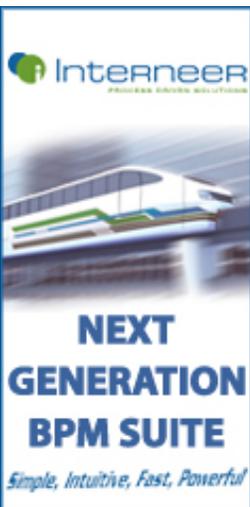


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What is a Business Architecture?

Recently, the term Business Architecture has been showing up in lots of places. The OMG has a Business Architecture SIG. A new Business Architecture association has just been formed. [1] And, at the two major BPM Conferences I recently attended, there were several speakers who were talking about Business Architectures. Meanwhile, the *Harvard Business Review* and others have been publishing interesting articles on Business Models. And, BPTrends continues talking about Business Process Architectures. I decided to take some time, read some articles and see if I could bring some clarity to this area.

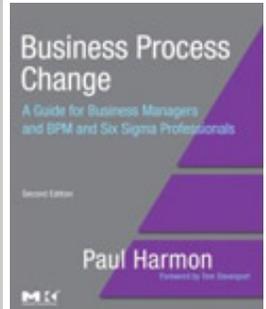
Enterprise Architecture

In the Nineties, I wrote a newsletter for Cutter Consortium called *Enterprise Architecture*. Then, the term was relatively new and derived its popularity from a variety of Software or Enterprise Architecture books (one of which I wrote), from a Journal article written by John Zachmann[2], and from several software architecture models proposed by vendors, including IBM and Oracle. At the time, there was an argument, which continues to this day, regarding whether the term Enterprise Architecture should refer to all of the architectural efforts undertaken within an organization, or just the IT architecture - which usually included more specific architectures for software applications, databases, and technology (or infrastructure). The question has never been resolved.

Almost everyone engaged in Enterprise Architecture will agree that an Enterprise Architecture ought to include a description of the business strategy, metrics, and processes of the organization. Most would go further and say that there should always be a specific architecture that describes what the business is trying to achieve and that the IT architectures ought to support this Business Architecture. The devil is in the details, however.

If you go to most Enterprise Architecture conferences you will find they are attended by folks from IT and that their discussions are focused on the various IT architectures. In the worst case, enterprise architects appear to regard the Business Architecture as simply a preliminary requirement they need to create in order to automate the business activities. This tendency to place the emphasis on automation has been encouraged by the ERP vendors who seem to conceptualize a Business Architecture as a matrix with one business entity for each software module they sell. Thus, while many enterprise architects believe there should be a Business Architecture, they believe it is something they should develop, rather than something that business managers should develop.

That, in turn, led those of us working with business managers to specify how an organization actually gets work done, to avoid the use of the term Enterprise Architecture, giving the term, by default, to IT. Instead, many of us use the term Business Process Architecture (or sometimes simply Business Architecture) as an architecture that defines how the business is organized and what goals the business is trying to achieve. We may not be sure what to call the architecture, but we are convinced



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that such an architecture must be developed by the business managers.

The Effort to Define an Architecture for Business Managers

The first effort to define an architecture by and for business managers was undertaken by Michael Porter in conjunction with his work on strategy. In his 1985 book, *Competitive Advantage*, Porter used the term Value Chain to describe how all of the activities within an organization can be grouped together into processes that deliver value to customers. His model is pictured in Figure 1.

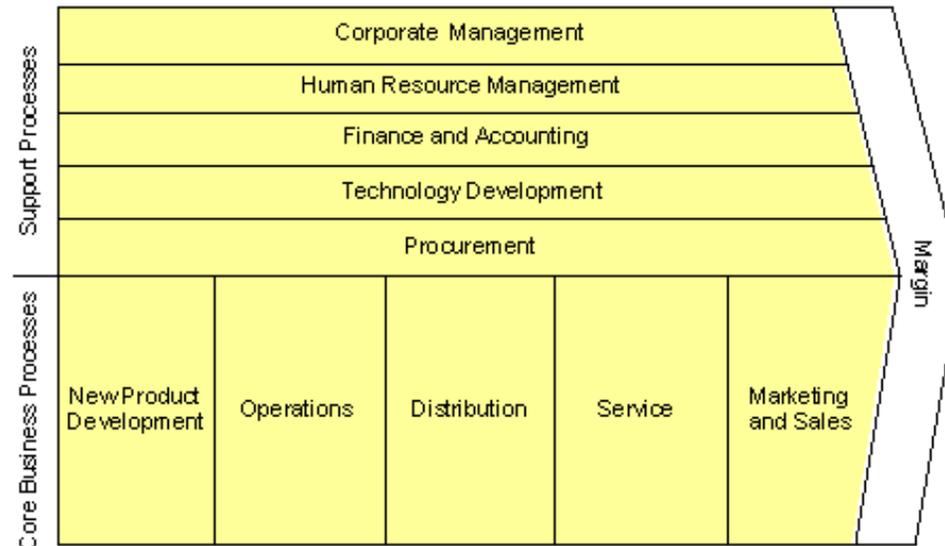


Figure 1. Michael Porter's Value Chain Model.

Note that Porter was concerned with how a company organized its activities and how it generated a profit. Hence, his model provides an overview of high level processes and also suggests that when you subtract the cost of performing activities from what you charge your customers, you arrive at the organization's margin or profit. Similarly, although Porter did not define a separate model for strategy or for a customer value proposition, he assumed that one organizes the activities within a value chain to implement a strategy. Thus, one organizes one's processes one way to generate a low cost commodity and in a different way to generate a premium priced niche product. [3]

Michael Hammer and Tom Davenport certainly contributed to everyone's awareness of the key role of Value Chains and business processes by encouraging many large organizations to define their Business Process Architecture and their key processes as a prerequisite for any process reengineering effort.

Rummler-Brache Organization Maps

A second early effort that was moving toward the idea of a Business Architecture was led by Geary Rummler and Alan Brache, (*Improving Performance*, 1990) who start any analysis of a process problem with an organization map and then drill down to describe the business processes that make up one or more Value Chains. Figure 2 provides an overview of a Rummler-Brache Organization Map.


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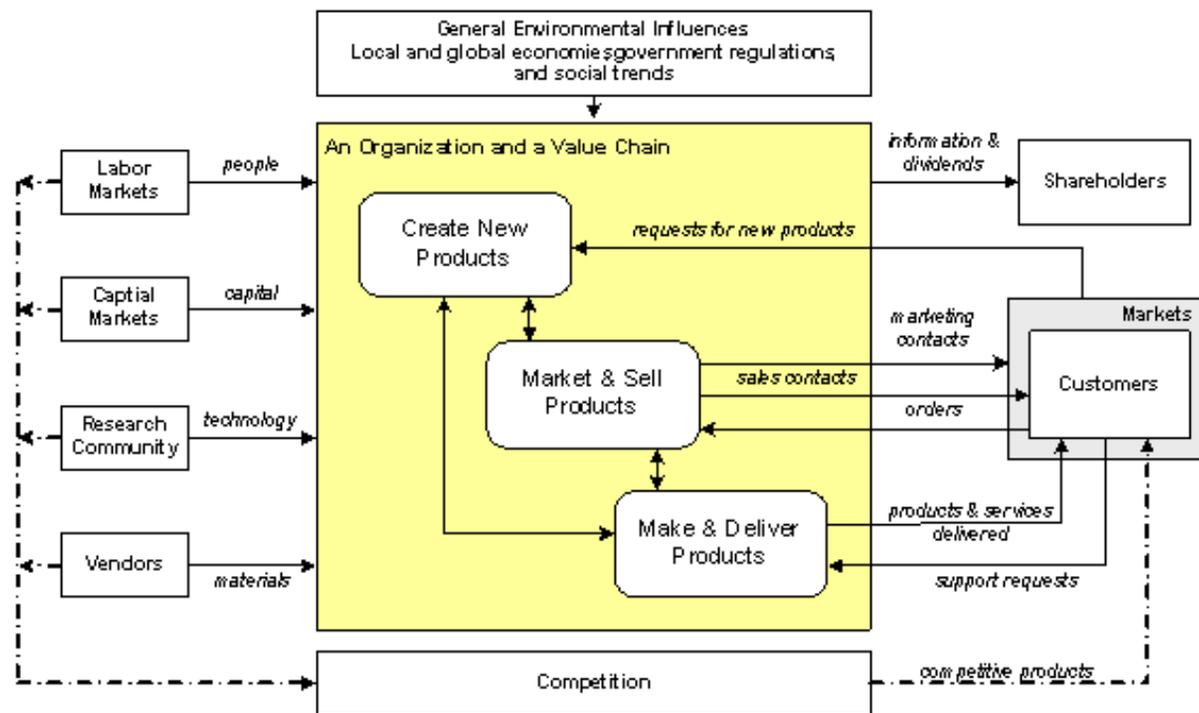



Figure 2. A Rummler-Brache Organization Map.

In the version of the organization map shown in Figure 2, you see an organization with a single Value Chain. Rummler usually began by representing a Value Chain with three generic core processes and then expanded them to accommodate specific client requirements. As with Porter's Value Chain model, Rummler was concerned with more than just the processes. He included information about sources of capital, competitors, customers, markets, and dividends. This is a model designed to appear on one page, providing business executives with an overview of their organization. It has little to do with what IT resources might be required to implement the Value Chain.

Most process practitioners today would likely refer to something like the Rummler-Brache map as a Business Process Architecture or, at least, as a business model.

The idea of a Business Process Architecture, itself, has always been confusing. Some use the term narrowly to picture the major processes involved in a Value Chain. Others use it more broadly to include the organization's goals, value proposition, process hierarchy and a set of metrics that managers can use to monitor and manage the efficiency and effectiveness of process performance.

The Role of Business Process Frameworks

The idea of a Business Process Architecture was given a huge boost in the late Nineties and the early Zeros by some major business process framework initiatives. (Many refer to these frameworks as Operations Reference Models or Frameworks.) The Supply Chain Council's SCOR, the TeleManagement Forum's eTOM, and the Value Chain Group's VCG Framework are all good examples of generic Business Process Architectures. I've pictured one version of some of the processes in the VCG's framework in

Figure 3.

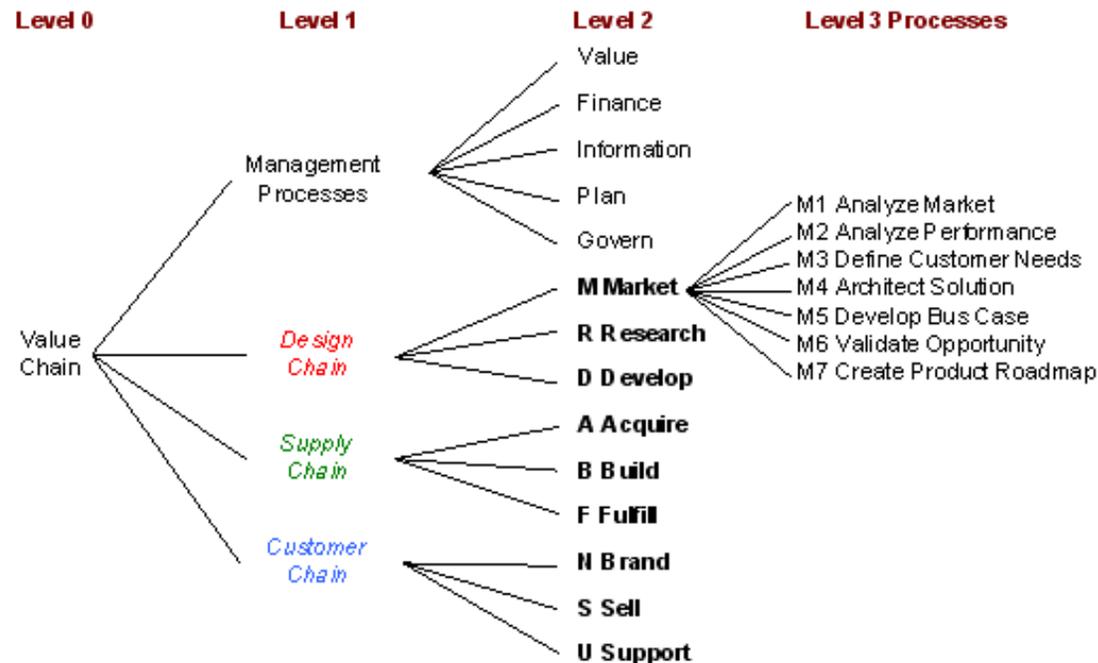


Figure 3. An Overview of the VCG's Value Chain Framework.

The VCG framework defines a Business Process Architecture to three levels. At the same time, like SCOR and eTOM, it ties level 1 and 2 processes to strategy decisions and provides metrics for evaluating each process at each level. Thus, when a supply chain manager creates a complete set of SCOR documents, he or she not only has process maps, but has detailed information on metrics used at each process level, and tables showing how specific metrics tie to corporate strategic goals. Thus, frameworks like VRM, SCOR and eTOM seem to support the broader definition of a Business Process Architecture. And, for some, they offer a quick way for business executives to implement a Business Process Architecture. [4]

Equally important, these OR frameworks help business managers make the kinds of decisions they need to make in order to manage the business. Using a combination of a framework diagram, associated metrics and benchmarks, business managers can identify processes most in need of improvement and make estimates about the value of different possible interventions. In essence, these business process frameworks make it easy for companies to conceptualize what an efficient business process might look like.

Business Process Architectures and Maturity

As anyone who reads BPTrends is aware, we usually argue that organizations tend to follow a generic process development sequence that is broadly similar to the maturity levels described in the SEI's CMMI. Most organizations are CMMI Level 2 and are focused on defining and redesigning departmental processes. It is only as organizations move from Level 2 to Level 3 and Level 4 that they begin to focus on Business Process Architecture issues. In this past decade there has been a lot of emphasis on

moving organizations up the maturity curve and frameworks like SCOR, eTOM and the VCG framework have played an important role in this effort by providing a concrete idea of what a real Business Process Architecture looks like.

The Idea of a Business Architecture

Recently, as we've suggested, there has been a sharp increase in discussions focused on Business Architecture. The Open Group, for example, defines an Architectural Framework (TOGAF) and reserves one of nine boxes for a Business Architecture. The TOGAF documentation says that "A knowledge of the Business Architecture is a prerequisite for architecture work in any other domain (Data, Application, Technology), and is therefore the first architecture activity that needs to be undertaken, if not catered for already in other organizational processes (enterprise planning, strategic business planning, business process re-engineering, etc.)." In a nutshell, TOGAF is an IT initiative and thinks of a Business Architecture as a keystone that all the other architectures will support. Like too many IT initiatives, however, TOGAF's discussion of a Business Architecture almost immediately degenerates into a discussion of UML business class diagrams at the task level. Nothing in the TOGAF document suggests that the authors have any knowledge of what a business executive might agree to look at, let alone find useful.

The US Government's FEAF Initiative

In a similar way, the US Government's Federal Enterprise Architecture Framework (FEAF) was developed by the CIOs of the various US government agencies to help these agencies fulfill a federally mandated requirement that they have an Enterprise Architecture. Figure 4 represents one popular way that the CIO Council represents the FEAF initiative. [5] Note that they clearly provide for a Business Architecture as the capstone of all of the other architectures. FEAF is, however, very much an IT effort, and many would say that little attention has actually been paid to the Business Architecture in most specific FEAF efforts, and that much more attention has been focused on defining and cataloging the IT resources of the various agencies.

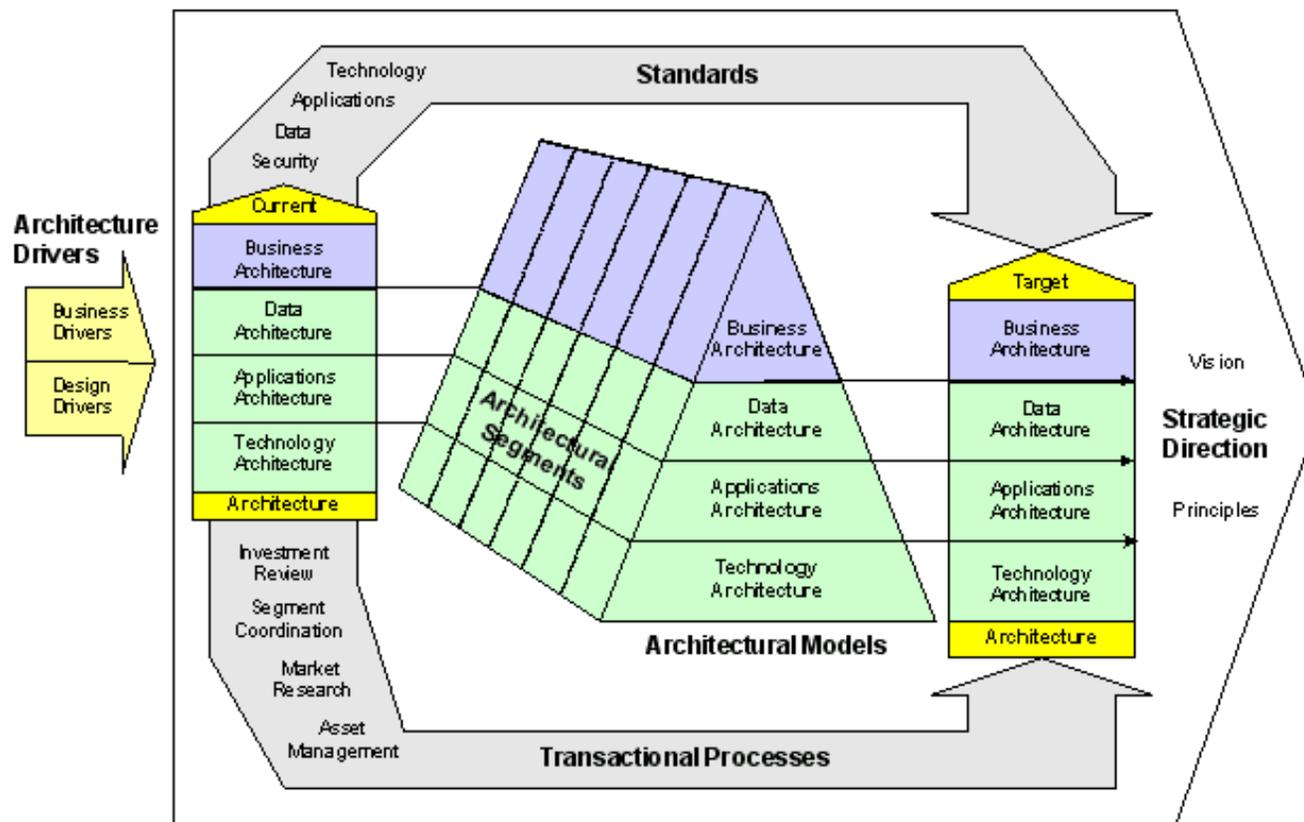


Figure 4. The US Government's Federal Enterprise Architecture.

Recently, the US CIO Council has been exploring ways to increase the sophistication of their Business Architecture effort. This is in keeping with the growing emphasis on beefing up Business Architecture efforts, and we will look forward to seeing how the FEAF evolves.

The OMG's Business Architecture SIG

One current effort to define the term Business Architecture is being led by the Business Architecture Special Interest Group (BASIG) established at the OMG about two years ago. (In OMG terms, a SIG is a group that discusses a topic, but doesn't generate standards. Usually the OMG establishes a SIG and then, if the group generates sufficient interest, transforms it to a task force so that the group can propose specific standards.) Information about the BASIG can be found at <http://bawg.omg.org>. To date, the group has worked on several whitepapers on Business Architecture. One recent whitepaper defines Business Architecture as follows:

"The Business Architecture provides the means for organizing previously disparate and poorly connected capabilities, organizational structures, processes, semantics, customer views and other aspects of the business into a readily accessible knowledge base. Common views of the factors and challenges at hand, abstracted from the Business Architecture, allow management to rapidly ascertain the root cause of a problem and objectively discuss ways to address these issues."

The figure that appears in that whitepaper and others is pictured in Figure 5, below.

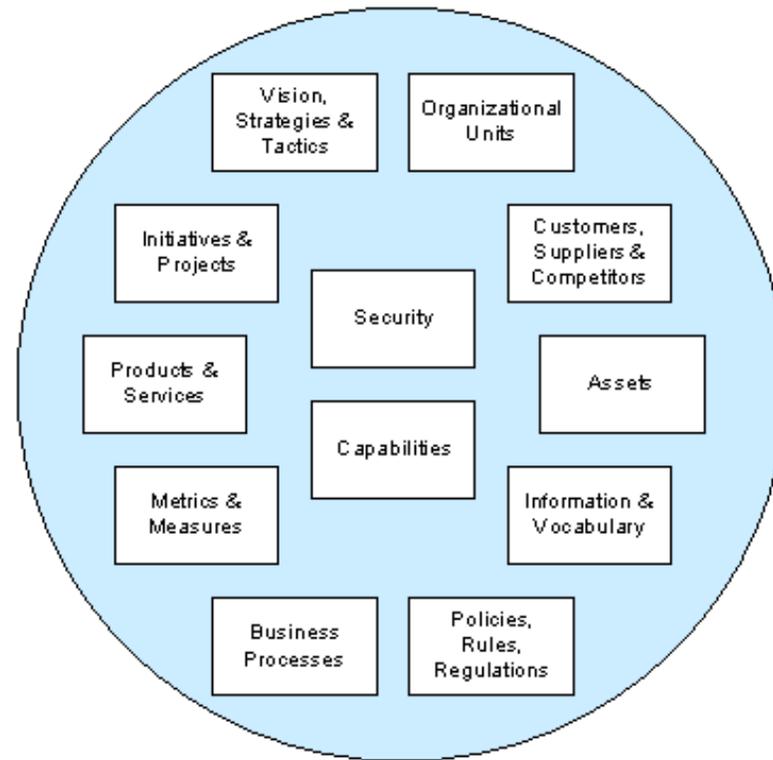


Figure 5. The OMG BASIG's Overview of the Business Architecture Space.

In addition to their overview, the BASIG is also working on a Balanced Scorecard Metamodel as a way of defining the semantics of the Balanced Scorecard approach and as a way to assure that future software vendors will have a way of creating tools that will be capable of passing information about scorecards in an efficient manner. [6]

Looking at the OMG BASIG whitepaper, two things seem obvious to me.

1. Ulrich and McWhorter, like several others, are keen to separate the idea of a Business Architecture from IT and Enterprise Architecture concerns. They want to focus Business Architecture on the concerns of business managers, and
2. At the same time, it also seems clear that they can't quite break free of their IT backgrounds. Rather than focusing on the tools that business people need, they have chosen, instead, to focus on the IT infrastructure of a Business Architecture. In effect, they are building models of the kinds of knowledge that a Business Architecture might use.

Consider Figure 6 below. At the top we show the target audience – the business manager trying to understand the organization and how it works. Now, ask yourself, “What will the business manager look at or consider when looking for help?” Most business managers prefer written text documents or spreadsheets. A good statement of the organization's business model or its value proposition usually ranges from a paragraph to a page in length. For many entrepreneurial managers, a Business Model is

simply a single spreadsheet page.

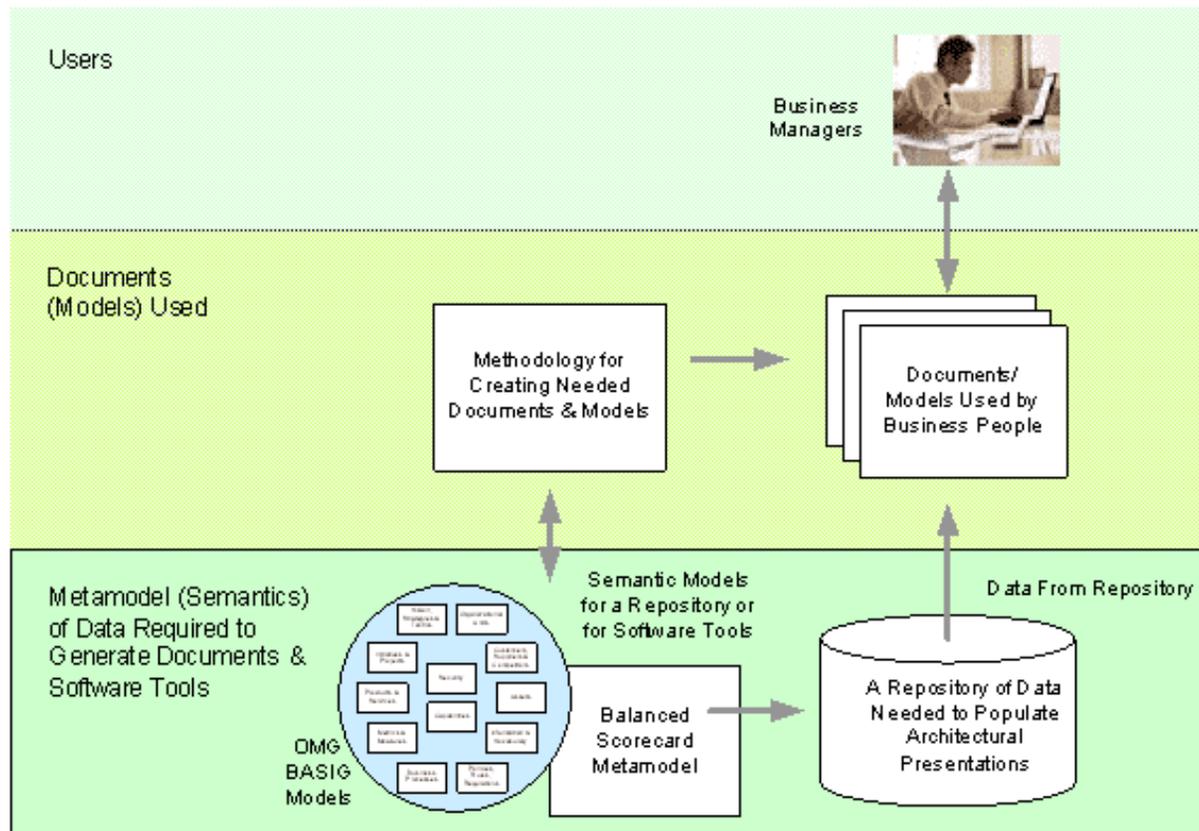


Figure 6. The Business Architecture Space.

At the bottom of Figure 6, we have pictured the OMG BASIG's effort to define semantic models and Business Architecture elements or perspectives. Obviously, these are important concerns. If large companies are going to gather data about business concerns, they need a consistent way to describe them and they need to be able to store them in a database that establishes logical relationships among the various data elements. Clearly, this is not something that business executives are going to concern themselves with. Thus, it makes sense that modelers from IT, who are interested in Business Architecture issues, might undertake it. The problem, however, is that they won't get the attention of most senior executives with this approach. This is, in essence, an IT effort to think about business issues. [7]

Those of us who have been focused on Business Process Architecture, from Porter and Rummler on, have focused on defining what kinds of documents business executives need to make decisions. In Figure 6, we illustrate this by showing boxes for methodology and business documents. A process practitioner would assume that such documents would include some high level description of how work is to be performed. BPTrends Associates has an enterprise methodology that teaches managers how to develop these documents. Kaplan and Norton, in their Strategy Maps, provide another methodology and a way of documenting their results. The book described below, *Business Model Generation*, describes another approach and slightly different documents. [8] Both focus on creating simple

documents that business executives can use to make decisions. The key, in all cases, is that those involved in creating the methodology and the documents are not focused on IT concerns but on business concerns. They are working top-down, not bottom-up.

In other words, one can do Business Architecture in two ways:

- One can focus on semantics, metamodels and tools, or
- One can focus on methodologies and documents that business people will actually use.

The New Business Model

To provide another illustration of the middle ground in Figure 6, consider what is happening to the well-established idea of a Business Model. Michael Hammer always focused a lot of attention on an organization's Business Model. He argued that an organization could only make major breakthroughs if they made major changes in the way they did things. He wasn't against continuous improvement, but he thought you'd get a lot more return on your process projects if you could innovate and really change the way you created and delivered value to a customer.

Given this approach, we ought to ask "What is a Business Model?" A simple answer is that a Business Model is a one to three paragraph description of how an organization is going to make a profit. In essence, you assert that:

- This organization will produce A.
- We will sell A to N customers who will pay B per unit.
- We can create and deliver this product/service for a price of C per unit.
- If we sell D units we will make E profits.

Any of these assumptions can be challenged, but once an organization has settled on its business model, these assumptions are then tested in the market. Obviously, innovation involves changing one or more of the assumptions – changing the nature of the product, the way it is produced, the customers who are targeted, and so forth. Thus, much of the current interest in innovation has focused on the nature of the business model. [9]

The traditional view of the Business Model began to change rather rapidly in the late Nineties. In 2008, as an example, there was a *Harvard Business Review* article: "Reinventing Your Business Model" by Mark W. Johnson, Clayton M. Christensen and Hennig Kagermann. (*Harvard Business Review*, December 2008) that provides a nice example of the new interest in Business Models. In essence, the authors have expanded the traditional definition of a Business Model to include lots of new things, as pictured in Figure 7. As they define it, a Business Model is "four interlocking elements that, taken together, create and deliver value."

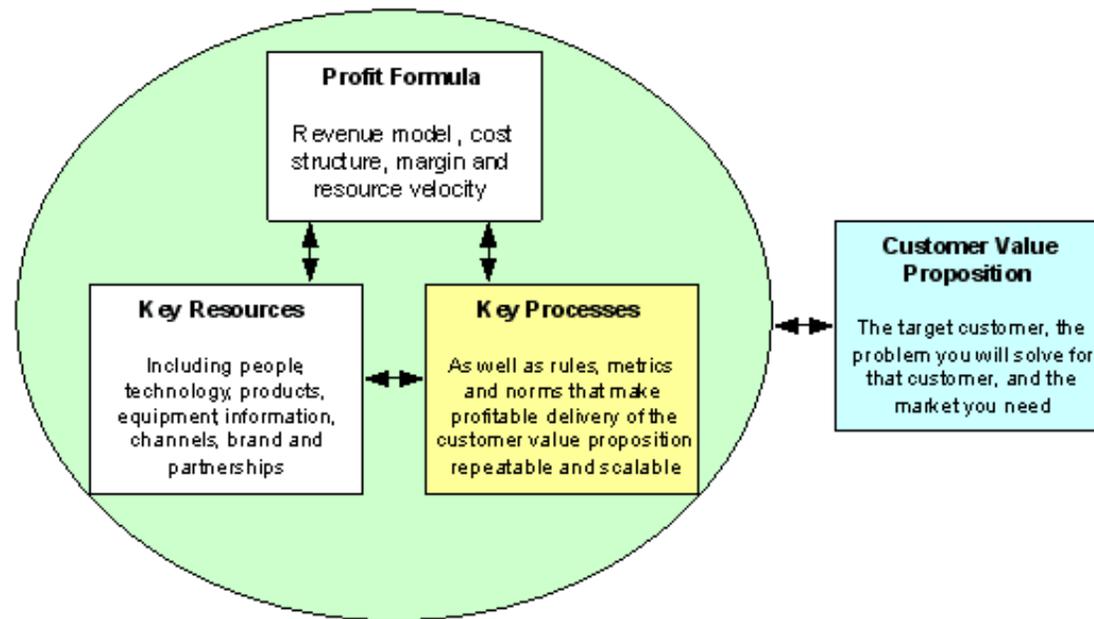


Figure 7. Elements of a Business Model
 (After Johnson, Christensen and Kagermann, *HBR* Dec. 2008)

The Johnson, Christensen, and Kagermann article, and several other publications since, have expanded the term Business Model to include processes and key resources. It's unclear how far the authors would go in defining processes if they were working with a specific company, but one has the idea that they are probably talking about a process architecture that defines the names, functions, and relationships among the processes, but stops well short of flow charts and detailed process analysis. In other words, they are probably talking about something very like the SCOR, VRM and eTOM frameworks.

Two other authors who are working in this same tradition, Alexander Osterwalder and Yves Pigneur, have written a wonderful book entitled *Business Model Generation* (Wiley, 2010). Osterwalder and Pigneur have developed a methodology for creating Business Models and improving them. They use a worksheet as the key graphic to orient their readers to their methodology. The worksheet is pictured in Figure 8.

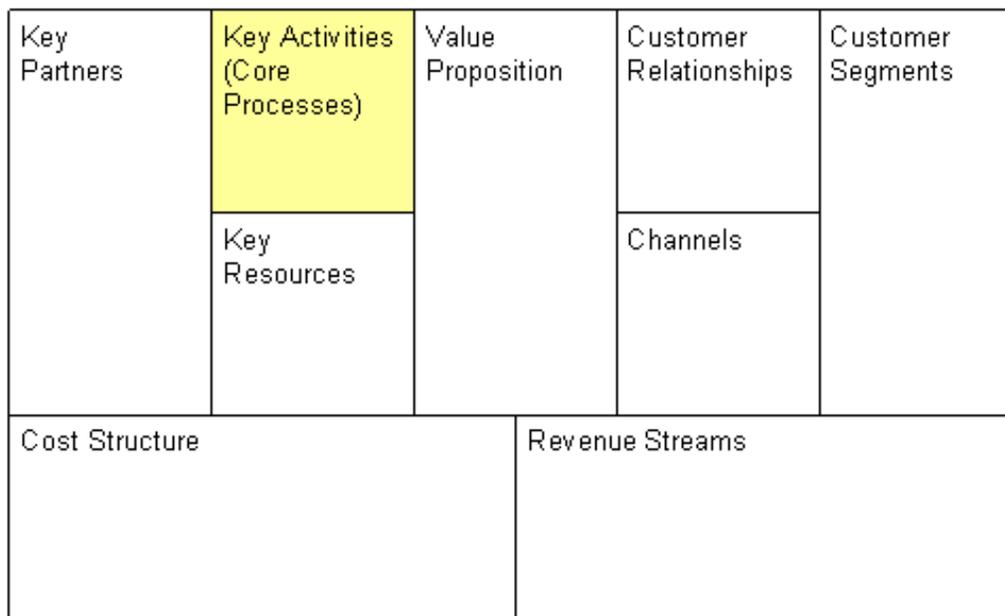


Figure 8. A Business Model Canvas
(After Osterwalder and Pigneur)

Take a moment to glance back up to Figure 2 and consider just how much this worksheet mirrors the Rummler-Brache Organization Map. Clearly, the authors have expanded the term 'Markets' to include 'Customer Segments' and 'Channels' and they provide a worksheet with space for financial information, but otherwise the flow from partners to processes to product/service to customers is all there. Osterwalder and Pigneur are definitely focused on the middle layer of Figure 6. For many doing Business Process Architecture work at large organizations, this approach will probably seem more appropriate and useful than the Business Architecture work currently underway at the OMG's BASIG.[10]

In essence, as with the work that Porter, Rummler, and Kaplan and Norton have done, Osterwalder and Pigneur have begun at the top and asked themselves what kinds of tools business managers will need to better manage their organizations. They have done this by expanding the idea of the Business Model and by offering a methodology for gathering data that managers can use to make decisions.

Business Process Traditions

Long time readers will recall that I usually argue that modern process management has developed from three separate traditions that are in the process of merging into BPM. One tradition is primarily focused on business management or organizational performance issues, one on quality, and one on the use of IT. I have pictured this in Figure 9.

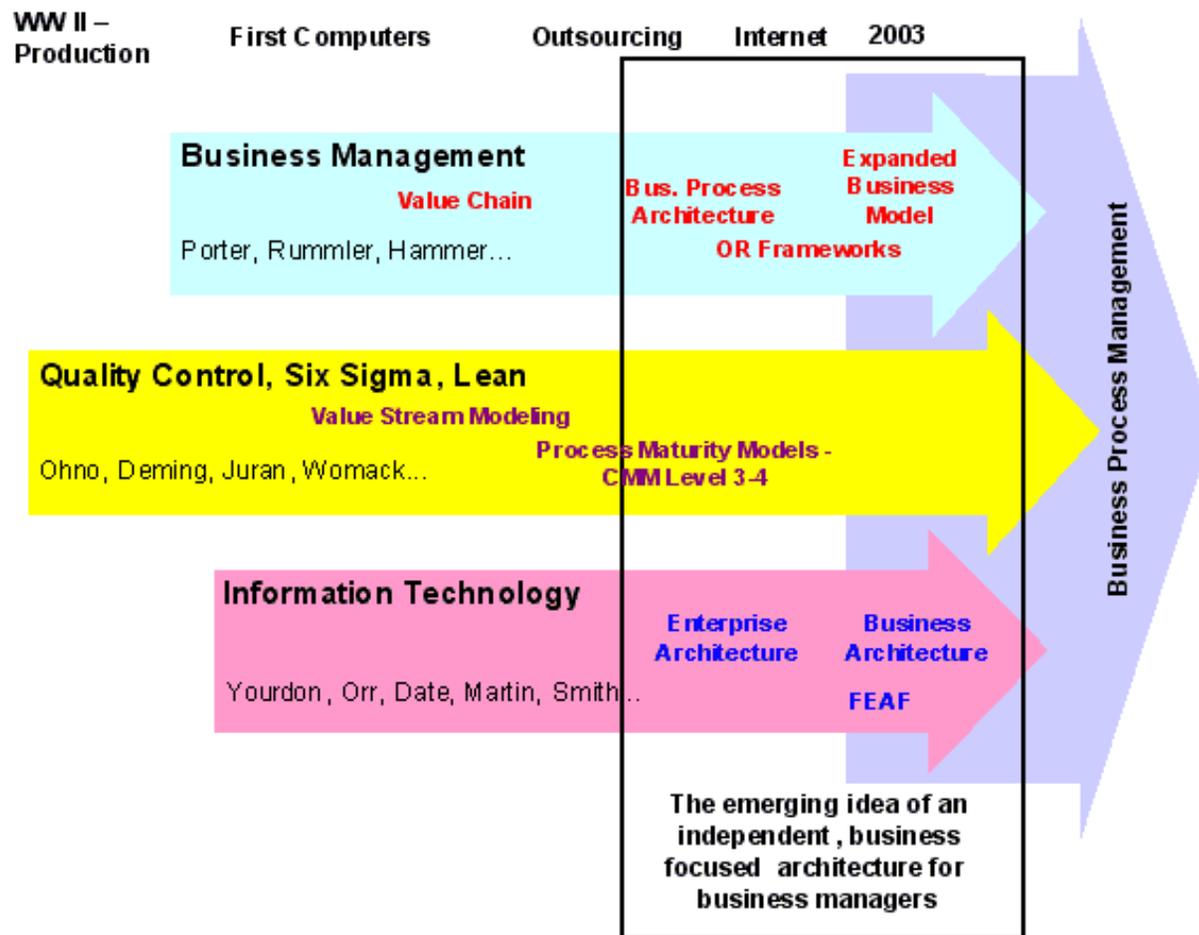


Figure 9. The Three Process Traditions and an Emerging Concern

It would be nice to think the three traditions have already merged, but in fact they are still, in many ways, quite independent traditions, each with a different language and different models. The idea of the Business Process Architecture, at least as derived from the work of Rummler and Hammer, is very much in the business tradition. The work on OR Frameworks is also very much in the business tradition. (One goes to a Supply Chain Council meeting and only meets senior supply chain executives.) Similarly, the emphasis on expanding the idea of the Business Model to incorporate processes is also in the business tradition and, like the others, works top-down.

The idea of an Enterprise Architecture, and the growing focus on Business Architecture, at least as the TOGAF BAWG and the OMG BASIG define it, is being driven by those from the IT tradition and works bottom-up. I have not seen any equivalent effort on the part of the Quality Tradition, although we should say that the Six Sigma community has embraced Lean and that Lean practitioners are increasingly emphasizing Value Stream modeling as a step in that direction. Certainly, CMMI, which is very much in the Quality Tradition, has done a lot to promote the idea by emphasizing that Level 3 and 4 organizations need a Business Process Architecture to guide decisions.

Put a little differently, Enterprise Architecture has focused too narrowly on defining and cataloging IT

resources and too little on defining the business requirements of those responsible for managing the business. There is a broad, emerging understanding that business people need their own architecture or model – their own way to describe their business goals and objectives. And, everyone seems to agree that a high-level description of the Business Process Architecture, key processes and associated performance metrics need to be a part of this business view.

The key issue, however, seems to be whether the heart of this effort should be undertaken by business people, working top-down, or created for them, by IT people, working bottom-up.

Business executives are pretty resistant to bottom-up efforts. In my experience, they probably won't choose to call any model they use an Architecture. An Expanded Business Model or an Organization Map will probably be more comfortable concepts for most executives. In any case, executives don't want a lot of details, and they will insist on high level documents or models that are easy to grasp and change.

At the moment, lots of folks, from lots of different perspectives, are focused on developing the concepts and models that business executives can use to better understand their organizations and to support business decisions. There is no consistency in the use of terms to refer to the types of models business people need to represent their concerns. There is, however, a great deal of interest in this issue, and various practitioners are using the terms Business Process Architecture, Business Architecture, and Business Model to describe this new area of concern. We expect this discussion to get more complex before it is resolved and we will continue to try to make sense out of it for BPTrends readers.

Till next time,

Paul Harmon

Notes

[1] There is already one association: The Business Architects Association (www.businessarchitects.org) which is a small group organized by people associated with DePaul University in Chicago. This past week another small group, primarily associated with the OMG Business Architecture SIG announced another, the Business Architecture Guild (www.businessarchitectureguild.org).

[2] John Zachman, "A Framework for Information Systems Architecture." Framework" *IBM Systems Journal*, Vol. 21, No 3, 1982. It was in this paper that Zachman developed the idea that software systems need an architecture with blueprints, just as a house requires an architecture and blueprints, and began his effort to define the elements that might be included in any such architecture. His current framework is quite a bit more complex than his initial one.

[3] For an interesting update on the Value Chain model, see the upcoming article by Adrian Grigoriu entitled: *A Single Page Generic Business Architecture*. to be published on BPTrends in December.

[4] If you attend a Supply Chain Council conference, you will not find many IT people. SCOR users are

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business executives who have worked together to create high-level process models to support business decisions. For any who believe that business executives are somehow incapable of rigorous 'architectural modeling,' the Supply Chain Councils work stands as a shining example of exactly how good business executives can be at this kind of thing.

[5] For more information, see the *Federal Enterprise Architecture Framework* (Version 1.1, Sept 1999) which is published by The Chief Information Officers Council of the US government.

[6] The two gentlemen leading the OMG Business Architecture group, Bill Ulrich and Neal McWhorter, have just written a book about their approach, *Business Architecture*, which is about to be published by Meghan-Kiffer. They are also heavily involved in launching the new Business Architecture Guild referenced in note 1.

[7] One might draw a similar picture of the Enterprise Space and replace the blue circle representing the OMG BASIG's Business Architecture with the Zachman matrix. Indeed, one could easily argue that the BASIG has simply taken the top two rows of the Zachman matrix as a list of the kinds of items that should populate a Business Architecture repository. And, as with the Zachman framework, there is nothing wrong with having a description of all of the items one might like to keep track of in a repository, but it's a long way from providing concrete models and actionable advice that business or IT managers can use.

[8] There is an interesting whitepaper available from the IBM Global Business Services group entitled *Actionable Business Architecture*. (Ray Harishankar, et. al., 2009) As with our Figure 6, the IBM article suggests that there is a lower layer that includes an enterprise architecture that incorporates a business architecture. At the middle level, however, they argue that "actionable business models" are needed to effectively communicate with business executives.

[9] A great review of the history and evolution of the idea of the Business Model is provided in a paper, "The Business Model: Theoretical Roots, Recent Developments, and Future Research" by Christoph Zott, Raphael Amit and Lorenzo Massa which was published by IESE (Business School, University of Navarra, June 2010.) It can be accessed at <http://www.iese.edu/research/pdfs/DI-0862-E.pdf>. The authors show that there was a dramatic increase in interest in the idea of the 'business model' following the introduction of the WWW in 1995 – when everyone began to talk about the nature and validity of the business models being pursued by e-business companies.

[10] For more on *Business Model Generation* see <http://www.businessmodelgeneration.com/>.