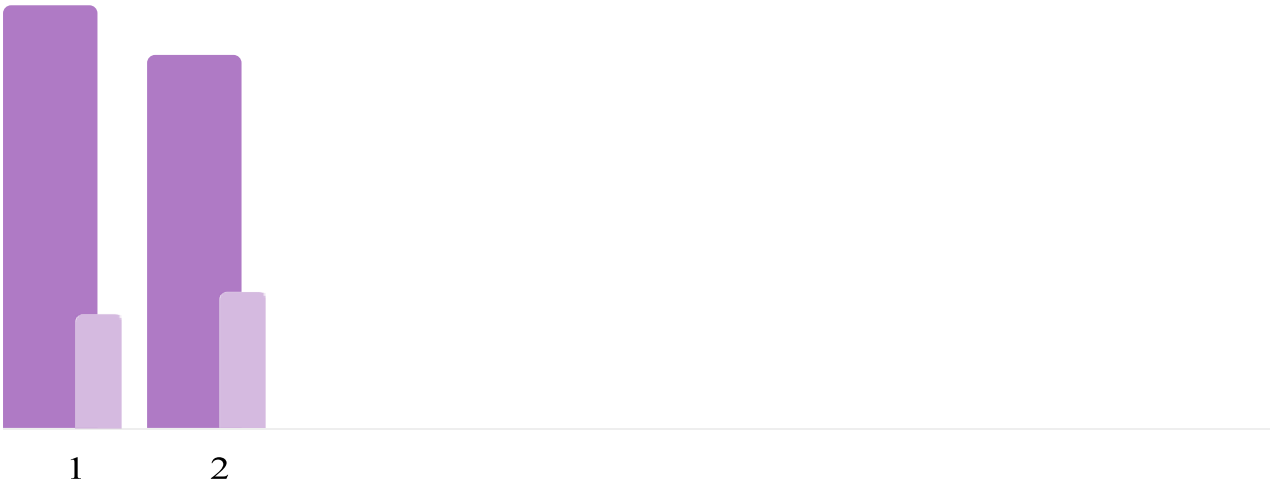
1. Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates and incremental approach

- Only for end-to-end view

9. Statements from literature: Develop architecture implementation

1. Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements.
2. Define Architecture Implementation by confirming increments and phases of the transition architecture (roadmap) and update these in the architecture definition document

10. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Define Architecture Implementation by confirming. increments and phases of the transition architecture. (roadmap) and update these in the architecture definition document	77.7	0	21%
2. Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements.	68.6	0	25%

Comments

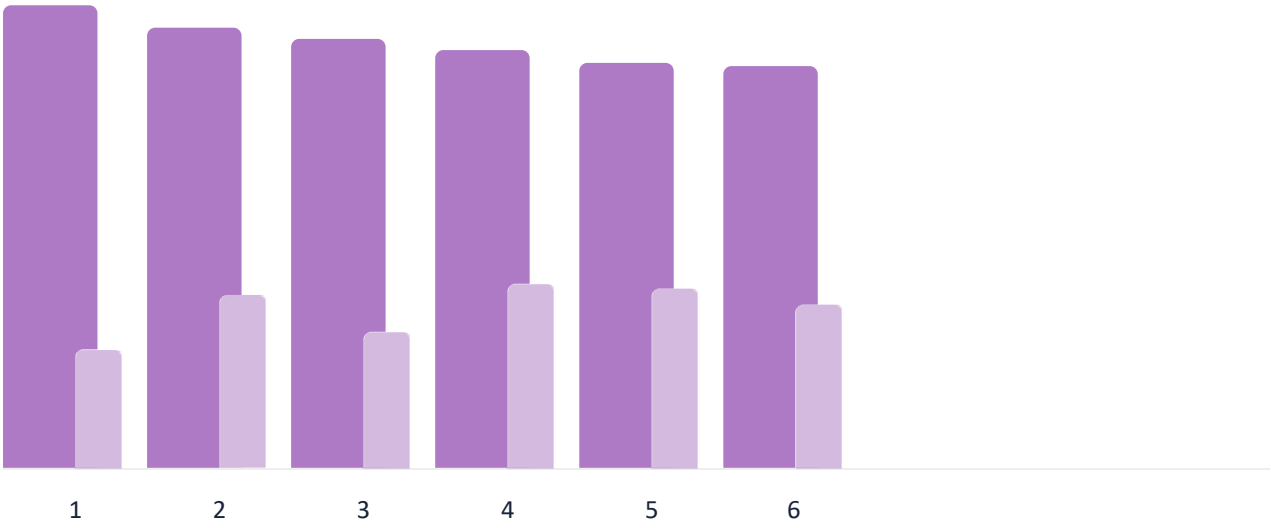
2. Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements

- Not only by architects

11. Statements from literature: Provide enterprise architecture services

1. Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks.
2. Provide Enterprise Architecture Services by providing guidance for solution development and deployment.
3. Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance 4. Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements.
5. Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology.
6. Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events

12. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks	85	0	22%
2. Provide Enterprise Architecture Services by providing guidance for solution development and deployment	80.9	0	32%
3. Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements.	79.1	0	25%
4. Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology.	76.8	0	34%

Item	Rating	A	Variability
5. Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance	74.5	0	33%
6. Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events.	74	1	30%

Comments

1. Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks - collaboration top.

2. Provide Enterprise Architecture Services by providing guidance for solution development and deployment.
   - Collaboration top

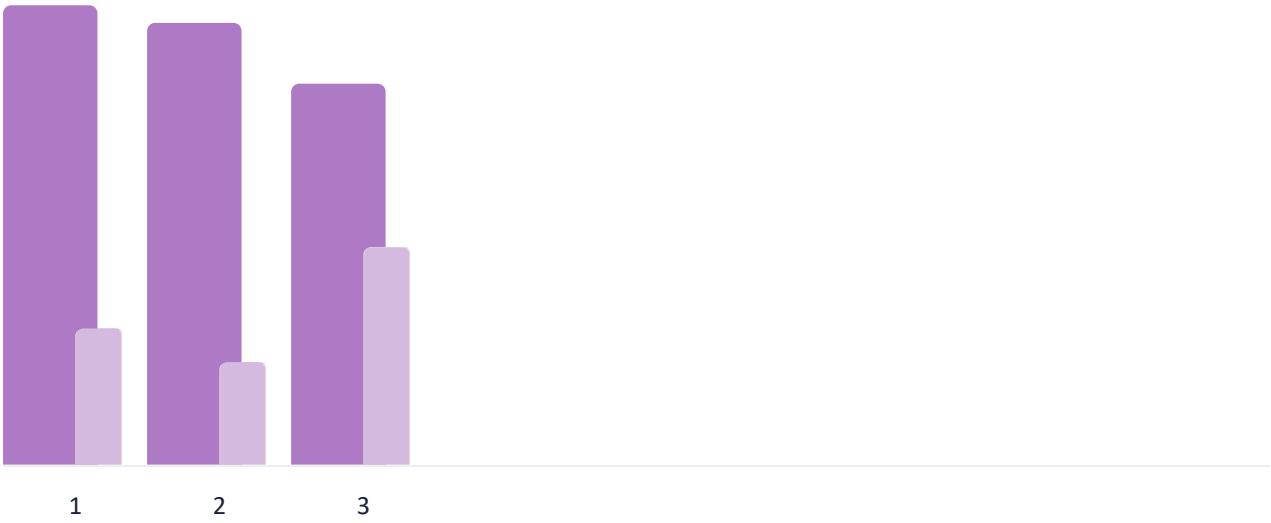
5. Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance
   - This would be great but not Easy to realize

13. Statements from literature: Develop Enterprise Architecture Organization culture

1. Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development.
2. Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism.
3. Develop Enterprise Architecture Organization Culture by creating an environment were.

Enterprise architecture and technical owners can closely cooperate

14. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism.	84.5	0	25%
2. Develop Enterprise Architecture Organization Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate.	81.4	0	19%
3. Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development	70	0	40%

Comments

2. Develop Enterprise Architecture Organization Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate.

- I would not involve architect but rather set the scene.

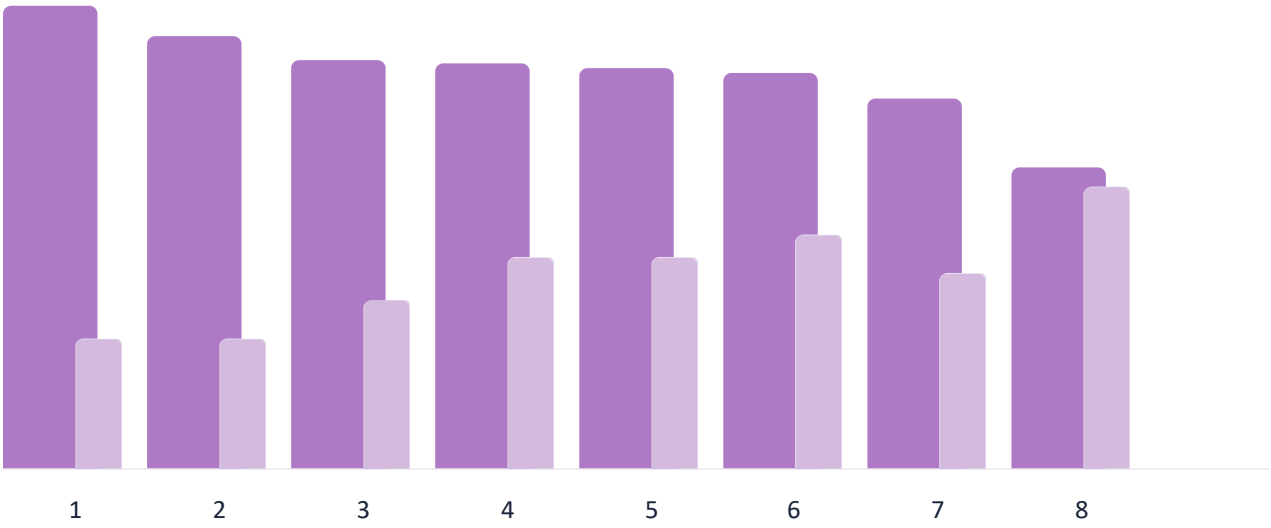
3. Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development.

- If an organization wants to go Agile, not the goal to develop a different culture in parallel

15. Statements from literature: Develop Enterprise Architecture Skills

1. Develop Enterprise Architecture skills by systematically collecting and communicating. Architectural lessons learned.
2. Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills.
3. Develop Enterprise Architecture skills by ensuring architects have profound knowledge of architecture frameworks and architecture methodologies.
4. Develop Enterprise Architecture skills by ensuring architects have good functional/nonfunctional requirements analysis skills.
5. Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills.
6. Develop Enterprise Architecture skills by ensuring architects have excellent leadership. skills
7. Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders.
8. Develop Enterprise Architecture skills by ensuring architects have deep technology knowledge in several subjects and profound technology knowledge over a wide range of platforms and systems.

16. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 11

Table view

Item	Rating	A	Variability
1. Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders.	85	0	24%
2. Develop Enterprise Architecture skills by ensuring architects have deep technology knowledge in several subjects and profound technology knowledge over a wide range of platforms and systems.	79.5	0	24%
3. Develop Enterprise Architecture skills by systematically collecting and communicating Architectural lessons learned.	75	0	31%
4. Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills.	74.5	0	39%
5. Develop Enterprise Architecture skills by ensuring architects have good functional/non-functional requirements analysis skills.	73.6	0	39%

Item	Rating	A	Variability
6. Develop Enterprise Architecture skills by ensuring architects have profound knowledge of architecture frameworks and architecture methodologies.	72.7	0	43%
7. Develop Enterprise Architecture skills by ensuring architects have excellent leadership skills.	68.2	0	36%
8. Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills.	55.5	0	52%

Comments

8. Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills

- Each expert can keep its own expertise goal is to collaborate (but via collaboration you gain experience for sure)
- Not sure the architect should master all.

17. Lost & Found

1. Do we think EA is on increased or decreased demand?
2. Nice work, interesting questions, also to link with the value. I also liked to hear the options of others especially when there are big differences. I'm interested in the outcome.
3. Would be interesting to further evolve this questionnaire after the thesis based on this first experience.
4. Why was it mentioned that it is related to the financial industry?
5. Interesting approach to contrast everyone's opinions and make conclusions.
6. We are working on a training at Xplus on Agile Architecture,
7. Adding some aspects of contribution to tooling, environment and helping lean and effective processes for the implementation of the EA findings
8. Revealing the scoring method (Delphi) during the voting, could influence. Impacting the variances.
9. Inputs from outside sources, expertise, to ensure a non-closed view on architecture.
10. I like the format and the statements are meaningful.
11. We love Peter!
12. Good pace of the questions, but some silence during the reading of the statements would work better for me.
13. N/A

Antwerp Management School

12.3. Report of Expert Group Interviews 2

Date: 2023-04-07

Author: Peter Wuytack

Enterprise architecture factors

Expert Group 2

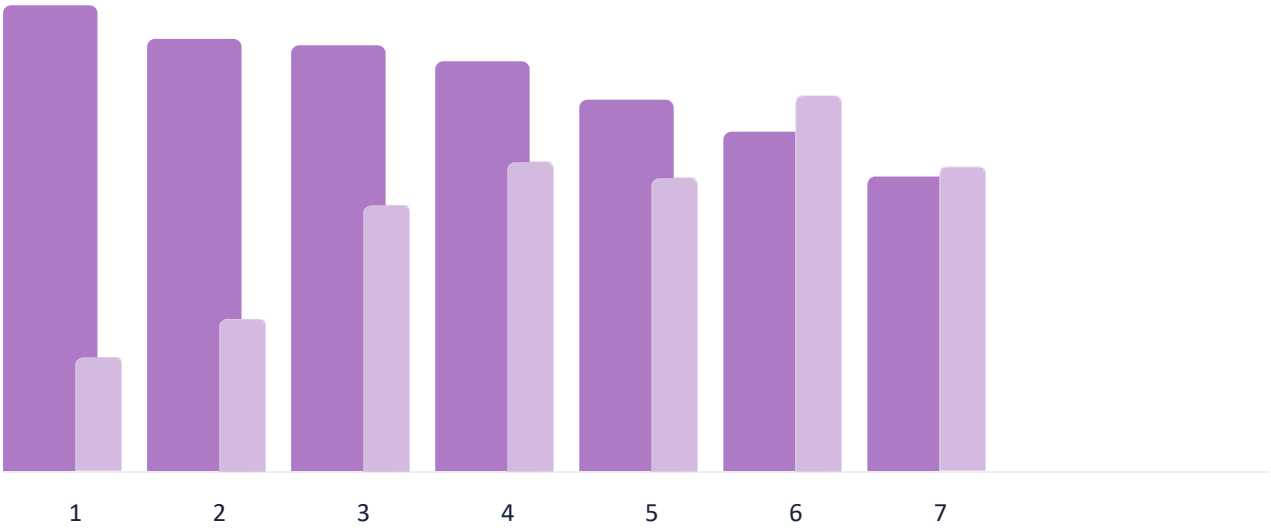
1. Introductions

1. Introductions
2. Presentation of master thesis
3. Statements from literature: Develop the enterprise architecture vision.
4. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
5. Statements from literature: Develop reference architecture.
6. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
7. Statements from literature: Select opportunities and solutions.
8. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
9. Statements from literature: Develop architecture implementation.
10. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
11. Statements from literature: Provide enterprise architecture services.
12. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
13. Statements from literature: Develop Enterprise Architecture Organization culture 14. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
15. Statements from literature: Develop Enterprise Architecture Skills
16. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)
17. Lost & Found

3. Statements from literature: Develop the enterprise architecture vision

1. Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified.
2. Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities.
3. Develop the Enterprise Architecture Vision by confirming well defined, validated, documented, and clearly communicated architecture principles.
4. Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives.
5. Develop the Enterprise Architecture Vision by clearly documenting, approving and communicating Business and architecture requirements.
6. Develop the Enterprise Architecture Vision by clearly defining and documenting the architecture mission.
7. Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting and mitigating risks associated with the architecture vision.

4. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 13

Table view

Item	Rating	A	Variability
1. Develop the Enterprise Architecture Vision by confirming well defined, validated, documented and clearly communicated architecture principles.	85.8	1	21%
2. Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing. definitions are current and any areas of ambiguity are clarified.	79.6	1	28%
3. Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives.	78.3	1	49%
4. Develop the Enterprise Architecture Vision by clearly documenting, approving, and communicating Business and architecture requirements.	75.4	1	57%

5. Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting and Mitigating risks associated with the architecture vision.	68.3	1	54%
6. clearly defining and documenting the architecture mission	62.5	1	69%
7. Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities.	54.2	1	56%

Comments

1. Develop the Enterprise Architecture Vision by confirming well defined, validated, documented and clearly communicated architecture principles.
   - This enables high cohesion as less divergent roads are taken. If we all agree on the ground rules then all decisions can be derived from that, and if not, then something is wrong.

2. Develop the Enterprise Architecture Vision by using a common language and ensuring that any existing definitions are current, and any areas of ambiguity are clarified.
   - in line with DDD
   - Common language enables highly cohesion while being loosely coupled. You don't have to explain too much. People know what the other means.

3. Develop the Enterprise Architecture Vision by clearly identifying key architecture stakeholders and their concerns/objectives.
   - Knowing who you work for and with and understanding their concerns is key to have acceptance of your work and hence improve the chances of success.

4. Develop the Enterprise Architecture Vision by clearly documenting, approving and communicating Business and architecture requirements.
   - Gathering Business requirements
   - Requirements become clear through the process; they should not be predefined- it's the "requirements" concept that is disturbing for me - value that we create would sound better to me.
   - Understanding the business needs is where it starts. Being able to balance with larger enterprise-wide architectural concerns is equally important for balance.

5. Develop the Enterprise Architecture Vision by identifying and clearly defining, documenting and mitigating risks associated with the architecture vision.
   - Transparency supports agility.
   - in line with DDD
   - Risk management is important, but the main focus in Agile is to mitigate risks through discovery and iteration.

6. Develop the Enterprise Architecture Vision by clearly defining and documenting the architecture mission.
   - Mission should be clear through showing value in practice, not through documenting.

   Documenting does not support agility.
   - I guess it's good to define, but does anyone really care?

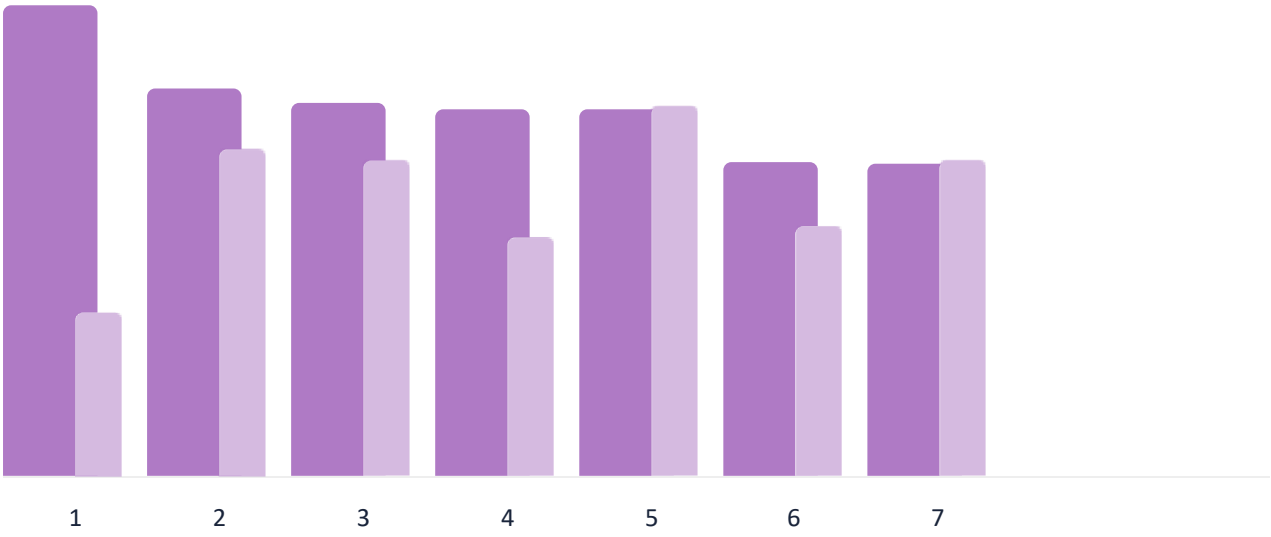
7. Develop the Enterprise Architecture vision by having a well-established architecture team with documented roles and responsibilities.

- Roles & Responsibilities should be flexible in Agile.
- The centralized team should be kept very limited and work on the architectural framework in line with the global vision.
- "I am on the fence. Having a clearly defined architecture team has the benefit of clarity, but in an Agile environment you should be able to be flexible as to whom takes the role, where they are located in the organization and what responsibilities they take on."

5. Statements from literature: Develop reference architecture

1. Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions.
2. Develop Reference Architecture by providing coherent, concise and different viewpoints from the architecture repository that demonstrates to different stakeholders how their concerns are addressed in the architecture.
3. Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.
4. Develop Reference Architecture by finalizing business, information, data, applications and technology domain architectures in an architecture definition document.
5. Develop Reference Architecture by documenting Architectural decisions.
6. Develop Reference Architecture by developing baseline architectural domain descriptions using the scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository.
7. Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies and views to enable uniformity of architectural organization and maintenance.

6. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 12

Table view

Item	Rating	A	Variability
1. Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies and views to enable uniformity of architectural organization and maintenance.	86.7	0	30%
2. Develop Reference Architecture by developing baseline architectural domain descriptions using the scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository.	71.4	1	60%
3. Develop Reference Architecture by providing coherent, concise and different viewpoints from the architecture repository that demonstrates too different stakeholders how their concerns are addressed in the architecture.	68.8	0	58%

Item	Rating	A	Variability
4. Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions.	67.5	0	44%
5. Develop Reference Architecture by documenting Architectural decisions.	67.5	0	68%
6. Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.	57.7	1	46%
7. Develop Reference Architecture by finalizing business, information, data, applications, and technology domain architectures in an architecture definition document.	57.5	0	58%

Comments

1. Develop Reference Architecture by developing and maintaining an architecture repository containing standards, reusable components and patterns, artifacts, relationships, dependencies and views to enable uniformity of architectural organization and maintenance - Uniformity makes it simpler to understand and use.
   - It can be useful in Agile context, but only to the extent that it is automated and allows us to bring the relevant artefacts to the place where they are used at the moment they are needed.
   - Having reference architectures is only valuable when they are easily accessible and reusable by the different stakeholders. This requires a place that can be advertised for people to find them, and the ability to consult and change them in an easy fashion.

2. Develop Reference Architecture by developing baseline architectural domain descriptions using the scope and level of detail necessary to support the target architecture, identifying relevant architecture building blocks from the architecture repository - Is more relevant for the architecture practice.
   - This sounds like architecture for the sake of architecture.
   - Good as-is descriptions of domain RAs are key to understanding the basis you start from, what capabilities already exist and can be tapped and the impact of changes. They are key communication materials with stakeholders.

3. Develop Reference Architecture by providing coherent, concise and different viewpoints from the architecture repository that demonstrates to different stakeholders how their concerns are addressed in the architecture.

- I like CONCISE here.
- Different stakeholders (business, IT, partners, employees) have different views on what the architecture provides as a solution. You must be able to communicate at their level.

4. Develop Reference Architecture by maintaining information architecture models as part of the baseline and target domain descriptions.

- Yes, Information Architecture is important in Agile, but it is not a discriminator between Agile and non-Agile.
- Architecture agility doesn't lie in the usage of repositories (target/baseline/...), what you put in them and how you manage them - that's internal architecture processes. you get architecture agility through concise and approachable work that you deliver to stakeholders - Imo I don't think that repository-based (TOGAF ;)) Qs are relevant for evaluating the usefulness of EA on Agile projects :S
- This is important to create information boundaries for the domains and the context in which the information model has to be interpreted so that other domains, when soliciting information, can re-interpret it for their context.

6. Develop Reference Architecture by maintaining process architecture models as part of the baseline and target domain descriptions.

- Yes, Process Architecture is important in Agile, but it is not a discriminator between Agile and non-Agile.
- In an Agile organization, people work less process oriented but are more outcome oriented. Some processes are stable and long term and should be maintained as such, but many processes are fluid, ephemeral or require a flexibility that is hard to maintain. More important is to provide capabilities and interfaces that enables this process flexibility.

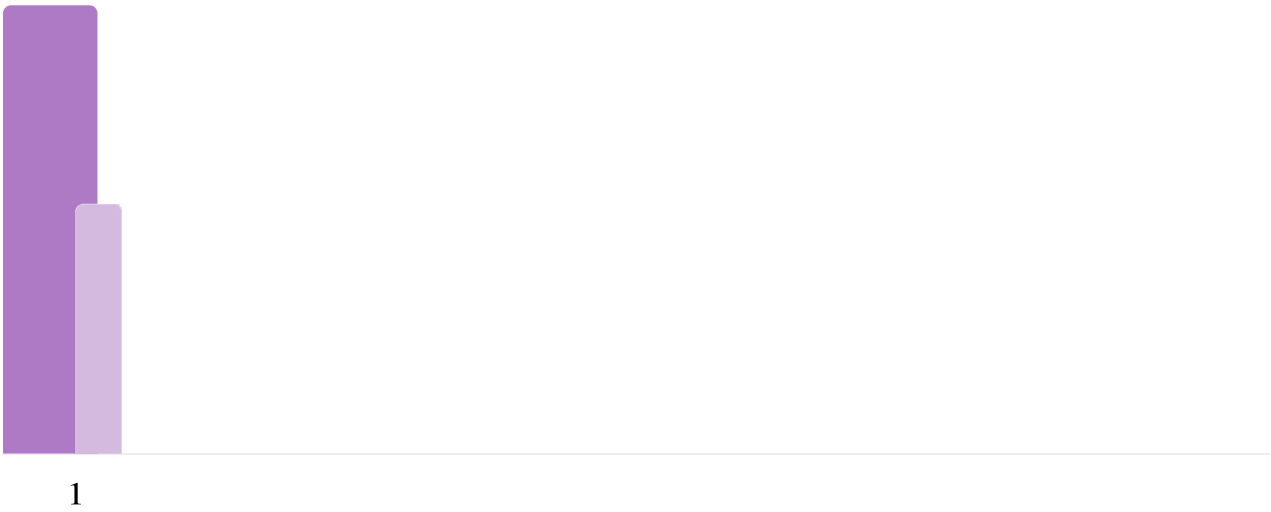
7. Develop Reference Architecture by finalizing business, information, data, applications and technology domain architectures in an architecture definition document.

- The provided score depends strongly on the demanded and applied level of detail in the architecture definition document. Too much detail vs. too little both don't provide as much value as possible.
- Outdated after 1 sprint.
- Low score because of the word 'finalizing'. Architecture is also incremental.
- I think a standard format of reference architectures is important to provide consistent communication on all the important aspects for the different stakeholders. Lack of standardization reduces capability of reuse. The art is having the right information in there and having the right reference architectures

7. Statements from literature: Select opportunities and solutions

1. Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates and incremental approach

8. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 12

Table view

Item	Rating	A	Variability
1. Select Solutions by developing transition architectures where the scope of change required by The target architecture necessitates and incremental approach.	82.5	0	46%

Comments

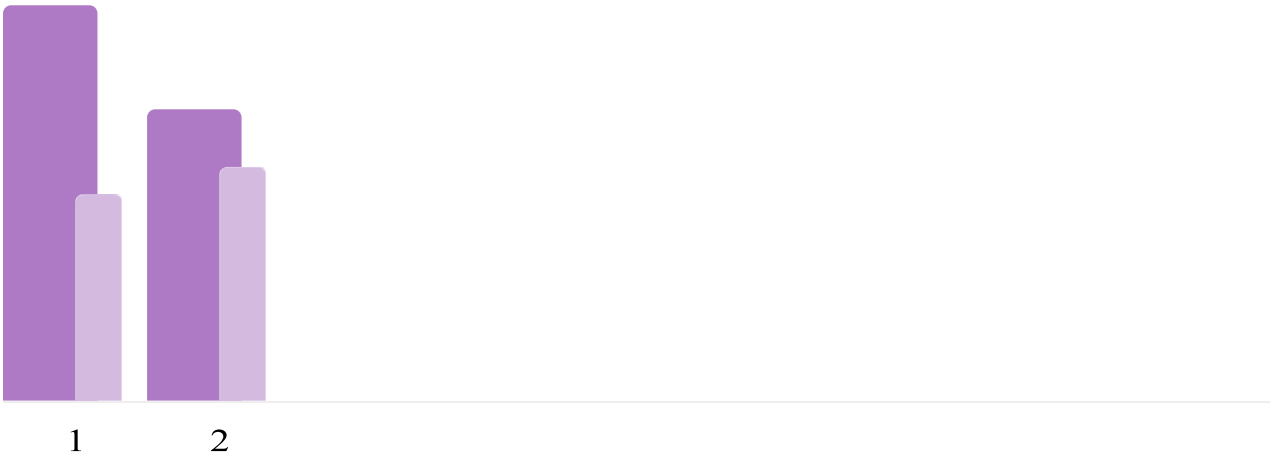
1. Select Solutions by developing transition architectures where the scope of change required by the target architecture necessitates and incremental approach

- targets that are too far away (like more than 4 quarters) are not giving any guidance at all.
- erm... you define your architecture based on the value that you want to define at each sprint.
- This is the key element of what architecture is. Especially in Agile where you can go through several iterations.

9. Statements from literature: Develop architecture implementation

1. Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements.
2. Define Architecture Implementation by confirming increments and phases of the transition architecture (roadmap) and update these in the architecture definition document

10. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 12

Table view

Item	Rating	A	Variability
1. Define Architecture Implementation by confirming increments and phases of the transition architecture. (roadmap) and update these in the architecture definition document	72.9	0	38%
2. Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements.	53.8	0	43%

Comments

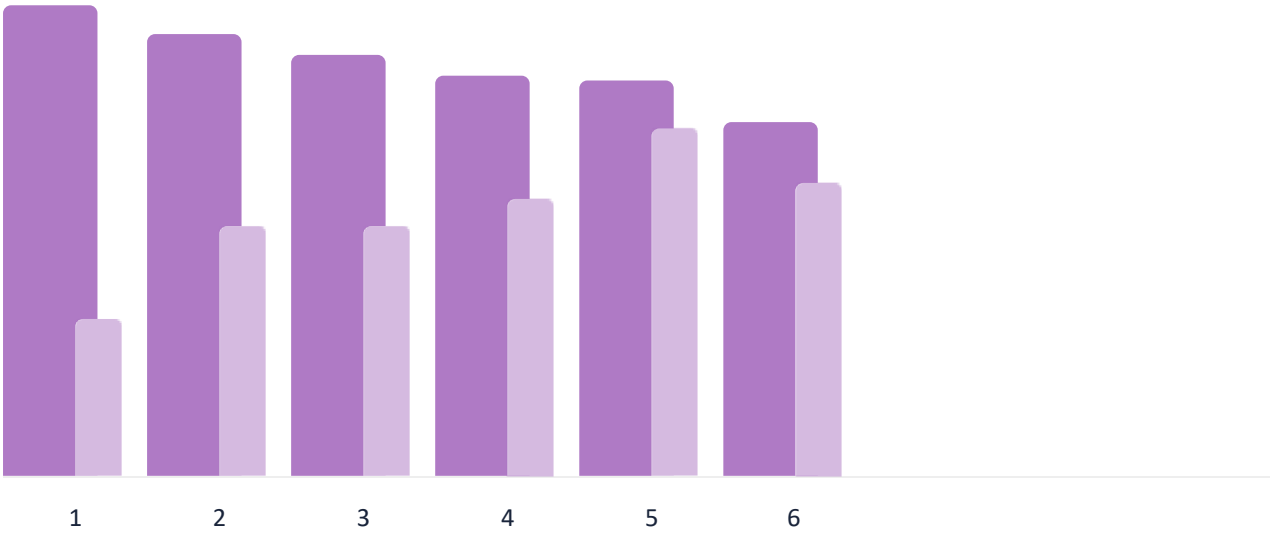
1. Define Architecture Implementation by confirming increments and phases of the transition architecture (roadmap) and update these in the architecture definition document.
   - This is what Agile is all about: incremental and iterative development and delivery - keeping them up to date keeps it relevant

2. Define Architecture Implementation by defining and completing architectural implementation and migration plans, including governance requirements.
   - This is often forgotten but is a must-have.
   - defining it up front helps, but once started ... they may become irrelevant

11. Statements from literature: Provide enterprise architecture services

1. Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks.
2. Provide Enterprise Architecture Services by providing guidance for solution development and deployment.
3. Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance 4. Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements.
5. Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology.
6. Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events

12. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 12

Table view

Item	Rating	A	Variability
1. Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks	86.7	0	29%
2. Provide Enterprise Architecture Services by communicating regularly and proactively at clear predefined events	81.3	0	46%
3. Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology.	77.5	0	46%
4. Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements.	73.8	0	51%
5. Provide Enterprise Architecture Services by providing guidance for solution development and deployment	72.9	0	64%

Item	Rating	A	Variability
6. Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance	65	1	54%

Comments

1. Provide Enterprise Architecture Services by supporting Business and IT with advice and expertise on architectural principles models and building blocks.
   - This might be considered too theoretical. But obviously you want to have principles that drive you.

2. Provide Enterprise Architecture Services by communicating regularly and proactively at clear pre-defined events.
   - I'd say: not specifically at predefined events - whenever required is fine.
   - Communication is critical, but does it have to be at clear & pre-defined events? This sounds very waterfall-y and not Agile.

3. Provide Enterprise Architecture Services by establishing a technology forum to provide architectural guidelines, advise projects and guide selection of technology.
   - Sharing of experiences and best practices helps diffuse knowledge and support adherence of other teams to standards.

4. Provide Enterprise Architecture Services by guaranteeing that new implementations as well as changes align with architecture principles and requirements - Is it up to the architect to guarantee this? This is more for developers - How you do it is less important than that it happens.

5. Provide Enterprise Architecture Services by providing guidance for solution development and deployment.
   - That is where the perceived value is.
   - Should be better done by the engineering community itself.
   - EA versus solution/domain architect

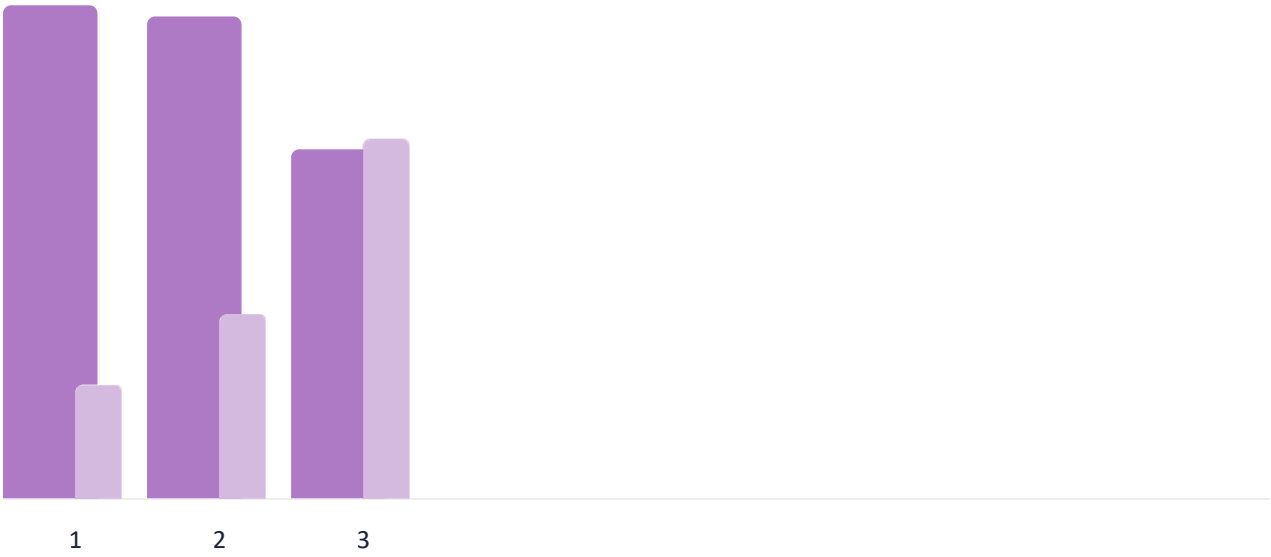
6. Provide Enterprise Architecture Services by measuring compliance with standards and guidelines, including compliance with external requirements and internal business relevance.

- too much admin .. impact must be made in the moment, not afterwards.
- In Agile context this should be via collaboration, not via policing.
- This is important because without providing guardrails Agile implementations risk delivering only what is directly required without taking other important elements into account.
- To be specific: the measure should be architecture debt and it should be managed at portfolio level

13. Statements from literature: Develop Enterprise Architecture Organization culture

1. Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development.
2. Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism.
3. Develop Enterprise Architecture Organization Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate

14. Relevance of factor for Agile IT projects (if not then comment whether not relevant or not part of EA)



Evaluation method: Rate from 1 to 100 | Votes: 12

Table view

Item	Rating	A	Variability
1. Develop Enterprise Architecture Organization Culture by creating an environment where Enterprise architecture and technical owners can closely cooperate.	90.8	0	21%
2. Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism.	88.8	0	34%
3. Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development	64.2	0	66%

Comments

2. Develop Enterprise Architecture Organization Culture by ensuring that the architecture is seen as a mentor and a guide helping business and IT decision making, and not merely as an auditing or controlling mechanism.

- Should come from the people, not the management.
- Most important to me is not being an auditing or controlling mechanism in Agile worlds.

The more gating the less Agile.

- Obviously. The question is more how to marry the Agile approach with the inherent structure and standardization that a business needs to function.

3. Develop Enterprise Architecture Organization Culture by having top management commitment and involvement in architecture development.

- Wouldn't the top management's value not be higher if they contribute to the projects themselves instead of committing them to the architecture development?
- "Enterprise" Architecture has not a lot of value when it can't help at that level.
- we need to prove our usefulness too :)

15. Statements from literature: Develop Enterprise Architecture Skills

1. Develop Enterprise Architecture skills by systematically collecting and communicating Architectural lessons learned.
2. Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills.
3. Develop Enterprise Architecture skills by ensuring architects have profound knowledge of architecture frameworks and architecture methodologies.
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6. Develop Enterprise Architecture skills by ensuring architects have excellent leadership.

skills

7. Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders.
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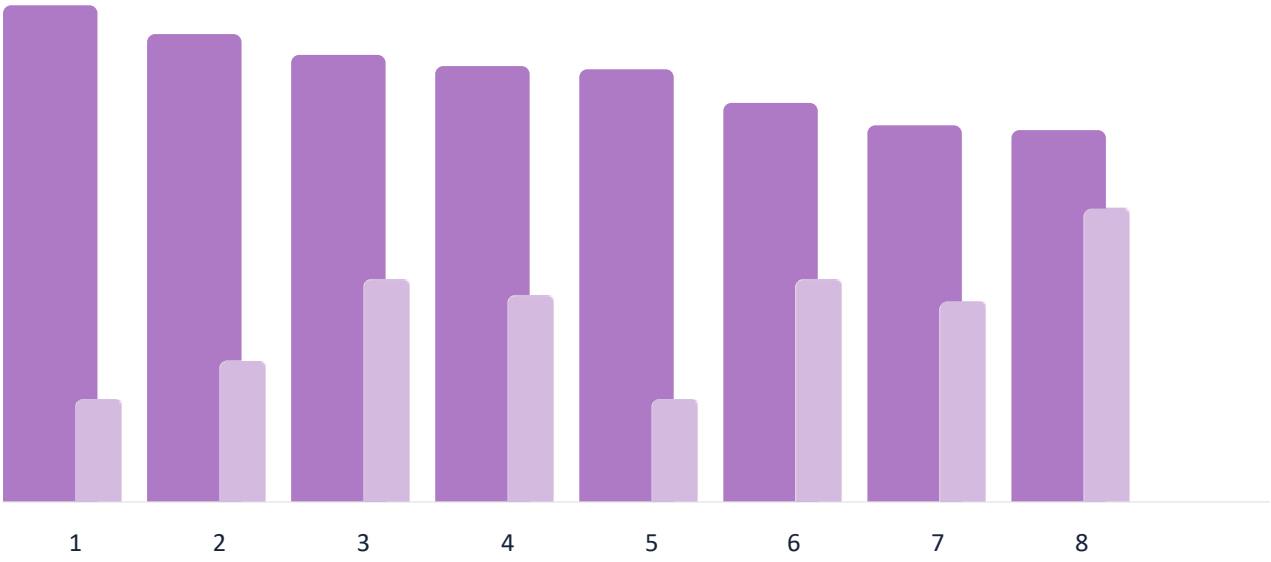

Evaluation method: Rate from 1 to 100 | Votes: 12

Table view

Item	Rating	A	Variability
1. Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders.	91.3	0	19%
2. Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills.	85.9	0	26%
3. Develop Enterprise Architecture skills by ensuring architects have excellent leadership skills.	82.1	0	41%
4. Develop Enterprise Architecture skills by ensuring architects have good functional/non-functional requirements analysis skills.	80	0	38%
5. Develop Enterprise Architecture skills by systematically collecting and communicating Architectural lessons learned.	79.6	0	19%
6. Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills.	73.3	0	41%

Item	Rating	A	Variability
7. Develop Enterprise Architecture skills by ensuring architects have deep technology knowledge in several subjects and profound technology knowledge over a wide range of platforms and systems.	69.2	0	37%
8. Develop Enterprise Architecture skills by ensuring architects have profound knowledge of architecture frameworks and architecture methodologies.	68.3	0	54%

Comments

1. Develop Enterprise Architecture skills by ensuring architects have excellent communication skills to convey clear messages to different stakeholders.
   - Architecture and especially enterprise architecture is a communication job.

2. Develop Enterprise Architecture skills by ensuring architects have excellent relationship building skills.
   - As an EA it's more who you work with than what you do.

3. Develop Enterprise Architecture skills by ensuring architects have excellent leadership skills.
   - have the right roles take the right decisions.
   - You expect EA's to be a driver of things. That requires a certain level of leadership (taking it and being perceived).

4. Develop Enterprise Architecture skills by ensuring architects have good functional/nonfunctional requirements analysis skills.
   - requirements: eeuww... let's talk about VALUE! :)

5. Develop Enterprise Architecture skills by systematically collecting and communicating. Architectural lessons learned.
   - But what about doing retrospectives instead of solely communicating lessons learned?

6. Develop Enterprise Architecture skills by ensuring architects have project experience from design, development, test, implementation, and operation skills.
   - They need broad knowledge, but not necessarily all though experience.
   - This can sometimes be more of a burden than a help.

7. Develop Enterprise Architecture skills by ensuring architects have deep technology knowledge in several subjects and profound technology knowledge over a wide range of platforms and systems.
   - Architects should have broad knowledge in Agile, so also technology, but technology alone is not enough.
   - It is important, but not at the level that the architect should always know best. It is more at the level to understand what people are saying, sufficient to foster collaboration and mutual respect.
   - Good knowledge is required but collaboration between experts per technology should also work. Generalists are not always the best way forward.
   - It helps but isn't a requirement. Business architects and functional architects must know the business first.

8. Develop Enterprise Architecture skills by ensuring architects have profound knowledge of architecture frameworks and architecture methodologies.

- Not enabler for Agile
- Only as background information to inform you of the general structures you work with.

17. Lost & Found

1. Everything EA is important for both classic and Agile, it's the way you do it.
2. more discussion time.
3. Not only the architecture "practice" but the architecture itself could enhance agility.
4. Fill in the form upfront and have more time to discuss.
5. more time for discussion, have architects more working with the teams,
6. I want to know: if we would all have the same understanding of the question, would the variability be as high. That would mean EA is in full evolution and not settled yet.
7. Would not be possible to have a questionnaire up front not to spend a lot of time and spare time for discussion?
8. More time for discussion or less questions