

Value Streams: Business Architecture's Guidepost to Business-IT Transformation

By William Ulrich and Neal McWhorter

In the midst of seemingly endless debates about the various approaches and techniques for business improvement, the concept of value is often lost. While we all intuitively know what value means, the use of value-driven approaches remains woefully problematic. In the 25 years since the publication of Michael Porter's initial work on value chains [i], the way in which value has been used and defined has remained a source of confusion and ambiguity. This paper discusses the powerful concept of the value stream as a means of defining and delivering stakeholder value.

Porter's original value chain analysis focused on the creation of a generic pattern with five core activities: Inbound Logistics, Operations, Outbound Logistics, Marketing, and Sales and Service. This model is a good fit for organizations with a defined customer base, focused on creating a specific, discrete product. In the value chain model, value was primarily achieved in delivery of the final product while value improvements were driven by internal performance and innovation. Competitive advantage leaned heavily on incremental differentiation and supply chain optimization which fits well with organizations that are focused on optimizing how interim value is accrued within a discrete product marketplace. Service industries struggled with the Porter value chain because their idea of value did not align well with Porter's accretive, stepwise value creation. Something more was required. Given the value chain shortcomings, an alternative approach evolved that focused on defining sets of core processes that can be aligned to a given organization's business model. This approach is called the "value stream."

A STAKEHOLDER-DRIVEN VIEW OF HOW TO ACHIEVE END-TO-END BUSINESS VALUE

Value streams focus on understanding how value is created and delivered to stakeholders. Value stream analysis is a more process-centric view of value accretion than is found in the value chain. As a result, value streams align well with much of the process work underway in organizations. Whittle and Myrick define a value stream as "an end-to-end collection of activities that create a result for a customer, who may be the ultimate customer or an internal end-user of the value stream." [ii]

The value stream consists of high-level views of a process where each activity or "stage" adds value for a defined stakeholder. A value stream called "acquire product," for example, would ideally result in a customer achieving a desired outcome of obtaining a product or service of choice. Value streams differ from processes in several important ways:

- **Stakeholder Focus.** The value stream's focus on delivering stakeholder value places a premium on viewing the business from a stakeholder's point of view, which in turn drives strategies and investments that ensure continuing viability of your business. Business processes, on the other hand, do not have to deliver value and may not have any stakeholder focus. Consider a potentially outdated process that moves a data file from one point to another within a government agency. It has no stakeholder focus and in fact is merely a legacy of a time long gone. This is clearly a process – but in no sense could this be considered a value stream because it is not stakeholder focused.
- **Value Centricity.** Each stage of a value stream as it moves from left to right creates value for one or more stakeholders. This is true in varying degrees of scale. While one can argue that a value stream to authorize a driver's license for an applicant is most valuable at the end state, consider that there is value in allowing the applicant to pass his or her vision exam. The applicant is informed that he or she has the visual ability to get a license and has additionally learned that their vision is not impaired.
- **Executive Representation.** Value streams are used to provide executive-level views to strategists,

planning teams, and decision makers. Value streams are easy to understand and take little explaining — unlike processes, which can quickly devolve into unnecessary and unwanted degrees of complexity that become a diversion at the planning level. Senior business executives can become quickly lost in the details of a business process. Value streams offer a simple, aggregated depiction of the same process concept with a focus on value and stakeholder — both topics executives can understand.

- **Holistic Viewpoint.** Value streams allow executives to build common strategies across divisions and even outsourcing partners. For example, an international insurance and financial company sought to align all business processes related to the delivery of value delivery to customers seeking to acquire a cross-section of products. The company created a common value stream called acquire product and mapped multiple processes for each product line and division to that value stream. By doing so, executives could determine how to streamline and optimize common on-boarding, rating, risk analysis, and related stages of the value stream to deliver value to a common set of stakeholders. This approach created a common set of customer expectations and results, regardless of the insurance product or financial instrument they desired.
- **Aggregation of Views.** A single value stream represents an aggregation of all business processes required to deliver value to a given stakeholder. For example, a customer information management value stream at a full service insurance company represented dozens of processes across multiple business units, product lines, and organizational boundaries. Customer losses were mounting as a result. Individual processes were streamlined on a product line basis, but scores of parallel processes that never converged and resulted in uncoordinated acknowledgements, synchronization, and notifications from a customer perspective when changes were initiated. Viewing this challenge from a common value stream perspective allowed executives to quickly understand the problem and craft a common solution across product lines and business units.
- **Decomposition of Views.** Decomposition is the reversal of aggregation. It ensures that individual business processes aligned to a given value stream have the flexibility to support unique product line or business unit requirements. In our aggregation, customer information management example, decomposition ensures that stages being aligned to maximize stakeholder value are still unique enough to accommodate specific information management requirements. In this example, changing an address on your mutual fund has little impact while changing an address on your homeowner's insurance can impact insurance rates.
- **Capability Mapping.** Value streams are composed of stages that map to business capabilities. A capability defines “what” a business does. Planning teams can use value streams to rapidly envision and improve the way which a business delivers value while determining “what” must be improved to support these changes. Value stream / capability mapping is a key factor in tying together “how” a business achieves value and “what” a business to support the how. We previously discussed the use of the acquire product value stream. In this example, capability mapping would enable teams to identify common (SOA) business services required to enable each stage of the value stream across all processes mapping to that value stream. This concept brought together common views for the first time on how to manage risk analysis, eligibility determination, and other capabilities essential to moving from stakeholder initiation through product acquisition within the context of the value stream.

WHY ARE VALUE STREAMS ESSENTIAL TO STRATEGIC TRANSFORMATION?

Value stream analysis is appealing because it helps executives gain a clear view into where an organization should focus its resources and apply funding to achieve stakeholder value. Historically, organizations have focused resources on inward-looking efforts to streamline and systemize internal business processes hoping to improve operational costs, throughput time, and overall quality. “Lean” concepts, for example, create a streamlined view of a process but can squeeze key stakeholder activities

out of the equation by focusing improvements on isolated aspects of the business.

Organizations seeking to move beyond the isolated application of time, cost, and quality improvements are hoping to achieve more strategic value for their investments. Value streams address this issue by helping ensure that whenever business processes are being modified, the value proposition is examined to understand and ensure that the overall impacts are desirable. In this way, organizations avoid situations where they optimize lower-level processes only to discover that the sum of these optimizations is a reduction in overall value to external stakeholders. Aggregation and decomposition as previously discussed enable this holistic approach.

One financial institution made significant investments in lean across various business units. But this investment resulted in little gain overall because the organizations had launched multiple silo-based, overlapping lean initiatives. When a handful of simple value streams were laid over these process initiatives to establish a transformation strategy to align finance and insurance areas, the executive steering committee, including the CEO took notice. Transformation planning shifted from a guess work approach to automation and alignment to a focused, business-driven view of which stages of the value stream and underlying capabilities must be targeted to achieve common stakeholder value.

BREAKING DOWN THE VALUE STREAM

Value stream-based analysis differs from traditional process analysis because it isolates activities that directly provide value from supporting activities. When creating value streams it is essential to avoid the temptation to populate them with activities that do not deliver value to one of the value stream's stakeholders. Figure 1 shows three separate value streams within an organization: Acquire Product, Maintain Account, and Develop Product.

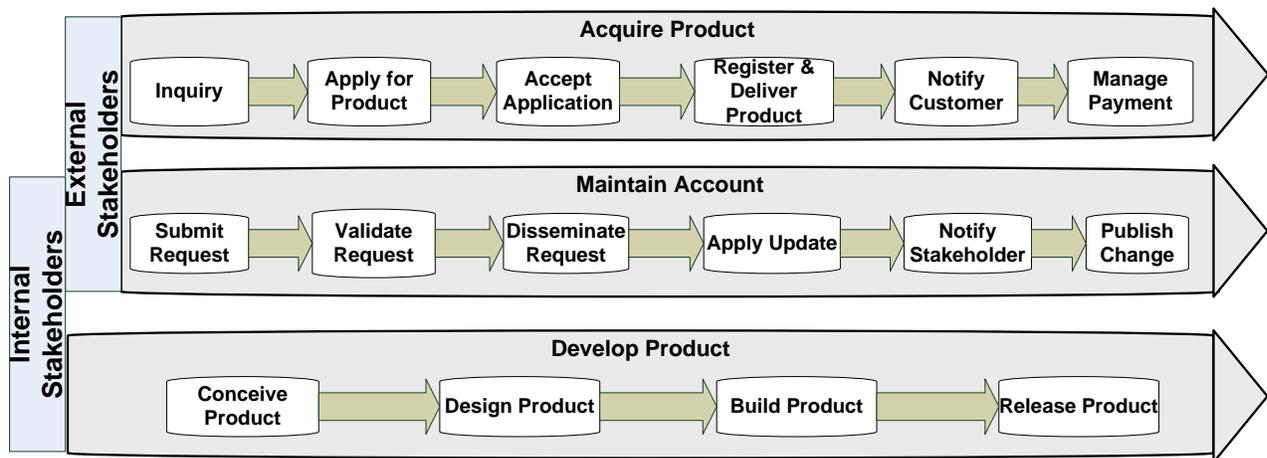


Figure 1 – Three commonly found value streams.

Actual process flows within an organization includes many activities that support the value streams shown in figure 1 but which are not included in the example. Each value stream only includes the stages that deliver value to a stakeholder for that value stream. In the example shown in figure 1, stakeholders are shown as internal or external stakeholders. In practice, identification of each of these stakeholders would accompany a given value stream.

Acquire Product is a common view of how a customer requests and procures a product or service. This concept works for most business models where something of value is desired by an external stakeholder willing to exchange value in return. At each stage across this value stream value is delivered to a given

stakeholder. Inquiry often involves a narrowing of a decision for a stakeholder with a response geared towards delighting the requester. Applying for a product allows the customer and organization to narrow the options to an agreed upon solution. This solution structuring concept is common in financial institutions where a loan, for example, is structured for the candidate. Acceptance, registration, and delivery are primary value-based, customer objectives. Notification and payment complete the value exchange cycle.

Two additional points are highlighted in figure 1. Maintain Account is a value stream that focuses on post-acquisition value delivery. This concept is often forgotten or underperforms, but in the service industry post-sale delivery is where much of the value is achieved for the customer. Consider, for example, a loan holder who wishes to modify a loan agreement. The loan holder desires fast action with minimal problems. These post-acquisition concepts are often buried as a single stage in the backend of a value stream that addresses product acquisition but ignores post-acquisition value – an essential aspect of what most financial, insurance, and similar service organizations provide.

The last value stream is called Develop Product. This value stream delivers new product and service offerings to internal stakeholders. These are typically marketing and sales teams that can now take these products and use them to deliver value to external stakeholders. Aligning internal product design and development processes to a given value stream constitutes an important aspect of ensuring the viability of a business.

While keeping value streams at the right level is important, it may be desirable to create lower level views of supporting value streams that capture the value proposition that enables the value stream stage at the higher level. Figure 2 shows a value stream stage called Prospect Customer that is broken down into a sub-stream. Lower levels of value streams can be thought of as delivering value to all the parties involved in the higher level value stream stage.

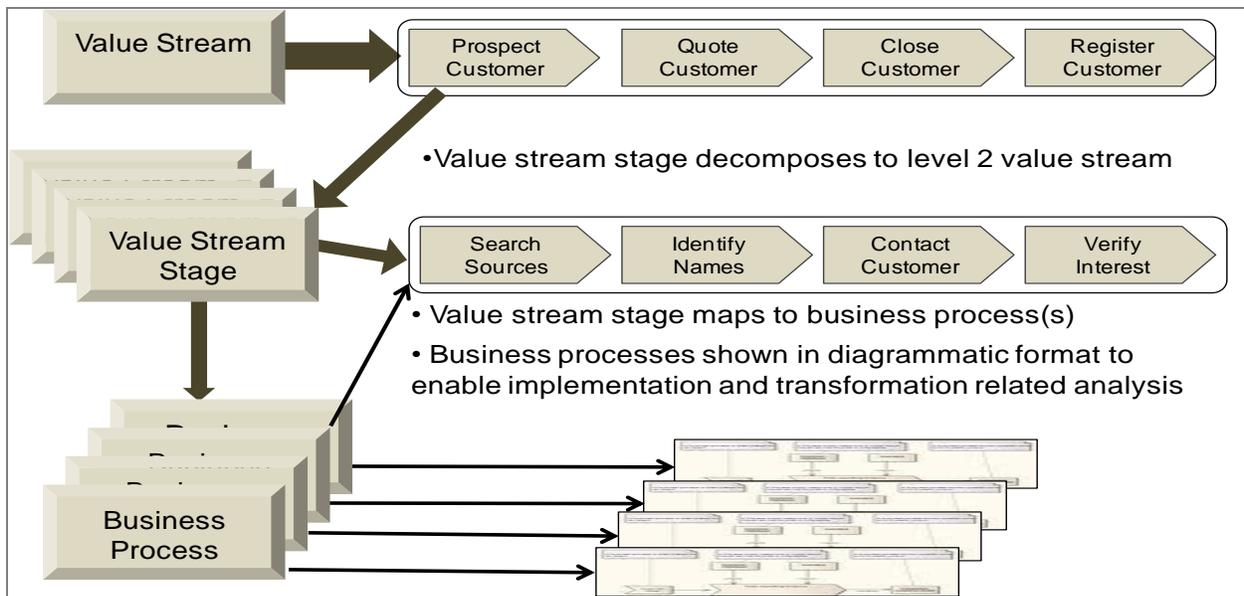


Figure 2 — Value stream decomposition and business process mappings.

Figure 2 further illustrates the decomposition of a value stream stage by showing that each stage also maps to one or more business processes. In practice, we have seen one or more stages of a value stream map to dozens or even scores of business processes. This mapping provides a way for organizations to understand the impact of various changes to the value stream.

VALUE STREAMS AND BUSINESS ARCHITECTURE

Given the role value streams play in helping organizations identify where to focus holistic improvement efforts, it is no surprise that value analysis and business architecture are highly intertwined. Business architecture is defined as “a blueprint of the enterprise that provides a common understanding of the organization and is used to align strategic objectives and tactical demands.”^[iii] Value is central to achieving strategic objectives and so is business architecture. If an organization cannot create stakeholder value it will not be around long, let alone achieve its strategic objectives.

While value streams are an essential part of the business architecture, they do not stand alone. Transforming an enterprise requires more than just a stakeholder, value-based view. It requires understanding business capabilities, as previously discussed, along with organizational views. Business architecture is an abstraction of the business and, in addition to value streams and processes, includes strategies and policies, organization units, business capabilities, information assets, customers and partners, initiatives and projects, metrics, and decision models.^[iv] The ability to view these aspects of a business holistically enables executives, planning teams, and business analysts to perform root cause analysis and craft enterprise-wide solutions.

In our previous customer information value stream example, insurance company executives could quickly envision not only how the value stream and processes needed to be aligned, but also identified where capabilities needed to be added or improved, how information had to be aligned more effectively, and the process automation and service deployments that were required to reverse customer losses. After phase one of this effort was completed and customer attrition trends were reversed, the use of business architecture approach was blessed at the board level of the enterprise. The benefits of value stream and business architecture analysis are very real and in use today.

Business architecture provides the glue needed to ensure that value streams deliver the greatest possible benefits. Value streams do not map neatly to organization units, information, or initiatives because any given value stream touches many aspects of the enterprise. This is where the previously introduced concept of business capabilities plays a role. Rather than getting lost in the details of IT implementations, organizations should instead focus on the capabilities required to maximize value stream benefits. A value stream may involve dozens of capabilities. The same capabilities are often deployed in many places.

Figure 3 depicts two unique aspects of the business capability as well as how it maps to stages within the value stream. The box to the right in figure 3 represents the level one capability map. Organizations create a level one map to represent a high level view of “what” the business does on a single page. A capability decomposes into lower levels, typically from levels 1-3 for purposes of planning and levels 4-6 for purposes of detailed business/IT mapping. The level one map in figure 3 has pointers showing where level 3 capabilities (level 2 capabilities are not shown) are invoked across a value stream. Capabilities may repeat within a value stream or repeat across many value streams. This is not only expected but the ideal because what a business does occurs in many places, across many parts of the enterprise. When the same capability is shown in multiple value streams this implies that it is reused across these value streams. If apparently identical capabilities are being used in different value streams then there may be redundancies in the organization that should require alignment from a business and / or IT perspective.

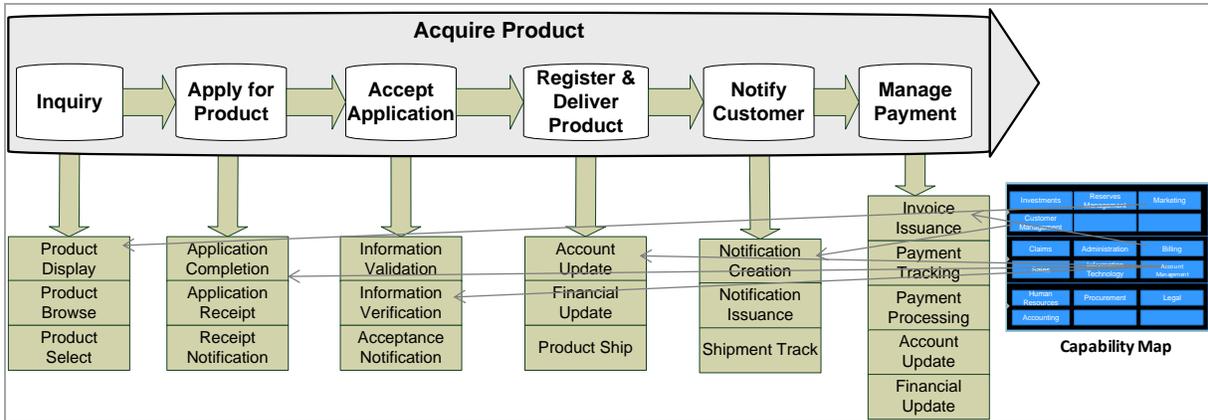


Figure 3 — Capability, value stream mappings within the business architecture. [v]

For example, an invoice issuance capability (see figure 3) is performed across many business units. Research may show that a common business approach should be enforced for this capability and should rely on a common set of business information. Further research may show that this same capability is deployed through a dozen applications and manual systems. Alignment of the invoice issuance is the first step towards the creation of a common invoicing service, which can then be accessed by all business processes mapping to this value stream. This type of analysis is central to successful transformation planning and deployment.

ROLE OF VALUE STREAMS IN BUSINESS / IT TRANSFORMATION

To understand how the value stream enables business transformation across an enterprise, consider an example where executives want to expedite and simplify the product acquisition cycle. Due to the diversity of the organization's business model, there is no single product acquisition view. Rather, there are scores of processes across numerous business units and product lines, enabled by a diverse combination of applications and supporting technologies. Each product line and business unit targets a common set of customers expecting to see the same product options displayed when seeking to make a product acquisition. Individual business unit attempts to address this issue through process analysis and streamlining of system front-ends have fallen well short of achieving the executive mandate of streamlining the overall acquisition cycle.

This is where value stream-driven transformation takes over. We will use the Acquire Product value stream introduced in figure 1 to demonstrate the role of the value stream in transformation analysis and planning. Once the initial Acquire Product value stream is created the next steps map organizational capabilities to the stages of the value stream. Next the business processes which define "how" these capabilities are implemented are mapped to those capabilities in order to allow the disparity and complexity of the current state to be assessed. The goal is that no matter how a customer enters the value stream, all relevant products would be shown to that customer based on needs and desires. This mapping provides a consolidated enterprise view for the customer of all product options, which in itself delivers customer value. This is depicted as the Inquiry stage of the value stream in figure 4. While executives generally knew this was an issue in the past, they had little understanding of the complexity and possible resolution options. The question as to how to best address this issue requires additional analysis.

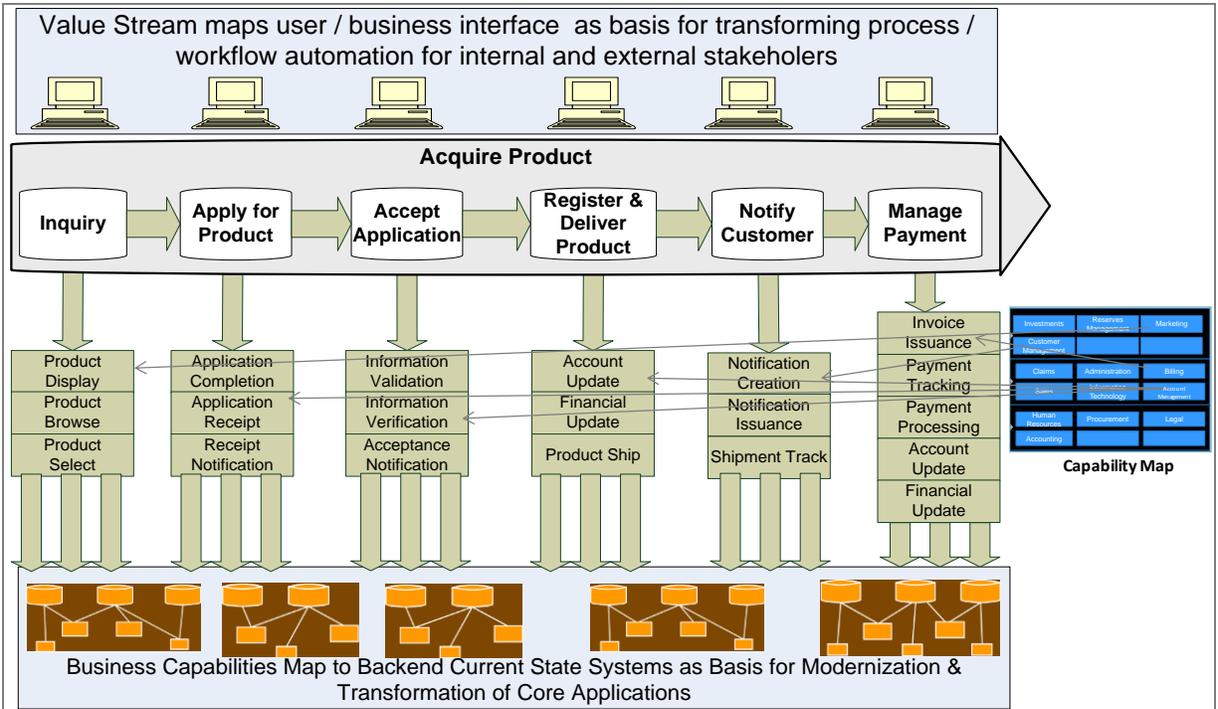


Figure 4 — Role of value streams and capabilities in business / IT transformation. [vi]

Leveraging the analysis in figure 4, executives across business unit boundaries can establish a clear strategy and funding model for transforming the value stream, related capabilities, and current-state applications, and databases into a cohesive target-state solution. Value stream / capability analysis provides important insights into how high-priority deployments can be introduced in early phases while more comprehensive solutions are implemented incrementally over a longer window of time. In the example in figure 4, planning teams might find that the best way to deliver short-term relief is to address the “Inquiry” and “Apply for Product” value stream stages. This would address some of the initial customer concerns – but not all. Work related to these stages can begin while a longer-term strategy is discussed and agreed upon.

A rapid-response approach to addressing issues across the value stream involves consolidating, streamlining, and automating processes or portions of processes that map to various stages. Figure 4 depicts this concept along the top. Work on the “Inquiry” and “Apply for Product” stages for example, might require a new portal as well as a new service deployment to give customers a common entry point to the value stream. An additional capability must be established to fully enable the “Inquire” and “Apply for Product” stages. That capability is deployed as a business service within the underlying IT architecture. [vii] Capability-driven changes to the application and data architectures are depicted along the bottom of figure 4. We note that application transformation efforts to achieve a common set of capabilities can take much longer for entrenched applications – but the roadmap is agreed upon and being funded appropriately over the long-term.

The dual-strategy approach shown along the top and bottom of figure 4 is a fundamental, business-driven transformation requirement because the business cannot wait years for an entirely new set of systems. When business drives value-oriented solutions using business architecture as a foundation, solutions and value are delivered early and often along an incremental deployment window. Finally, because the solution will ultimately benefit a number of business units, executives will need to establish a shared funding model for initiatives such as these. This has been challenging for some organizations because this

is not the way they normally operate. It is important, therefore, to engage senior management and finance teams early in the discussion.

GETTING STARTED: FROM THE BASICS AND BEYOND

The value of leveraging business architecture in general and value streams in particular to drive business / IT transformation is that the business defines requirements from a cross-functional, stakeholder-centric perspective. This allows organizations, perhaps for the first time, to articulate and fund a strategy that crosses business unit silos. Many organizations do not have funding models that support cross-functional initiatives but this is one more benefit provided by business architecture; the ability to envision how to best deliver solutions from a stakeholder perspective to achieve value on a previously inconceivable level.

We recommend that organizations begin this journey with modest goals. Start with a value stream that has known stakeholder requirements. Customer-facing value streams are always good candidates for improvement. Focus on a single stage of the value stream, but be sure to incorporate capability mapping into your analysis early in the process. As you gain experience with building out your business architecture, you can establish a more robust set of mappings that include organization units, information assets, capabilities, processes, and IT assets as applicable. You will begin to see how value streams provide the foundation for a new way of addressing major business challenges.

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ⁱ Michael E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance* (New York, 1985).

ⁱⁱ Whittle, Ralph and Myrick, Conrad B., *Enterprise Business Architecture: The Formal Link Between Strategy and Results*. CRC Press, 2005.

ⁱⁱⁱ Business Architecture Special Interest Group, Object Management Group, <http://bawg.omg.org>

^{iv} "The Business Capability Map: The 'Rosetta Stone' of Business/IT Alignment." Cutter Consortium Enterprise Architecture Executive Report, Vol. 14, No. 2, 2011

^v "The Business Capability Map: The 'Rosetta Stone' of Business/IT Alignment." Cutter Consortium Enterprise Architecture Executive Report, Vol. 14, No. 2, 2011

^{vi} "The Business Capability Map: The 'Rosetta Stone' of Business/IT Alignment." Cutter Consortium Enterprise Architecture Executive Report, Vol. 14, No. 2, 2011

^{vii} We note here that the term "business service" refers to an IT component within a services oriented architecture.