Enterprise Architecture
- a holistic view of the enterprise
The term “Architecture” as it is often used by business managers and IT specialist is a metaphor from the construction industry, where a series of blueprints and documents define the house to be build. The first set of drawings will show the house from different angles, the garden, the surroundings and a view of the interior. This information is meant for the owner of the house, it places the house in its context and shows the important features of the house. The next set of drawings and documents will show the interior details and a final set of specifications will concern the individual building blocks and engineering elements such as piping and heating. Obviously you would expect all this information to be consistent across both technical boundaries e.g. piping and electrical wiring will not collide, and across levels of details e.g. if the context of the house places it in a cold climate, the isolation will be better and piping and heating will have increased capacity.

Following the assumption, that a similar approach can be used to describe a company, many business managers and IT managers today use the term “Enterprise Architecture”, or simply “EA”, to refer to a comprehensive description of all the key objects and relationships, that make up an organization. Therefore an enterprise architecture will contain information of all aspects of the enterprise and cover all levels of abstraction. One group of people will work with the competitive environment of the company and develop strategies, goals, policies and business rules, another group of people will work with the business processes, a third group of people with the IT systems etc. until all important aspects of the enterprise is covered.

There are many approaches to building and maintaining an enterprise architecture, but the common goal for all is to end up with a holistic view of the enterprise, that will provide managers on all levels with a common place for analysis and decision making.

The QualiWare Enterprise Architecture Framework is one method for building an enterprise architecture. It is a pragmatic approach, which is built on several hundred years of modeling experience by QualiWare, its partners and customers. It is inspired by the work of John Zachman, www.zifa.com and it contains the building blocks needed to build enterprise architectures for the majority of QualiWare’s customers. To learn more about how to tailor the QualiWare Enterprise Architecture Framework to your company’s needs or to read about other enterprise architecture frameworks available on the market today go to: Other EA Frameworks

QualiWare Enterprise Architecture Framework

The QualiWare Enterprise Architecture Framework is a matrix oriented framework that consists of six columns and three rows. Each of the columns represent an aspect (or viewpoint) of the enterprise, which is important for the enterprise to manage in order to achieve vision in an optimal way. Each of the rows represents an entire view of the enterprise at a certain abstraction level.

QualiWare EA Framework

The columns are:

**Strategy**
The so called “Why” column. This aspect includes everything, that is the reason for the enterprise to react a certain way. From the highest strategy level with vision and mission down to the lowest level of business rules to be implemented in an IT system.

**Process**
The “How” column. This aspect includes all descriptions on how the enterprise performs its operations. From the highest level business processes to low level operational task descriptions.

**Application**
This aspect includes all descriptions of applications relevant for the enterprise. From the highest level of application categories to the lowest level of implemented software code.

**Information**
The “What” column. This aspect includes all description of information structures in the enterprise. From the highest level of concepts to the lowest level of data structures in programming code or database models.

**Organization**
The “Who” column. This aspect includes all descriptions of the human elements in the enterprise. From the highest level stakeholder view down to the lowest person/role oriented level. For large enterprises this column will often also answer the question “where”.

**Technology**
This aspect includes all descriptions of technology used in the enterprise. From the highest level of patented competitive edge technology embedded in the products to the lowest level of IT technology.
The rows are:

**Conceptual**
This is the level of the owner (or the planner) of the enterprise elements in the columns. This is where high level descriptions places the enterprise in its context and the overall view of the business is made.

**Logical**
This is the level of the designer. Here all logical analysis and designs belong.

**Operational**
This is the level of the builder (or implementer). This row contains all descriptions on how the enterprise is executed.

**Integration**
Whereas the intuitive structure of the QualiWare Enterprise Architecture Framework makes it easy to understand, there is a danger, that it is interpreted wrong in the sense that the cells in the framework seem to be isolated boxes of self contained information. This is absolutely wrong. In fact the most important characteristic of the QualiWare Enterprise Architecture Framework is the relationships between the objects in the cells. A pile of documents does not make an enterprise architecture. To obtain a value from the models the various model elements (objects) must be placed in a repository and have relationships to other objects. Only this way can different group of users analyze the enterprise architecture from their own view e.g. business managers will focus on business processes, organization and the IT systems that support the processes, the IT specialist will focus on information flows, information stores and the different processes a particular information system automates.

In stead of viewing the QualiWare Enterprise Architecture Framework as a flat two dimensional matrix, you should fold the matrix to form a cylinder and see all the relationships on the inside of the cylinder.

Seen from the top it would look like this:

![QualiWare EA Framework Cylinder seen from the top](image)

From the side you can see all levels. Note the relationships between objects in different levels.

![QualiWare EA Framework Cylinder seen from the side](image)

If the enterprise architecture is documented in sufficient details managers are able to identify a particular object (e.g. a business process, an IT system etc.) and immediately analyze the impact of changing or removing such an object. Imagine also being able to analyze the enterprise architecture and identify gaps, disconnects and overlaps in the organization. Several of QualiWares larger customers have saved a substantial amount of money from being able to sunset old or redundant applications as a result of working with enterprise architectures.

**Metamodeling**

The QualiWare Enterprise Architecture Framework is a mental model that can be used to organize your business models. Although not a business model in itself, it is a model of the structure of your business models and their interrelationships. We refer to such a model as a “metamodel”, and metamodeling is an integrated part of building an enterprise architecture.

QualiWare Enterprise Architecture Framework is not the “answer” to all your modeling prayers, rather it is a “question” to the managers: “Do you have sufficiently detailed models of all aspects of your enterprise to make it execute the most optimal way?” For each cell in the framework, managers should decide to what degree the cell needs to be filled with information, how the structure of such information should look, and what the relationships are to objects in other cells.

In QualiWare you can define the metamodel for your enterprise architecture, and with the unique flexibility of the product you can implement this metamodel with all modeling rules so it becomes an integrated part of the modeling tool.

Build your metamodel into the framework model. This example shows how the cell “Process at Conceptual level” has been designed to link to strategy, organization, application and technology objects. Also the decomposition to lower level business processes is shown.
In short an enterprise architecture helps managers think about the organization as a whole. It contains a wide variety of information with relationships among the various objects. Everything is stored in a single repository, so that managers can analyze, identify problems, design solutions to changes they are considering, and inform the organization of new strategies and decisions.

Working with enterprise architecture is not ‘rocket science’. The QualiWare Enterprise Architecture Framework is a mental model, that should make organizations consider if they have adequate knowledge in all areas of the enterprise to make the right decisions in all situations and achieve their goals. The goal of enterprise architecture is ‘BFC’ or ‘better, faster, cheaper’. This should be the focus for all EA work. Consequently it is important to work with an enterprise architecture framework that fits the need of the enterprise. The QualiWare Enterprise Architecture Framework is a pragmatic suggestion for an approach based on experience.

Other EA Frameworks

Other frameworks for EA are available on the market today. They can all be implemented in QualiWare Lifecycle Manager using the ArchitectureFrameWork diagram type. The most well known EA framework is created by John Zachman. Many other frameworks including QualiWare Enterprise Architecture Framework are based on his work. You can read more about his work at [www.zifai.com](http://www.zifai.com).

Another comprehensive approach to enterprise architecture is called TOGAF and is created by ‘The Open Group’. Read more about this on [www.opengroup.org](http://www.opengroup.org).

In addition to these two frameworks many governmental organization has published frameworks for EA, e.g. US Department of Defence has a framework called DODAF.

Tailoring the QualiWare EA Framework

To build your own framework in QualiWare Lifecycle Manager use the diagram type called ArchitectureFrameWork. Place FrameWorkRow symbols and FrameWorkColumn symbols to form a matrix, and place FrameWorkCell symbols in the intersections. For each FrameWorkCell specify the templates to be used for creating deliverables in this cell.