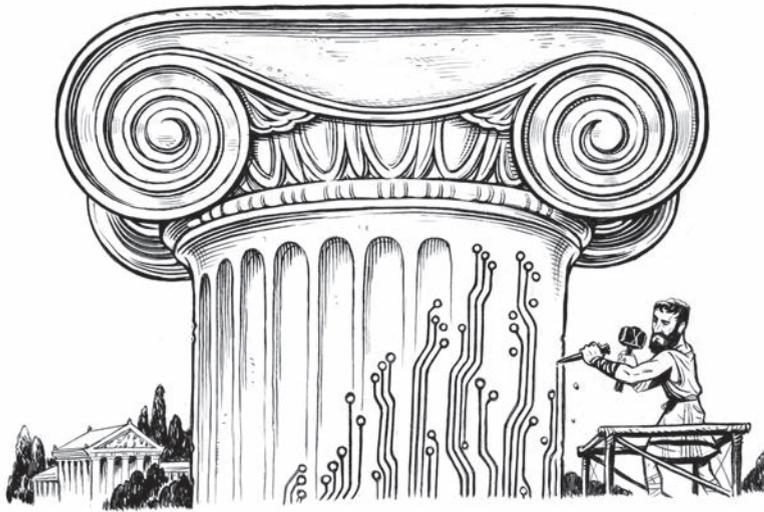


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Enterprise Architecture Planning 2.0

A new approach to digital strategy reinvents legacy IT by aligning it to a company's capabilities.

BY JACK TOPDJIAN, DIRK KLEMM, AND CARL DRISKO



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No enterprise today can afford to spend a year or more incorporating digital technology into its core. The technology and the competition move too fast. Yet most Fortune 500 companies take at least that long just to put a new digital system in place, let alone to show results.

The reason is understandable: Digitization is a complex and daunting challenge. It requires companies to adopt a new operational model, incorporating new and often unfamiliar technologies — including multichannel engagement, cloud computing, big data analytics, and “smart” infrastructure laden with sensors and real-time controls. They must do all this against the back-

drop of the soon-to-be-ubiquitous Internet of Things with real-time responsiveness embedded in technology throughout the enterprise. Running these new systems requires new behavior, and not just on the part of employees: Customers, vendors, suppliers, and distributors must all change their ways. Few of the largest companies have figured out a digital solution that will be comprehensive enough to span this whole business ecosystem, but simple enough for people throughout the company to use.

Although companies look far and wide for solutions, the best place to look is often disregarded. That's the company's enterprise architecture planning (EAP) discipline.

Many view EAP as a legacy approach. But when it was originally developed in the 1980s, EAP was

a bold response to the same perennial problem: integrating technology with the business strategy. The information technologies of that era were bumping up against old, clumsy, bureaucratic processes and practices. EA projects were supposed to replace those practices with more elegant, streamlined renditions, closely tied to business objectives. EAP borrowed techniques from the more mature “industrial” disciplines of architectural engineering and urban design (hence the name *enterprise architecture*) to accomplish its goals.

Unfortunately, at most companies, EAP, or EA, was placed under the information technology function. It was often directed toward addressing narrow technology needs for particular business units, or subsumed into complex exercises in documenting incompatible systems. Then, as EAP was combined with reengineering during the 1990s, it was frequently used as an excuse for wholesale cost cutting, which ultimately tended to make companies weaker. This history helps explain why many EAP groups developed a poor reputation, or did not deliver value to the enterprise.

Today, companies can proceed in a more strategic way — with something close to EA in scope, but more ambitious in spirit and pragmatic in achieving results. We call this approach *capabilities architecture planning* (CAP). It involves redesigning IT and organizational practices together, in service of a company's most distinctive strengths. Unlike most enterprise architecture projects, CAP starts with strategy. It marshals digital technology to develop the company's capabilities — the combination of processes, tools, knowledge, skills, and organi-

zation — that give it a competitive advantage.

This approach takes CAP out of the sole purview of the IT function. A truly distinctive capability is cross-functional; it typically involves innovation and customer insight, or data-driven synchronization between a buyer and a supplier — a retail store and a factory, for instance. (See “Think Functionally, Act Strategically,” by Deniz Caglar, Namit Kapoor, and Thomas Ripsam, *s+b*, Feb. 26, 2013.) CAP brings the in-depth knowledge of IT functional leadership together with the customer insight of business leadership to better inform your strategy discussions. It blends the activities of IT with talent, operations, organizational change, and innovation,

of tools, electronic instruments, and industrial components to businesses and directly to consumers. It was a consummate fast follower, releasing relatively low-priced versions of its competitors’ innovations.

Acme had several distinctive capabilities: interconnected systems of people, knowledge, technologies, tools, and processes that set it apart from other companies. It had a highly efficient logistics and merchandising proficiency that excelled at quickly getting products into customers’ hands. This was enabled by a global customer relationship management (CRM) system, through which marketing leaders and sales reps maintained close contact with hundreds of thousands of people around the world. Acme also had

and rooted out expensive, often duplicative IT systems, replacing them with more user-friendly, cloud-based apps that allowed employees to work together easily across functional lines. And they were offering products with software and Internet connectivity embedded in them, which Acme couldn’t easily reverse engineer. The resulting higher margins and lower costs led Acme rivals to greater profitability.

The top executives of Acme watched their share price lag behind the sector average, listened to the increasingly loud complaints of shareholders, and fielded demands for change from the board. In March 2014, after a board-level discussion of digital technology, the board chair finally gave the CEO an ultimatum: Don’t fall further behind!

The following week, the CEO summoned the company’s chief operating, information, and marketing officers to a meeting. He told them to assess the potential digital processes and technologies that the company needed, while reducing costs in line with the competition. They crafted a plan that carved up the company into more than 100 units of activity, each tied to a key group of products and services. For each unit, a small team of operations specialists led by enterprise architects in the IT department laid out a road map of technological change.

But the transformation efforts went nowhere. Simply developing the new road map took more than nine months. In many of the small groups, the IT architects (who struggled to understand the business) and the business leaders (who never really understood the technology) squabbled over where to spend money. Some new systems proved difficult to install and integrate with

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and aligns it all with the company’s value proposition. After the advances of the past few years, IT is finally ready to help close the gap between strategy and execution. CAP can be the vehicle for getting there.

Acme’s False Start

To understand how a capabilities architecture plan — and the attitude shift that goes with it — might work, consider the story of a large U.S.-based industrial company, Acme Dynamics (a composite case study example, whose story is drawn from several real companies). In early 2013, Acme was in the business of selling a wide range

of effective competitive intelligence and ergonomic design capabilities; it held few patents, but its tools and instruments were appealing, durable, and popular. Customers invariably chose Acme’s products because of the way they felt when using them.

But rumblings of dissatisfaction began in early 2013. Although the CRM system worked well, it required a small army of administrators to keep it updated. Acme’s competitors, meanwhile, were equipping their salespeople with mobile devices that tracked customer activity and generated new offers immediately in response. These companies also streamlined business processes

older systems. Others, including the CRM system updates, simply didn't work. They generated inaccurate and confusing data, which made customer service calls more frequent and more difficult. Frustrated employees ended up returning to their old ways. Many set up their own "shadow" IT systems to connect with their customers and suppliers. A year after the board meeting, very little of the road map had been implemented, while costs had continued to rise and Acme had fallen further behind its competition.

Weaknesses and Strengths

Acme's CEO didn't ask the CIO, CMO, and COO to resign. Instead, in April 2015, the four company leaders sat down together for a post-mortem. They concluded that they would have to approach the problem differently. They'd still need a top-to-bottom overhaul of business processes and technologies, the kind they had hoped the enterprise architecture plan would give them. But it would work only if it focused sharply on the capabilities Acme needed to compete.

This time, Acme's CEO didn't take the company's strategy for granted. He brought together the C-suite leaders and the heads of all the business units and functions for a four-day intensive retreat, starting on a Monday morning in June. The goal was to reexamine the company's traditional identity as a fast follower, in light of the new digital age. They spent the first day looking in detail at the competition, and at their own capabilities, and realizing the depth of their problem. In just about every one of its product categories, Acme would find it harder and harder to compete unless it found a better value proposition. As part of this, the

company needed a breakthrough in digital technology — and now it was needed fast.

That evening, as it happened, GE chairman and CEO Jeffrey Immelt appeared on the *Charlie Rose Show*. Most of the Acme leaders watched him, together, in the hotel bar after dinner. "It's our belief," Immelt said, "that every industrial company in the coming age is also going to have to be a software and analytics company." He went on to say that anyone who denied "that digitization is going to impact every corner of the economy" would get left behind. (See "Raising Your Digital IQ," by Chris Curran, Tom Puthiyamadam, and Chrisie Wenden, *s+b*, Spring 2016.)

relationships was an unsung capability that had taken the company far. The top leaders realized that these capabilities, and Acme's non-nonsense, pragmatic culture, would allow the company to migrate from being a fast follower to being a platform player. It could become known for ease of integration — a premium in any technical field — helping a wide range of tools, devices, and standards interconnect in a reliable and easy-to-manage way.

An in-depth discussion of capabilities followed. One that deserved further investment was customer insight — enabling Acme's systems to evolve more rapidly with the changing demands of the market. On the consumer side, bolstering consumer

"Every industrial company," Jeffrey Immelt said, "is going to have to be a software and analytics company."

These remarks underlined the predicament faced by Acme's leaders. Their company could not recover its lost ground simply by benchmarking and copying its rivals' technology. Its competitors were too far ahead. Instead, Acme would need to make digital investments with an eye toward its existing strengths — to figure out what it did exceptionally well already, to articulate the gaps it needed to fill, and to leap ahead in that direction.

Digitally Enabled Capabilities

But what did Acme have that set it apart? In design, logistics, and consumer insight, it excelled at doing "little things" that turned out to be not so little after all. For example, its ability to foster business-to-business

insight would require significantly better data gathering and analytics. Acme would have to gain greater insights into smaller segments of its market, develop a deeper understanding of its presence in each segment, and continually refresh its product portfolio to reflect changing consumer needs. For its business-to-business enterprises, Acme would leap ahead with digitally enabled operations, installing sensors and collecting and analyzing data about how the instruments were used. Acme's industrial customers would use that data to make more informed decisions about their own operations and growth prospects.

Other capabilities, such as certain aspects of talent management, were less important and required less

attention. Still others, such as some of the company's legacy marketing and innovation activities, could be dropped entirely. Rather than try to expand its solo R&D capability, Acme would partner with other companies in joint ventures around the world, extending its logistics and relationship-building capabilities into new arenas. It would also experiment with cross-boundary IT systems and crowdsourced approaches to product development.

Now that Acme's executives understood the value proposition, the capabilities that were required, and the ways in which digitization affected those capabilities, they were confident they could deliver. But the work was just beginning. Developing the requisite new capabilities would demand a complete transformation of the company's approach to digital technology, in five successive steps:

1. Set up a company-wide transition oversight team. Acme could no longer keep EAP within the IT department. It established a new cross-functional capabilities architecture planning team to oversee digitization. Led by a top Acme executive, CAP included senior business unit and functional leaders. They were given a mandate to link the digital design plans to business strategy and capabilities building.

2. Streamline the current system. Right out of the gate, the CAP group was asked to find cost savings by identifying technologies and capabilities that could be decommissioned or outsourced. This freed up money to fund the digital transformation. Fortunately, low-hanging fruit was easy to find. The company was awash in dozens of different IT systems in every function — product development, sales and marketing, finance. Each was originally intend-

ed to support a particular business, and most of them overlapped or were not aligned with Acme's new direction. The CAP team phased out most of these completely, replacing them with new company-wide processes and systems aligned with the most important capabilities. The funds saved were then used to support the development of the new relationship-building and interoperability platforms, and particularly the proprietary software and other

products would also benefit from those efforts. But building an entirely new software development capability from scratch turned out to be an enormously complex task, in an area where the company had little or no experience. The resulting road map, as articulated by the CAP team, involved contributions from virtually every part of Acme's organization, including product development, marketing and sales (which oversaw the data analytics needed to

Developing new capabilities would demand a complete transformation of the company's approach to digital technology.

technologies that would distinguish them in these realms.

3. Blueprint a new capabilities system unconstrained by traditional silos. Designing capabilities for the entire enterprise required a great deal of attention. It included rethinking Acme's operating model and business processes, choosing the right digital technologies, setting up training and recruiting to put people with the right skills in place, and fostering a digitally attuned culture. Because the new capabilities system was needed quickly, separate CAP teams were created for each capability within it.

Each team picked one priority to focus on first, and used that project to demonstrate to employees, key customers, suppliers, and other stakeholders how the broader capability would operate in the future. For example, Acme needed to embed software into the industrial products it made, and its consumer

gather and make sense of the output of the new services), learning and development, and procurement.

4. Pilot the new system with an emphasis on rapid results. Rather than seeking to implement their solutions perfectly, each of the Acme CAP teams established a baseline from which they could learn and improve. For example, the team embedding software into new products recruited two new full-time managers to bring this capability to life. They understood the company's overall strategy, and were given authority to adjust the direction of the effort as needed. In turn, they reached out to a carefully chosen software firm and set up practices for coinvention and codesign with that firm, emphasizing the specialized capabilities that Acme needed to compete.

The CAP team broke away from the conventional approach to software engineering, in which

managers carefully spelled out all the requirements for exactly how the new services-enhanced products would be integrated with Acme's systems as well as those of its customers. Rather, the CAP team set up an agile development approach, in which groups of people assembled rapidly on a project-driven basis, working intensively on specific parts of the overall effort.

As a prototype for this approach, the team chose the redesign of an important product with a large and loyal following, a product that was being targeted by competitors. They broke up the overall effort into small parts and gave them to separate groups of developers, who wrote their pieces of the puzzle in collaboration with willing customers. The pieces were then combined and the result tested with customers to make sure it could be integrated

ing and sales, they could help CAP leaders keep an eye on consumer habits, and on the new technologies that customers were demanding. Each cross-functional team monitored its progress through metrics focusing on how the new capabilities were creating value.

Acme's company-wide transformation program is only nine months old. But already the company has a rich body of experience on which to build. Still, the effort was not without its challenges and problems. For instance, some IT leaders protested that their function should run the capabilities architecture effort. Instead of arguing, the CAP leaders worked on improving day-to-day relationships with the IT leaders. They openly explored and explained the new value proposition, and gave the IT leaders a more integrated role, charging them with educating the

panies focusing on distinctive capabilities can learn to compete more rapidly and effectively in an increasingly digital business environment. The key — for Acme and, we believe, for many other companies — lies in using the rigor of capabilities architecture planning directly, or adopting some of its tenets into an existing management approach, as a vehicle for collective mastery. Try to move your people, processes, technology, and partners into alignment as you carry out your capabilities architecture plan, making all of them parts of a single capabilities system. Your capabilities are your business, and technology should not be treated as a specialized field, set apart from the rest of your company: It is an inherent, inseparable aspect of what you do better than anyone else. +

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Your capabilities are your business, and technology should not be treated as a specialized field.

into their own systems. Creating the first working prototype took just a few months, and the knowledge gained in the process gave the team a huge head start in creating future products.

5. Chart a new way to operate in the future, scaling up the early successes. The newly created software business inside Acme served as a model for the entire company. It affected the clock speed of production, the schedule of releases to the external world, and the development of more permanent collaborative cross-functional teams. Because these teams included people from market-

rest of the business leaders about the rapidly evolving digital technologies available to them.

The software engineering effort also generated a great deal of early pushback. Many felt that agile development simply wasn't the right approach, or that it wouldn't work at scale. It took some early successes to prove to the nonbelievers that agile development could work at an industrial scale. By October 2015, when the first prototype was completed, Acme had dozens of well-synchronized and collaborative development teams at work.

Acme's story suggests that com-

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