An inspired! Approach to Business Architecture

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Scope of Business Architecture

The term business architecture has been much abused in popular use and recent literature. Within IT-oriented Enterprise Architecture methods, such as TOGAF, IAF and others, it has come to mean “the business stuff that IT needs to know about in order to do Enterprise IT Architecture”. This normally includes, for example, organization structure, business processes, business goals and business information requirements. It may include stakeholders, roles, responsibilities and capabilities. There is usually extremely little coverage of anything of a soft nature e.g. culture, ethos... or of issues in the context of the enterprise, such as competitors, industry trends, technology trends, legislation, external threats, customers and markets etc. There is usually very little coverage of products and services offered, channels through which we reach our markets and financial issues, constraints and opportunities.

Our definition of business architecture is much broader. We see it as:

*The design of a desirable future state of the enterprise, including the components, relationships and arrangement of these to achieve business goals*

Looked at in this way, business architecture is not about providing IT with inputs to the “Enterprise Architecture” method or process - it really is about designing the future of the organization. It is thus overlapping with strategy. Traditional strategy practices, though, are often blinkered - e.g. most business planning approaches focus primarily on financial aspects, products and marketing.

We believe that all important dimensions need to be considered in an holistic and integrated way, with Business Architecture informing all other architectures and driving the primary change within the organization. It is a two way street, though, and business architecture also needs to be influenced by context, available technologies, product and service possibilities and exciting new organizational forms and business models.
Difficulties with a “method” for business architecture

Industry is beloved of “best practice” or cook book approaches that try to endow practitioners (often without the requisite personal experience) with competence in carrying out architecture development or planning. This can work to a degree where the goal is to enhance communication between disparate stakeholders and to provide a lingua franca and a safety net, ensuring that at least the basics are considered. It is a fraught approach when dealing with something of the scale of business architecture - there are so many dimensions that form part of a comprehensive future business design and so many different starting points / competencies / maturity levels as well as a plethora of goals in undertaking business architecture work, that it is almost impossible to have “a” business architecture method.

Techniques and Deliverables

Our view is that we need a variety of techniques and deliverables to assist us in doing business architecture work. From the available techniques and deliverables, we will then select those that are useful and achievable in the given situation.

There are many perspectives that we need to consider, including:

- **Motivation**: Drivers, Goals, Objectives, Threats, Opportunities
- **Products and Services**: What do we deliver / produce / provide to our clients
- **Brand**: What is our Brand? How valuable and trusted is it? How can it be enhanced? Do we need to create new Brand(s)?
- **Channels**: How do we reach our Clients and Markets?
- **Collaboration**: Who do we work with to achieve our results?
- **Legal**: What are the legal constraints and requirements under which we operate
• **Risk and Governance**: What Risks do we face? What Governance models are we required to implement? What reporting do we have to do? What are the requirements around security, privacy, transparency?

• **Social**: What is our role in society? How do we contribute? What are the trends that affect our future?

• **Resources**: What is available? What are the future scenarios for Resource types and availability?

• **Business Model**: How should we be structured to best achieve our objectives in the longer term?

• **Technology**: What do we use and what will be available? How can we exploit technology to our advantage?

• **Ethical**: What are our beliefs and principles about how we should operate? What will be sustainable for us, society and the environment in the long term?

• **Organization Model**: What is the best structure for the Organization, its components and its relationships to partners and other stakeholders?

• **Timing and Events**: What are the key cycles we need to be aware of? What are the events that require us to respond and who are the relevant Stakeholders concerned? What role do they play? What do they contribute and expect?

• **Information**: What information do we need for operations; for performance monitoring and improvement; for strategic decision making?

• **Scenarios**: How are things likely to pan out? What will an appropriate strategy be in each scenario? Are there things that we can do that play well in all scenarios?

• **Planning Horizon**: What time period are we planning for? What interim capability delivery points will we target? In fast moving, low capital industries, this might be measured in months, while in mature capital industries (e.g. resources and energy) it may be decades.

Any particular business architecture / strategic planning exercise or project may involve any combination of subsets of the above. There are also competing approaches to business strategy, including the more conventional views (e.g. Porter) and more recent and different views (e.g. Blue Ocean Strategy). A key challenge is to perform the required analysis in each area of concern, but also to integrate the analyses and results into a coherent whole. The analysis may take place at different points in time and under different projects. A powerful way to achieve this integration is to have a common underlying conceptual model and associated agreed terminology.

**Role of a Unifying Meta Model**

A model is a representation (usually simplified in some way) that shows essential characteristics of something in the real world (or which we want to create in the real world). Thus a model might show that we sell product “Telephone System” to the client segment “Small Business Owners” in the geographical market “Western Europe”.
A meta model abstracts a model up a level so that we identify the concepts involved and their relationships, rather than the specific objects or items in the model. For the above model, the meta model would include the concepts: Product, Client Segment and Geographic Market and the relationships: Product is sold to Client Segment; Product is sold in Geographic Market. We might include the concept Sale related to Product, Client Segment and Geographic Market.

The meta model thus captures the kinds of things that we are interested in, the legal relationships between them, and the properties we want to record or know about for each. E.g. for Client Segment, we might want to know the population and average age; for the Product, we might want to know the average price in Euros and the months since product introduction.

An agreed meta model is a great way to achieve integration between various aspects. Product managers could populate the Product details and relate products to Geographic Markets where they are sold. The Regional Managers could define the Geographic Markets and provide their characteristics. The Marketing people could populate the Client Segments and relate them to Products they buy, etc.

The key here is to agree the meta model. We can then populate the contents of models conformant with the meta model at any time, starting anywhere, as and when we have the information or it is useful to perform the analysis. With an agreed meta model, we also have a shared vocabulary, so that when we refer to things within the different specialisations, we are talking about the same things with a shared understanding. This is sometimes called a business ontology.
Ideally, the meta model and the models should be held in a repository, where they can be captured, validated, maintained, analysed, shared and reused in further analysis work. Reuse is facilitated by having the common meta model and trying to relate existing things before creating new ones. E.g. If I define a new Product, I can simply relate it to all the existing Client Segments to which it should appeal. If there are new Client Segments being targeted, I could add these too.

**Models, Model Types and Representations**

We have seen how a shared meta model supports coordination, reuse and sharing. We also have to consider the best representation or form of presentation for different stakeholders and target audiences. A Chief Financial Officer is used to dealing with figures, spreadsheets and graphs. This might be the best representation to use for models he/she will deal with. A Business Intelligence officer might relate best to graphical conceptual data models. A Process Owner might want to see process flow diagrams. A CEO might want to see a report of how the complement of different staff types will change over time. A Programme Manager might want to see a milestone chart of key delivery points in several streams of activity.

The key thing is to consider the content (what the role requires the person to see, know or visualize); the orientation or most comfortable representation (e.g. list, report, spreadsheet, matrix, diagram, visualization) that is best for the stakeholder and the mode of obtaining the information: e.g. regular report; ad hoc query; diagram editing; dynamic visualization etc.

To support the above, we need mappings between the meta model, the model, the logical model type and the representation. The latter may also be adapted for the medium of delivery (e.g. Paper, Web Interface, iPad/tablet).

*Figure 4 - Mapping of objects, models, model types & representations*
Dynamic Methods Using the Method Model

Many years ago, we developed a method management model (M$^3$) which supports the modeling, management and evolution of methods and techniques within organizations. This has dimensions of Products/Deliverables (what should be produced); Projects/Tasks (what work is needed to produce the required outputs) and Resources (roles/people, skills, tools, other resources) required to produce the results. Each of these facets has a decomposition:

- Projects break down to tasks (as you would have for a project work breakdown structure)
- Products break down to deliverables from which they are compiled
- Resources break down to categories and finally actual resources to be allocated
- The three facets are also inter-related:
  - Products are related to the Tasks required to produce them
  - Tasks are related to the Resources required to perform them
  - Tasks are also related to skills and applicable techniques

The method model is implemented at two levels:

- The first level is concerned with kinds of Projects, kinds of Deliverables, kinds of Tasks, kinds of Resources etc. (so it is effectively a meta model)
- The second level is concerned with actual Projects, Deliverables, Tasks, Resources etc. as they will be applied in an actual project. (so it is effectively a model)

In the Product and Task facets there are also dependencies. For Products this relates Products to those which are required as inputs for their production. For Tasks, it relates them to those required as prerequisites before the given task can be performed. This is often derived from the Product dependencies.

OK, so why bother with all of this? Well, earlier we said it is almost impossible to have “a” Business Architecture method, and that the approach would have to be tailored for each situation. The above models provide support (even automated!) for such tailoring. By selecting the Products that we need from a given exercise, we can automatically determine:

![Diagram of the M$^3$ Model]

**Figure 5 - One level of the M$^3$ Model**

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• What sub and input products are required  
• What tasks, subtasks and prerequisite tasks are required to produce the above  
• What resources are required to perform the tasks above  
• What techniques and skills are useful or required in performing the tasks  

Thus, we can effectively generate a tailored project plan for each situation. Doing this against a consistent method model and meta model will ensure that any time we do the same thing we achieve consistency. Also, by having the shared meta model underpinning the analysis work and deliverables we ensure that we get maximum reuse and that we can integrate all the results across whatever dimensions.

**Use of Industry Models**

A great deal of work has been invested in various industries/domains to develop models germane to their specific domain. These include:

• FrameworkX in the Telecommunications industry, which provides process, data, service and functional models  
• ARTS process models in the Retail industry  
• Insurance Application Architecture (IAA) from IBM which addresses the assurance / insurance industry  
• HL7 process and data models in the Health Care industry  
• etc.

The use of these models as a starting point, or as a safety checklist or to spur conceptual thinking in development of business architectures can result in higher quality models and great resource and time savings. The models can be preloaded into the unifying meta model and serve as a straw man for the organization’s own models. Alternately, conforming to these models at all organizational interface points can greatly facilitate agility and flexibility in how we collaborate with partners. Further, using recognised models where suitable can ease the adoption of industry solutions (e.g. ERP or Telecommunications Billing) based upon these models thereby enhancing integration in business systems and operations.

**Support for Implementation**

Ideally, the meta model, the models and the methods information should be managed in a shared and secure repository supporting collaboration by all concerned parties. Inspired has provided such an environment, known as Enterprise Value Architect Netmodeler (EVA) for many years. It is a server based, meta model driven repository providing web browser, graphical modeling and programmatic interfaces to support all of the above concepts.

Similar results could be achieved with other toolsets, provided that a shared comprehensive meta model is implementable in the tool(s) and that the method adaptation can be supported by suitable customisation and tool APIs.

We provide our integrated meta model and methods management model as part of our toolset. It is also available in an industry standard form (XML and XML schemas) as a separate product to assist implementation in other toolsets and environments.
Meta Model

Since Business Architecture is typically pursued by fairly mature and advanced organizations which are also likely to have some Enterprise Architecture activity, often driven out of Information Technology, we have tried to accommodate the industry leading standards into our models, so that we have maximum congruence with industry understanding of the concepts, use consistent terminology and can leverage existing training and skills to best effect. The dominant EA method in use today is TOGAF, from the Open Group, currently at release 9.1. The leading standard for architectural model representation in graphical form is Archimate, also from the Open Group, now at Release 2. These are not comprehensive for our purposes, but there is a large overlap in concepts.

Figure 6 - Development of the comprehensive meta model

To leverage industry knowledge and common understanding, we took Archimate as a core, since it had the better defined meta model compared to TOGAF. We cleaned up a few confusing concepts there, then analysed what was missing to fully support TOGAF. We added the concepts that would be required. Next we looked at our own comprehensive EA, Business Architecture, Methods Management and Capability Management models which we have built over the past two decades. We added the concepts necessary to fully
support our concept of Business Architecture as defined above and those necessary to manage methods, integrate with programme management and manage architecture capability. Thus, what we now have is a fully integrated, consistent, comprehensive meta model covering all the necessary concepts and relationships to address:

- Business Architecture
- Enterprise Architecture (including Process, Applications, Information, Technology)
- Requirements Management
- Programme Management
- Methods Management
- Risk Management

Figure 7 - The concepts included in the meta model related to Business Architecture (the oval represents the organization boundary)

**Techniques and Deliverables**

Over the past decade, we have adopted, defined and evolved powerful techniques and deliverables to support the various analyses required in support of Business Architecture. These have been mapped to our meta model described above and defined in model types and representations supported in our tooling. The techniques and deliverables are taught in a comprehensive four day intensive course which we have developed over the last two years and which has been introduced to the market to general acclaim. The techniques and deliverables include:

- Business Operating Models
- Stakeholder Value Contribution
- Maturity Analysis
- SWOT
- Drivers, Goals, Objectives
- Vision Development
Skills

Real business architecture requires a broad range of skills and abilities. These include:

- **Strong conceptual abilities**
  to understand the wide range of concepts involved, their relationship and the impacts of change across the business

- **Modeling ability** (especially abstraction)
  General ability to model and abstract using various techniques including decomposition, abstraction, synthesis, analysis, gap analysis etc.

- **Soft skills** (communication, facilitation, empathy)

- **Domain knowledge**
  of the industry in which the organization operates is essential. This is both to understand the real issues, industry trends and to have credibility with senior business executives

- **Experience**
  There is no substitute for experience. It is very doubtful that youngsters, on their own, prepared only with theoretical knowledge would perform well at the subtle and complex task of business architecture. Of course, as part of a team with a few grey-beards they bring new perspectives, innovation, enthusiasm and energy, which are also invaluable

Training

We have a number of training courses which support the approach we have described and the development of the necessary skills. Courses typically include principle based training (which delegates can adapt to specific methods, tools and techniques) as well as rich case studies and practical assignments performed in teams. These include:

- **Techniques and Deliverables of Business Architecture**
  Our comprehensive and intensive four day course for business architects.

- **Practical TOGAF Certification Courses**
  A three day Foundation level certification course and a five day TOGAF full certification
Both are accredited by the Open Group. We have trained hundreds of students successfully since 2007.

- **Executive Introduction to Enterprise Architecture**
  A one day introduction for senior managers, CxO and board level executives.

- **Practical Archimate**
  A one and a half day practical course covering the Archimate notation. Can be used in preparation for Archimate certification.

We can also tailor training to specific organizational needs, given that there are sufficient students to justify the effort.

Training is offered in the UK, Europe, USA, Scandinavia, South Africa, Malaysia and Australia. Other locations can be handled on a negotiated basis.

**Consulting Services**

Inspired and Promis offer a range of consultancy services relevant to Business Architecture and Enterprise Architecture. These include:

- **Architecture Capability Development** - where we work with organizations to establish the organization structures, governance processes, methods and techniques that an organization will employ and the skills and resources that they will need to create or sustain a credible and valuable architecture capability

- **Architecture Method Adaptation and Implementation** - putting in place and tuning the methods and techniques to suit the organizational goals, requirements, culture, maturity and capability

- **Architecture Development** - defining goals, collecting data, performing analysis, defining scenarios, defining future architectures, building business cases, creating change programmes

- **Architecture Review/Quality Assurance** - reviewing work of internal architects or that done by major suppliers. Ensuring that all relevant aspects have been properly considered and that the quality of analysis and results is good

- **Architecture Due Diligence** - When organizations are considering take overs, mergers or major outsourcing, looking at all relevant aspects to identify road blocks and risks and to advise on whether to proceed. If the decision is to proceed, identifying risks and coming up with strategies to minimize these and facilitate rapid solid progress

- **Major Business Initiative Support** - defining goals and scope, establishing and designing project, enhancing skills, performing requirements analysis, creating RFIs and RFPs, analysing vendor responses, establishing change programmes

These are representative examples, but assignments are defined to match the situation, the client and the other parameters of each unique situation.

**Tools**

EVA Netmodeler is our comprehensive, collaborative meta model driven knowledge management and modeling environment. Available for in house installation or as a SaaS solution. EVA allows management and secure sharing of all information mentioned in this paper. It is fully meta model driven and the meta model and visual representations are user customisable at runtime without programming. This makes it a highly flexible tool to meet the needs of business and other architects. It has the ability to define an infinite number of model types and corresponding graphical notations to suit your needs or to conform to industry standards. In addition, it supports instant distributed working, report
generation, sharing data via portals and even website generation for distribution of knowledge without access to the tool. See a detailed brochure here. EVA comes preconfigured with our comprehensive meta models and methods management capabilities as discussed in this paper.

**Other toolset enrichment**

We also work with clients to implement these ideas in other toolsets and to assist you in selecting suitable tools where required. This is facilitated by available meta models and our knowledge of tooling in general. We are familiar with domain specific modeling concepts and have used advanced tools, such as MetaEdit+ to create visual languages for specific modeling purposes.

**Tooling integration**

We work with clients, using the APIs in our toolset or other offerings, to create a productive and integrated tool environment which supports the workflow of architects and related disciplines. Contact us for more information.

**References and Further Information**

You can contact the writer at: mcleod@iafrica.com

You can find Graham’s blog at: http://grahamcleod.typepad.com/

Inspired can be found at: http://www.inspired.org

Promis can be found at: http://www.pro-mis.com

A presentation on “Business Architecture Transforms Business” to the Open Group conference at Cannes, France in April 2012

A presentation including the M³ Method Model

More information on Porter strategy models here:

http://en.wikipedia.org/wiki/Michael_Porter

More information on Blue Ocean Strategy here:

http://en.wikipedia.org/wiki/Blue_Ocean_Strategy

An earlier paper on the Inspired EA Frameworks

More information on Domain Specific Modeling and MetaEdit+