# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE OF CONTENTS</td>
<td>2</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>4</td>
</tr>
<tr>
<td>INDUSTRY CONTEXT</td>
<td>5</td>
</tr>
<tr>
<td>ENTERPRISE VALUE DISCIPLINE</td>
<td>5</td>
</tr>
<tr>
<td>PRODUCT LEADERSHIP</td>
<td>5</td>
</tr>
<tr>
<td>CUSTOMER INTIMACY</td>
<td>5</td>
</tr>
<tr>
<td>OPERATIONS EXCELLENCE</td>
<td>6</td>
</tr>
<tr>
<td>HOW ORGANIZATION LEARN</td>
<td>6</td>
</tr>
<tr>
<td>INNOVATION AND BUSINESS ARCHITECT</td>
<td>6</td>
</tr>
<tr>
<td>INTRODUCTION TO BUSINESS ARCHITECT</td>
<td>8</td>
</tr>
<tr>
<td>BUSINESS ARCHITECTURE DEFINED</td>
<td>8</td>
</tr>
<tr>
<td>PURPOSE OF THE BUSINESS ARCHITECT</td>
<td>9</td>
</tr>
<tr>
<td>BUSINESS ARCHITECTURE RESPONSIBILITIES</td>
<td>9</td>
</tr>
<tr>
<td>BUSINESS ARCHITECTURE: CURRENT STATE</td>
<td>9</td>
</tr>
<tr>
<td>ENTERPRISE ARCHITECTURE 2010</td>
<td>10</td>
</tr>
<tr>
<td>BUSINESS ARCHITECTURE TEAM PROFILE</td>
<td>12</td>
</tr>
<tr>
<td>ROLES</td>
<td>12</td>
</tr>
<tr>
<td>PRIMARY MEMBERS OF THE BUSINESS ARCHITECT TEAMS</td>
<td>12</td>
</tr>
<tr>
<td>VIRTUAL BUSINESS ARCHITECTURE ROLES</td>
<td>12</td>
</tr>
<tr>
<td>SKILLS REQUIRED</td>
<td>13</td>
</tr>
<tr>
<td>CANDIDATE PROFILE</td>
<td>13</td>
</tr>
<tr>
<td>GETTING STARTED WITH BUSINESS ARCHITECT</td>
<td>14</td>
</tr>
<tr>
<td>ADOPT SERVICES-ORIENTED ARCHITECT</td>
<td>14</td>
</tr>
<tr>
<td>BUSINESS-DRIVEN SOA PLANNING FRAMEWORK</td>
<td>15</td>
</tr>
<tr>
<td>IDENTIFYING SOA DRIVERS</td>
<td>16</td>
</tr>
<tr>
<td>ESTABLISHING SOA BASELINE</td>
<td>17</td>
</tr>
<tr>
<td>SOA REFERENCE ARCHITECTURE APPROACH</td>
<td>18</td>
</tr>
</tbody>
</table>

Date: 2/19/2008

SOA Practitioners’ Opinion on Business Architecture

Page 2 of 34
# Proven Approach for Business Architecture Blueprinting

## Developing the Business Architecture Roadmap

## Estimate Project Timeline

## Conclusion

## References
ABSTRACT

As Enterprises are starting to adopt Services-Oriented Architecture, they are currently in the process of transforming both their Business and IT organizations. In this context there has been a discussion on the topic of Business Architecture with a basic consensus that Business architecture is the link between business and technology (or IT) but there isn’t any clear definition of the roles and responsibilities of this position. Nor is there clear descriptions of the practical aspects of what exactly are the Business Architect’s activities and how should enterprises get started with this function. The objective of this paper to help clarify these points from a practitioner’s point of view as well as help organization kick-start the Business Architecture function.
INDUSTRY CONTEXT

This section briefly describes the Enterprise Value Disciplines and the need for innovation is driving enterprise to look at ways of strategically leveraging IT for competitive advantage.

ENTERPRISE VALUE DISCIPLINE

Every enterprise has its own value discipline (strategy) which could broadly be classified into three categories.

Following are short description of each of these value disciplines:

PRODUCT LEADERSHIP

The primary focus of the company is to constantly product a new state-of-the art products or services that are attractive to customers. Examples of such companies are Sony and Apple. These enterprises focus primarily on innovation and leverage IT to provide an environment that encourages innovation; both to their employees and partners. One point to note: these days majority of the innovations comes from the eco system of the enterprise, including both partners and customers – not exclusively from the employees of the company.

CUSTOMER INTIMACY

Providing the best products, services, content in the context of what an individual customer likes/prefers taking it to 1:1, if possible. Basically shifting focus from transactions to knowing the customer. Examples of such companies are Ritz Carlton and Capital One. These enterprises leverage IT to capture as much information as they can about the customer such as preferences, trends, personal, business, industry and family. They then leverage this information to provide a custom service to that individual customer.
OPERATIONS EXCELLENCE

This is where the customer gets the best total cost of the product, i.e. the cheapest product. Examples: Wal-Mart and Dell. These companies leverage IT to optimize their overall operations to squeeze out as much cost out of each product/service as possible. Unlike the other two disciplines – such companies do not focus a lot of resources on developing new products or customer intimacy. Their value proposition is that as they are cheapest – the customers will come to them. Basically targeting the mass market to meet their business objectives by increasing sales volume.

HOW ORGANIZATION LEARN

There is no such thing as a stable environment or market and organization learn based on problems they face. For example, failure to achieve its objectives results in search for alternatives in each of the enterprise disciplines (and not necessarily in their primary discipline). This search continues until a satisfactory solution is found and adopted or until aspirations are adjusted (which is typically a bad sign). This process of discovery and adaption happens throughout the organizations, even without the intent of the top management. As each organization learns and reacts to the environment – so does the competition – a process known as "Red Queen Competition". This competition tends to stimulate change, and is the primary factor that drives the continuous strategic evolution. As the organization, individual and competitions are changing one need to design a system that will shape the future – rather than attempting to predict the future and build a system base on this prediction.

INNOVATION AND BUSINESS ARCHITECTURE

The process of search for alternatives could also be termed as innovations and can be classified into three types:

- Business Model: Innovation in the structure and/or financial model of the business
- Operations: Innovation that improves the effectiveness and efficiency of core processes and functions
- Product Services/Markets: Innovations applied to products or services or "Go-to-market" activities

Enabling innovations with an enterprise requires a systematic approach and making deliberate choice. Even though the enterprise value discipline may be products (such as Apple) it does not mean it would not focus on Business Model or Operations Innovations. iTunes being a prime example – a new business model with operations innovations for delivering music to the iPods.

Another interesting example is Cisco which started with innovative products (Routers) as Products being their Enterprise Value discipline. Once they established themselves as the market leaders, Cisco focused on Operations innovations by coming up with concepts as daily close of the books as well as rapid acquiring and integrating companies. Since the dot com burst, Cisco transformed their business model (operations innovation) from 80% direct sales to 80% channel sales – all in record time. With the latest acquisitions and marketing messaging around the human networks – looks like Cisco is now attempting to go up the value chain to enter the Software As A Service (SaaS) market. Cisco would not have been able to make these transformations without having the right information strategy in place.
It is the responsibility of the Business Architect (or the Business Architecture team) to ensure that the enterprise has the right system/infrastructure in place to enable business agility.
INTRODUCTION TO BUSINESS ARCHITECTURE

Business Architecture is the bridge between the business and the technology – these days termed as business and IT alignment. The traditional approach is to have IT aligned to the business to develop and provide solutions that help business meets its objectives. However, with the rate at which technology is changing these days, there is also a need to change the business models based on technology trends. Following are a couple of example where technology advancement had forced changes to the business model:

- With the wide adoption of the Internet – Amazon.com established the eBusiness market which in turn forced the existing book sellers to also go on line. Of course, the Red Queen Competition then force Amazon to expand into other markets like Home and Garden, Movies, Music, Games, Toys, Downloads, etc. It also provided its platform to other 3rd parties such as Toys-R-Us – a combination of services that other book sellers could not do. With the recent advancement in technology – Amazon is now also providing virtualized computing platform.

- With the wide adoption of the Internet Netflix forced Blockbuster not only to close a number of their stores but also enter the on-line rental model. Of course, this created the price wars between the two market leaders and once again technology is now enabling Netflix to provide direct download to their customers. With broadband widely available in most major cities – new business models are coming up for on-line streaming of movies, music and games – not only on desktops but also on mobile devices. Once again the technology is going to change the business model and only those companies that have the flexible (agile) infrastructure will survive – the rest shall perish.

BUSINESS ARCHITECTURE DEFINED

Business Architecture services as the bridge between the business needs and enables the strategic use of information technology to achieve competitive advantage. This is not a new task or term; it has been defined previously in Enterprise Architecture frameworks such as Zachman Information Framework and The Open Group Architecture Framework (TOGAF). However this has become a much more important function with the adoption of Services-Oriented Architecture (SOA).

The goal of Business Architecture is to link the process, information, and decision/strategy models used by the business to those used by IT, to achieve alignment, agility and, of course, cost efficiencies.

It is the responsibility of all Executives and Senior Management team to ensure that there is clear and consistent Business Architecture defined across the enterprise; however it is the responsibility of the Business Architect to facilitate and bring it all together.

*Aligned IT and business result in DOUBLE the productivity gains of isolated business and IT efforts Source: London School of Economics – McKinsey survey and analysis of 100 companies in France, Germany, UK and US*
PURPOSE OF THE BUSINESS ARCHITECTURE

One of the first tasks for Enterprise Architects is to explain to executives and senior management of business on the need to develop the business architecture. Agreed, that today Enterprise Architects are responsible for developing the technology roadmap for IT organization aligned to business requirements. The enterprise architects are not responsible for creating business and deal purely with technical information.

Just like there is an architect responsible for designing and ensure that the building is built to the specification, standards and regulation compliance there is also a need within enterprise to link business strategy and other major architectures; information, applications, services, infrastructure and security. It works in multiple directions; short-range, to meet current demands, mid-term, to meet the needs over the next 6 to 12 months and long-term; to build an agile enterprise that can adapt to unanticipated demands.

Today most of IT solutions are siloed and business does also play an important role in driving IT into such an approach. As time-to-market is key for each of the business silos, IT organization are directed to invest heavily on implementing siloed applications and later expected to stitch them together. The Business Architecture function would work across all the business units to understand the need and IT investments. Based on business strategy and this information; the Business Architects shall be able to come with a recommend approach that optimized the enterprise as a whole, instead of the individual silos.

In short the Business Architecture functions enable business flexibility (agility).

BUSINESS ARCHITECTURE RESPONSIBILITIES

Business architecture defines how the business will achieve its goals at the business level. The business architecture reflects the design decisions for process, resources, rules roles and responsibilities that will maximize business value and minimize overhead.

BUSINESS ARCHITECTURE: CURRENT STATE

Today – not very many organizations have Business Architecture teams and even if they are being formed they are part of the Enterprise Architecture teams or Business silos in IT organization. In addition, the Enterprise Architecture teams are engaged only after a project has been funded, the impact of the Business Architects is blunted.

This is expected to change with the adopting of Services-Oriented Architecture where, if done right, looks all across the enterprise. Ideally, this position would be part of the “Corporate Development & Strategy Organization”. However, as they are generally not involved in the operation of the company, this position should belong in an organization that has cross-functional visibility of governance structures, business semantics, and value disciplines. In short, they would be reporting to either the CFO or the CIO (as part of the Enterprise Architecture teams). This would depend on the maturity level of the IT organizations, i.e. if IT organizations are still primarily focused on the supply side such as focused on reducing cost by off-shoring and optimizing program delivery, then the Business Architecture team would be part of the finance function. However, if the IT is mature enough to work in partnership with the business to also deal with the demand side the Business Architecture team would belong in IT (as part of the Enterprise Architecture team).

Even though the business architects are part of the Enterprise Architecture teams, business needs to involve them right from the beginning, i.e. during the strategy planning (typically the yearly/quarterly budgeting process).
One of the working groups in the SOA Consortium’s community of practice is the “EA2010” group. This group of seasoned enterprise architects from industry, government, systems integrators and vendors, has been actively discussing and defining the next generation role of enterprise architecture. Specifically, what enterprise architecture looks like – organization, practices and people – in a business-driven, service-oriented world and following are some of their comments.

The task of Business Architecture is performed in an informal manner whereas there is a formal technology architecture discipline in IT organizations; currently know as the Enterprise Architecture team. The consensus among the consortium members was that by 2010 the Enterprise Architecture team shall encompass both Business and Technology Architecture. In short, the Enterprise Architecture team shall also participate in helping define the Enterprise Strategy.

The Enterprise Architecture team that is currently focused on technology shall transform into more value generation enablement and responsible for architecting the enterprise for business agility. Following is the Business Architecture definition adopted by the Consortium members. Business architecture defines how the business will achieve its goals and strategy at the business level

- It is a definition of what the business must produce to satisfy its customers, compete in a market, deal with its suppliers, sustain operations and care for its employees
- As such the business architecture is the blueprint for operating and transforming the enterprise
The business architecture is sufficiently structured and well defined such that the architectural plans are “executable”

- The architecture is captured via modelling tools wherever possible
- The precision helps to detect inconsistencies, redundancies, risks, and so on, run simulations, and so on

The following diagram illustrates the Enterprise Architecture 2010: Domain Model.

Following are the deliverables from the Business Architecture:

- **Business Deliverables:**
  - Business Process Models, (as is & to be) includes business events, processes, roles, rules
  - Business Priorities
  - Business Vocabulary
  - Organization Structure

- **IT Deliverables:**
  - IT Strategy Refinements
  - Technology Architecture Requirements
  - IT Portfolio Requirements
BUSINESS ARCHITECTURE TEAM PROFILE

This section lists the profiles of the Business Architecture team – starting with the roles of the core team and the virtual extended team as well as the high-level skill required.

ROLES

This is not a single role, it is a combination of the Business Architecture team as well an expanded virtual team consisting of key stakeholders from all the aspects of the business and IT. This virtual team could be viewed as the business architecture Center Of Excellence – but does not mean that a new CoE needs to be created. This activity could be part of an existing Enterprise Architecture, SOA or BPM CoE.

PRIMARY MEMEBERS OF THE BUSINESS ARCHITECTURE TEAMS

- **Business Strategist:** Even though the Business Architect would not be involved in developing the business strategy the Business Architect would be consultant to the strategy makers by providing inputs and recommendations on current state of IT, technology trends and market trends

- **Governance Expert:** As each of the business silos would prefer to fund their own IT projects, the business architect will need to have the ability to define and drive the governance process of prioritizing IT projects across the enterprise. This requires both collaboration and negotiation skills.

- **Methodology and Framework specialist:** As part of the governance process, the Business Architect will need to define business architecture frameworks for Business Process Outsourcing, Services-Oriented Architecture, Software As A Service (SaaS), User Experience, BPM, acquisitions and divestures.

- **Industry specialist:** Someone with expert knowledge of the industry, the various business processes, market intelligence, market competition and information models.

- **Business Analyst:** Translate Business requirements to the IT requirements. Typically this will be at a high-level and as each project get funded – the business analyst of the project team shall be responsible for capturing the details business requirements.

- **Technology Architects:** A technology visionary who has the ability to identify the right technology to meet the business needs. In addition, someone who could identify the right tools for handling modeling, simulations, portfolio management and governance.

VIRTUAL BUSINESS ARCHITECTURE ROLES

These roles reside in the business units and may rotate through the business architecture CoE.

- **Business unit Business Architect:** The business unit domain architect responsible for coordinating and synchronizing business architecture efforts across a single business unit.

- **Financial Controller:** Responsible for managing the finance for each of the business units and would be primarily focused on the IT investments for that particular business unit.

- **Program Manager:** Program manager from the Program Management Office responsible for coordinating IT projects across the business unit and/or the enterprise
Defining the roles played by business architects within an organization is an important step in ensuring that business architecture initiatives start off and continue on the right track.

**SKILLS REQUIRED**

The Business Architect is someone who as the T-Shaped skill (as defined by IBM defined).

Business skills such as Industry knowledge, enterprise-wide view, risk management and business process. Deep IT Skills such as Coordinate and translate business requirements into IT implementations, strategic mapping and modeling, Infrastructure knowledge. Finally the aligned skills such as Governance (Corporate, IT and SOA), Business-IT Communications and decision making.

**CANDIDATE PROFILE**

Following is an ideal profile of a candidate that could potentially be a Business Architect:

- BS/MS in Computer Science of Management
- 10+/8+ years of experience either in technology or management
- Well versed with the technology trends and ability to pick the right one
- Subject matter expert in the industry of the enterprise
- Preferably someone who came up through the technology ranks
- 2+ years as a Project or Development manager
- Responsible for either head-count or project budget
- MBA is plus, especially with specialization in Corporate Strategy or Finance
- Presented and sold concept/products/ideas to executives
- Excellent communications, presentation and writing skills
- Key contributor to at least one very high-profile project within an enterprise or industry
- Skillful at negotiation and influencing strategies

A lead developer/project architect promoted as an Enterprise Architect and later managed a large strategic project to deliver a solution to the business is an ideal candidate for this team.
GETTING STARTED WITH BUSINESS ARCHITECTURE

Given where the industry is today once the decision makers understand the role of Business Architecture the next question would be – how do we get started? This section briefly describes a practical approach to getting started with Business Architecture.

ADOPT SERVICES-ORIENTED ARCHITECTURE

Every two years, IBM conducts an exhaustive CEO survey and the next report is scheduled to be published at in April 2008 at their IMPACT event.

Following are couple of interesting findings previewed by IBM.

Business have notices a 2% improvement in their revenue by focusing on IT optimization and an 8% improvement by focusing on business optimization. However, when they align both IT and Business, the impact was more than double, 20% a key reason for enterprises to focus on Business Agility. In addition, the top four areas of focus for the CEOs (in no particular order) are:

- Business Agility
- Deal with new and changing customer
- Business Model Innovation
- Services-Oriented Architecture

Today there is a lot of pressure on business to change especially with intensified global competition, escalating customer expectations and unexpected rapid market shifts. One of the best ways of dealing with these challenges is not to focus on the threats to the business – rather concentrate on the opportunities which typically outweigh the threats. To do so enterprises need to transforming organizations more systematically. This requires a combination of business and market insights with technology know how and now is the right time to adopt Services-Oriented Architecture. As Services-Oriented Architecture is an Architecture principle that enables Business Agility – the best time to establish the Business Architecture team is while adopting Services-Oriented Architecture.
One of the best ways to embark on the Services-Oriented Architecture journey is to adopt a framework and my preference would be to leverage the SOA Consortiums (http://www.soa-consortium.org) Business-Driven SOA Planning Framework.

The goal of the SOA Planning Framework by the SOA Consortium is to raise practitioner awareness on the scope and impact of business-driven SOA. This framework identifies the major business-driven SOA activities and provides guidance to plan and execute those activities. The guidance comes from SOA Consortium practitioner experience and industry practices.

The SOA Consortium members recognize there will never be one definitive business-driven SOA roadmap, or prescription to accomplish any activity. Differences in business priorities, organizations, and technology result in different practices and experiences. As such, the consortium’s goal is to provide insight to help other practitioners identify the questions they need to ask, and share potential answers, traps and real-life experiences.
A PRACTICAL APPROACH TO ADOPTING THE SOA PLANNING FRAMEWORK

Based on my experience with adopting Services-Oriented Architecture, the following diagram illustrated how I would go adopt adopting this framework.

As usual the approach – like any other Enterprise Architecture approaches is a top-down model. However, the flexibility of this model is that enterprises could start at any of the levels – preferable one of the top three levels, i.e. Business Strategy, SOA Drivers and SOA Baseline.

- The Business Strategy is always business driven and Business Architects may participate as consultant to this exercise, especially while understand the technology impacts to the Business Model Innovation Process.

- The SOA Drivers is Business Architect facilitated. Business Architects are responsible for conducting the Business Architecture CoE meetings, drive the joint Business + IT Plan and help identify SOA Opportunities within the enterprise.

- The SOA Baseline is Enterprise Architecture driven, i.e. Business Architects develop the SOA Roadmap based on the joint Business + IT plan whereas the technology architecture is the responsibility of the technology architects. The Enterprise Architecture team is overall responsible for identifying shared services, governance plans and services lifecycle (principles, approach and engineering process).

- Each of the Project managers are responsible for the execution which also includes the development of shared services.
While the Enterprise Architecture team is responsible for defining the governance the Program Management Office is actually responsible for the Governance execution across the enterprise.

Finally the LOB-IT with the assistance of IT Operations is responsible for providing measurements and monitoring feedback back to the business.

If the Business drives the adoption of Services-Oriented Architecture, the best place to start would be SOA Drivers (starting at the Business Strategy level would be ideal but the reality is that it is very unlikely to happen at the beginning) and if this is IT driven (which is currently the majority of the cases) it would start at establishing the SOA Baseline.

### IDENTIFYING SOA DRIVERS

This typically happens only when business is involved and participates in adopting Services-Oriented Architecture. This exercise is driven by the Business Architects and the best way to go about doing this is as follows:

- Partner with the business to identify the business strategy, business processes (at a high-level), and business priorities
- Perform gap analysis and identify the one that needs immediate attention
- Review the existing IT Application Portfolio and map them to one of the key business processes as well as identify redundant system that perform the same business functions
- Review the planned IT projects and reprioritize them based on enterprise priority and not on business unit priority
- Develop a short and long-term IT project roadmap (joint Business-IT Plan)
- Perform SOA Opportunity assessment – the SOA Business Plan
The above diagram illustrates the system approach of first defining the business vocabulary such as business processes and object (entities) in context of the business. The next step is to map this vocabulary to the application portfolio. For enterprises that have already implemented one of the Application portfolio team, this step is defining the business taxonomy and mapping it to the application portfolio. As the application portfolio management team is leveraged by IT to manage all the projects and report the status back to the business, this process does not change. However, there needs to be bi-directional synchronization between the Application Portfolio Management tool and the SOA Repository. This shall enable the LOB-IT to demonstrate the benefits of adopting Services-Oriented Architecture as well as help the Enterprise Architects (both the Business and Technology Architects) in activities such as Service Discovery, Service Identification, identify dependencies and perform impact analysis. Ideally, it would great to adopt these tools right from the beginning of adopting Services-Oriented Architecture.

**ESTABLISHING SOA BASELINE**

Establishing the baseline is basically developing the blueprint for the future by primarily focusing on the technology architecture. This basically includes establish the enterprise standards such as SOA Best practices and templates, SOA Reference Architecture, Shared Services Roadmap, Governance Models and Policies and also defining the Service Governance Process. It would be ideal to develop, define and map these assets in an SOA Repository.

**SOA REFERENCE ARCHITECTURE APPROACH**

One needs to understand two aspects of SOA to be able to develop the reference architecture:

- The three SOA foundation components
- Enterprise SOA maturity model

**SOA FOUNDATION**

The SOA foundation components are illustrated in the figure below.
BUSINESS ARCHITECTURE

Business architecture describes the business strategy, objectives, priorities, and processes to be supported by the SOA. An SOA is only successful if it delivers on the business architecture. Reuse of business processes provides higher ROI than the potential reuse of infrastructure or data components.

Some of the best practices for developing the business architecture include:

- Review the current system specification and the underlying technology
- Map these to the business strategy to identify gaps
- Review the horizontal (business processes) and vertical (role-based view) requirements
- Prioritize the application (services) portfolio to provide these capabilities
- Standardize the user experience across applications
- Define business policies on key aspects such as application and data access and regulatory compliance

Additional reference: Developing a Business Architecture View (TOGAF)

INFRASTRUCTURE ARCHITECTURE

This is the engine that enables SOA. It should address all the aspects of the scalable infrastructure from networks, enterprise servers, data centers, and firewalls, to application infrastructure, security, monitoring, and middleware. The architecture team is responsible for identifying the infrastructure components—the architecture building blocks—required to provide the business capability.
The above diagram is an example of the architecture building blocks required to provide the business capability with the primary focus being business process. At the same time, the infrastructure architecture also needs to include role-based portal requirements.

Infrastructure needs to combine architecture building blocks and role-based portals in order to enable:

- High reuse of common services
- Reuse of infrastructure and foundational components
- Reduction in time needed to develop new capabilities.

<table>
<thead>
<tr>
<th>Infrastructure Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom application frameworks</td>
<td>Common components required for developing custom applications</td>
</tr>
<tr>
<td>Data services</td>
<td></td>
</tr>
<tr>
<td>Logging services</td>
<td></td>
</tr>
<tr>
<td>Exception handling</td>
<td></td>
</tr>
<tr>
<td>Audit service</td>
<td></td>
</tr>
<tr>
<td>Search framework</td>
<td></td>
</tr>
<tr>
<td>Notification framework</td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td></td>
</tr>
<tr>
<td>Authentication</td>
<td></td>
</tr>
<tr>
<td>Authorization</td>
<td></td>
</tr>
<tr>
<td>Single-Sign-On (SSO)</td>
<td></td>
</tr>
<tr>
<td>Delegated administration</td>
<td></td>
</tr>
<tr>
<td>Shared data services</td>
<td>Data services to support SOA</td>
</tr>
<tr>
<td>Master data management</td>
<td></td>
</tr>
<tr>
<td>Data profiling</td>
<td></td>
</tr>
<tr>
<td>Data quality service</td>
<td></td>
</tr>
<tr>
<td>Data matching</td>
<td></td>
</tr>
<tr>
<td>Data validation</td>
<td></td>
</tr>
<tr>
<td>Data modeling</td>
<td></td>
</tr>
<tr>
<td>Analytic services</td>
<td></td>
</tr>
<tr>
<td>Portal services</td>
<td>Portal services for consistent user interaction and ability to leverage WRSP</td>
</tr>
<tr>
<td>Common look and feel</td>
<td></td>
</tr>
</tbody>
</table>

Date: 2/19/2008  SOA Practitioners’ Opinion on Business Architecture  Page 20 of 34
INFORMATION ARCHITECTURE

Information architecture models key concepts and events for a given business process. The business concepts represent any business entities that need to be exchanged by the processes or applications that support the enterprise.

Information modeling creates canonical models described by XML schemas. Canonical models are very crisp definitions of the business concept attributes, including attribute relationships, value enumerations, value patterns, sequencing of the attributes on the XML document, and whether an attribute is mandatory. SOA uses canonical models to represent both the request and response documents traded by the service and also the content payload that is returned to a consumer.

Canonical models that are exchanged by a business application are typically business concepts. For example, “Candidate Product List” may be returned in response to a product catalog search. Canonical models that are sent out or published by a business process are typically business events. For example, “Purchase Order Approval” business event may be published by the Supply Chain Management business process and will need to be subscribed to by the supplier.

Another aspect of information architecture is the definition of key performance indicators (KPIs) that capture business-level information. KPIs help an organization define and measure progress toward organizational goals. KPIs are abstractions of information that report value extracted from a business process.
ENTERPRISE SOA MATURITY MODEL

The SOA maturity model helps enterprises develop a roadmap to achieve their target state.

The above diagram illustrates the stages of the enterprise SOA maturity model.

WEB APPLICATION DEVELOPMENT STAGE

At this stage, teams focus on providing rich client and browser-based business solutions to both internal and external users. They might choose to roll out web-enabled CRM, ERP, or custom applications that support connected and occasionally disconnected operations. In addition, IT organizations typically deploy enterprise-based solutions and services such as content management, search, instant messaging, blogs, Wikis, discussion forums, and white boards.

BUSINESS REQUIREMENTS

Typically most enterprises would have already deployed external web sites as well as multiple internal web sites and applications to support the diverse needs of each of the business units. The first step is to standardize, share, and integrate these siloed solutions through an infrastructure that provides a common look and feel. This makes it easier for customers, partners, and employees to find the information they are seeking.

During this phase, the team should focus on:

- Unifying user experience on the external site, making it easy for potential users, partners, customers, and analysts to find information they need
- Standardizing the look and feel across all sites (internal and external) as well as across processes and procedures for publishing content
- Creating one my<company name> such as http://my.company.com, site for all employees, contractors, partners, customers to personalize services and content
• Providing secure access to confidential information for all internal and external sites
• Providing a highly reliable, available, and scalable environment
• Enabling the site operations with AJAX to increase performance and user experience.

KEY CHALLENGES
The key challenges for this phase include development of:

• Application support escalation path
• Support for numerous parallel activities
• Leadership and technical quality of team
• Physical environment for development through production, with release management processes and skilled staff resources
• Dedicated production support processes and staffing
• Hosting.

EXIT CRITERIA
The team can consider this phase complete when:

• External web site is up and running
• Portal front end has been developed for one or more packaged applications
• One or more custom applications is accessible through the portal site
• Most enterprise services have been deployed
• Business users can request information from multiple applications
• Establishment is complete for the program management office (PMO) and and LOB governance model for deploying application portals
• Business has confidence in delivery timeline and consistently approaches the program office for all major initiatives.

SUCCESS FACTORS
This phase is successful if:

• Business involvement at LOB level is high
• Sponsorship/executive oversight has been established for all composite applications
• Web-based applications can be rapidly developed and delivered
• Project management is in place, and the team has leadership and a sense of urgency and direction
• Processes have been standardized across the LOB for development, deployment, and status reporting
• The team has developed identified and created experienced resources.

DEVELOP COMPOSITE APPLICATIONS
Composite applications aggregate and provide information and data from a variety of sources and channels, and make them available to internal and external users as appropriate. Enterprise 2.0 services can provide appropriate levels of SLA.
BUSINESS REQUIREMENTS

The business requirement is for IT to adapt to changing business needs. Several business units may approach IT to develop custom applications, enhance their own branding, increase productivity, or provide additional information to their customers, partners, or employees.

Business requirements may include:

- Branding and exposing multiple applications through the portal
- Accessibility of information from multiple applications
- A web-based desktop for users
- Personalized service based on roles and responsibility of the user
- A single standardized look and feel, which can reduce user training requirements
- Reduced maintenance costs from standardizing on one platform
- Reduced operations and support cost, to enable IT to deploy scarce resources for new functionality.

KEY CHALLENGES

The key challenges for this phase include development of:

- Application support escalation path for shared services
- Support for numerous parallel activities across multiple LOBs
- Governance for shared services
- Leadership and technical quality of team
- Physical environment for development through production, with release management processes and skilled staff resources
- Dedicated production support processes and staffing
- Hosting.

EXIT CRITERIA

This phase is complete when:

- A Program Management Office (PMO) has been created that spans multiple LOBs, and an enterprise-wide governance model for deploying shared services has been established
- Business has confidence in delivery timelines, and uses the program office for all major initiatives
- Multiple deployed application portals leverage the SOA foundation
- Business units debate integration timeframes for applications or data.

SUCCESS FACTORS

This phase can be considered a success when:

- Business involvement and sponsorship, including executive oversight, is in place for all composite applications
- The team has developed a rapid development and delivery approach
- Project management has developed leadership, a sense of urgency, and direction
- Processes for development, deployment, and status reporting have been standardized across the enterprise for shared services
- The company has developed experienced resources in agile (parallel development) methodology.
AUTOMATE BUSINESS PROCESSES

This is the stage where the applications, data, and infrastructure help users to perform their roles effectively by providing the right information at the right time. At this stage, the enterprise can start achieving higher ROI by consolidating multiple business systems into a single system. Business organizations should now be ready to abandon their point solutions and transition to the target state of end-to-end business process management.

BUSINESS REQUIREMENTS

The basic requirements for this phase are as follows:

- Business is interested in standardizing the business process across the enterprise
- Infrastructure is consolidated on standards-based technology, reducing costs
- Standardized business processes are used globally, but allow for some localization

KEY CHALLENGES

The key challenges for this phase include:

- Accomplishing business and IT transformation
- Establishing appropriate governance and organization models
- Implementing packaged applications for perceived short-term gain.

SUCCESS FACTORS

This phase is successful when:

- Business involvement and sponsorship and executive oversight enable both business and IT transformation
- A dedicated team focuses on business processes
- Business process is the primary focus for the enterprise
- Loosely coupled business services are assembled to automate business processes and can be recombined to provide new business functionality.
BUSINESS ARCHITECTURE GOVERNANCE

All Architecture Governance processes are similar and the best approach would be to adopt the SOA Governance Process.

SOA Governance Model

Following are the various types of governance models:

- **Corporate Governance**: A framework for evaluating risks, establishing business policy, defining business controls and managing through to outcome.

- **IT Governance**: Increase business value with IT, minimize risk to the business, align organizationally on IT investments

- **Enterprise Architecture Governance**: Framework for leveraging the right technology approach to solve business problems

- **Services-Oriented Architecture Governance**: Manage the component development process to enable SLA-based contracts between publishers and subscribers.

Governance Models address:

- **What** decisions must be made for effective management

- **Who** should make these decisions

- **How** will these decisions be made and monitored

In case where enterprise have not yet adopted Services-Oriented Architecture – the best place for handling the Business Architecture Governance would be as part of the Enterprise Architecture Governance Process.
Following are the various groups that make up the Enterprise Architecture Governance Process:

<table>
<thead>
<tr>
<th>Groups</th>
<th>Goals</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executives</td>
<td>Review and approve architecture investments based on business goals</td>
<td>Enterprise Business Objectives</td>
<td>IT Business Objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enterprise Architecture trends and needs</td>
<td>Enterprise Architecture Direction</td>
</tr>
<tr>
<td>Architecture Steering Committee</td>
<td>Guide Enterprise / Project Architecture based on business objectives</td>
<td>Business objectives</td>
<td>Architecture Standards (approval)</td>
</tr>
<tr>
<td></td>
<td>Determine product organization / funding structure in line with</td>
<td>As-Is Architecture and systems</td>
<td>Architecture initiative definitions</td>
</tr>
<tr>
<td></td>
<td>architecture direction</td>
<td>Project Proposals</td>
<td>Project definitions and funding</td>
</tr>
<tr>
<td></td>
<td>Ensure Governance Architecture assignment to specific projects</td>
<td>Architecture</td>
<td>Project Architecture assignments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data Models</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SLAs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KPIs, etc.</td>
<td></td>
</tr>
<tr>
<td>Architecture Review Board</td>
<td>Determine Architecture standards</td>
<td>Business objectives</td>
<td>Project Architecture approval</td>
</tr>
<tr>
<td></td>
<td>Ensure project compliance with existing standards</td>
<td>Architecture standards</td>
<td>Corrective actions</td>
</tr>
<tr>
<td></td>
<td>Exception approval</td>
<td>Project deliverables</td>
<td>New requirements for architecture components</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Network and Infrastructure Design and estimates</td>
<td></td>
</tr>
<tr>
<td>Enterprise Working Groups</td>
<td>Execute a specific architecture design / deployment task over a</td>
<td>Business needs and environment changes</td>
<td>Project plan including funding requirements</td>
</tr>
<tr>
<td></td>
<td>limited time span</td>
<td>Architecture component / standard need identification</td>
<td>Architecture components design and development (definition)</td>
</tr>
</tbody>
</table>

The above table shows that the Enterprise Architecture Governance Process is very similar to the SOA Governance Model. The next task is to identify the members and their roles in each of these teams.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executives</td>
<td>CIO – Interfaces with the Executives</td>
</tr>
<tr>
<td></td>
<td>Enterprise Architecture team (Business Architects) to provide input for decision making</td>
</tr>
<tr>
<td>Architecture Steering Committee</td>
<td>Chair: CIO or Head of EA team</td>
</tr>
<tr>
<td></td>
<td>Architecture: A small group of core EA team</td>
</tr>
<tr>
<td></td>
<td>Members: Business Operations, LOB-IT and IT Operations leaders</td>
</tr>
<tr>
<td></td>
<td>Business Architecture will provide members with supporting information for decisions on specific projects</td>
</tr>
<tr>
<td>Architecture Review Board</td>
<td>Chair: Head of EA team</td>
</tr>
<tr>
<td></td>
<td>Core Members: Enterprise (Technical) Architects</td>
</tr>
<tr>
<td></td>
<td>Optional Invitees: IT Operations</td>
</tr>
<tr>
<td></td>
<td>Project teams responsible for presenting to the ARB</td>
</tr>
<tr>
<td>Enterprise Working Groups</td>
<td>Staffed on a case-by-case basis</td>
</tr>
</tbody>
</table>

In this case, the Business Architecture governance process shall be part of the Enterprise Architecture governance process.
ENTERPRISE ARCHITECTURE ORGANIZATION STRUCTURE

Following is a short summary on the ideal organization structure of the Enterprise Architecture teams. The Enterprise architecture team should be reporting to the CIO and consists of the following 3 teams.

- **Strategy and Governance**: Responsible for facilitating the development of the IT strategy and governance.
- **Business Architecture**: Responsible for enabling business agility by aligning business and technology
- **Technology Architecture**: Responsible for the overall technology strategy and ensuring that there is a consistent architecture across the enterprise

STRATEGY AND GOVERNANCE

RESPONSIBILITIES

- Establish IT Governance
- Facilitate Architecture Review Board
- Facilitate periodic refresh of the Architecture Blueprint
- Architecture Metrics and Communications
- Facilitate Technology/Solution Procurement

PROFILES

- **Strategy Expert** (profile: ability to participating in defining business strategy based on technology trends)
- **Program Manager** (profile: facilitate activities across the organizations)
- **Governance Expert** (profile: ability to develop various levels of governance to ensure that decisions are based on facts and not politics or emotions)
- **Financial Analyst** (profile: ability to capture all the metrics and distil them to readable form for the leadership team)
BUSINESS ARCHITECTURE

RESPONSIBILITIES

- Participate in Business Strategy discussions
- Identify and model business processes
- Facilitate prioritization of IT projects across the enterprise with business
- Translate business needs into IT solutions / projects
- Partner with business to define the business semantics (vocabulary in context of the business)
- Review and map IT application portfolio to business processes
- Identify gaps and propose alternatives to business
- Identify target shared and specific business services
- Develop frameworks such as Business Process Outsourcing, off-shoring development, solution support, business feedback and solutions procurement process

PROFILES

- Business Architect (profile: technology architects with excellent business domain knowledge)
- User Experience specialist (profile: business analyst specializing in modelling user experience – portal simulation)
- Solutions Architects (profile: projects architects who shall be assigned to strategic IT projects)
- Application Architects (profile: application architects who understand both the technology and business context of the packaged applications)
- Information Architect (profile: information architects who can model the enterprise information model to meet the business needs)
- Modelling Expert (profile: business analyst specialized in using the modelling and simulation tools, especially for BPM)
TECHNOLOGY ARCHITECTURE

RESPONSIBILITIES

• Ensure consistent technology architecture across the enterprise
• Develop and communicate out the technology reference architecture
• Identify technology and estimate effort to develop shared and specific business services
• Provide technology guidance to the solutions project teams
• Develop technology frameworks such as solution procurement, offshore development, service engineering process and IT operations policies

PROFILES

• Information Architect (profile: expertise in various technologies such as ERD tools, ETL, Business Intelligence, Master data management, meta-data management and distributed databases)
• Operations Architect (profile: specialized in solutions deployment, configuration, monitoring, management, load balances, servers, disaster recover and all environments from solution development to deployment)
• Network Architect (profile: certified in designing various networks across the enterprise – includes but not limited to office environments, virtual offices, network zones, LANs, WANs, WiFi and Cellular)
• Integration Architect (profile: familiar with all integration patterns using Enterprise Service Bus, Enterprise Application Integration, Extract Transform Load and data warehouse)
• Portal Architect (profile: ability to design all the user interaction components for transaction systems, mash-ups, mobile devices and voice interface)
• Security Architect (profile: develop the overall security architecture, vision and strategy. Includes security solutions/technology for applications as well as infrastructure security such as firewalls, intrusion detection, denial of attacks, VPN and Wi-Fi)
• Application Architects (profile: specialized in installing, configuring, tuning and all the other internal technology aspects of the packaged application)
• Collaboration Architect (profile: expertise in collaboration technologies such as workspace, knowledge management, Unified Messaging, multi-media conferencing, Instant Messaging and other collaboration techniques)
PROVEN APPROACH FOR BUSINESS ARCHITECTURE BLUEPRINTING

The following section briefly describes the approach to blueprinting the enterprise. This approach is independent of whether it is for Enterprise Architecture, Services-Oriented Architecture or Business Architecture – only the context would change but the approach would be the same.

DEVELOPING THE BUSINESS ARCHITECTURE ROADMAP

The traditional approach is the best way to develop the Business Architecture Roadmap.

- Review the current state from all aspects (Business Context, Applications, Technology, Organization and Funding)
- Develop the Future Vision (deal target state for the enterprise)
- Develop and actionable roadmap consisting of short-term, mid-term and long-term roadmap
ESTIMATE PROJECT TIMELINE

Following is a proven estimate for developing the Business Architecture Roadmap.

Independent of the size of the organization the recommendation is to complete developing the roadmap in approximately 8 weeks (elapse time could be a bit longer) so that:

- It does not look like an ivory tower effort
- Matches very well with the yearly budgetting process (which takes on an average 8 to 12 weeks)
- Complete the roadmap in time to matchup with the finalization of the budget

The Finalization Transition Plan is intentionally left out the project estimate because the Business Architects would provide this information to the executives to make a decision. The transition plan shall be based on the feedback and approval from the executive team. Based on whether the enterprise has an Governance model in place, the transition plan should include two additional work streams of developing and implementing the Governance Process (60-90 days) and Skills assessment.
CONCLUSION

Business Architect is a very important activity; especially for enterprise are under tremendous competitive pressures from both globalization and technology changes. This document is based on my own experience, discussion with my peers (especially at the SOA Consortium) and reading any literature I could get hold off. Even thought the Business Architecture is now the primary focus of the enterprise the frameworks to develop and execute the Business Architecture are proven Enterprise Architecture approach. The two most critical factors that shall determine the outcome of Business Architecture are:

- Executive Support to this effort
- Identifying the people with the right skills to lead this effort

Please do feel free to send me your feedback and comments at info@soablueprint.com.
REFERENCES

1. Expanding the Innovation Horizon – Global CEO Study 2006. IBM
2. Business Architecture Work stream – SOA Consortium
3. IT needs SOA Skill – Presentation by Sandy Carter, VP SOA & WebSphere, Strategy, Channels and Marketing at SOA Consortium (Dec 2007)
6. Adapted from US GSA architecture, and from Ralph Whittle, Enterprise Business Architecture: The Formal Link between Strategy and Results
7. Adapted from the Introduction to SOA Governance (BEA Systems) and SOA Governance Model (The Open Group)