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Business Process Architecture and Process Improvement

In the Eighties, when Geary Rummler used to teach organizations how to do process improvement, he would begin by suggesting that the redesign team generate an organization map, a high level overview of the organization that everyone could use to see how the specific process to be redesigned would fit with the other major processes in the organization. Hammer urged organizations to begin with value chains and to work top-down. Roger Burlton used to suggest that the first step in a redesign process was to create a high level business process architecture that defined the major processes in the organization. I mention this to say that, for quite awhile, process improvement gurus have tended to treat a business process architecture as something that a team might undertake as a preliminary step to doing a process redesign.

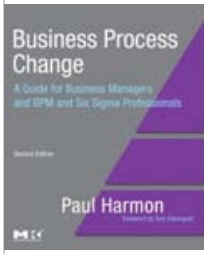
In the past decade, that approach has changed. Or, perhaps it would be more accurate to say that it has been extended. Today, organizations approach process groups and ask for help in creating a business process architecture. They do not expect to use the architecture as a first step for a specific redesign effort. They expect, instead, to use the architecture as the basis for an ongoing effort to manage all of the process work going on in the organization. More accurately, they expect the architecture to provide an ongoing framework and to help them classify and prioritize all of the process work they might consider over the course of the coming year or two. In essence, they expect the business process architecture to serve as, or to generate, a roadmap for all the ongoing process efforts to be undertaken by the organization.

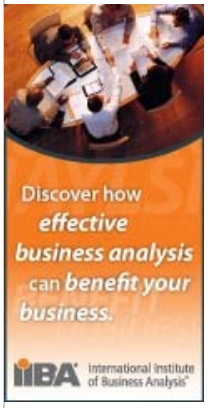
This new use of a business process architecture has, in turn, placed lots of additional demands on anyone trying to develop a comprehensive business process architecture. A casual effort by a dozen team members, over the course of two weeks, as a preliminary effort to a specific process redesign effort, will not produce an architecture of sufficient detail or elegance to be useful and sustainable. Mapping out all the relationships among all of the units in a large organization and determining where common processes can rely on common solutions requires an effort of a different magnitude and it requires new conceptual tools.

This Advisor will briefly walk through one approach to developing a comprehensive business process architecture—the approach used by BPTrends Associates (BPTA) in consulting engagements with its clients. To limit the length of the Advisor, we will only consider the modeling piece of an architecture effort. A complete effort is concerned with not only modeling processes, but is also concerned with establishing a strategic alignment, developing a comprehensive process measurement system, and establishing a process management system with specific managers responsible for achieving specific goals. Similarly, a complete methodology not only defines the processes but provides a systematic approach to creating a process roadmap and defining priorities for future process interventions. The BPTA Business Process Architecture Methodology does all these things, but we are going to limit ourselves, here, to a consideration of how one begins by identifying and organizing all of the processes in an organization.

Define the Scope of the Business Process Architecture Effort

Any business process architecture effort begins by defining the boundary of the organization you are going to consider. The organization-in-scope may be a worldwide enterprise, or the architecture team may limit its efforts to one division within a larger organization. Once one has identified the scope of the organization, one asks how many value chains the organization supports. Here, as with other technical terms, we will not go into details [1]. Suffice to say that a value chain is a more-or-less independent group of processes that generates a product or service line of value to a given set of customers. Determining the number of value chains an organization has can get complex, but the goal is to assure that you have a clean set of value chains when you are done, so that you can subsequently focus your analysis efforts on one value chain at a time. Figure 1 pictures Michelin, an organization that has two value chains: Produce and sell tires and Produce and sell restaurant guides. The two lines of business are, more or less, independent and should be analyzed independently.





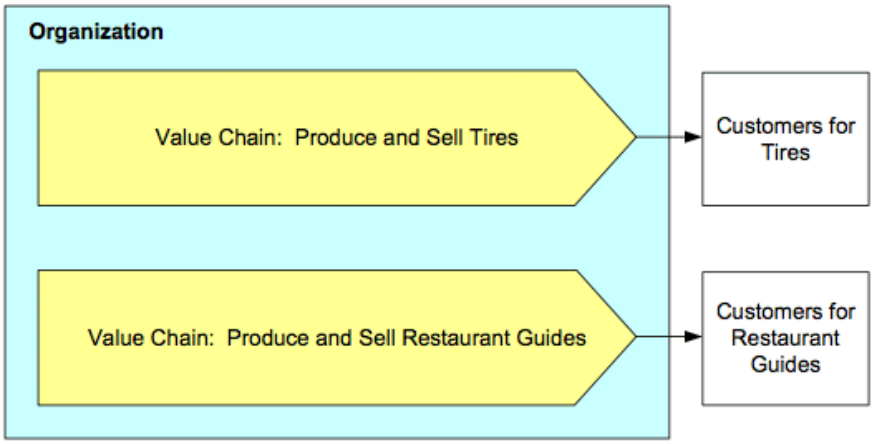


Figure 1. An Organization with Two Value Chains

The organization wants a comprehensive business process architecture, so it is going to have to model the processes in both value chains. For our purposes, assume the team begins with an effort to model the processes in the Produce and Sell Tires value chain.

Begin With Stakeholders

The team next analyzes the stakeholders of the Produce and Sell Tires value chain. Stakeholders, in this case, can refer to either internal or external groups that have an interest in whether or not the value chain succeeds or fails. We have already identified oneÑthe customers for the tires. There are, however, others. For example, there is the management of the organization. There are the shareholders of the organization. There are government agencies that regulate and tax organizations, and there are partners who provide materials for the production of tires, or who provide support for marketing, distribution or sale of the tires. There are also the employees who depend on the value chain for jobs. Figure 2 illustrates some of the stakeholders that the architecture team identified for the Produce and Sell Tires value chain.

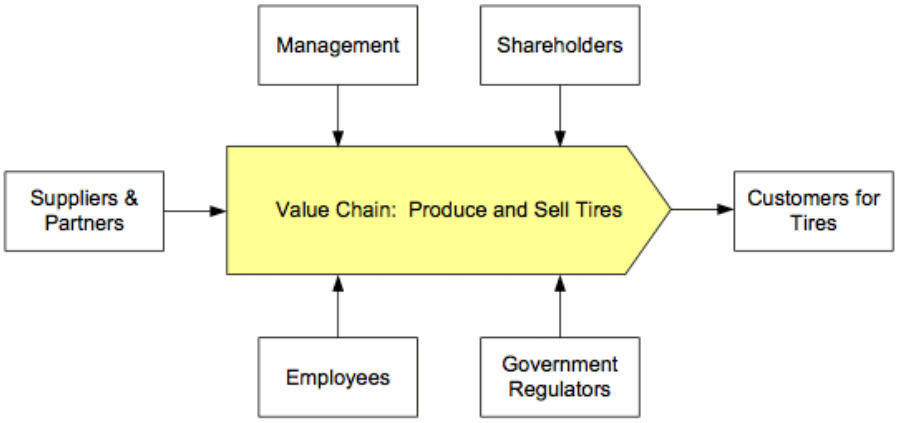


Figure 2. Stakeholders in the Produce and Sell Tires value chain

To succeed, the Produce and Sell Tires value chain has to support each of its stakeholders. Obviously, the company won't succeed if it fails to attract customers, but it will go bankrupt just as surely if it fails to pay taxes, or fails to retain the employees it needs for its successful operation. The organization needs measures for the success achieved with each stakeholder. More to the point, there must be processes to support each of the stakeholders. Thus, for example, the organization must have a process for managing its stock, for providing reports to shareholders, and for dealing with shareholder problems. Similarly, the organization must have processes for hiring new employees, for paying existing employees, for dealing with employee problems, and for managing pensions for retired employees.

Historically, business process architecture teams have tended to focus almost exclusively on the core processes that generate products and services for customers. Developing a comprehensive business process architecture requires a broader perspective.

From Stakeholders to Value Streams

To keep things simple, imagine that there is one major business process set within the organization that is designed to support each stakeholder. Figure 3 pictures the situation we would have. Each of the loops shown in Figure 3 is a value stream (as the term is defined by the Lean Enterprise Institute—a process that begins with a request by an external party and ends when the request is satisfied.) [2]. In Figure 3, we keep it simple and assume that each external

stakeholder interacts with the value chain in a single way.

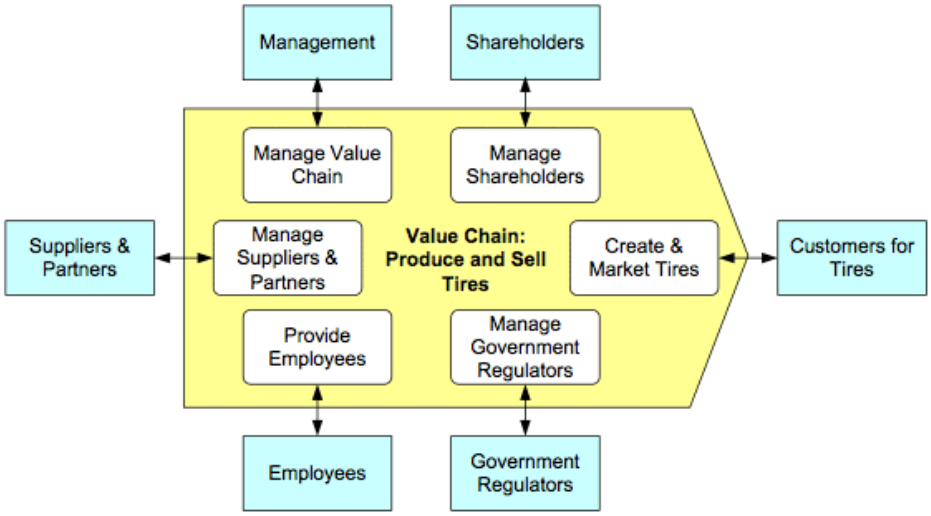


Figure 3. Processes that provide products and services for value chain stakeholders

In reality, it is more common for a stakeholder to interact in multiple ways. Looking just at the customer-value chain interaction between a bank customer and a bank, for example, we arrive at three major value streams. One involves a request on the part of a customer to open a new bank account. A second involves a request by the customer for a specific service—say cashing a check on his or her new account. A third interaction arises when the customer asks for a service that the bank does not currently offer, which triggers a new service design process which eventually generates a new bank offering. All three of these value streams are diagrammed, at a high level, in Figure 4, and at a more detailed level in Figure 5.

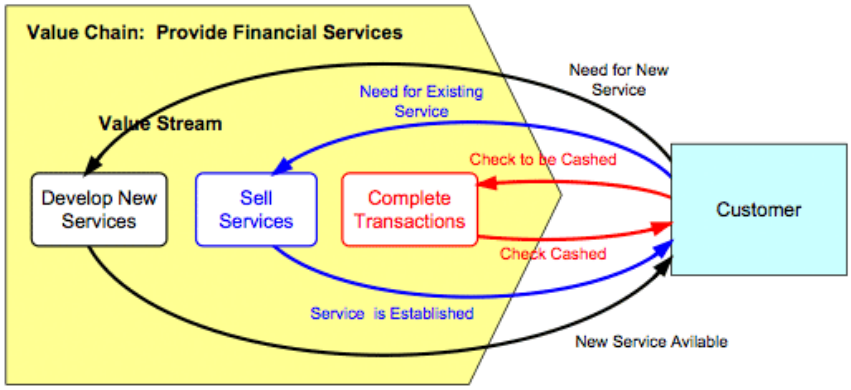


Figure 4. Multiple value streams initiated by a single type of stakeholder.

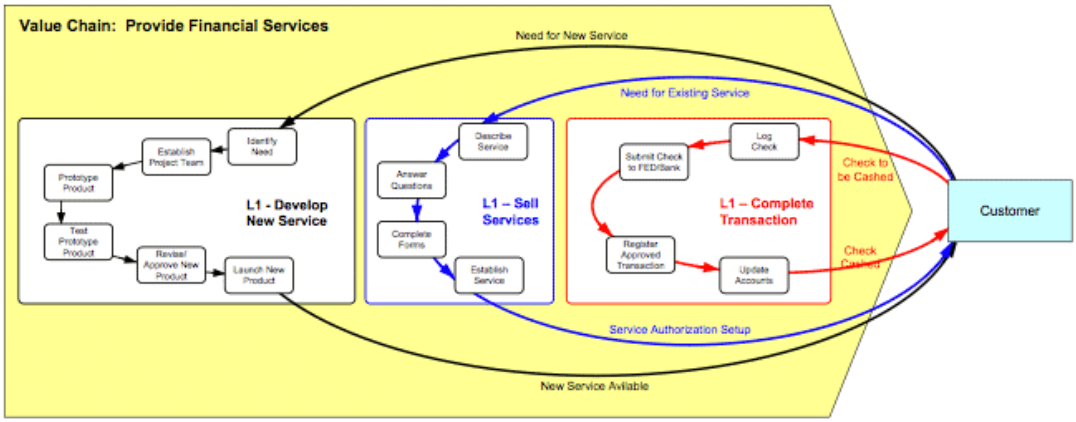


Figure 5. A detailed look at multiple value streams initiated by a single type of stakeholder.

From Value Streams to a Comprehensive List of Level 2 Processes

Assume that we term the large processes that interact with the stakeholders Level 1 processes and that we call the subprocesses identified in Figure 5, Level 2 processes [3]. Without going into more detail, you can see that our initial analysis of a value chain is going to generate a large

number of processes, some core and some managerial or supporting in nature. Processes designed to provide shareholders with financial statements will be managerial in nature while processes to hire and pension employees will be support processes.

Organizing and Consolidating the Level 2 Processes

Using the approach we described in the banking analysis, we arrive at some 100 level two processes which we then need to organize more effectively. Generating value streams for each stakeholder has the advantage of generating a rather comprehensive list of processes. It has the disadvantage that the same process may show up in more than one value stream, and the same process may be given different names, depending on which group uses the process. Thus, after the initial effort is complete and a comprehensive list of processes has been generated, the team must then review all processes from a given value chain and organize them into a consistent list of level 1 and level 2 processes. (See Figure 6)

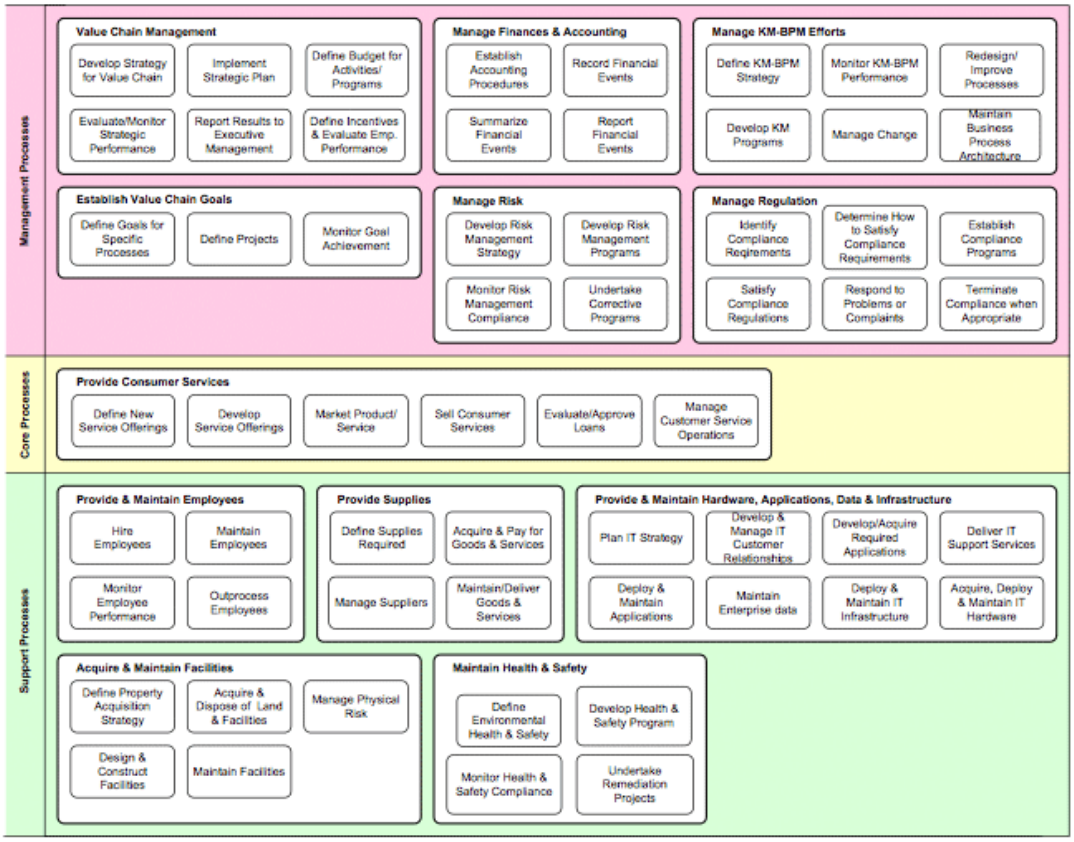


Figure 6. A comprehensive list of Level 1 and 2 processes for an organization.

Using Scope Diagrams to Analyze Level 2 Processes

We do not recommend trying to push the analysis effort below level 2 (or in some special cases, level 3 processes). Core processes and value streams tend to flow from customer or stakeholder requests to the satisfaction of those requests. Internally, however, management and core processes tend to link with many other processes, creating a mess of crisscrossing flows. Consider Figure 7. In this case, we see how a single support process, Hire Employees, might have links to all of the other processes in a core value stream and to managerial and other support processes, as well. At one time or another, all of these different processes will want to hire new employees, just as all will want to pay and pension employees.

If one adds more than a few support processes, and shows all the possible internal flows, one generates process models that are impossible to understand or use. A business process architecture should provide a picture that management can understand and that can guide major process management efforts. For this purpose, views like those shown in Figures 3 and 6 are quite adequate.

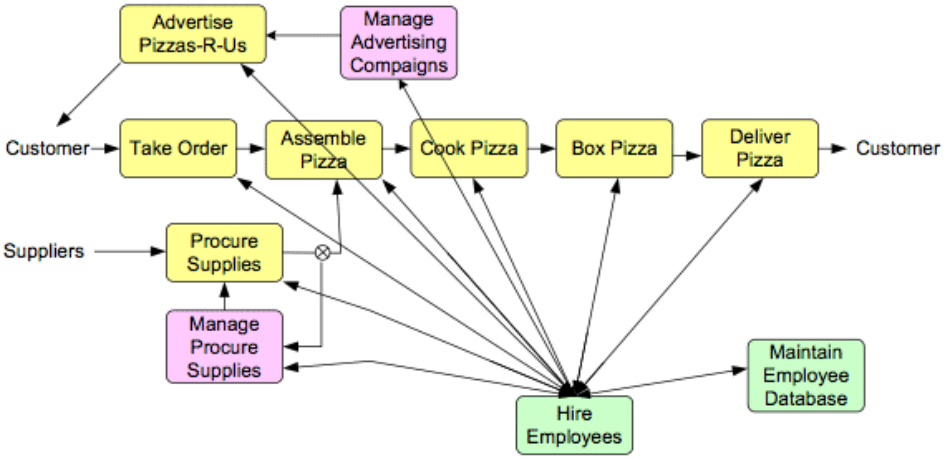


Figure 7. A single support process would link to many other internal processes.

When one needs to move beyond the level of analysis pictured in Figure 6, individual level 2 processes can be analyzed, one at a time, using something like a scope diagram [4][5]. With a scope diagram, one begins by putting the specific level 2 process one wants to analyze in the middle of the page and then considers how that process interacts with all of the other processes in the organization. It's not uncommon for a major business process-in-scope to interact with 10-20 other processes in the organization, or with multiple stakeholders. One considers inputs and outputs and one also considers management and support interactions. One considers every other process and any group of stakeholders with which the process-in-scope interacts and asks about the nature and the current success of the interaction. Are customers happy with the output? Is the process satisfied with the support it is given by HR or IT processes? Is management happy with the flow of financial information, or with risk avoidance procedures that are in place?

The scope diagram is the basis for the development of a business process change roadmap. Each level 2 process is analyzed and then ranked according to its importance to the organization and the degree to which it would benefit from being improved. (See Figure 8.) If a specific level 2 process is found to have problems, then it is time to look inside the process, converting the scope diagram to a process flow diagram (e.g. a BPMN diagram) that shows exactly how the specific process handles the various inputs or outputs it must deal with. Flow diagrams, as such, have nothing to do with process architecture work; they remain a tool best used by process improvement teams.

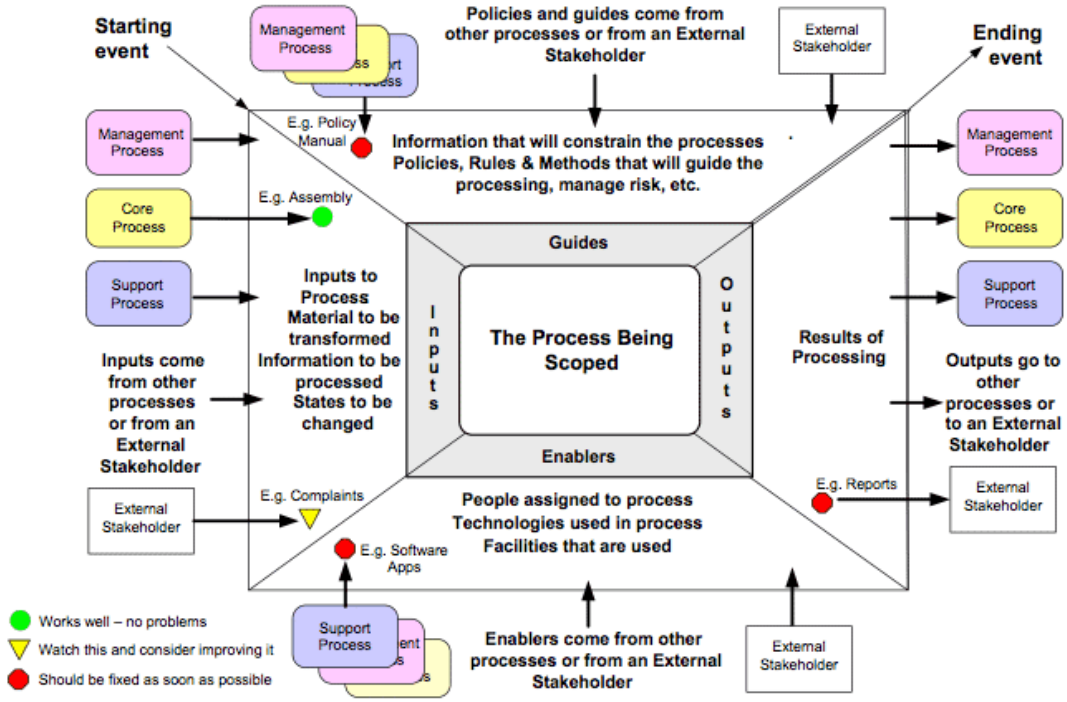


Figure 8. A scope diagram.

From Architecture to Process Improvement Projects

The scope diagram, at least as BPTA uses it, forms the link between a business process architecture overview and the initiation of a process redesign effort. BPTA architecture teams end

a detailed business architecture effort by analyzing each major process by means of a scope diagram. Similarly, a BPTA process redesign team begins each project by developing a scope diagram to determine the nature of the existing process. In an organization with a good business process architecture that step can be simplified because the BPM group doing the analysis and project prioritization can provide the redesign team with a current scope diagram for the process to be improved.

Once one has done an initial scope diagram, one is prepared to think about the nature of the intervention that might be appropriate. Looking at some scope diagrams, one is confident that the problems are minor and that process improvement can be delegated to the manager and employees who deal with the process on a day-to-day basis. In other cases, one might decide that a major redesign project was called for and a team might be set up to reconsider how the process is performed or to initiate major changes, as for example, when one decides to switch to a new software technology and rearrange all process activities to work with the new technology. Similarly, some scope diagrams reveal so many difficult problems that the organization may decide to step back and consider a major transformation of the entire process and the ways in which that process interacts with other major processes. This assignment of treatments is done in conjunction with an assignment of priorities, and, perhaps, in conjunction with the development of a detailed roadmap for process interventions over the course of a year or more.

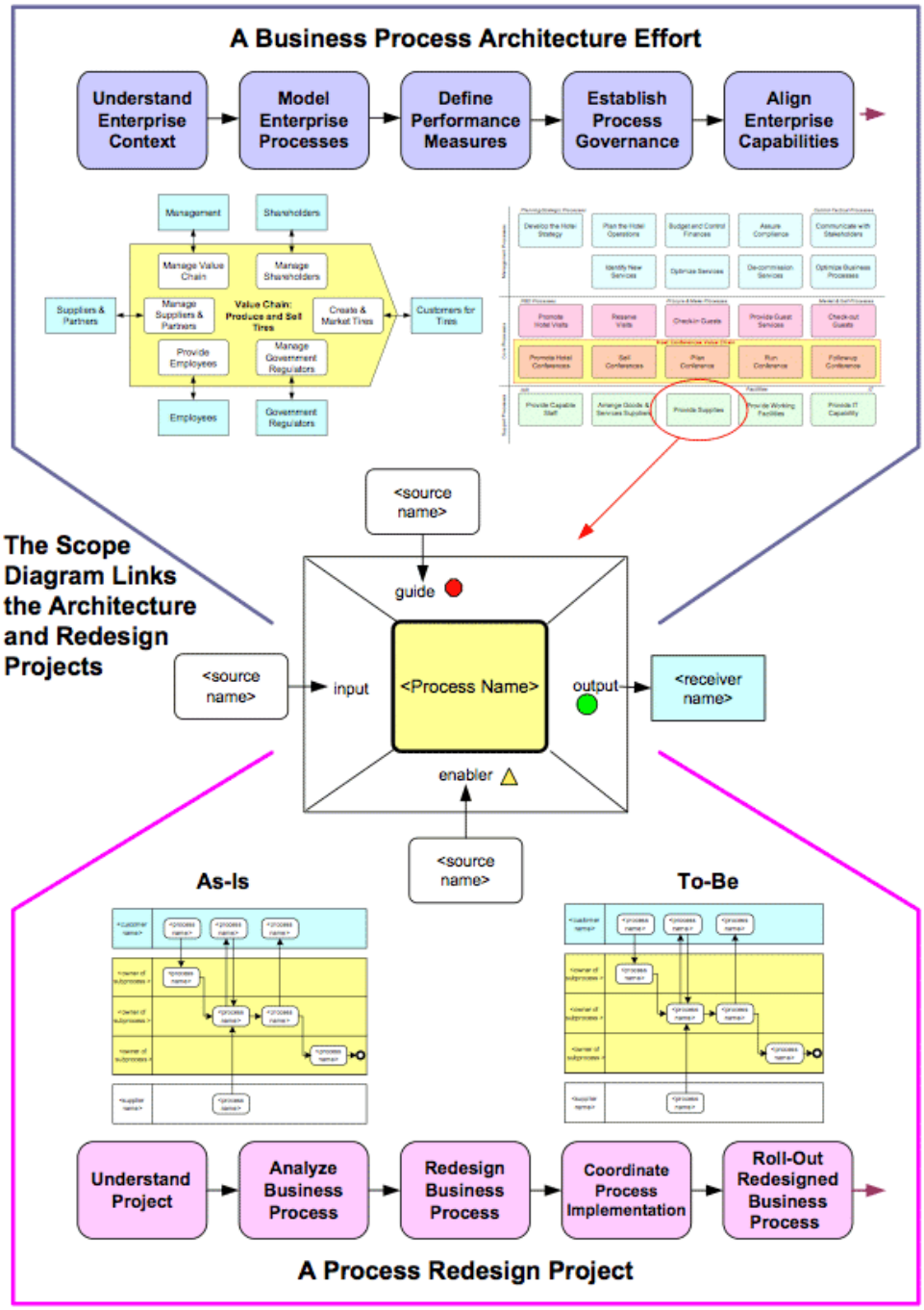


Figure 9. The Scope Diagram is the lynch pin between architecture models and process redesign projects.

Conclusion

The creation of a business process architecture requires a major effort. A comprehensive business process architecture is not so much a hierarchy as a network rooted in the value the organization provides to a number of stakeholders. The architecture should not be organized entirely around a core set of processes—even though the concept of a value chain is very important to structure the overall effort—but should reflect all of the processes required to produce value for all of the organization's key stakeholders.

Early efforts by process methodologists conceptualized the business process architecture as a front-end effort performed when one began a major process redesign project. There is still a need for something like that effort, but today, the development of a comprehensive business process architecture requires a much more elaborate and systematic effort to assure that all critical business processes are captured and understood. At the same time, today's methodologists have abandoned the idea of creating a comprehensive architecture that shows every process in a large organization within a single diagram, and they have abandoned the use of flow diagramming techniques as a way of capturing the relationships among processes. Instead, they are more likely to limit themselves to an architectural diagram that pictures a hundred level 1 and 2 processes for each value chain, and to then use something like a scope diagram as a way of deciding which level 2 processes identified in the architecture deserve further attention.

The key thing to understand is that the business process architecture is a management tool, and like any other tool, it must be designed to be understood and used by business managers.

Till Next Time,
Paul Harmon

Notes

[1] For a good description of a value chain and some of the problems in a value chain, go to BPTrends and read Defining a Value Chain for a Bank.

[2] For a good overview of the value stream approach and how it is used by the Lean Enterprise Institute (LEI) go to BPTrends and read the book review, Learning to See: Value Stream Mapping.

[3] For a discussion of process hierarchies go to BPTrends and read Resisting a Narrow Definition of Process.

[4] As far as we know, this approach to focusing on a specific process and its relationship to all other core, support and management processes at Level 3, rather than attempting further decomposition using a flowchart approach, was first developed by the Supply Chain Council for use with SCOR documentation.

[5] For a good description of a scope diagram, go to BPTrends and read Scoping Processes.

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