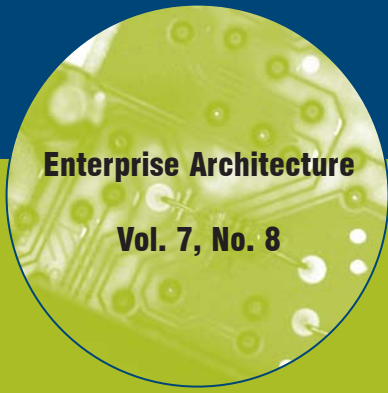




What It Takes to Be a Great Enterprise Architect

by Dana Bredemeyer and Ruth Malan

Enterprise architects have an exciting opportunity before them in helping shape organizations. But what makes an enterprise architect great? Talent, of course, but also the skills that help leaders and managers excel. This *Executive Report* spells out the necessary qualities for great enterprise architects.

Report

Executive

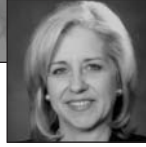
Cutter Business Technology Council



Rob Austin



Tom DeMarco



Christine Davis



Lynne Elyn



Jim Highsmith



Tim Lister



Ken Orr



Ed Yourdon



About Cutter Consortium

Cutter Consortium's mission is to foster the debate of, and dialogue on, the business-technology issues challenging enterprises today and to help organizations leverage IT for competitive advantage and business success. Cutter's philosophy is that most of the issues managers face are complex enough to merit examination that goes beyond simple pronouncements. The Consortium takes a unique view of the business-technology landscape, looking beyond the one-dimensional "technology" fix approach so common today. We know there are no "silver bullets" in IT and that successful implementation and deployment of a technology is as crucial as the selection of that technology.

To accomplish our mission, we have assembled the world's preeminent IT consultants — a distinguished group of internationally recognized experts committed to delivering top-level, critical, objective advice. Each of the Consortium's nine practice areas features a team of Senior Consultants whose credentials are unmatched by any other service provider. This group of experts provides all the consulting, performs all the research and writing, develops and presents all the workshops, and fields all the inquiries from Cutter clients.

This is what differentiates Cutter from other analyst and consulting firms and why we say Cutter gives you access to the experts. All of Cutter's products and services are provided by today's top thinkers in business and IT. Cutter's clients tap into this brain trust and are the beneficiaries of the dialogue and debate our experts engage in at the annual *Cutter Summit*, in the pages of *Cutter IT Journal*, through the collaborative forecasting of the Cutter Business Technology Council, and in our many reports and advisories.

Cutter Consortium's menu of products and services can be customized to fit your organization's budget. Most importantly, Cutter offers objectivity. Unlike so many information providers, the Consortium has no special ties to vendors and can therefore be completely forthright and critical. That's why more than 5,300 global organizations rely on Cutter for the no-holds-barred advice they need to gain and to maintain a competitive edge — and for the peace of mind that comes with knowing they are relying on the best minds in the business for their information, insight, and guidance.

For more information, contact Cutter Consortium at +1 781 648 8700 or sales@cutter.com.

What It Takes to Be a Great Enterprise Architect

ENTERPRISE ARCHITECTURE ADVISORY SERVICE

Executive Report, Vol. 7, No. 8

by Dana Bredemeyer and Ruth Malan

Our concept of enterprise architecture has shifted over the past decade, from being the enterprise-wide technology architecture to being the architecture of the enterprise, not just the technology of the enterprise. As we move beyond problems with the enterprise technology substrate to what is possible when we move from business strategy to implementation using enterprise architecture as the critical bridge, we engage architects in the process of creating great enterprises.

To be a great architect, you need talent. But greatness is accorded to those responsible for great architectures, those that stand out from others in the value they afford. The great enterprise architect is one who is credited with contributing in a significant way

to a great enterprise. In this *Executive Report*, we explore what it takes to be a great architect as well as the exciting opportunity that enterprise architects have in shaping enterprises that stand out among the organizational landscape.

AN ENTERPRISE ARCHITECTURE STORY

We explore what it takes to be great in the context of a historical tale with all the qualities of a great story: the hero embarks on a quest to do great good for his people; and though faced with many challenges, he prevails against tough odds. This is a story of an enterprise architect. As you read it, you will no doubt find that, paragraph by paragraph, there is a lesson for enterprise architects

and for executive managers considering how to set up the role so that it will add the most value. Not only will this story give you keen insight into what it takes to be a great enterprise architect, but the story itself will be a valuable resource. Remember, great leaders tend to be storytellers, and this is a wonderful story to tell.

This is the story of a group of people who got together to solve an enterprise architecture problem 217 years ago and the architect who led them.¹ So what was happening in 1787? The group in

¹Jack N. Rakove has written excellent books on James Madison and the US Constitution [13, 14]. Our story draws heavily on his work as well as our reading of the Articles of Confederation, the US Constitution, Madison's notes, *The Federalist Papers*, and other works. William Crandall first used this story in the early days of architecture work at HP.

question was seeking to sort out the structure of the US federal government. The architecture took the form of the US Constitution, a four-page document that was to define the federal government, its key components and their responsibilities, how these components interact with each other, and how to evolve the architecture itself by way of amendments to the Constitution.

The success of that enterprise architecture is well established. In terms of longevity, this architecture has far surpassed the expectations of its creators. Many thought it would be successful if it lasted a generation, if it lasted just 30 years before it had to be redone completely. But here we are, 217 years later, and the architecture continues to do a good job at what its authors intended. It is the founding document of the oldest continuous government on the planet. And it has stood the test of external criticism and been accorded the honor of emulation, being the pattern for every constitutional democracy created since.

When you look at the story, the role of one individual emerges as supremely important: James Madison, the father, or architect, of the Constitution.

The Problem with Confederation

In investigating the role of Madison, it is important to understand that the Constitution was not the first attempt at resolving the structure of the US government — that was undertaken by the Articles of Confederation. Written in 1778 and ratified in 1781, the Articles created the United States and took the form of a set of agreements among the then 13 states. These 13 states had great variation in population, economic strength, and fundamental industries. They also differed significantly in their levels of commitment to a strong federal government, both in their legislative bodies and in the general populace.

The Articles laid out agreements such as:

- States would pay their debts to each other.
- States would not conduct foreign policy; that was the prerogative of the federal government.
- States would not impose unreasonable tariffs on inter-state commerce.
- States would not form alliances among themselves and against other states.

Almost immediately, driven by local exigencies, these rules were broken. What had been clear to Madison from the start became clear to others: the Articles left too much authority to the states and failed to create a strong federal government. There was no enforcement mechanism and no integrity. The states had made a set of decisions and agreements, but they had no teeth. Further, there was no unifying vision for the United States.

Getting Delegates to the Convention

Within a year of the Articles' ratification, Madison lobbied hard to push state leaders to support a constitutional convention (and he lobbied for the next five years). The people he lobbied fell into the following three camps:

1. Those who agreed with him on the value and necessity of a stronger central government and that a constitution was the approach to take and as soon as possible.
2. Those who agreed with him on a stronger central government but did not think the citizenry wanted it or that their leaders would support creating it. Many would say, "After all, we tried this in 1778 and got the Articles.

The *Enterprise Architecture Advisory Service Executive Report* is published by Cutter Consortium, 37 Broadway, Suite 1, Arlington, MA 02474-5552, USA. Tel: +1 781 641 9876 or, within North America, +1 800 492 1650; Fax: +1 781 648 1950 or, within North America, +1 800 888 1816; E-mail: service@cutter.com; Web site: www.cutter.com. Group Publisher: Kara Letourneau, E-mail: kletourneau@cutter.com. Managing Editor: Rick Saia, E-mail: rsaia@cutter.com. Production Editor: Linda M. Dias, E-mail: ldias@cutter.com. ISSN: 1530-3462. ©2004 by Cutter Consortium. All rights reserved. Unauthorized reproduction in any form, including photocopying, faxing, and image scanning, is against the law. Reprints make an excellent training tool. For information about reprints and/or back issues of Cutter Consortium publications, call +1 781 648 8700 or e-mail service@cutter.com.

Why do you think it will be any different this time?”

3. Those who did not want, or support, a stronger central government. They wanted either less government on principle or to protect the power they enjoyed at the state legislature level. A powerful individual in a state legislature, or someone with significant influence over a state legislature, was reluctant to yield power to a central government.

But through the constant lobbying of Madison and his allies, and due to the growing problems facing the young nation, willingness to participate increased, and a convention was finally scheduled for the summer of 1787 in Philadelphia. But even then, it was not to be a constitutional convention. Several delegates and states refused to participate in such a significant change; they would only participate in a convention whose purpose was limited to revising the Articles of Confederation.

Distilling the Lessons of History

While Madison was busy over those five years getting people to the meeting table, he was also asking, “What should we do differently this time? How should we structure the government in order to best support the kind of nation we want?” Madison studied world political history, particularly the ancient Greek and Roman experiments and the previous several

hundred years in Europe. He looked at and analyzed these historical lessons through the lens of the values and aspirations of America: the desire to establish and protect the rights of individuals; the right to hold and keep property; the right to representation in and influence over their government; the rights of assembly, religion, free press, and so on.

From this study, Madison distilled two guiding principles that such a government would have to follow. First, power in the government had to be distributed — concentrated power tended to result in tyranny and oppression. But even in distributed power systems, over time they often leaned toward concentrated power, given political ambition and the desire for power. This property of human systems was the motivation for Madison’s second guiding principle: the government’s structure must have mechanisms to keep the power distributed over time. These principles were called *separation of powers and checks and balances*.

Intelligence Gathering and Relationship Building

The convention was due to begin in mid-May 1787. Several elements of the convention, and Madison in particular, are worth noting. Madison insisted that the Virginia delegation, of which he was a member, arrive on time or early. Due to slow transportation,

the weather, and other unpredictable factors, delegates were expected to trickle in over the first two weeks of the convention. Madison’s intent was that the seven Virginia delegates would act as an informal welcoming committee: helping other delegates get settled, refreshing old relationships, making new ones, and in the informal time prior to the official convention, start working their strategy for the summer. They would note the key issues that each delegate was concerned with: What were their official instructions from their states, and what were their personal issues and attitudes? Who were the leaders within a delegation, and what were the lines of influence among the delegates? All the while, Madison wanted the Virginia delegation to build good working relationships that would enable them to work well with other delegates. These first two weeks set the stage for an ongoing theme of intelligence gathering and relationship building.

Vision as Platform for Change

So a sufficient number of delegates arrived and the “Fix the Articles of Confederation Convention” began. The first order of business was to decide how to proceed. The initial proposal was to allow each of the 55 delegates an allotment of time to state problems with the Articles and to propose changes he thought were required. Madison

immediately saw two critical problems with this approach:

1. It would so divide and entrench the delegates that they would never be able to reach consensus.
2. It would keep the focus on the Articles, when Madison wanted to redirect their attention to a constitution.

So Madison ran back to his room and wrote a document known as the Virginia Plan, which outlined the key points that formed the basis of the US Constitution. He brought it back to the convention and tactfully had someone else submit it for consideration. The debate raged. Two weeks later, the Virginia Plan was accepted as the basis for further debate over the “55 views” approach (i.e., one for each delegate). Madison had effected two critical changes:

1. One view rather than 55 — a vision of what could be accomplished that summer. He had directed attention at one topic.
2. He had shifted the meeting agenda from fixing the Articles to creating the Constitution.

Preparation for Persuasion

Another thing Madison did was to invent a shorthand notation, allowing for a verbatim transcript of the entire proceedings of the convention. Surely he recognized the historical significance of the event and was partly thinking of that when making the transcript

(which was not made public until 30 years later). But Madison’s immediate use of the transcript was as an intelligence and strategy support document. It was a way of keeping track of the tone and movement of the group and of individuals. If someone changed his view on a key issue on Wednesday, Madison could go back and read through Monday and Tuesday’s transcripts and use this to form a better understanding of what influenced the delegate’s stance on an issue.

The Necessity of Compromise

Over the course of the next two months, the Virginia Plan evolved into the US Constitution. Along the way, 10 of the 55 delegates left the convention, and with 45 delegates left, winter looming, and many critical issues still not addressed, a critical moment presented itself. No one thought the Constitution was complete, and many thought it contained fatal flaws. Because of Madison’s transcript, we can actually read through the debate as it took place over the last two weeks. One delegate would say, “I can support it if we deal with the issue of a free press.” And another, “I won’t support it unless the freedom of religion is made explicit.” And so on. There were 12 of these key issues on the table for discussion.

Delegates would then begin debate on one of these issues, and it would quickly become clear that they could spend all

their time on that one issue alone. It became evident that, in the time remaining, they could not address all of these critical issues. Yet some delegates were not willing to let go of their pet issues. Those in favor of compromise argued:

- “If we try to resolve every issue, we’ll fail. We don’t have time. We should accept the Constitution we have created. Even with its imperfections, it is far better than the Articles. Besides, the amendment process can correct the deficiencies later.”
- “It took five years to get us to the table this time. If we go home empty-handed, how many years would it take to build the support again?”

This debate raged for two weeks. Fortunately, the compromisers won, and the Constitution went to the legislatures of the 13 states for ratification.

This ended the second of three phases in this story. The first phase was getting the delegates to the table: it took five years to establish sufficient support and availability of delegates to get them there. The second phase was the convention: it took three months to write the Constitution; in other words, to create the architecture. The third phase was getting the state legislatures to ratify the Constitution: this took another three years.

Building Support and Ratification

During those three years, James Madison and John Jay, led by Alexander Hamilton, wrote 85 essays in support of the Constitution. Published first in New York and then syndicated in newspapers throughout the states, these essays were collected and published as *The Federalist Papers*. They are the classic example of the argued case for an architecture.

Other, less public efforts also were being made. Offers of cabinet positions in the first presidential administration were made for the strong support of key state leaders. Rhode Island was the last of the 13 states to ratify, and until it did so, the other 12 states threatened a trade embargo. So it was not all merely good argument. Plenty of politicking was going on to ensure ratification.

Led by a Great Architect

We tend to think of the US as young — and it certainly is young in the worldwide family of nations — but it has the oldest continuous government in the world. While other nations and cultures are certainly older, their governments are not. By other measures, the success of what the constitutional architects put in place is clear too, for they enabled a young nation to become a superpower in a league of giants.

Most historians of the moment agree. Without the guidance,

drive, passion, energy, and committed action of James Madison, the Constitution would not have been enacted. He brought the qualities of a great architect to the situation: vision, a thorough understanding of the problem (the governmental structure problem and the specific political problems of the people and states involved), insight into the solution, political shrewdness, willingness to compromise, and drive.

Properly empowered, enterprise architects are in a position to make extraordinarily high-impact contributions to their organizations. By the same token, they can sink extraordinary resources if they focus attention in the wrong place.

LESSONS FOR ENTERPRISE ARCHITECTS TODAY

In reading the story of Madison and the enterprise architecture work he led, you have no doubt been drawing out important lessons for your own work. We will make several of these lessons explicit since they chart the direction in which we are headed with this report.

Enterprise Architecture and the Opportunity to Be Great

Madison saw that a loose confederation of 13 states could not maintain the unity that would make the US a great nation. Seeing the gap between the reality

of the day and what was possible, he led the states on a path that would strengthen the national identity and put in place governmental structures and processes that would serve the nation as a whole. At the same time, the work of Madison and the other delegates at the constitutional convention preserved considerable powers for the states, empowering them to be successful entities in their own rights while remaining under the umbrella of a strong federal government focused on decisions of national importance.

It is worth noting that Madison was not appointed to do this. He held no formal position of authority. His task was as great as, or greater than, any faced by an enterprise architect today. And he succeeded superbly.

This story serves as inspiration to architects. Even in organizations in which enterprise architecture is not fully embraced and the function is not properly empowered, architects can make very significant future-shaping contributions to the enterprise. Properly empowered, enterprise architects are in a position to make extraordinarily high-impact contributions to their organizations. By the same token, they can sink extraordinary resources if they focus attention in the wrong place. At any rate, with enterprise-wide perspective, decision scope, and influence, enterprise architects have the opportunity to be great by helping their organizations be great.

In the following sections, we refer to Madison and the qualities and work that made him great, highlighting the lessons that can help us forge paths to outstanding contributions, prominent places in the history of our enterprises, and the recognition of our peers.

Expert in the Domain

Madison spent much of his time leading up to the convention learning about the structures of governments. He focused this study using the lens of US values. To do so, he had to understand the qualities that the people of the US valued and identify the qualities that were imbued in other governmental structures.

Madison used this understanding to forge a vision and articulate it credibly to others. In *The Federalist Papers*, he, along with Hamilton and Jay, argued the case for the Constitution in what has become a classic format for architecture white papers: here's a problem with the way things are structured today; here's how it gets worse if we don't do anything; and here's how the situation is improved if we adopt the architecture (in Madison's case, the Constitution).

Enterprise architects today must understand their businesses and the qualities their stakeholders care about. They need to actively study exemplars in their organizational spheres of interest and understand how they achieve

the qualities and capabilities that make them successful.

*The name of the game
for the enterprise architect
is change — and winning
support for change.*

Capabilities are the essential building blocks of the enterprise. Capabilities are generated by a mix of people (knowledge, experience, talent, and skill), process (activities and collaborations), and technology (application solutions and computing systems), supported by resources (financial and facilities).

An enterprise architect must seek to understand and articulate the capabilities the organization has as well as the capabilities required to implement the business strategy. They need to construct models and arguments, motivating and explaining the capabilities, how they relate to one another and to the objectives of the organization, and what they mean in terms of what must be done to build them.

Organizational Politics

Madison understood that he needed to effect a shift in the positions of a significant proportion of the convention delegates. Further, he recognized that to do so he had to understand their initial positions, determine what would influence them, and build

the relationships that would act as conduits for this influence. This was not the grimy, unethical side of politics. This was about achieving a vision by making it compelling to a broad base of supporters.

In the Madison story, the initiating debate centered on a strong federal government versus a loose confederation of states. The starting position of the power players in organizations today is much the same. There is an inherent bias toward decentralized power with a broadly held belief that organizations' strategies, and the structures and systems that support them, are best allowed to emerge organically through empowerment at the grassroots level.

Enterprise architecture, as the architecture of the business, threatens the autonomy of entities, groups, teams, and individuals and gives rise to resistance. But without it, organizations are an amorphous amalgam of processes, systems, and technologies. Empowering business units frees them to move quickly to take advantage of innovations born of customer intimacy. But this same freedom comes at the price of consistency and integration, consolidation, and leverage across the enterprise.

The key to greatness lies not in either polarity but rather in striking the right balance of centralized versus decentralized decision making that allows for a coherent

enterprise strategy and best serves the business in implementing this strategy. But even this amount of change entails a restructuring of the decision bases of the enterprise, and such change gives way to resistance.

The name of the game for the enterprise architect, then, is change — and winning support for change. From Madison, we learn important lessons about influence and persuasion and the value-creating work in building relationships, understanding stakeholders and tracking their positions, and shaping beliefs and expectations for a shared future.

All was not done once the Constitution was written. It still had to be ratified; remember, three months to create the Constitution and three years to gain the support of the states and get it ratified! Enterprise architects and their chartering managers must realize, too, that their job is not done once the architecture is written. The next phase, gaining broad support and getting the architecture rolled out, is generally the greater challenge.

Strategy

Madison is broadly recognized as the key figure responsible for the US Constitution, the architecture of a great nation. In creating the Virginia Plan, and orchestrating the strategic game plan for evolving this vision into the Constitution, Madison demonstrated a profound sense of strategy. He understood

what would make the US great in the eyes of its people and the world, and he set a clear direction for achieving this greatness as a nation.

A business strategy, no matter how promising, is just an exercise in futility unless it is used to transform what people throughout the organization actually do.

Being great requires focused attention on what matters. Scattered attention dilutes impact. Business strategy plays a key role in producing focus, making choices about where the organization will excel and where it will accept parity with others in the competitive space. In short, the business strategy formulates how the business will be great.

The essential components of business strategy are identity, value proposition, and business capabilities. Identity determines the organization's defining purpose, the scope of value contribution, and the essential properties or characteristics of the business. The value proposition establishes what unique and compelling value the organization will provide to its shareholders, to its customers, and to its employees and partners in the value chain. The business capabilities establish how the business will provide this value and achieve its identity. Together, these components of

strategy determine how the business will compete for capital, customers, employees, and partners. All are essential to the competitive success of the business as well as to any larger altruistic goals that the business might set as its defining purpose.

A business strategy, no matter how promising, is just an exercise in futility unless it is used to transform what people throughout the organization actually do. It is necessary to have an effective way to interpret the strategy in terms that are meaningful to each of the constituents involved in its implementation. Enterprise architecture provides the essential bridge, allowing a conscious, deliberate process for moving from business strategy to a business capabilities architecture that can be used to partition the problem, making the strategy executable. This process allows the business strategy to drive what capabilities are built, sustained, and jettisoned at the enterprise level, versus those that are delegated [9], making it clear who best to involve in the next level of capability design and rollout.

Leadership

Above all, Madison was a great leader. He had a vision, and he worked passionately to instill that vision in others. In presenting his vision, articulated as the Virginia Plan, he bowed out of the limelight so that others would take on, and still others would perceive, broader ownership of the vision.

He had drive. He poured years of his life into fulfilling his vision for the US.

Leadership has to do with vision and motivation, decision making and action, establishing a compelling vision and inspiring followers to do what it takes to achieve the vision, building consensus around what is critical and leading to compromise where it is not, and moving the decision process forward. The scope of enterprise architecture is the enterprise. In any decision, some elements of the enterprise are likely to find that the decision adversely affects them, even though the decision is good for the business overall. Moving the enterprise toward a global optimum at the expense of local compromise means that members of the enterprise architecture team as well as managers in the business units must excel not just at leading but also at following when the situation calls for it [6].

GOOD, RIGHT, AND SUCCESSFUL ENTERPRISE ARCHITECTURE

The qualities that we have been exploring in debriefing the Madison story are the qualities needed to create (from scratch on occasion, but more commonly through renovation) an enterprise architecture that is *good*, *right*, and *successful*.

By *good*, we mean an architecture that is inherently sound. There is an integrity to the architecture. It

Technology is essential not only to maintaining parity with competitors but also to the ongoing creation of competitive distinction. "IT doesn't matter" only as long as opportunities for strategic differentiation have nothing to do with IT.

does not have technical flaws. If an industry expert or architecture expert looked at it, without knowledge of the particular business strategy, no fault would be found with the architecture. Being good relies much on the architecture design skills and experience of the architects involved.

By *right*, we mean an architecture that meets the goals of its stakeholders. In the case of enterprise architecture, it is right when it clearly enables the business strategy or meets business imperatives that cannot be tackled at a more narrow level of decision scope than at the enterprise level. Being right relies much on the architect's strategic abilities. The process the architect follows will tell us a lot about whether or not the architecture will be right. The following questions should be asked:

- Have the architects sought to uncover and understand stakeholder goals and concerns?
- Did they establish priorities?
- Did they come up with architectural alternatives and assess how well each alternative

satisfies the properties of the system, making trade-offs among architectural approaches?

- Did they include others in reviewing the architecture to improve and validate both the architecturally significant requirements and the architecture?

By *successful*, we mean an enterprise architecture that is attributed with substantial business success. We cannot just assume that a good and right architecture will be successful. For this to be the case, the architecture has to be implemented. Being successful is what the organizational politics and leadership skill set is all about. The job is not done when the architecture is written. The architects must gain buy-in to the architectural approach, applying all their skills and drawing on their relationship networks to persuade, influence, consult, and educate. Further, they must stay in tune with the implementation issues by problem solving with the implementation communities and shielding the architecture from unwarranted accommodations [6] all the while ensuring that the architecture is current and reasonable.

THE ROLE OF IT IN ENTERPRISE ARCHITECTURE

In its early manifestations, enterprise architecture was an IT function. The chief enterprise architect generally reported to the CIO, and

the enterprise architecture work was focused on IT issues such as enterprise application integration, and (the lack of) technology standards across the enterprise. But just as business process reengineering (BPR) efforts illuminated the need to consider technology in BPR, so too did enterprise architecting efforts illuminate the need to consider business process — and more broadly, business architecture — in IT reengineering. Enterprise architecture was broadened to include business architecture along with technology architecture, application solution architecture, and information or data architecture (see Figure 1).

In this model, enterprise architecture was simply growing in scope, expanding the disciplines covered under the enterprise architecture umbrella without providing a clear way for those disciplines to work together on the problem of architecting the enterprise. Business capabilities provide the integrating building blocks. Since capabilities are built from a composite of people, process, and technology, architects from IT and the business side are needed to design the business capabilities architecture, or enterprise architecture, that will deliver on the business strategy.

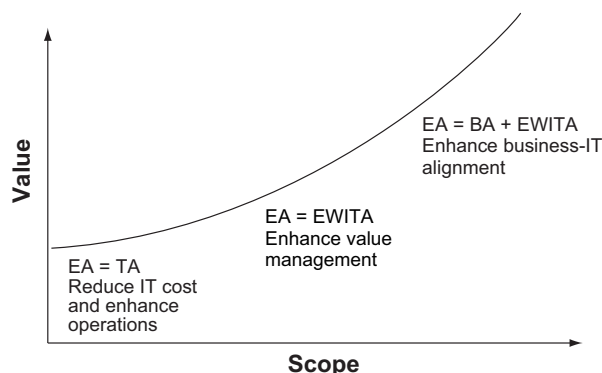
IT and the Opportunity to Be Great

In business today, technology is essential not only to maintaining parity with competitors but also to the ongoing creation of competitive distinction. “IT doesn’t

matter” [2] only as long as opportunities for strategic differentiation have nothing to do with IT. Wal-Mart’s unparalleled distribution system uses IT as its central nervous system. We need only look at companies such as Wal-Mart in retail, Capital One in financial services, Caterpillar in heavy machinery, and HP in high tech to see that quite broadly, leading companies are applying IT to differentiate themselves from competitors. Technology is used to underpin strategies from industry-beating reductions

in inventory costs, to customer satisfaction through individualized tailoring of the consumer experience, and to new products or services that shake up the competitive order.

As a result, business strategy must be informed not only by those who have keen insight into the market, but also by those who have a strong technology background and insight into the technical capabilities of the organization as well as opportunities presented by new technologies or novel



EA = Technology Architecture (TA)

Reduce IT complexity and costs:

- Increased convergence consolidates purchasing, lowers training costs, and increases employee mobility in the organization

EA = Enterprise-Wide IT Architecture (EWITA)

Support collaboration among different parts of the enterprise:

- Shared access to information across the business and, increasingly, from outside the business by customers, partners, suppliers, even competitors
- More effective portfolio management
- Elimination of duplication in similar applications for different business functions or different business units
- Address concerns that cut across business units such as integration, interoperability, and security

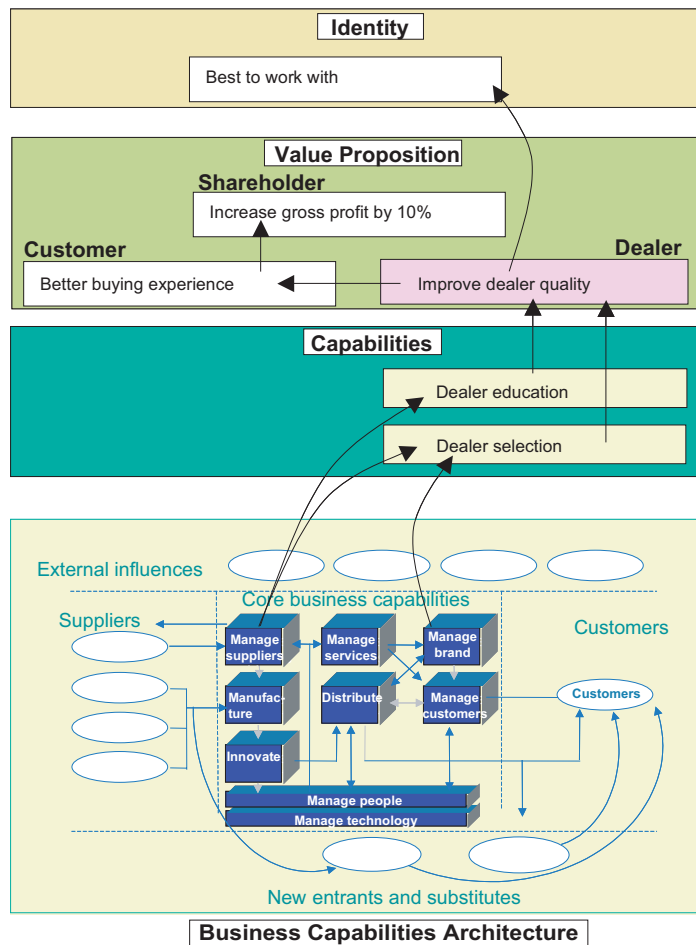
EA = EWITA + Business Architecture (BA)

Increase enterprise agility and alignment with business strategy:

- Enable changes in business strategy with quick-response changes in enabling processes and technology solutions
- Inform strategy more effectively because there is a strategic path for identifying and integrating technology-enabled opportunities (and threats)

©2004 Bredemeyer Consulting

Figure 1 — Showing how enterprise architecture (EA) scope has broadened to increase the value contribution.



©2004 Bredemeyer Consulting

Figure 2 — Relating a theme on the business strategy map to the business capabilities architecture.

applications of technology. This insight is needed to inform decisions about where the business can accept parity with others, utilizing lower-cost, industry-standard technologies (systems and solutions).

We must choose where to excel, where to focus our resources and talents to create competitive advantage. The willingness to settle for a “good enough” solution in areas in which we are clear that competitive parity is sufficient

is itself an advantage that few competitors are yet ready to emulate. Harsh competition under economic stress these past several years has induced more scrutiny of IT spending, and enterprise architecture has partly arisen to address the need to better manage the technology portfolio. The key point that we are discussing here is that this needs to be done in the context of a strategy process that allows us to distinguish capabilities that will differentiate our business from

capabilities where we simply must match the industry standard or the general bar set at the level of basic competitiveness in our industry.

Enterprise Architecture and IT

Enterprise architecture, as a business capabilities architecture, allows a seamless path from business strategy to enterprise architecture, playing a pivotal role in making the business strategy executable (see Figure 2). We use the business capabilities architecture to inform decisions about what capabilities to build at enterprise scope and what capabilities to defer to the business units. There has to be an entity that works across the enterprise to build enterprise-scope capabilities. Generally, this is the strategy execution function of the enterprise architecture group. This function, just like the business units, has a business component and an IT component. The latter is responsible for building enterprise-scope technology capabilities. It includes, for example, technology architecture and the role it plays in driving enterprise-wide standards in areas where this enables a capability that must be tackled at enterprise scope, such as enterprise integration of systems that are critical to customer value delivery.

CAPABILITIES OF ENTERPRISE ARCHITECTS

The two threads we have established come together in this last

part of the report. The story of Madison highlighted critical dimensions of excellence for the enterprise architect. Our exploration of enterprise architecture, and the place IT holds within enterprise architecture, sheds further light on the responsibilities and challenges that enterprise architects must be able to address, and the key role that IT architects play in enterprise architecture. In the remaining sections, we explore the areas of competency that were raised when we debriefed the Madison story, namely domain expertise, strategy, organizational politics, and leadership. We do so in the context of our “know, do, be” framework [1], in which we consider the activities and responsibilities of the architect (do) and the knowledge (know) and personal characteristics (be) required to fulfill these responsibilities well.

Expert in the Domain

The enterprise architect must be highly credible within several communities. IT architects must be highly regarded in their technical communities. Further, they and the business architects must have high credibility among senior business managers. This credibility comes from experience and talent.

Architecture is about the overall organizing structure of the system designed to deliver the properties and behaviors required of the system. Architects at any level need

The architect must be comfortable with the concept of good enough yet recognize that the first attempt is probably going to warrant a good deal of revision.

to be good at system thinking and system modeling. They need to see the big picture, think in terms of the system, and make tradeoffs across the system to address cross-cutting concerns [6]. They need to be good at abstracting away from the details, in evaluating and prioritizing stakeholder values, concerns, and goals as well as in the architecture itself. We use architecture to gain intellectual control over complex problems, and abstraction is key to simplifying and communicating the architecture.

Enterprise architects must be good at creating and evolving architectures; but now the system in question is the enterprise. The big picture is the entire business. The design space involves making tradeoffs across business elements. All this raises the complexity and the need to find abstractions that will be useful in creating system-wide views of the enterprise. The goal in enterprise architecture, generally speaking, is to address at a high level how the enterprise will achieve the value propositions established in its business strategy. It is about establishing capabilities, where capabilities have properties or qualities

associated with them. These properties contribute to the identity of the business as well as the value that stakeholders perceive. And there are huge numbers of stakeholders, all with strong vested interests, so their concerns and goals can be difficult to keep track of, prioritize, and balance. This work is fraught with ambiguity, with ill-defined or fuzzy goals that can shift as soon as you have a handle on them, and is necessarily highly conceptual.

The architect's core role is to create architectural approaches to address architecturally significant requirements. There is no established science for designing enterprise architectures. Systems of this complexity involve elaborate tradeoffs with many identified and potentially more unidentified ramifications. The architect must be comfortable with the concept of good enough [6], yet recognize that, as the architecture team's understanding of the problem matures, alternative solution approaches are investigated, and the input and review of other internal and external stakeholders as well as industry and architecture experts is sought, the first attempt is probably going to warrant a good deal of revision. Philippe Kruchten describes the life of an architect as “a long and rapid succession of suboptimal decisions taken mostly in the dark” [5]. These responsibilities, and the characteristics and knowledge the architect relies on to effectively

Table 1 — Enterprise Architect as Credible Expert

What You Know	What You Do	What You Are
• Deep knowledge in some area of the business and/or technology of the business; broad knowledge in other areas of the business • Past experience in the domain to quickly integrate key principles and identify issues • Experience creating more than one architecture in a complex organizational and technical setting • Broad experience; can see from multiple perspectives, having worked in various roles on multiple projects • Good understanding of the products or services of the enterprise as well as the capabilities on which the business depends	• Watch new technologies, applications of technology, or ways to synthesize technologies and domain understanding to forge new market opportunities • Lead the creation of architectural strategy for the enterprise, making architectural decisions that have impact across the company • Negotiate and set priorities across product families (portfolios) • Define architecture principles, styles, and standards for systems across the enterprise; create architectural mechanisms to address concerns that have broad impact (e.g., system integration across the enterprise) • Prepare and document the enterprise architecture vision and strategy as well as key approaches to broad architectural concerns affecting various areas of the company • Take an enterprise viewpoint, optimizing the architectural strategy across various families or portfolios of applications or products in the enterprise	• Thought leader • Tolerant of high degrees of ambiguity, and good at resolving uncertainty and setting direction • Very good at working at an abstract level and creating abstractions that clarify and contribute to system integrity across the enterprise • Intelligent and quick • Highly respected internally and externally as a sharp (technical) thinker who quickly grasps key issues and implications • Innovative and able to make technical leaps, finding novel solutions • Able to develop sound strategies to solve technical problems and address concerns that cut across the enterprise

©2004 Bredemeyer Consulting

as well as the constraints, such as shortfalls in critical foundational capabilities afforded by the state of the organization's current technology. This perspective is essential in a world in which technology plays a key role in competitive differentiation.

But the place at the strategy table must be well deserved! To earn this spot, the enterprise architect must understand the business and the industry, including customers, competitors, and all significant players in the value network. The architect has a huge advantage here, for the very skills used in modeling and understanding the architecture are highly useful in the strategy space. We encourage architects (and strategic managers, for that matter) to look at our Visual Strategy Process in "Architecture Strategy" [7], which goes into preparation for strategy formulation, creating winning value propositions, and strategy expression and execution. Being fluent in this process will help senior enterprise architects make a significant and welcomed contribution to the business strategy.

execute these responsibilities, are summarized in Table 1.

Strategist

We advocate that the chief enterprise architect should have direct input into the business strategy process, because he understands the current capabilities of the

business and what it would take to build new capabilities. Moreover, if the chief enterprise architect has a business rather than an IT background, then the senior IT architect also should be included in the strategy process. She will have a unique perspective on the opportunities that technology opens up for the business

Enterprise architecture is the pivotal step in implementing the business strategy. As often as the business strategy needs to change to keep pace with a changing business context, so too does the enterprise architecture. To be a viable and useful means of translating from strategy to action across the business, the enterprise architecture must

change to reflect the capabilities the organization needs to build, enhance, or adapt to implement the new business strategy. This means that the entire enterprise architecture team must have an up-to-date understanding of the business strategy as well as the business context in which the strategy make sense.

Moreover, the enterprise architecture team is responsible for reinterpreting the business strategy in terms that are actionable within the communities it leads. Thus, enterprise architects will set objectives² for enterprise architecture work that contribute directly to business objectives, exploring and documenting this contribution to the business strategy through strategy maps [4].

The enterprise architect's role in strategy preparation and formulation, as well as the insights and qualities that help the architect play a valued role here, are summarized in Table 2.

Organizational Politician

The better architects are at working the organizational politics dimension of the role, the more likely they are to be successful. This is not about power but rather about getting things done without direct authority and power. The work of the enterprise architect

²Architecture scorecards are a specialization to the architecture space of balanced scorecards in the business space [3], and they are used to document and communicate the enterprise architecture objectives.

Table 2 — Enterprise Architect as Strategist

What You Know	What You Do	What You Are
• The competitive landscape of the whole business, including: ◦ Industry structure ◦ Market segments and respective users' needs and values ◦ The competition, and their products, strategies, and processes; insight into where competitors are headed ◦ The supply chain and value proposition of different players • Company's capabilities and weaknesses • Business strategy and its rationale	• Advise high-level business strategy setters, identifying threats and opportunities especially in the area of technology and technical capabilities • Lead teams to identify entirely new markets and business opportunities • Play a role in the strategic process, including the business investment decision process, and in evaluating strategic relationships such as possible acquisitions • Set technical direction across the organization • Identify strategic themes and help create synergies across groups to accomplish the associated strategic objectives • Identify avenues to create unique and sustainable value to create strategic advantage • Identify new technologies and capabilities that will give strategic advantage • Look for opportunities to create leverage across multiple families of products • Translate corporate strategy into technical strategy • Communicate strategy in terms that are meaningful to the technical community	• Entrepreneurial — having a good sense of how the business can make money and add value • Pragmatic — having a practical sense of what is realistic for the organization

©2004 Bredemeyer Consulting

is technically difficult, but the greater challenge lies in the work it takes to initiate broad-scoped, far-reaching change, relying for the most part on influence and persuasion. This work is made

easier when the formal structures and relationships inherent in the organization's reporting structure support the enterprise architect. But even then, the architect is effective only when he embraces

Table 3 — Enterprise Architect as Politician

What You Know	What You Do	What You Are
• Political process in the organization • Model of the organizational networks of influence across the business • Who the key players are and what they care about, personally and with respect to the business • Hidden agendas exist that could derail the architecture; seek to discover them • Organization's culture and core values; sense what it takes to align projects and groups despite their differences • Where power is focused and how it flows in the organization (e.g., who really makes what decisions)	• Influence business leaders at the highest level in the organization • Build a strategic network of partnerships and relationships with inside and outside groups; build coalitions to work on shared desired outcomes • Effectively persuade and influence across various organizational groups to achieve corporate goals • Take and retake the "pulse" of the critical influencers who can impact the success of the architecture • Weave together and balance diverse agendas, making tradeoffs among technical and social/organizational concerns and needs • Handle politically charged situations adeptly and smoothly • Coach others on achieving organizational effectiveness and dealing with political situations	• Driven — see a bigger outcome for the organization and are passionate about it • A role model — upholding high standards of personal and technical integrity • Perceptive and shrewd — with a good sense of what can be achieved practically • Sagacious — wise in the conduct of organizational affairs • Skillful and strategic in managing multiple relationships • Good at communicating in a variety of mediums to various audiences • Effective and comfortable working with high-level management

©2004 Bredemeyer Consulting

the need to gain buy-in and support for the enterprise architecture and the changes it necessitates.

In order to understand and inform or persuade key influencers, the enterprise architect must build relationships. A high degree of personal integrity must be matched by insight into what it takes to gain support and achieve goals in the context of great organizational challenge. The politically savvy enterprise architect is an invaluable asset in a setting of

organizational power players, each with different business-unit agendas. The activities, knowledge, and personal attributes that will enable an enterprise architect to be successful in bringing about enterprise-scope change are summarized in Table 3.

Leadership

The architect is a leader in different communities. First, there is "leading up" [15], influencing the strategic direction. The architecture team needs a designated

leader who is accepted and followed by the team. An architecture team without leadership thrashes and diverges. A leader is required to infuse the team with a common vision and to motivate team members to do their best work. Further, the architects lead the implementation communities, inspiring them to follow the architecture and guiding them in its implementation. This requires dedication, passion, and a strong belief that you can lead the effort. You must see yourself, and others must see you, as a credible leader. Table 4 lists the qualities that make an enterprise architect an effective leader.

A GROWTH PATH FOR ARCHITECTS

Enterprise architects do not graduate from universities with all the competencies shown in Tables 1-4. Business architects on the enterprise architecture team may build their experience on the business side, where the growth path is more established. In this section, we address architects coming from IT (or R&D for that matter), where seniority tends to follow increasing decision scope, similar to the management ladder.

To illustrate how the architect's activities and responsibilities and personal qualities shift with the different levels of decision scope, see Levels 1, 2, 3, and 4 in Tables 5-7.³

³These tables are taken from [8].

Level 1 refers to the designers responsible for components or elements of a system. Level 2 refers to architects responsible for the architecture of an application or system. Level 3 refers to architects responsible for more broadly scoped architectures, such as architectures for solutions (composed of multiple applications or systems), portfolios (applications/systems managed together for business synergy), and product families (architected together to create leverage and consistency). Level 4 refers to enterprise architects and chief architects in product development (R&D) organizations.

Table 4 — Enterprise Architect as Leader

What You Know	What You Do	What You Are
• Know yourself and what you care to achieve • Understand the need to align people with the vision, by making it personally compelling to them	• Create alignment broadly across the organization and empower others to make decisions • Effectively use different decision styles as appropriate to the situation (time pressure versus need to overcome organizational resistance, etc.) • Build and manage broad participation in the decision process • Make a decision, even when it is unpopular, if it is critical to the vision and strategy of the enterprise • Demonstrate unflagging personal commitment to the vision	• Gifted and broadly recognized leader who is able to inspire groups to break new ground, overcome challenges, and reach new levels of achievement • Respected and active leader of the technical community across the organization • Mentor to junior architects (e.g., at project/product and product family/portfolio scope levels) • Credible — given the benefit of the doubt when acting decisively to move forward

©2004 Bredemeyer Consulting

In Table 5, we explore what the architect does to motivate and align the architecture team with the teams implementing the architecture. The key here is to create a shared purpose, vision, or direction for the group or organization and to inspire others to work toward this goal.

In Table 6, we explore the architect's role in decision making and consensus building. The (lead) architect facilitates the decision-making process by building consensus and leading the team to be decisive even under uncertainty or when tradeoffs and compromises must be made.

In Table 7, we explore the personal qualities or characteristics of the architect as leader. The key point is that the architect should be seen as a leader in

Table 5 — What You Do: Motivate and Align

Level 1	Level 2	Level 3	Level 4
• Sets personal objectives and works toward achieving them • Communicates enthusiasm and commitment to achieving goals and making a contribution to the team	• Outlines a clear direction and objectives for team; effectively motivates team toward achieving important goals • Infuses the architecture team with a common vision; aligns and motivates the team to do its best work • Builds teams that are more than a collection of individuals • Works enthusiastically with people in own group and related groups to achieve team goals	• Articulates a clear strategic vision that impacts multiple teams or groups • Involves others in creating the vision and strategy; good at generating enthusiastic participation, buy-in, and commitment • Creates symbols, tells stories, etc. to generate enthusiasm for the vision and rally the support of people in your group or organization • Is a role model in energizing others to work toward the enterprise vision	• Creates compelling strategic vision for the enterprise; fosters and leads cross-group collaborations necessary to achieve the vision • Skillful at adapting leadership and communication style to win support from various stakeholders and personalities • Able to lead through stressful and difficult times • Constantly communicates the vision and constantly looks for ways to make the vision more personally compelling to others • Demonstrates unflagging personal commitment to the vision

©2004 Bredemeyer Consulting

Table 6 — What You Do: Decision Making and Consensus Building

Level 1	Level 2	Level 3	Level 4
• Works with a spirit of goodwill toward those who make decisions at a different scope level • Does not resist a decision just because someone else made it	• Facilitates the team's progress toward consensus • Draws out various perspectives on the team, establishes alternatives, and leads the team in evaluating tradeoffs so that a decision emerges • Willing and able to make credible decisions for the team when needed, especially when there is insufficient time or the consensus process stalls	• Involves people from different groups in decision making in ways that generate enthusiasm, ownership, and personal commitment to implementing the decisions and ensuring that others do so • Makes decisions for the group(s) when this is the best way to move forward • Effective at selling upward and rallying downward to build commitment to decisions	• Creates alignment broadly across the organization and empowers others to make decisions • Effectively uses different decision styles as appropriate to the situation (time pressure versus need to overcome organizational resistance, etc.) • Able to build and manage broad participation in the decision process • Credible — given the benefit of the doubt when acting decisively to move forward • Willing to make a decision, even when it is unpopular, if it is critical to the vision and strategy of the enterprise

©2004 Bredemeyer Consulting

Table 7 — What You Are: An Effective Leader

Level 1	Level 2	Level 3	Level 4
	• Viewed as an effective team leader	• Viewed by group members and others as an effective leader who is able to align and inspire teams to achieve broader organizational goals • Mentors project architects and senior developers	• Gifted and broadly recognized leader who is able to inspire groups to break new ground, overcome challenges, and reach new levels of achievement • Respected and active leader of the technical community across the organization • Mentors junior architects (e.g., at project/product and product family/portfolio scope levels)

©2004 Bredemeyer Consulting

his community of impact. It should be evident that the architect is upheld as a role model who inspires others to greater achievements.

PERSONAL DEVELOPMENT FOR ARCHITECTS

The competency elaborations in Tables 5-7 (as well as those in [10], [11], and [12]) help technical people decide whether they want to be architects at all. If they do, it helps them set targets and establish a path for personal growth toward the ultimate level at which they wish to work.

Self-Assessment

An assessment of where we are relative to where we want to be is key to charting a path to focus our development of knowledge, skills, and personal attributes. An informal way to do this is simply to assess where we believe ourselves to be on a five-point scale using a Kiviat, or spider, diagram, where the five⁴ competency areas form the axes (see Figure 3).

To help direct our attention and sensitize us to areas in which we need to enhance our skills or change our attitudes in order to be more successful, we have developed questionnaires for each competency area. Tables 8,

⁴Yes, five, even though we have not explored the consulting area in this report. In brief, this is the domain of competency where the architect is educator and consultant, solving complex problems with systemic impact and helping implementers understand the architecture and see where what they do affects the architecture. See [1].

9, and 10 contain a set of questions in the areas of leadership explored in Tables 5, 6, and 7, respectively. The amount of unchecked “yes” boxes signals whether this is an area that needs to be strengthened.

Learning on the Job

Once we are clear about our development goals, we can seek out roles and responsibilities that help us deepen our experience, hone our skills, and build our relationship networks. Here, we provide suggestions for improving strategy skills:⁵

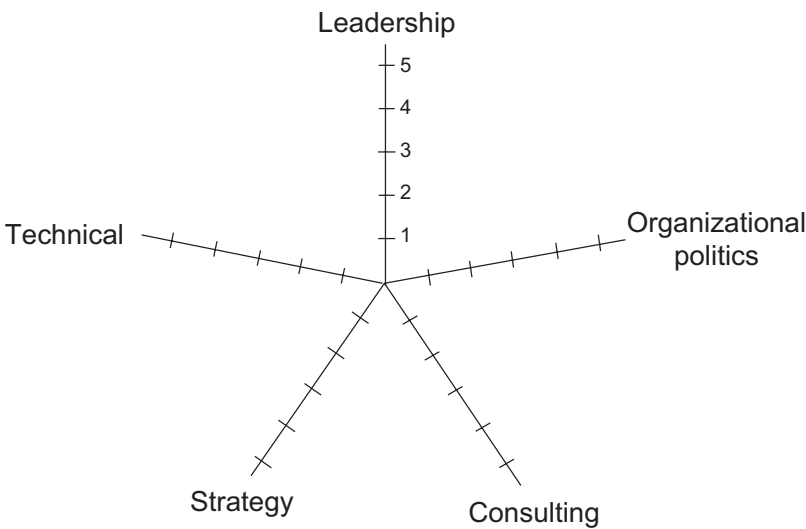
Practice strategic alignment.

Consider how you can contribute to the achievement of your business strategy and integrate that into your daily action. Lead by example in the implementation of strategies set at a higher level (business strategy, enterprise technical strategy, portfolio or product set strategy, etc.).

Learn by doing. Several top architects have gained experience by working in management positions for a few years. You should also make the formulation of architecture strategy the first step of your architecture process. Focus on doing this well, at whatever your level of architecting.

Earn a place at the table. Avidly seek to understand your

⁵Suggestions are copyrighted by Bredemeyer Consulting.



©2004 Bredemeyer Consulting

Figure 3 — Architect self-assessment diagram.

Table 8 — What You Do: Motivate and Align Questionnaire

Am I enthusiastic about my team’s ability to make a difference to a higher-level goal? (Counterpoint: It’s just a job.)	☐
Does my team or group have a shared vision? (Counterpoint: Ask my manager.)	☐
Does our vision guide the group’s activities and decisions? (Counterpoint: We created a vision some time ago, but it is ignored when decisions are made.)	☐
Do members of my team describe our vision to newcomers/outside as if it were their own? (Counterpoint: Each person on the team has a different vision, and this becomes clear when they try to relay the team vision to someone else.)	☐
Do I enjoy finding and telling motivating stories? (Counterpoint: I can’t afford the time for that feel-good stuff; I have to solve the real [aka technical] problems.)	☐
Does everyone in my group understand where we are headed? (Counterpoint: We keep arguing about the direction of the project. People seem to be working toward contrary goals.)	☐
Do I set a good example in communicating and following the vision set at a higher level? (Counterpoint: Our senior architect has no credibility, and I’m not afraid to let my feelings be known.)	☐
Do I take responsibility for my team’s level of motivation and alignment? (Counterpoint: No one has given me the authority to motivate my team.)	☐

©2004 Bredemeyer Consulting

Table 9 — What You Do: Lead Group Decision Processes Questionnaire

Do I empower others to make decisions? (Counterpoint: I need to make them all myself because they would mess up.)	☐
Do I help the group progress toward consensus? (Counterpoint: I have a better solution so, in good conscience, I can't accede to the group decision.)	☐
Am I effective at building commitment to decisions? (Counterpoint: I keep arguing my point after the decision is made.)	☐
Do I have credibility in the technical community? (Counterpoint: People tend to doubt the value of my ideas.)	☐
Do I have credibility in the management community? (Counterpoint: Managers seldom ask me for my input.)	☐
Do I make credible decisions to move forward when the consensus process fails? (Counterpoint: When I make a decision, there is a lot of questioning/arguing, and it drags on and on.)	☐

©2004 Bredemeyer Consulting

Table 10 — What You Are: Effective Leader Questionnaire

Am I able to inspire others to reach new levels of achievement? (Counterpoint: It's their fault; they just aren't achievement-oriented.)	☐
Am I viewed as a respected leader of the technical community? (Counterpoint: I am known for my ability to solve the toughest technical problems, but I'm not very good at getting everyone to do what I think should be done.)	☐
Do others seek me out to provide mentoring to them? (Counterpoint: I keep a closed door; it lets me focus on what I'm doing.)	☐

©2004 Bredemeyer Consulting

industry, competitors, channel, and partners as well as customers. Have a compelling contribution to make to business strategy and seek opportunities to make this contribution. Become valuable to the strategy process so that you are invited to the strategy table (such as strategic management team off-sites) because it is recognized that you will make

a substantial difference to the outcome.

- **Get 360-degree feedback.** Ask stakeholders for feedback on your architecture strategy and your effectiveness in communicating that strategy so that it can be executed.

While we may have an inherent predisposition toward, or distaste

for, organizational politics, it nonetheless helps to recognize that this is an area we need to foster in ourselves. If we feel uncomfortable, practice will help us become less so. Below, we provide suggestions for getting better at organizational politics:⁶

- **Do volunteer work.** Volunteer for a task force looking into cross-organizational issues, for projects that involve multiple groups, and for “extracurricular” activities such as charity work and sports in which your organization is actively involved. Use these opportunities to create relationships and to get to know the needs and concerns of other groups, especially of key individuals in other groups. Relationships create personal conduits for information and influence, but they must be built between individuals first.

- **Mimic Madison.** Madison was an astute politician; we can learn a lot that is directly relevant to business politics from him as well as from business leaders and other political figures. For example, Madison arrived early at the Constitutional Convention in order to greet the delegates and get to know them as they arrived. He took exhaustive notes on what everyone had to say and performed detailed analysis of what they were

⁶Suggestions are copyrighted by Bredemeyer Consulting.

thinking and how their perspectives were shifting. Identify lessons like these and practice them while you find your own techniques for listening and influencing to bring about alignment among individuals and groups.

- **Find the pulse.** Develop and maintain a network of relationships with individuals who are “plugged in” to the business, the market, and technologies. Analyze your network as you would your architecture, thinking about what information you need to be successful (technically and in making the politics of the system fly) and who you need to influence both directly and indirectly — and how best to do so.

- **Practice communication.** Use every opportunity to present to higher levels of management and focus on honing your ability to convey a message to this audience in a way that is compelling. Never stop communicating about your architecture.

- **Get 360-degree feedback.** Ask the architects you report to (even if this “reporting” relationship is only informal), the architects or technical leads that report to you, your manager, extended team members, and other stakeholders for feedback on your communication skills and your effectiveness in dealing with and playing a role in the political web of the organization.

Table 11 — Training Classes in Strategy and Related Topics

General guidelines:

- Attend strategy conferences and training courses.
- Attend conferences or seminars targeted at business leaders in your industry.
- Attend management training classes, especially those targeted at fast-track acceleration of talented managers.

Specific suggestions:

- American Management Association’s Strategic Planning (www.amanet.org/seminars/cmd2/2526.htm)
- Bredemeyer’s Consulting’s Architectural Leadership and Other Skills — Technical Strategy (www.bredemeyer.com/role_of_architect_workshop_overview.htm)
Bredemeyer Consulting’s Software Architecture — Meta-Architecture (www.bredemeyer.com/architecture_workshop_overview.htm)
- Grove Consultants International’s Visioning & Strategy provides you with useful skills in graphically facilitating groups through the strategy process (www.grove.com)
- Wharton’s Executive Education Program, Strategic Thinking and Management for Competitive Advantage (<http://execed.wharton.upenn.edu/course.cfm?Program=STM>)

©2004 Bredemeyer Consulting

Training

While training classes are not known for working miracles, many are excellent vehicles for achieving attitude shifts (stimulating new perceptions, energizing, and motivating) and for conveying new knowledge or ways to synthesize and integrate existing knowledge, providing organizing models, and covering concepts and techniques in both technical and soft skills areas. In Table 11, we provide general guidelines as well as suggestions for specific courses focused on improving strategy skills.

Reading

The obvious other place to go is books and papers. There is a

rather mind-boggling array of books on leadership, strategy, and organizational politics, which come in a variety of guises from networking to organizational agility to communication skills. See “Recommended Reading” for a list of books, articles, and papers we find helpful in this area.

CONCLUSION

Enterprise architects must choose a path: wander in a wasteland of insignificant and ineffective decisions or make a laudable contribution to the excellence of their enterprises. Having a clear, articulated strategy and a way to move from that strategy to activities and decisions that align with

it will help you make a strategic difference in your organization.

At their most promising, executive managers, supported and informed by enterprise architects, set the strategy that will (continue to) make the organization great. Enterprise architects translate that strategy into a form that is executable, a form that is useful in making decisions about which capabilities to build. Not only are enterprise architects responsible for the business capabilities architecture, but they also architect key capabilities that must be designed at enterprise scope. These are capabilities that, if architected at a more narrow level of decision scope, would optimize for that local scope, creating a solution that is ineffective across the enterprise [9].

We encourage you to assess what role you want to play. Do you want your organization to be a stellar example in the league of organizations it plays in? Do you want to make it so?

If you do, Madison sets a clear path for you to follow. In this report, we have used Madison's story to illuminate what it takes to be a great enterprise architect. When we boil it all down, what sets the great enterprise architect apart from the merely talented architect is a passionate dedication to the greatness of the enterprise. This passion for greatness is wasted unless it is focused on what fundamentally matters.

Enterprise architects must choose a path: wander in a wasteland of insignificant and ineffective decisions or make a laudable contribution to the excellence of their enterprises.

Strategy identifies what matters. Leadership and organizational politics help you achieve it.

To excel, you must focus on the properties that lead to excellence and shed anything that merely distracts attention and contributes little to the achievement of excellence. This is true for the organization, and it is also true of the path the architect chooses to reach the position at which he can affect the greatness of the enterprise in a substantive way.

The goal of this report was to help you identify what is important as you choose your path and make your way along it. Now it is up to you.

ABOUT THE AUTHORS

Dana Bredemeyer is founder and president of Bredemeyer Consulting (www.bredemeyer.com), a company that focuses on training and consulting in system architecture, including enterprise architecture and software architecture. He is also president of the Global Enterprise Architecture Organisation (GEAO — www.geao.org). Mr. Bredemeyer has

more than 20 years' experience in the software industry. For nearly 10 of those years, he has focused exclusively on architecture, first at Hewlett-Packard and then at Bredemeyer Consulting. He has taught well over 1,000 architects at top companies around the world and given presentations and tutorials at leading conferences. Mr. Bredemeyer is editor of the Enterprise-Wide IT Architecture Web site (www.ewita.com). His writing on software architecture has been very influential, and many of his white papers and other publications are available on the Resources for Software Architects (www.bredemeyer.com) Web site. You may be especially interested in the work on architect competencies that he has done together with Ruth Malan. He can be reached at dana@bredemeyer.com or by phone at +1 812 335 1653.

Ruth Malan is a senior architecture consultant at Bredemeyer Consulting. She has published papers, chapters, and a book in the areas of object-oriented methods, reuse, and software architecture. She is principal editor of the acclaimed Resources for Software Architects Web site. Two of the most popular papers by Ruth Malan and Dana Bredemeyer are "Less Is More with Minimalist Architecture," published by IEEE's IT Professional in September/October 2002, and "Software Architecture: Central Concerns, Key Decisions." She and Dana Bredemeyer are working on a

book on software architecture; draft chapters can be previewed at www.ruthmalan.com. She can be reached at ruth_malan@bredemeyer.com or by phone at +1 812 335 1653.

RECOMMENDED READING

Collins, J.C., and J.I. Poras. "Building Your Company's Vision." *Harvard Business Review*, September/October 1996.

Dikel, D.M., D. Kane, and J.R. Wilson. "Projecting and Unifying Vision." Chapter 3. *Software Architecture: Organizational Principles and Patterns*. Prentice Hall, 2001.

Kotter, J.P. "Leading Change: Why Transformation Efforts Fail." *Harvard Business Review*, March/April 1995.

Malan, R., and D. Bredemeyer. "Creating an Architectural Vision: Collecting Input." 25 July 2000 (www.bredemeyer.com/pdf_files/vision_input.pdf).

Senge, P.M. *The Fifth Discipline*. Doubleday, 1990.

Senge, P.M. *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization*. Doubleday, 1994.

Useem, M. *The Leadership Moment*. Three River Press, 1999.

REFERENCES

1. Bredemeyer, D., and R. Malan. "Role of the Architect." Bredemeyer Consulting Software Architecture Resources, 2002.

2. Carr, N. "IT Doesn't Matter." *Harvard Business Review*, May 2003.

3. Kaplan, R.S., and D.P. Norton. *The Balanced Scorecard*. Harvard Business School Press, 1996.

4. Kaplan, R.S., and D.P. Norton. *The Strategy-Focused Organization*. Harvard Business School Press, 2000.

5. Kruchten, P. "Common Misconceptions about Software Architecture." *The Rational Edge*, IBM, 2001.

6. Malan, R., and D. Bredemeyer. "Architecture as Business Competency." Bredemeyer Consulting Software Architecture Resources, 2004. Part of this paper was published as a *Cutter IT E-Mail Advisor*, 21 January 2004.

7. Malan, R., and D. Bredemeyer. "Architecture Strategy." Bredemeyer Consulting Software Architecture Resources, 2003.

8. Malan, R., and D. Bredemeyer. "Leadership Competency Elaboration." Bredemeyer

Consulting Software Architecture Resources, 2002.

9. Malan, R., and D. Bredemeyer. "Less is More with Minimalist Architecture." *IEEE IT Professional*, September/October, 2003.

10. Malan, R., and D. Bredemeyer. "Organizational Politics Competency Elaboration." Bredemeyer Consulting Software Architecture Resources, 2002.

11. Malan, R., and D. Bredemeyer. "Strategy Competency Elaboration." Bredemeyer Consulting Software Architecture Resources, 2002.

12. Malan, R., and D. Bredemeyer. "Technology Competency Elaboration." Bredemeyer Consulting Software Architecture Resources, 2002.

13. Rakove, J.N. *James Madison and the Creation of the American Republic*. Addison-Wesley, 1990.

14. Rakove, J.N. *Original Meanings: Politics and Ideas in the Making of the Constitution*. Alfred A. Knopf, 1996.

15. Useem, M. *Leading Up: How to Lead Your Boss So You Both Win*. Crown Business, 2001.



Mike Rosen

Enterprise Architecture Practice

Cutter's EA Practice helps your company move forward in creating and deploying an enterprise architecture that increases business opportunities, supports agility, and delivers value.

Consulting

Architecture Review and Action Plan

Receive an in-depth evaluation of your enterprise's architecture. Led by Cutter EA Practice Director Mike Rosen, this engagement takes an architectural approach to addressing specific questions and concerns that you may have. It is intended to clarify business, application, and technology discussions and help your organization make specific technology decisions.

EA Enablement

Receive expert opinion on the current state of your EA initiatives and work with Cutter's Senior Consultants to formulate an end-state vision and prioritized action plan.

Enterprise Architecture, Business Architecture, or SOA Program Development

Whether you're initiating a new architecture program, moving beyond a pilot project, rolling out an EA or SOA program, or expanding EA's reach and influence with business architecture, Cutter will help you identify your firm's strengths, as well as areas needing attention, and create a strategy that is right for your organization.

Training

Business Architecture: The Missing Link to IT Alignment

Business architecture addresses the need for commonality across lines of business to achieve such goals as common customer relationships, cross-selling, and common compliance. This Executive Briefing introduces the benefits that business architecture can bring to your company as well as how to utilize it to optimize performance against goals and strategy.

Delivering Value and Agility with Enterprise Architecture

This seminar will help you understand how to shape EA to meet your needs and navigate the architecture maturity path more quickly to streamline IT, enable more effective IT projects, and gain competitive advantage. It will describe the value of an EA program, today's trends and best practices — SOA, governance, metrics, organization — and how these relate to delivering EA value.

Enterprise Architecture Rollout and Training

Help your organization clarify, implement, and maintain its strategic architectural approach by transferring the necessary knowledge and skills to your architects, technologists, and developers. Raise the level of architectural readiness for your entire IT organization.

Research and Analysis

Become a client of Cutter's EA Practice and your team will immediately benefit from access to our online resource library, including Webinars, podcasts, white papers, reports, and articles.

Popular Research:

- "10 Key Skills Architects Must Have to Deliver Value" by Mike Rosen
- "Webinar: Improving Productivity and Performance Through BPM" with Mike Rosen
- "Getting Your Enterprise Architecture Metrics Right " by Tushar K. Hazra
- "Enterprise Architecture Rollout and Training" by Mike Rosen
- "Death by Architecture" by Mike Rosen
- "The King (SOA) Is Dead; Long Live the King" by Paul Allen

Test-Drive the Service

To gain a free trial to Cutter's Enterprise Architecture resource center or to discuss how Cutter's consultants can help you successfully implement EA initiatives at your organization, call us at +1 781 648 8700, send e-mail to sales@cutter.com, or visit www.cutter.com.

Enterprise Architecture Practice

Today the demands on corporate IT have never been greater. Cutting costs and accelerating time to market for individual line-of-business projects are still priorities, but even that's not nearly enough anymore. Companies are now looking for strategies to better leverage their entire IT infrastructure. They want IT to deliver sophisticated enterprise applications that can provide value across many lines of business and provide marked differentiation from their competitors. The Enterprise Architecture Practice provides the information, analysis, and strategic advice to help organizations commit to and develop an overarching plan that ensures their whole system fits together and performs seamlessly.

The subscription-based services within this practice — Enterprise Architecture Advisory Service and *Web Services Strategies* journal — offer continuous research into the latest developments in this area, including Web services, enterprise application integration, XML, security, emerging and established methodologies, Model Driven Architecture, how to build an enterprise architecture, plus unbiased reports on the vendors and products in this market. Consulting and training offerings, which are customized, can range from mapping an infrastructure architecture to transitioning to a distributed computing environment.

Products and Services Available from the Enterprise Architecture Practice

- The Enterprise Architecture Advisory Service
- *Web Services Strategies*
- Consulting
- Inhouse Workshops
- Mentoring
- Research Reports

Other Cutter Consortium Practices

Cutter Consortium aligns its products and services into the nine practice areas below. Each of these practices includes a subscription-based periodical service, plus consulting and training services.

- Agile Project Management
- Business Intelligence
- Business-IT Strategies
- Business Technology Trends and Impacts
- Enterprise Architecture
- IT Management
- Measurement and Benchmarking Strategies
- Risk Management and Security
- Sourcing and Vendor Relationships

Senior Consultant Team

Our team of internationally recognized specialists offers expertise in security issues, e-business implementation, XML, e-business methodologies, agents, Web services, J2EE, .NET, high-level architecture and systems integration planning, managing distributed systems, performing architecture assessments, providing mentoring and training, overseeing or executing pilot projects, and more. The team includes:

- Michael Guttman, Practice Director
- Scott W. Ambler
- Eric Aranow
- Douglas Barry
- Don Estes
- David S. Frankel
- Paul Harmon
- Ian Hayes
- Tushar Hazra
- Peter Herzum
- Brad Kain
- André LeClerc
- Diego Lo Giudice
- Arun Majumdar
- Jason Matthews
- James J. Odell
- Ken Orr
- Michael Rosen
- Rob Shelton
- Oliver Sims
- William Ulrich
- Tom Welsh