



A Pragmatic View on Enterprise Architecture

by [Danny Greefhorst](#)

Published: June 1, 2012

(Article URL: <http://www.tdan.com/view-articles/16108>)

This article from Danny Greefhorst describes some principles for a more pragmatic approach to architecture.

Enterprise architecture guides organizations in their transformations. In practice, however, architecture is not enough focused on the goals and objectives, making it ineffective. Typical symptoms are large architecture documents, architects that do not communicate and developers that ignore the architecture. Architects that show such behavior will not be taken seriously. This article therefore describes some principles for a more pragmatic approach to architecture.

## Introduction

Enterprise architecture is about making important decisions and assisting organizations in implementing these. The problem is, however, that the architectural field is quite broad, and as a result, many different types of architecture exist. This makes it very difficult to define a standard approach. Each situation seems unique. Moreover, suppliers often have their own vision on architecture, which (consciously or unconsciously) differs from other methods and techniques. The result is that organizations are still struggling with how to approach architecture. Architecture documents contain all sorts of useful information, but too often insufficiently to contribute to the goals and objectives. Symptoms of this are large and inaccessible documents, abstract models that cannot be applied in practice and architects that isolate themselves from the organization.

It is clear that there is a need for a pragmatic and goal-oriented approach to architecture. Architects should be able to quickly deliver results that meet the objectives of the organization or specific problem context. They have to accelerate, without getting sloppy. This calls for pragmatism, an open attitude and out-of-the-box thinking. This article describes some principles that architects should follow when carrying out their work in order to become more effective. They are based on my experiences and formulated from the perspective of the architect. Each principle has a statement, a rationale that describes the underlying motivation and a description of the consequences of the principle.

## Principle 1: Architects focus on what is essential

Architects are generally thinkers, and often take a lot of time to think, whilst others are anxiously waiting for answers. For some reason, architects tend to feel like they need to come up with the perfect answer that is one 100% correct, whilst an answer that is 95% certain and complete is more than adequate in most situations. A lot of decisions are not made in a rational process but are much more driven by the concerns, interests and needs of the stakeholders involved. Also, large documents are often not read, especially not by management. It is better to focus on what is really important in order to achieve certain goals, and write that down in a brief fashion. Inspired by Len Fehskens,<sup>1,2</sup> I think that architects should focus on what is essential, on "the stuff that matters." This equates to those properties that are necessary and essential. This is also what distinguishes architecture from design.

The most important implication of this principle is that architects should determine what is really important in any given situation, given the goals and objectives. Architecture principles are the most important deliverable in that respect, since they focus on the essence of architecture and thereby prevent analysis paralysis.<sup>3</sup> Also, only those principles that reflect what is necessary and sufficient at a certain level should be included. Models should be used with care. In general, you should try to describe the 20% that answers 80% of the questions. To come to the essence also requires an iterative process, which is common in the field of software development (agile software development). First deliver a high level architecture, which provides enough information in order to determine where the real issues are. A second iteration can then focus on the areas where these real issues are. It helps to partition the enterprise architecture into more manageable chunks that can be developed separately, and that each have their own added value. If you need to be very agile, you can even define a mini-architecture in a few days if that is sufficient for the problem at hand.

## **Principle 2: Architects provide concrete and useful results**

Architects too often have the image of being someone that delivers abstract models that are difficult to use in practice. It is clear that both these behaviors as well as the image is harmful for architects. The results of the architect should directly contribute to the issues and objectives in the organization. It is also important that the work and deliverables of the architect are sufficiently well-considered, so that its value is maximized. An architect should be a vital link in the chain from strategy to operations, but this requires architecture as a whole to be taken seriously in the organization.

The consequence is that architects should make clear exactly what they deliver and how the results contribute to the questions and objectives. You could say that architects need to be salesmen of their own work. Architects that cannot explain the value of their work probably do not truly understand it. Show examples of what you could deliver, providing the sponsor a chance to better understand what value you can generate and whether it contributes to his concerns. Governance is also a crucial component for architecture to work and to ensure that the right deliverables are constructed. There needs to be a formal sponsor for architecture that is accountable, typically in the form of an architecture board. The sponsor is responsible for formulating what is expected from the architecture in a request for architecture work. The architect is responsible for delivering a statement of architecture work that shows how architecture contributes to the goals. This creates a necessary and formalized contract between the sponsor and the architect.

## **Principle 3: Architects facilitate a collaborative process**

Architecture is not the result of an individual, but the result of a collaborative process. The main added value is that it creates a common view of the issues and the decisions that need to be taken to address these issues. It is not the architect himself that has to have all the necessary knowledge to make these decisions. He should seek the specialists in the organization that have the required knowledge, and place this knowledge into the overall organizational context and goals. Management is an important stakeholder because they make the most important decisions. It is therefore important for the architect to think carefully about the relevant stakeholders, and how to engage them.

This implies a form of stakeholder management, where the various types of stakeholders and their impact on the engagement is carefully considered. A lot of time will be spend on engaging stakeholders, getting the necessary information and building support. An absolute precondition to the involvement of stakeholders is that these people also have sufficient time to be able to contribute. Securing the availability of these people should therefore be done as early as possible in the process. In terms of ways of working, workshop sessions are a very good way to approach architecture engagements. Such sessions allow all participants to contribute to the result, automatically creating support for the results. An architect should

have good workshop facilitation skills.

## **Principle 4: Architects provide knowledge and skills**

The role of the architect can be difficult to understand. Does he add value or is he just some sort of police agent that only ensures that people follow the rules. It is clear that an architect that takes on only the last role does not contribute enough to the organization. Principles and rules are important, but not an end in itself. In addition, the architect does not know everything, and can therefore not assess the full consequences of principles and rules in advance. There can be valid reasons to deviate, provided that this deviation is properly motivated and agreed upon by the right people. There are architects who think their opinion is sacred and should defend it at all costs. Such architects interfere in the political arena, and seem to pursue their personal goals. They do not understand that the architect should primarily be concerned with the objectives of the organization as a whole and the translation of these objectives into the design of the organization. An architect facilitates the collaborative process, but should be very careful in predefining the results of the process.

The consequence is that the architect primarily serve the organization, and take a humble position. Architects must realize that their value lies in their contribution to the organizational knowledge (and not their personal opinion). This contribution should focus on those areas which do not get enough attention in the business as usual. This is primarily knowledge of the whole and the cohesion of the parts of the organization, but also more general knowledge on business and IT. Once the organization realizes that the architect has valuable knowledge, its value is immediately evident. It is important to also explicitly codify, manage and share this knowledge with others. This is where the architecture repository comes in; it contains knowledge of the organization, and the architectural decisions that are taken. Semantic wikis can provide a valuable instrument in this area. They are specifically designed to share knowledge, both in structured and unstructured form. Besides knowledge, the architect also provides specific skills. Especially social skills are relevant; architects should demonstrate leadership and be good communicators.

## **Principle 5: Architects use reference architectures**

Organizations often think that they are very special, but in practice their architectures are very similar. Sharing architectural best-practices between organizations can really speed the process and increase the quality of the architecture. In general, it is not wise to reinvent the wheel. Especially in the area of IT-architecture, most of the architectural issues and solutions have already been explored by others. Reference architectures are especially relevant in this context. A reference architecture is a generic architecture for a class of systems based on best practices. It typically provides generic principles and models for specific areas or specific industries. Also, referring to reference architectures can help in the adoption of specific architectures. People tend to agree that it is a good idea to adopt best-practices. This leaves more room to discuss the issues and decisions that are specific to the organization.

A consequence of the above is that architects should find out which reference architectures are relevant to their organization. A lot of reference architectures are freely available on the Internet, especially in IT-related areas such as service oriented architecture (SOA). A good example in that area is the SOA Reference Architecture that is included in the SOA Source Book<sup>4</sup> that is developed within the Open Group. It provides templates and guidelines for architects and software engineers for designing and developing service-oriented applications. In many cases you can quickly create a specific architecture by selecting and translating principles and models that are available in reference architectures. It is also useful to apply the concept of reference architectures to your own deliverables. You could split your architecture into two documents: an organization-specific document and a document that contains general reference models and best practices. This encourages reuse in other situations and departments provides a recognizable and stable basis.

## Principle 6: Architects use open standard methods and techniques

The rationale of this principle is that open standards reflect knowledge and experience, and inventing something that is better is not easy to achieve in a short period of time. By using open standards, the quality of the architecture increased. A more important argument is that standards define a common language that makes it easier for people to understand each other. Communication is an important part of architecture, and a common language contributes to better communication. Standards also prevent endless discussions about terminology that do not contribute to the goals. Open standards are preferred over proprietary standards because they are broadly accepted in the market, and there are limited or no restrictions and costs in using them.

Consequence of this principle is that the architect should be well informed of relevant architecture standards. The most important standards in this area are TOGAF<sup>5</sup> and ArchiMate,<sup>6</sup> both Open Group standards. TOGAF describes the method and ArchiMate the language, including its visualization. Although standards are a good starting point, they must be tailored to the situation since they provide more than is generally needed. In TOGAF, this customization is even formalized. In the preliminary phase of TOGAF, both the framework, the organization and the phases in the method steps are adapted to the specific context. ArchiMate also describes mechanisms to specialize concepts. You should use these mechanisms with care since these new concepts are not part of the standard language, losing a lot of the communication advantages of the standard. Another recommendation for the use of ArchiMate is that you need to pay attention to the audience that you target. ArchiMate is good for communicating with design-oriented people, but is less suited for communicating with (senior) management. A more informal representation of your model is more appropriate for such an audience.

## Conclusions

In this article I described six principles that demonstrate how to make enterprise architecture more pragmatic. These principles are, in my opinion, essential to make enterprise architecture a success. The knowledge, experience and skills of the architect are also critical success factors. Not everyone is suitable to become a five-legged sheep.

It is important that the architect, but also the organization in which he operates, considers architecture as an opportunity for improving the organization. I often get the feeling that the architect is seen only as a nuisance. That is not surprising when you consider that the architecture field itself is still maturing. It is not easy to be effective as an architect. Organizations should understand the real value of architecture and ensure that the necessary preconditions are fulfilled.

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**Danny Greefhorst** - Danny Greefhorst, MSc., is a Principal Consultant and Director of ArchiXL in Amersfoort, The Netherlands, and acts as an architect and consultant for clients in the financial and public sector. He has extensive experience with the definition and implementation of enterprise architectures, application architectures and technical architectures. In addition, he coaches organizations in setting up and executing their architecture function. Danny is responsible for the EA portal Via Nova Architectura and is a member of the governing board of the architecture department of the Dutch Computing Association. Danny is active in the architecture community, regularly publishes on IT and architecture related topics and is co-author of the book *Architecture Principles: The Cornerstones of Enterprise Architecture*. He can be reached at [dgreefhorst@archixl.nl](mailto:dgreefhorst@archixl.nl).

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