

Enterprise Business Architecture: The Formal Link between Strategy and Results

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Abstract

How do you feel after reading the business section of the newspaper or your favorite business publication? You read that some companies are thriving; that others are in a state of chaos and you wonder, are these “the best of times, or the worst of times!” The enterprise is not about chaos and “the worst of times”; it’s about connectivity, and causality, and understanding those relationships to both internal and external factors that lead to “the best of times.” This connectivity, causality, and understanding are found in an architecture of the business, a unifying structure which enables the execution of the strategy through its initiatives to achieve results. Without knowing this, it is fair to perceive the enterprise as chaotic and unpredictable. At times the enterprise seems “out of control”, awash in the daily chaos of quick fixes to problems that eventually degrade process efficiency, cloud initiative effectiveness, affect product quality, render poor customer service, and ultimately wipe out profits. To get “in control”, you must “design control” into the enterprise and not let it suffer the consequences of unaligned functional management. Either you control the enterprise as a natural extension of your vision and strategy with the *Enterprise Business Architecture*, or the enterprise controls you through unpredictable chaotic events.

The formality of the enterprise business architecture may frighten some business people and others may feel it is unnecessary. After all, an architecture including the business seems “too disciplined, too engineering like and too technical” for a business person! Many still prefer the informality of loosely defined diagrams and business models presented in colorful and creative presentations. However, these are mostly useless during the life cycle of a strategic initiative as they provide little “substance beyond the show.” The enterprise business architecture, in contrast, provides the framework that links the corporate strategy to tangible and demonstrable results, and to “the best of times!”

Enterprise Business Architecture: The Formal Link between Strategy and Results (CRC Press – August 2004) is the title of a new book soon to be published by the authors. This white paper will give the reader an overview of the basic concepts explored in this upcoming publication. You can visit the authors’ web site at: <http://www.enterprisebusinessarchitecture.com/>.

INTRODUCTION:

What are the formal links between strategy and results?

We define the formal links of the *Enterprise Business Architecture* (EBA) as those fundamental and essential links that unite the enterprise to form a harmonious whole. We will also refer to these relationships in formal and disciplined terms. Henceforth, we will characterize these links in architectures representing the business as a manifestation of the corporate strategy, achieving the results delivered by the enterprise initiatives.

The central plexus of the corporation is the enterprise business architecture. From this foundational or basic precept, one can unite, derive and integrate all of the architectures of the enterprise in a formal and disciplined manner. These include the IT, security and organization architectures. One can also use the very same EBA to direct and guide process design/improvement, software development, and package configuration initiatives. Today the EBA is a loosely defined and often misused term. However, we have clearly defined the EBA in architectural terms and in the context of the whole enterprise with its business as well as technology links. Additionally, we will stress the importance of the EBA and its integration throughout the enterprise (figure 1).

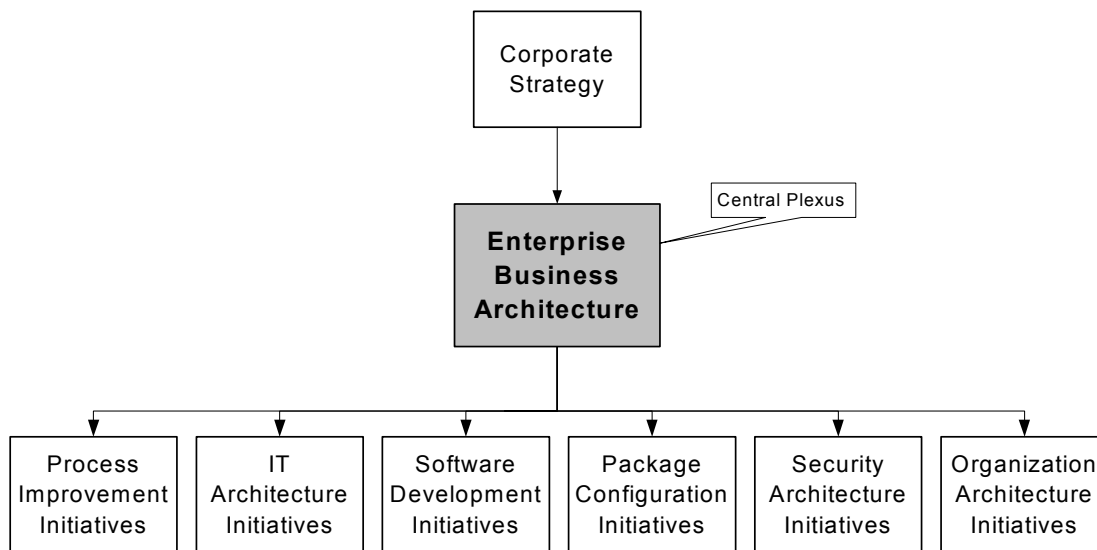


Figure 1: The Enterprise Business Architecture Fomal Links

Why are architectures important or even necessary?

As the 21st century begins, we find ourselves not only entering a new century, but a new age as well. During the Internet boom, it was sometimes referred to as the e-Age. New and different ways of doing business are revolutionizing our industries, commerce and governments. The convergence of communications and computing across the Internet is fueling this revolution. These unparalleled events are occurring throughout the world in every industry segment from the small family sized businesses all the way up to the largest of corporations. Phenomenal opportunities are available to those who can take a vision and, through creativity and innovation, develop that vision into the next mega-enterprise.

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What is enabling this revolution, providing its momentum and sustaining its rapid progress? If we were in real estate, we might say it is three things; location, location, location. However, in this new age, it is architecture, architecture, architecture! Those enterprises adopting the new rules of the 21st century and developing into the next group of mega-enterprises have or are building integrated and adaptive architectures. These bold new enterprises are not building some static, rigid new architecture, with a moat around the castle. Quite the opposite, they are building fluid, dynamic, integrated architectures capable of evolving with and supporting the corporate strategy. A fundamental requirement of the integrated architecture is that it must have the capability to evolve, change, and adapt in a predictive way. This ability, coupled with a renewed and frequently refreshed vision, provides keen insight into the 21st century. The adaptive architecture "ain't no silver bullet," but rather a "golden spike" that unites and aligns the enterprise, and allows it to operate holistically, and seamlessly.

What benefits are delivered out of the integrated enterprise architectures?

In order to understand the true priorities and needs of the business, you must conduct a serious strategic analysis of the enterprise. The data collected requires synthesis into viable information. The best way to summarize and represent the information is in a model built using a rigorous and disciplined approach. In addition, the building of integrated enterprise architectures from the customer centric perspective enables corporate leaders to view the enterprise holistically. It puts the customer first and foremost, above the internal politics and functional silos. The models illustrate the alignment and formal links between the strategy, vision and corporate objectives, with the strategic initiative roadmap. Finally, it establishes the metrics, measures, and expectations for success from this customer centric view. When the initiatives from the consequent strategic roadmap are implemented, the results provide a clear competitive advantage and improve stakeholder value.

Integrated Enterprise Architecture Definitions and Precepts

What is an integrated enterprise architecture?

Before discussing in detail the importance and benefits of integrated enterprise architectures, we need to clarify a few terms and definitions. Let us first define and agree on the general definition for an integrated enterprise architecture and follow that with some pertinent observations.

There are several good definitions of enterprise architectures.

- ✓ Enterprise architectures are like blueprints, drawings or models. (*Enterprise Architecture Planning* by Steven Spewak and Steven Hill)
- ✓ Enterprise architectures refer to an organized set of elements with clear relationships to one another, which together form a whole defined by its finality. (*Enterprise Modeling and Integration* by Francois Vernadat)
- ✓ Enterprise architectures define the style and method of design and construction that comprise the elements of a system and define the purposes and interrelationships of those elements. (By the authors)

Each of these satisfies the need for a good definition of an integrated enterprise architecture and are reasonably understood by both business and IT professionals. They indicate that bringing all parts together to create a whole unifies the enterprise. These definitions also imply precise

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alignment and connectivity, through a systematic and disciplined approach, rather than a “seat of the pants” approach. Although not indicated in the definitions, it must be understood that architectures do not illustrate flow, sequence, or timing of events, but the relationships between parts that create a whole.

IT architectures reference a business architecture, but seldom define one.

Numerous books, articles, white papers and publications refer to the integration of the IT architectures with the business architecture. One can refer to any of several texts on IT architectures, such as *Enterprise Architecture Planning* by Steven Spewak and Steven Hill, and find clear definitions of IT architectures. Your favorite Internet search engine can also find and provide you references to a multiplicity of definitions and descriptions of IT architectures as well, but searches for enterprise business architecture yield limited hits and varied references. You will not find among the references a standard or comprehensive definition, understanding, or description for a business architecture.

Sometimes the business architecture is defined or described by a functionally centric business function/process model.

When asking fellow IT associates and business people "What is a business architecture?" their answers are typically vague and nebulous, and, in our experience, no two people have ever drawn or depicted a similar graphical representation. Some start out with a corporate organization chart and make a futile attempt to use it as a vehicle to describe their interpretation of a business architecture. Some consultants start with a business function/process model and then try to draw connecting lines between the vertical functions to various horizontal processes in order to describe a cross-functional process within the business and claim this is an architecture. Using this type of model is a weak attempt to illustrate the corporate linkages from the viewpoint of a functional representation of the enterprise. The business function/process model may very well serve other purposes, but it is most inadequate in describing the real business architecture and providing a viable tool for integration with the IT architectures.

What then is an enterprise business architecture?

Let us define and agree on the general definition for an enterprise business architecture:

- ✓ "An **enterprise business architecture** defines the enterprise value streams and their relationships to all external entities and other enterprise value streams and the events that trigger instantiation. It is a definition of what the enterprise must produce to satisfy its customers, compete in a market, deal with its suppliers, sustain operations and care for its employees." It is composed of architectures, workflows and events.
- ✓ A **value stream** is an end-to-end collection of activities that creates a result for a “customer,” who may be the ultimate customer or an internal “end user” of the "value stream." The value stream has a clear goal: to satisfy or to delight the customer. (*The Great Transition* by James Martin).

Now that we have defined and understand the term “enterprise business architecture,” and are familiar with the IT architectures, we can describe the general precepts for the integration of the business and IT architectures, which lead to the integrated enterprise architecture.

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Building the business architecture around a core set of building blocks, called “value streams”, is one of the key enablers or precepts to integrating all of the architectures. The value streams contain the ordered sequence of activities that produce results from functional organizations. If an activity does not produce a desired result or contribute to a desired result, why does it exist? Once the activity's effectiveness is determined, its efficiency is analyzed next. Opportunities abound during the effectiveness and efficiency analysis. For example, choices from discontinuing the activity to moving it to the web are available for analysis, not in a stand-alone fashion, but in the context of the whole enterprise. Options for reusability surface, redundancies are identified, and other improvements emerge.

Business design and process improvement are usually a little too unfamiliar to the typical business leader. The focus on IT, the hype about the Internet, wireless technology and packaged software “bake-offs” frequently distract the business leader from an honest analysis of the business needs and a commitment to developing effective, efficient and adaptive processes. Once the business architecture is developed and placed under the auspices of the business leader, they may initiate analysis of the value streams first in terms of “what” each is producing that is of “value” to the enterprise. The business architecture provides the means by which to control process understanding, requirements, and evolution.

With properly modeled architectures and an inspired and motivated team, out of the box thinking will flourish and break-through initiatives will evolve. This is achieved by viewing the enterprise holistically through an understanding of its architectures. It creates the initial understanding of the corporate center of gravity and its potential. An achievement unmatched if only viewed through the functional organizations without a set of integrated architectures.

Characteristics of an integrated enterprise architecture in the legacy age.

Most companies have some sort of description of their enterprise architectures. However, a thorough review of them most likely will result in these findings:

- ✓ The presentation style, format, content and descriptions vary from one organization to another.
- ✓ Very few models connect to, or integrate with any other models from other organizations.
- ✓ Most are high level, abstract and do not connect to any lower level models.
- ✓ Most are out of date and not managed in a central repository.
- ✓ Few are actually used for any analysis of a corporate initiative.
- ✓ Few are usable in the development or maintenance of IT strategies and infrastructure.
- ✓ Some components, for example, the application architecture, are missing.
- ✓ None represent the whole enterprise.
- ✓ A formal approach to modeling, building and integrating enterprise architectures is nonexistent.

When it comes to strategic business planning and strategic IT planning, most existing enterprise architectures are of little or no value. Sometimes in a wild flurry of activity, there is an attempt to clean them up and get them updated in a few weeks’ time. These hastily prepared documents

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attempt to present the architectures of the enterprise in a polished format when in reality, it is broken “bits and pieces of the enterprise”, wrapped in a pretty package. This approach usually accomplishes very little, and as a result architecture maintenance or development is usually dismissed. Yet, one of the keys to successful strategic planning, engineering, and implementation is an integrated enterprise architecture that includes the business, IT, security and organization architectures.

Architectures are critical in the construction industry, not only for building the structure, but also for maintaining it for years to come. The architecture is the nexus between the homeowners’ dreams and their new home. For example, would you ever allow the building of your "dream home" by a company that did not draw up a set of blueprints for you to review? Would you ever allow the addition of a sunroom, patio, and pool with supporting landscapes without analyzing the blueprints? No one is willing to let a truck back up to an empty lot and off load the carpenters, bricklayers, plumbers, electricians, heating and cooling personnel, and let them start building the house without a blueprint! However, why do we think this approach is OK when building or maintaining a corporate enterprise?

Why is it that the CEO, the COO, the CIO and even the CFO undertake major corporate initiatives and spending, time after time with no supporting or incomplete enterprise blueprints? Perhaps it is because they are unaware that an integrated enterprise architecture approach exists and that the architecture models provide a graphical representation of the shared knowledge of the enterprise. This knowledge comes out of peoples’ heads, out of user manuals, and then gets documented in a model, which is initially posted on a wall and later on the web. Keeping the models current and accurate, gives you the holistic view of the enterprise and allows you to look across the enterprise and external to the enterprise to understand the numerous relationships between functional processes. This approach, coupled with the appropriate metrics and measures, enables you to analyze a new initiative relative to its impact on the whole enterprise, not just a few functional departments. It also enables you to understand how the initiative will impact your customers and stakeholders, and determines the true value delivered to the enterprise.

What is strategic planning?

Strategic business planning is the process of defining the mission and long-range objectives for conducting the business and developing the strategies for achieving them. Enterprise Architecture planning is the process of defining architectures for the use of information in support of the business, and the plan for implementing those architectures (*Enterprise Architecture Planning* by Steven Spewak and Steven Hill).

In strategic enterprise planning, envisioning the new and evolving enterprise is very demanding, and requires committed, dedicated and insightful executive leadership. This leadership team needs the current enterprise architecture as input into developing the future enterprise architecture. Both the current and future enterprise architectures are necessary in order to build the transition plan for evolving to the future enterprise architecture. Strategic business and enterprise architecture planning require frequent updates based on the changing nature of the markets served and the business strategy.

Questions that need answering for strategic planning:

- ✓ How does our enterprise achieve the corporate objectives?
- ✓ How do customers and suppliers view our enterprise?
- ✓ How do the stakeholders view our enterprise?
- ✓ How do we enable and support our enterprise?
- ✓ How do our employees view our enterprise?

To find answers to the planning questions using the legacy approach, you cobble together in an “ad hoc” fashion the activities of several functional organizations and departments, sometimes calling the result a cross-functional process. If you are researching a customer complaint or material shortage problem you often find one department blaming another and the symptom is treated rather than the cause. A clear understanding, purpose, and control of the cross-functional process are absent and honest process analysis is weak if it exists at all. Due to the superficiality of this approach, it is very difficult to measure performance or link the results of an organization back to the enterprise strategic objectives. Every re-organization of the enterprise requires a new “ad hoc” approach and you start all over again.

Building Integrated Enterprise Architectures in the 21st Century

What do we need to build and integrate the enterprise architectures?

Consider the dream home you’re building. It has a structural architecture, an electrical architecture, a plumbing, heating and cooling architecture, a landscape architecture, and so on. However, the dominant architecture is the structural architecture. It must meet your basic objectives of providing shelter, a certain amount of space, and some specific family living areas. It must also provide for car and yard equipment storage, phone connections, cable connections, and Internet connections. However, none of these objectives and requirements are achievable without a thorough understanding of the structural architecture. You cannot provide an Internet connection unless you know where the walls are and which walls or rooms require the hookups. Don't forget that you must also connect to the local city's communications infrastructure for Internet access. You may also have to modify the structural architecture to take better advantage of the city's infrastructure services such as water and street access.

Design is the compromise and optimization of conflicting requirements. As you can see in the previous example, all other architectures are based on the structural architecture, and must be analyzed and engineered from a holistic point of view taking all architectures into consideration. Each architecture is integrated with the others, dependent upon one another, and provides critical feedback and keen insight as to conjoined design requirements. It is impossible to design all these architectures independently and then think you can integrate them easily when the truck arrives at the empty lot to start construction.

Which architectures do we need?

Consider the business enterprise we are building or modifying. We need to identify the appropriate enterprise architectures just as we did for building our dream home.

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The integrated enterprise architecture consists of the following:

- ✓ Business Architecture
- ✓ Technology Architectures (including data/information, application, network)
- ✓ Security Architecture
- ✓ Organizational Architecture

Now that we have identified the enterprise architectures, we need to define the guidelines and requirements for integrating all of them together holistically. Then we can start the actual architecture construction. We will focus on the enterprise business architecture and its development, since the other architectures are well understood, with defined approaches for development and representation.

All architectures are logical in that each describes what is required, and none describe the physical implementation that achieves the logical requirement. This is the first rule that enables the building of adaptive architectures. It forces an understanding of the business and its opportunities and later allows the building of viable supporting physical architectures to achieve the desired results. The physical implementation is also viewed in terms of the overall enterprise architecture, holistically, not just based on the interest of the latest hot project. Since we need to consider the enterprise in a constant state of change, the choices for the physical implementation must not only meet the new architectural requirements, but also have some capability to adapt to the next architectural evolution. You are never done! You are always evolving and adapting. If you stay still, simply reinforcing the wall and dredging the moat around the castle, you will be yesterday's news!

The enterprise business architecture contains the business rules and requirements defined by the designers and implemented in the value streams. Additionally, the metrics and measures for each value stream are tied back to the corporate strategic objectives. This maintains the forged links or nexus back to the corporate strategy and keeps the whole enterprise focused. For example, getting thousands of hits on the web site is not a strategic objective. Gaining higher profit margins out of improved selling chain management is a strategic objective and the desired result. Along the way, you may also want to reduce the time it takes to fill an order and reduce inventory. This is a potential opportunity that strategic enterprise business architectures can reveal and illustrate where it might occur.

The EBA is the highest and most dominant architecture, the central plexus, and is equivalent to the structural architecture for your dream home. All other architectures can be derived out of the business architecture and must be traceable back to the business architecture. Here again, as in your dream home, each architecture requires analysis for optimization and must be viewed from the prospective of the whole enterprise. For all intents and purposes, the EBA is the true knowledge repository of the enterprise.

Although any model is an abstraction of some reality, the EBA is the most tangible representation of reality in business terms. It provides the business rules and requirements for building all other architectures. The other architectures provide an excellent feedback mechanism for additional business improvements and opportunities for building a competitive advantage.

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For example, consider the numerous business improvements and opportunities provided by the various hand-held computing devices, cell phones, and the growth of the Internet. Viewing all of the integrated enterprise architectures holistically and with feedback loops yields synergistic results for the company.

How do we build the integrated enterprise architectures?

Building and integrating all of the aforementioned enterprise architectures are a significant undertaking. You must first have a committed leadership team, shared expectations and knowledgeable personnel in order to achieve success. Next, you must take a disciplined approach that addresses at least three things:

- ✓ A way to understand enterprise complexity through decomposition.
- ✓ A method of structuring the enterprise with architectures at each level of decomposition.
- ✓ A common language to communicate and create a shared understanding across and throughout the enterprise.

Understanding complexity through decomposition.

Decomposition of the enterprise is required in order to manage its complexity. Proper decomposition with value streams built around outputs, or results, distills the complexity of the enterprise into manageable and integrated elements. It also provides well-defined requirements and business rules for each activity or component. This first step enables an evolution of the enterprise away from organizational functions and towards a component based architecture. The enterprise decomposition evolves around an output or result for a customer (or supplier), not an activity or function.

For example, the best way to decompose an airplane or a personal computer is according to its bill of materials (BOM). The same is true for an enterprise. Value streams enable you to decompose the enterprise into its bill of processes (BOP). You never decompose an entity by carving it into pieces. However, functional decomposition of the enterprise does just that, carves it into pieces. The value streams are also the building blocks of higher-level value chains such as customer relationship management (CRM) and supply chain management (SCM). This is where you architect and engineer the CRM or SCM solution, rather than cobbling it together from the functional organizations and departments.

Structure the enterprise with architectures that define relationships, dependencies and requirements.

The architectures should clearly define the relationships between all components of the enterprise through the inputs and outputs. The architectures enable the workflows initiated by the external business events. The business events, architectures and workflows are required in order to bring the models to closure and some reasonable state of finality. As the architectures are decomposed, each is balanced and leveled with the higher-level models. Then, as one starts to derive and develop another architecture, the consistency and integration is maintained between architectures via the inputs and outputs. This keeps all architectures hard wired together and ensures corporate linkages and focus. The architecture enables the workflow. For example, can you walk from one room in your home to another? Only if the architect designed and built a door! The same is true for an enterprise.

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Building enterprise models requires a very formal structure. The structure and approach are simple in nature, but they require a rigorous discipline to maintain them. However, the rigor and discipline enables you to expand your thinking and to view the enterprise holistically with a customer-centric view. The structure includes three types of enterprise models:

- ✓ **Architectures** – Graphically portray the style and method of design and construction that comprises the elements of an enterprise and defines the purpose and interrelationships of those elements. *Architectures are static models and do not illustrate flows or sequences.*
- ✓ **Workflows** – Graphically portray how inputs are transformed to outputs for the enterprise. Workflows illustrate the flow of control, delays, sequencing and which entity performs the activity. *Workflows are dynamic models that require activation by an event.*
- ✓ **Events** – Graphically portray when the enterprise must react in a preplanned way. *Events initiate (trigger) workflows in the architecture.*

These architecture, workflow and event models are required, and balanced and leveled with inputs and outputs. In order to view the enterprise holistically, all three types of models are necessary.

Most typical modeling approaches create just the workflows. Usually these workflows start at a functional level. Some start at the very bottom of a process, and a few even include the event models. Normally, the architecture models are missing, and the workflows are not balanced and leveled with the external inputs and outputs. Without the balanced and leveled external inputs and outputs, you have no way to bind and integrate the workflows with empirical certainty and consequently no nexus capability.

Communicate and create a shared understanding with a common language.

The use of a common language for modeling, decomposing, and integrating architectures is required. The more graphical and richer modeling language is preferred. Do not seek the lowest common denominator when considering modeling languages. A rich modeling language enables better communication through more precise graphical representations. It also forces the team members to listen and communicate better, since each has to articulate their concepts through the modeling language. Instead of listening to just words, arguments and opinions, each team member will seek to understand the ideas and concepts represented by the common language in the models.

The models provide the best communication medium. Really good models stand alone and do not require detailed explanations. Two people's review of the model must result in a common and shared understanding. The common language, through the syntax and semantics of its constructs, is the key enabler for integrating and deriving the architectures. It also provides the common language that binds sales, ordering, manufacturing, distribution, and IT departments together for serious process analysis and significant performance improvement.

Let's consider the concept of a common language of the business architecture for a moment. The Unified Modeling Language (UML) has evolved over the past several years as the predominant object-oriented modeling language. How do we connect the business architecture with the various IT architectures? How do we derive the IT models out of the business models? The constructs of the business architecture not only need to describe the business, but need to

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empirically translate to the first iteration of the UML. This provides the common language between the business designer and the IT designer, and the formal link for improving communications.

As the concepts and constructs of the business architecture common language evolve and mature, this translation also evolves systematically, ultimately developing software which translates the business model into an IT model. A similar event occurred years ago when data models were first utilized as manual input to code generators. Then, for example, James Martin developed Information Engineering (IE) and later software tools were developed which automated most of the translation. These early CASE (Computer Aided Software Engineering) tools were not completely successful; however, it moved our industry out of the dark ages of unstructured programming. Whether or not the same will happen between the business architectures and IT architectures is anybody's opinion, but the concepts and principals are sound.

Not only must the business architecture connect to the UML, but it must also connect to the first iteration of any packaged software configuration, for example, an ERP package or just a financial package. Once the business designer and IT designer have communicated through the business architecture, the IT designer may continue further development into any other IT domain, applying other acceptable methodologies, approaches, techniques and tools to transition from the logical models to the physical implementations.

However, these connections are not one-time events but iterative ones. Numerous opportunities for business improvement will surface from development in the downwind IT domains. These feedback loops to the business architecture result in continued creativity and additional process improvement ideas.

The Benefits to the Enterprise of Integrated Architectures

If you assume that out of the strategic planning process you have to "build something", sometimes referred as the "to be" or "future state," then one must design a logical architecture of the "new" enterprise. Since most companies already have some sort of existing enterprise architecture, you must also understand the "as is" or "current state." And, of course, the plan must include the "initiatives" to transition from one state to the other. One must assume that you build out the architectures in order to enable the daily execution of the designed processes, which in turn achieves a desired strategic result. The expected benefits are: better predictable results and results aligned with the vision and objectives of the whole enterprise. This ultimately translates into higher profits and a competitive advantage for the stakeholders.

How can you use integrated enterprise architectures?

Integrating initiatives

Just about any strategic enterprise initiative requires a thorough understanding of the integrated enterprise architectures to assess impact on present and future initiatives. New product development, e-business design, process improvement, plant expansion, mergers, acquisitions, business continuity planning, and disaster recovery, all require a keen understanding of the integrated enterprise architectures for development. Additionally, each needs an understanding of the other initiatives for proper sequencing of implementation and leveraging of resources.

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Alignment of the strategy, vision and objectives with the enterprise initiatives

Just about every company has a vision, mission, and objectives. However, the real manifestation of that vision is not found in the lobby of the corporate offices or cafeterias, but in the daily actions of the leaders and employees of the company. If the vision is real and compelling, you will see evidence of it everyday in the leaders and employees. Hard wired to the vision are the corporate objectives with their supporting metrics and measures. Additionally, the enterprise initiatives have well defined expectations for accomplishing results and positively influencing the metrics and measures of the corporate objectives. This meeting or exceeding of corporate objectives then enables the achievement of the vision.

Quite often corporate initiatives fail to complete or achieve the expected results, especially if it requires a lot of supporting IT. The reasons for this are numerous. Some run out of funding, the corporate priorities change, or the initiative's champions move on to other things. The foundations of these problems are seen in unaligned, out of sequence, and unfocused initiatives, most likely using unstructured architectures. This is the unfortunate consequence of a weak and fractured enterprise business architecture. Hard wiring the vision, objectives, initiatives, and architectures is the best failure prevention.

A focused strategic initiative roadmap

Once everyone understands and can visualize the linkage from the corporate vision through the enterprise initiatives, you can start engineering the enterprise. You build a strategic initiative roadmap, assigning the priority of initiatives based on their contributions to improving the corporate objectives (indicated by the architecture models) which, when met, achieve the vision. This holistic view of the enterprise from the perspective of the customers, suppliers, stakeholders, employees and competition is critical to implementation of the initiatives. The roadmap provides direction, understanding and insight that collectively provide the will to execute the initiatives.

Convergent engineering

It is fair to expect that all architectures (including business, technology, security, and organizational) are engineered to form a complete, operational whole and not a bunch of loose parts carried around in a bag! An operational jetliner is very different from a hangar full of all its functioning parts lying in close proximity to one another. It is also desirable to empirically or systematically derive the business requirements and software specifications from these logical architectures. This derivation must support the first iteration of the UML, and/or the initial configuration of packaged software. Somehow, it must also provide some sort of link to the legacy environment already out there. This formal approach to architectures truly enables convergent engineering, the implementation of the business design directly in software with an absolute minimum of translation or restatement.

People thinking holistically

The integration of the architectures and the alignment to the vision are conceptually easy to develop. What makes it difficult is overcoming the politics of the functional organizations and departments. Getting them to think holistically and putting the enterprise first is a very difficult task. Most people hold their allegiance and loyalty to their functional boss, assuming that their boss has the best interest of the enterprise in mind. Here lies the first opportunity to benefit from integrating the enterprise architectures. You get the entire company to understand the whole

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enterprise and how the enterprise initiatives link to the corporate objectives, which in turn link to the vision. Now, everyone is properly focused on what is important to the enterprise and can see how their contributions impact the vision.

An anecdote told by Jan Carlzon in *Moments of Truth* describes two stonecutters hewing square blocks of granite out of a mountain. Each was asked to describe their contributions. One replied wearily, "I am cutting this mountain into square blocks." The other smiled and proudly responded, "I am building a cathedral." Obviously, the first stonecutter's view of the enterprise was a simple description of a routinely performed, functional activity. The second stonecutter's view was a holistic understanding of the vision of the enterprise with a focus on results, not just activities.

Conclusion

What does it take to build these architectures?

You don't need a miracle to build integrated architectures, just a committed decision to do it, and then, get on with it! Most of the architectures discussed are well understood, but not properly formatted and integrated. Architectural development skills are learnable. In reality, it is a behavioral issue, requiring more insight, discipline and rigor rather than skill. Most of the integration and architecture skills are mechanical, capable of evolving into software. However, we don't yet have software available that does our thinking for us. That's why we need the strategy, vision, corporate objectives, and enterprise initiatives normally found in a sound strategic plan. The strategic business plan coupled with a well-defined and modeled enterprise business architecture provides the superior insight, unity of purpose and synergy for achieving break-through results.

Remember the key enabler in the 21st century, *is architecture, architecture, architecture!* It gives us a chance to get out in front of the pack and lead for a while. Instead of having a strategic plan simply focused on catching up with the competition, we cause the competition to react or catch up with our enterprise. However, when they finally catch up, we have moved ahead again, and the competition is left behind. We on the other hand, are constantly evolving, adapting and changing toward our exciting new strategy.

Today we operate in an environment more technically complex than at any other time and it is getting more complicated every day. At times we feel "out of control", awash in the daily chaos of quick fixes of problems that eventually degrade process efficiency, cloud initiative effectiveness, affect product quality, render poor customer service and ultimately wipe out profits. There are no quick fixes for these faltering enterprises! If there were, we would have already implemented them.

These quick fixes are symptomatic of bigger problems caused by poor designs, fractured architectures and weak integrations, and an inherently poor understanding of the formal links of the enterprise business architecture. We need the long-term view, a permanent fix and an adaptive design that is fully integrated. To get "in control", you must "design control" into the enterprise and not let it suffer the consequences of unaligned functional management. Either you control the enterprise as a natural extension of your vision and strategy, or the enterprise controls you through unpredictable chaotic events.

Enterprise Business Architecture: The Formal Link between Strategy and Results

However there is another view! The enterprise is not about chaos; it's about connectivity and causality, and understanding those relationships to both internal and external factors. This connectivity, causality, and understanding are found in an architecture of the business, a unifying structure which enables the execution of the strategy through its initiatives to achieve results. Without knowing this, it is fair to perceive the enterprise as chaotic and unpredictable, but it is our own responsibility to solve these problems and stop blaming the economy or some other external factors. We have to fess up to this responsibility and stop acting like a spectator at a sporting event just cheering for the home team. We have to get down into the arena, participate in, and commit to a long-term solution. We have to suppress the "quick fix" mentality, view the enterprise holistically, and develop insightful solutions that are responsive to customer demands and adaptive to the changing business climate.

However there is a conundrum. We know that no matter how many poorly planned projects we inflict on the enterprise, in most cases, it somehow seems to eventually return to a state of equilibrium in spite of the upheaval and pandemonium the projects create. Somehow, it seems to organically heal the self-inflicted wounds and recover. Why do we always leave stability to serendipity? Why don't we just skip the upheaval and pandemonium, and begin with a reasonable state of equilibrium? We can't - because most of these poorly planned projects are implemented independently and most implementers are unaware of the enterprise linkages that they are violating, fracturing, or ignoring. Instead of thrashing around in this environment of turmoil, we need to boldly stand on the threshold of a new era of structure and order, and take the steps to embrace it.

There are no guarantees of success here or hyped-up promises of glory! Only a choice between staying put in an unstructured, chaotic, inherently flawed system, or engineering your way out of this mess with formal integrated enterprise architectures, models and frameworks. It's a tough decision, one made only by visionary leaders with a commitment to creating their view of the future and understanding the opportunities for success.

The formality and discipline of the EBA may frighten some business people and others may feel it is unnecessary. After all, an architecture including the business seems "too disciplined, too engineering like and too technical for a business person!" Many still prefer the informality of loosely defined diagrams and business models presented in colorful and creative presentations. However, these are mostly useless during the life cycle of a strategic initiative as they provide little "substance beyond the show." Besides, most managers think they can "wing it," even at the risk of failure, rather than to formally design and engineer success with the enterprise business architecture. But, their days are numbered, and a new discipline is emerging with the *Enterprise Business Architecture* forging the links between strategy and results.

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