Enterprise Architecture – the Key to Benefits Realization

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Introduction

Over the last decade there has been a slowly increasing awareness of Enterprise Architecture. But, still many people remain confused. What is Enterprise Architecture? What can Enterprise Architecture do for you? How does it help your business? What do you have to do to have Enterprise Architecture? Why should you want to have Enterprise Architecture?

Fundamentally, Enterprise Architecture is required to facilitate change. Today's business climate requires continuous change. Change is very hard. Enterprise Architecture provides a means to manage change; to understand change; and, to make change an advantage.

Enterprise Architecture is an asset. It requires investment and maintenance; and, it yields a very definite return. Enterprise Architecture makes explicit the information and knowledge which makes your corporation run. All aspects of Enterprise Architecture exist either implicitly or explicitly. Each aspect that is implicit is unmanageable because it is unknown. Each aspect that is explicit is like a valued employee – known, dependable, profitable.

The purpose of this article is to make clear what Enterprise Architecture is, and what your corporation must do to attain it.

The Problem

Over the last three or four decades, nearly all businesses have installed increasing amounts of computing hardware and software. According to John Thorpe, ‘…spending
on IT is the largest single element of capital investment for most enterprises. Today, most businesses simply could not operate without computers – and this will become increasingly more so with each passing year. This expenditure is rightly justified because information is the life-blood of the corporation. Without information systems, a corporation simply cannot operate. But, are businesses realizing the expected benefits from their investment in information systems? In most cases, the answer is NO.

Why are the benefits not being realized? As with most complicated problems, there is no simple answer. One very significant contributing factor is the manner in which information systems projects proceed. One of the first phases in nearly all projects is ‘define the current situation’, or ‘analyze the current systems’, or ‘define the current processes’ – the discovery phase of the project. This situation demonstrates the lack of Enterprise Architecture. If a company maintains an Enterprise Architecture, the current situation is immediately obvious. The discovery phase of the project can be avoided altogether.

During the discovery phase of the project, certain architecture-like artefacts are usually produced – process diagrams, entity relationship diagrams, infrastructure diagrams, and other similar artefacts. These artefacts form the basis for the new project. However, there are usually some fundamental problems with these artefacts. Because they are created within the context of the project, they are seldom correct and almost never complete – from the broader context of the enterprise. The project may call these ‘architectural artefacts’, but they are ‘application artefacts’. They deal with the aggregates found in the current situation and do not identify the primitives upon which architecture must be based. Of course, when the project is over, they are not maintained, generalized, or extended. They are simply thrown away (or equivalently left on shelf).

1 Page xvii of reference (1)
This situation illustrates one of the most obvious paybacks from Enterprise Architecture. The discovery phase of each project can be avoided at considerable saving. The development of throw-away artefacts is a complete waste. The Enterprise Architecture provides a complete and correct basis from which to launch each new project. It is reusable for every project. There is no waste.

Another major obstacle to benefits realization is the ‘silver bullet mentality’. To be sure, vendors have profited greatly by selling the latest and greatest hardware, the newest and most complete software suite, or the hottest and most up-to-date methodology. But, the corporations that have bought these things have usually found themselves with something of a white elephant. And the cycle repeats.

The purchases do not fit together. They do not fit into any overall scheme which satisfies the corporation’s needs – because the corporation’s needs are undefined. Enterprise Architecture provides the definition of the corporation’s needs. Then each purchase can be carefully measured to see how it will fit into the overall scheme. There is no chasing after silver bullets.

The major payback from Enterprise Architecture is that it actually allows the management of change. Change is a necessity, but most corporations do it using the ‘brave leap into the unknown’ technique. Being unsure of the starting point, it is very difficult to know what to change in order to get to some desired point. Tinkering with the current state of the organization can also have unanticipated results when the current state is not fully known. Enterprise Architecture fully defines the current state. The things that need to be changed can be precisely determined, and the effect of each change can also be determined. All aspects of a proposed change can be quickly assessed, the results analyzed and quantified, and the change effectively managed.

A lot of companies have dabbled in architecture. Some have an enterprise data architecture, or a partially documented process architecture, or a set of infrastructure diagrams. Some have even embarked on Enterprise Architecture projects. These
incomplete attempts are doomed to failure. Enterprise Architecture must have a well
defined scope that is large enough to encompass the entire enterprise the architecture
will serve. Above all, Enterprise Architecture is NOT a project. It is never finished. It
must grow and develop with the corporation. It is a permanent part of the structure of
the organization.

For Enterprise Architecture to succeed, it must be sponsored at a very high level within
the corporation. This is because, Enterprise Architecture is a high level corporate asset,
and short term, sub-optimized benefits can be in conflict with long term enterprise wide
benefits. Enterprise Architecture provides the means to realize the benefits of
investments in information systems and information technology. You will spend the
money anyway, so why not make a long term investment? Enterprise Architecture is a
part of the corporate structure. It is not a document, or a method, or a project. It is an
ongoing part of the corporation. It is a means to make your corporation successful in
today’s business world.

The Solution

Enterprise Architecture provides a tangible and practical means to capture the
information and the knowledge which forms the basis of the enterprise. This facilitates
the management of change and the realization of benefits. It is the missing ingredient in
forty years of information systems spending. Enterprise Architecture is the glue to bind
information systems into the business forming a smoothly running corporate entity.

In most corporations today, there is at best an uneasy working relationship between
‘information services’ and ‘the business’. This relationship is born out of necessity –
otherwise, there would be no cooperation at all! Enterprise Architecture provides the
means for ‘the business’ and ‘information services’ to truly function as partners to
deliver the benefits of information systems investment. Increasingly, the information
system is the business – the business and information services must function in unity.
The most important asset of any business is the knowledge which makes the business work. Enterprise Architecture provides a means to capture this knowledge and make it available for the ongoing benefit of the business. The Enterprise Architecture is a blueprint of the business. It contains a complete picture of the business and all the components which make the business work.

Most companies have suffered due to the loss of important knowledge when a key person leaves. If the entire knowledge base of the corporation, is defined by the Enterprise Architecture, the loss of important knowledge can be avoided. Data in the context of a business process is information. Information in use by a person becomes knowledge. The knowledge must be quantified and captured as data so that it can produce information to be used by another person. Enterprise Architecture makes explicit all key corporate knowledge and the processes whereby the knowledge is captured and quantified to produce information for other uses.

The Zachman Framework (2,3) specifies thirty discrete models which are required to fully define an enterprise. All of these models are required – none are optional. In fact, all models exist at all times – either explicitly or implicitly. The implicit models affect the operation of the business just as surely as gravity affects someone who is unaware of its existence. The implicit models cannot be managed because they are unknown – they change randomly without control. The key to a fully successful Enterprise Architecture is to make all thirty models explicit. Then all changes can be managed. Nothing is left to chance.

Each row of the Zachman Framework takes a unique perspective of the enterprise (planner, owner, designer, builder, subcontractor). Each column deals with a primitive interrogative (what, how, where, who, when, why). Each of the thirty intersections of these rows and columns identifies a unique model of the enterprise. Each model is unique – it is not an elaboration of a higher level model. Each higher level row provides requirements for the row beneath, but each perspective, hence, each model is unique.
All models in a column are related by a fundamental meta-model (entity-relationship, function-argument, node-link, agent-work, time-cycle, ends-means). As the models are developed ‘as is’ for an enterprise, it is unavoidable that discontinuities will be discovered between the higher level models (planner’s and owner’s perspective) and the lower level models (builder’s and sub-contractor’s perspective). This is because current corporate systems have usually been built starting at the lowest levels with no regard to the higher level models. So naturally, the functioning enterprise is NOT a true representation of what the corporate management desires.

Enterprise Architecture properly sponsored, fully funded, properly maintained, and effectively utilized provides the means to realize the benefits of investments in information technology and information systems. All corporations need information systems, but information services has been poor at servicing the need. Enterprise Architecture provides the glue to bind the business and information services into a fully functional whole entity. This allows the business to perceive information services as an integral part of the business. Enterprise Architecture is recognized as an asset and the information systems also become an asset. Enterprise Architecture and information systems become an important means to carry out the business.

**Long Term Benefits of Enterprise Architecture**

Over the long term, Enterprise Architecture provides the means to attain stability within an environment of change. Today every corporation must reinvent itself every few years. Mergers and acquisitions are a way of life. In order to manage the changes required by this environment, every corporation requires a full definition of itself – Enterprise Architecture provides this. To attempt to make the required changes without Enterprise Architecture is like trying to drive in a blizzard.

Enterprise Architecture is not easy. It requires know-how, commitment, and careful planning. Many who have attempted to develop architectures have failed. Failure can
be due to lack of knowledge of the required scope of Enterprise Architecture, which results in poor placement of Enterprise Architecture within the corporate structure. Failure can also result from lack of corporate self-knowledge combined with insufficient allocation of resources to discover the knowledge. The most essential ingredient for success is commitment – commitment to complete the Enterprise Architecture; commitment to maintain the Enterprise Architecture; and commitment to use the Enterprise Architecture, even if shortcuts seem to produce short term benefits. Short-term solutions always tend to sub-optimized results.

Enterprise Architecture provides the standards, policies, and direction for all information system and knowledge management related activities. The traditional departments such as application development, production support, and infrastructure remain much as they are, but Enterprise Architecture defines the framework through which they interact with each other and with the business. This requires that Enterprise Architecture is positioned correctly in the corporate structure so that short term interests cannot circumvent long term benefits.

Enterprise Architecture can be phased in over a period of time. There is much value in providing some benefits quickly. An area of the enterprise with an obvious need and a visible payback can be selected as the first place to demonstrate the benefits of Enterprise Architecture. A gradual approach can then be used to develop all thirty models for all areas of the business, providing maximum benefit as quickly as possible. The greatest benefits will come when the Enterprise Architecture is fully defined and all areas of the business are actively using it.

Conclusion

How then should your corporation proceed to develop an Enterprise Architecture? Enterprise Architecture is not another ‘silver bullet’. You can’t buy it. There is no product which delivers it. It has no vendor. No two corporations have the same
Enterprise Architecture. You must make a corporate commitment to acquire the necessary self-knowledge to develop your Enterprise Architecture – it is your unique blueprint. Then commit to maintain it, and commit to use it.

Enterprise Architecture is organized by the Zachman Framework. The Zachman Framework is not a cookbook recipe – it is a high level schema which defines the broad parameters of Enterprise Architecture. Each company’s application of the Zachman Framework will be as unique as that company’s Enterprise Architecture.

Once defined, an Enterprise Architecture is like a living organism. It becomes part of the corporate culture. It will quickly die if it is not used and maintained. Properly used, it will grow and develop and guide the growth and development of the corporation. Enterprise Architecture is a key tool to be used in achieving the benefits of investments in information systems.

Enterprise Architecture is not an expense – it is an asset. The expense comes from not investing in the asset and repeatedly performing piece-meal, throw-away tasks which could be avoided through Enterprise Architecture. The biggest loss is opportunity loss through the lack of Enterprise Architecture. Instead of constantly throwing money and opportunity away, Enterprise Architecture allows a corporation to invest its money in such a way that short term needs are satisfied and long term benefits are multiplied.

References

