Digital Transformation, Strategic Acquisitions, and the Role of EA

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> *If a man will begin with certainties, he shall end in doubts. But if he will be content to begin with doubts, he shall end in certainties.*
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> — *Francis Bacon*

In today's digital era, businesses must fundamentally reinvent themselves — and disrupt themselves where necessary — to cope with the new competitive dynamics that are all about rapid and relentless change. In the digital era, business models are rising and falling at tremendous speed. Continuous disruption is going to be the new normal; you will either disrupt or be disrupted. For those that succeed in adapting to the new era and reaching beyond their current business models, digitalization brings great opportunities for business growth both within industries and across industries.

The Digital Paradox of Change

The permeation of digital technologies throughout modern society has been ongoing for a while. Today, however, the technology wave has not only continued to accelerate, but has also changed in its very nature. Technology trends such as the Internet of Things (IoT), cloud/virtualization, big data and data analytics, advanced machine learning, 3D printing, and technological networks are radically transforming almost every industry. This transformation is evidenced by the fact that digital technologies are no longer just *supporting* how companies do business — digital is *becoming* the way to do business.

For business strategy, digitalization creates a strategic paradox. One implication is that change has become the key characteristic of the new era. Research shows that the speed of change in an industry directly correlates to the degree of digitalization. The notion of sustained competitive advantage is diminishing in

importance, if not becoming completely obsolete. Instead, strategists talk about "transient advantages."[1] Businesses that understand the change become skilled at exploiting this concept, putting themselves in their customers' place, and considering the outcome they are trying to achieve. They accept that competitive advantages are fleeting and disruption is crucial to survive. This change is relentless and leaves little room for putting things on hold in order to restructure and rebuild. As soon as one transformation materializes, the company must respond to the next challenge. Many transformations may even be ongoing in parallel work streams.

The other implication of digitalization is that change is more difficult than ever. For many years, strategy has been about building and fortifying positions that are difficult for competitors to imitate. Digital technologies have been adopted with this objective in mind. To transform, firms need to account for organizational change across the different business and technological layers of the organization in a synchronous way. This is hard, and often each transformational sprint creates some minor misalignment between the business and technology layers. Over time, these misalignments cumulatively add to organizational complexities, and as a result it becomes cumbersome, or even impossible, to exploit digital opportunities.

It's widely accepted that companies such as camera producer Kodak, mobile phone company Nokia, and typewriter manufacture Smith Corona were disrupted because they didn't spot the digital trends in their respective industries. The reality is, however, different in one important aspect. Kodak was itself the inventor of the digital camera. In 1996, Nokia released the first smartphone, more than a decade before Apple released the iPhone. Smith Corona was a frontrunner in word-processing typewriters with its PWP 1400 model. So the issue that brought these companies down was not that they were unable to see the technological trends. The issue was that they could not *reinvent* themselves to deal with the industry dynamics that followed the swell of digitalization.

EA as a Transformation Capability

Leaders peering over the edge of the horizon of their own and adjacent industries might wonder, "What are companies that have achieved digital success doing differently?" We believe that at the heart of the ability to manage an ongoing and multilayered organizational transformation rests a sophisticated enterprise architecture (EA) capability with a specific charter to act as a transformation engine connecting strategic intent and execution excellence. However, because of the relative youth of EA, there are many different views on what EA is and what impact/value it offers to modern businesses. Some talk about EA as a structural characteristic of how the different components of an IT infrastructure are assembled. Others talk

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[1] Transient advantage is a business strategy that accepts that competitive advantages are often short-lived and focuses on innovation strategies that continually build new advantages. Instead of building one advantage and defending it, a transient strategy focuses on the velocity of competitive advantage.

about EA as a method or approach for understanding how the different business and technology layers of a firm fit together.

Our research has taught us that to capture what EA brings to the table in the digitalization era, EA needs to be understood as a capability for orchestrating an ongoing organizational transformation across the different layers of the enterprise. At the end of the day, it doesn't matter what particular breed of EA framework a company uses. Neither is the state of the EA at the beginning of a series of digital transformations of decisive importance. As a starting point, it helps if the EA is in good condition, but what really matters is its long-term trajectory. Each effort should be improving the overall architecture in a significant way, rather than just introducing incremental changes or efficiencies. If used in the latter way, EA becomes a marginalized and nonstrategic asset.

Our research points to two qualities of EA capability that are especially critical. The first is that the EA capability must have *direct and intentional engagement quality*. In our work, we have often seen EA kept at arm's length from the transformation work. EA contributes to the transformation by providing various artifacts that map the as-is situation, but it does not assume responsibilities or accountability for any tasks in the transformation. The EA function should be able to not only deliver input as a supplier to other organizational units but should also actively engage in collaborative solving of challenges with other units.

The second quality an EA should have is to *span across all architectural layers*, from IT infrastructure and applications to operations and strategy. This might sound obvious, but because of the heritage from an era when digital technologies were only supporting business practices, most companies just use EA to orchestrate change across IT infrastructure and application layers. With the fusion of business and technology in the era of digital business, this separation is no longer effective when orchestrating organizational transformations.

EA and Acquisitions

Organizational transformations come in many forms, including divestures, joint ventures, taking a business public or private, and general market reorientations. Here, we explain EA in relation to one type of strategic transformation: acquisitions. Acquisitions are one way that businesses seeking to digitize use to accelerate the journey to their destination and, in our experience, to specifically complement their innovation-management pipeline. We focus particularly on acquisitions for two reasons:

1. Acquisitions are, in many ways, the epitome of strategic transformation, and many lessons learned about how to enable acquisitions are transferable to less extreme contexts. Extreme pressure to rapidly realize acquisition benefits is becoming the norm in the digital era, accompanied by the cumulative inefficiencies that accrue across a stream of acquisitions.

2. Acquisitions have established themselves as one of the most common, but also most challenging, forms of strategic transformation.

Appropriately executed, acquisitions can enable economies of scale or scope, give access to innovative capabilities, or fuel strategic renewal. But history shows that these benefits are usually far from easily achieved.

The Role of EA in Each Phase of the Acquisition Lifecycle

To succeed in its value-creation aspirations and to enable the digital business strategy, the acquirer has to manage an organizational transformation across the different architectural layers in a way that leverages the synergistic potential motivating the deal, while at the same time ensuring that quick fixes, workarounds, and organizational inefficiencies do not impede future strategic moves. To this end, an advanced EA capability can help.

In the following section, we highlight specific ways leading organizations are utilizing their EA capability to enhance the M&A process. We have broken down the acquisition lifecycle into four phases and pinpoint when, where, and how enterprise architects can support and enhance the process in each phase.

Pre-Acquisition Preparation (Position)

The pre-acquisition preparation phase is general and not particular to any acquisition. In this phase, EA helps ensure a company remains *acquisition ready*. The key EA artifact in this activity is the enterprise reference model, which includes both business and IT knowledge and blueprints. It is used to verify the integrity of the architecture and serves a key role in capturing the evolving as-is state of how the company operates. When a company is acquisition ready, it can hit the ground running in any business transforma-tion, avoiding the need to first prepare critical resources or document the as-is scenario. In essence, it allows the company to exploit an opportunity instead of being reactive to market changes. The benefits of the preparatory work are related to speed, rather than to cost. In the digital era, speed in the acquisition process (expressed in the evaluation criteria of time to orderability and time to completion) is of utmost importance.

EA contributes to maintaining a company's acquisition readiness through three different activities:

1. **Infrastructure preparation** involves constantly monitoring the integrity of the infrastructure to enable future strategic business moves. When IT components are introduced into the systems or technology level of the EA framework, these components are assessed for their connectivity, their level of conformity with corporate standards, and possible integration scenarios. Ensuring the infrastructural integrity allows for a relatively effortless extension and expansion of the existing IT infrastructure, meaning that technology constraints won't limit the strategic options.

2. **Documentation** involves maintaining the enterprise reference model as the single source of truth. The reference model captures how the acquirer does business and the operational enablement of the business. This way, the acquisition team can focus solely on the target in a potential acquisition situation. Creating the documentation when an acquisition target is identified would severely delay the process of assessing the match between the two organizations or significantly increase incorrect assumptions about capabilities.

3. **Knowledge integration** is a consequence of the work in interdisciplinary teams within EA that enables individuals to develop a better understanding of the existing opportunities and constraints experienced by both the business and the technology sides. Each partner in the EA team is constantly gaining a better understanding of the implications that decisions taken have for the other partner and the potential way the partner may respond to demands.

Selection (Identify)

In the selection phase, EA can contribute to the target selection by showcasing resource complementarity between the acquirer and the target. Understanding the complementarities is fundamental for estimating synergistic effects accurately and for identifying the barriers that need to be overcome to realize acquisition benefits. Specifically for the selection phase, EA can be engaged in five distinct activities:

1. **Business case estimation.** This is the process in which the EA team assists in the estimation of whether a potential acquisition target is suitable for the acquirer and fits with its corporate strategy. This process can take the as-is description of the acquirer as one of its starting points. The other starting point is a set of assumptions about the target's capabilities. In some cases, it is not possible to verify assumptions due to legal or strategic restrictions. In other cases, information is available to verify these assumptions during due diligence in the selection phase.

2. **Transformation needs assessment.** The process continues with the transformation needs assessment, in which the EA team can carry out an assessment of the costs associated with implementing the needed business and technology transformations to integrate the two organizations.

3. **Analysis of major roadblocks.** Associated with the previous activity, EA can contribute to the analysis of major roadblocks that could hinder the expected synergistic effects (e.g., differences in how services and products are offered to a market).

4. **Reverse integration.** EA can be assigned the responsibility of investigating whether there are advanced capabilities in the target business worth redeploying in the acquirer through reverse integration.

5. **Suite analysis**. Finally, given its unique understanding of how technological and organizational resources can be bundled, the EA team can assume responsibility for ensuring that the target's IT-based offering can be integrated and can coexist with the acquirer's existing suite of products.

All these activities in the selection phase are based on the initial assumptions of what the capabilities of the target can be expected to look like, based on what is known. Members from EA and from the acquisition team need to constantly work to verify or redefine these assumptions. To do so, capability heatmaps are important tools. Capability heatmaps convey where the critical capabilities for the acquisition can be found. Therefore, it is in the areas covered by the heatmaps where assumptions have to be carefully investigated, if possible. Unfortunately, sometimes assumptions can only be validated after the deal has come into effect — when it is too late to reverse it.

Integration (Direct)

In the integration phase, the acquirer consolidates the two organizations to achieve the expected business benefits from the acquisition. In this phase, EA can help direct and govern the transition toward a desirable end state that realizes the acquisition benefits without compromising long-term performance. EA can contribute to four tasks in the integration phase:

1. **Definition of the to-be state.** The first activity after the deal has been struck is to define the to-be state that the company wants to achieve as a result of the integration. At this stage, the assumptions made at the high-level planning step of the selection phase are reassessed. The outcome of this activity is a detailed capability model of the envisioned organization.

2. **Organizational design.** Following the to-be state definition, EA aids in the organizational design process. In this step, the accountable enterprise leaders, assisted by the EA team, decide how the acquired workforce should be distributed in the organization. The acquisition team utilizes the organizational capability models provided by EA to determine the conceptual integration of the workforce into the organization's workforce model.

3. **Technological enablement.** The IT enablement of the organizational design allows the EA team to provide input into how the capabilities and organizational design can be supported efficiently by technological resources. The technology models contained in the reference model are used to determine the needed transformation to support the required systems and operational capabilities.

4. **Connection of strategic intent to execution.** Finally, the EA team is engaged in developing a capability roadmap, including a migration model to realize the desired to-be state.

In the integration phase, an EA team can leverage a capability roadmap to map systems and technologies and to determine the relative difficulty of integration and the options to consider, along with a cost estimate. The roadmap takes into account other ongoing transformations in each capability view. The integration activities are, therefore, not separate and unique transformation activities, but are built into the general capability roadmaps for each part of the EA.

Post-Acquisition Management (Monitor)

In the post-acquisition management phase, EA can reflect on the business and technical integration achieved in order to learn and to take corrective action when needed. During the post-acquisition management phase, EA can be engaged in two specific activities:

1. **Integration evaluation.** To be able to learn and continuously improve the acquisition capability, the acquirer can conduct a comprehensive integration evaluation to determine how integration proceeded during the acquisition. The integration roadmap and the target states at the business, operating, and technical levels allow the EA team to measure integration against integration metrics.

2. **Integration correction.** The second activity that EA can contribute to in the post-acquisition management phase is integration correction. This requires the restoration of the "integration debt" that was intentionally or unintentionally created during the integration project.

To complete these two activities, an EA health metrics dashboard is a critical tool. The dashboard conveys deviations from an ideal architecture. Corrections are worked into the capability roadmaps to ensure that whenever a new acquisition opportunity emerges, the company is always ready to acquire.

Engaging Enterprise Architects in Acquisitions

Engaging EA in the acquisition process allows the acquisition team to plan, execute, and evaluate acquisitions within a strategic planning framework that improves acquisition performance without compromising organizational performance. Specifically, using the EA capability improves acquisition performance through the following:

- **Speed (time to capability).** The ability to reuse current capabilities in-house will allow the company to get its products, services, and solutions to market and make them orderable faster.

- **Reduced integration cost (reuse).** The ability to support the integration of new business models and technologies with current operational capabilities will eliminate the need for redundant capabilities.

- **Reverse integration.** The ability to identify business or operational capabilities in the target company will allow them to be scaled inside the acquirer.

Long-term organizational performance and sustainability of the acquisition program are impacted through the following:

- **Reduced business and IT complexity.** Through ongoing documentation of the current state of the enterprise, redundant and unused assets are identified and eliminated (e.g., through simplification/reduced redundancy of processes), thus sustaining a flexible organization.
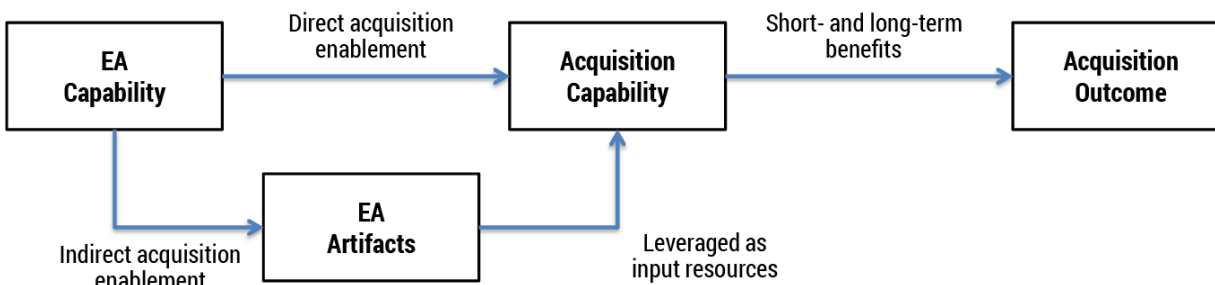
Figure 1 — Contribution of the EA capability to acquisition outcome.

- **Fewer simultaneous projects.** The rapid integration process means that the acquirer can avoid the additional challenge of running a large number of acquisition integration processes in parallel.

- **Synchronization with other transformation initiatives.** The EA team orchestrates parallel integration processes with other transformative initiatives, enabling the firm to evolve as a coherent whole.

Based on our research and understanding of the opportunity EA has in the acquisition process, we propose two different ways the EA capability can contribute to an acquisition: direct and indirect (see Figure 1). *Direct* engagement refers to the particular tasks the EA team performs in the acquisition project, forming an integrated component of the acquisition capability. *Indirect* engagement refers to tasks in the acquisition project facilitated by input delivered by EA. This distinction between modes of engagement is important, since each mode entails different requirements from the EA capability and different managerial efforts in order for the engagement to succeed.

Direct engagement in the acquisition process happens when the EA team is considered the best-positioned group within the acquirer to analyze the actual implementation of the tasks necessary to combine the organizations and to identify possible difficulties. Therefore, the tasks assigned to the EA team are typically associated with the design of operational, systems, and technical capabilities that would support the envisioned business scenario to the extent possible and support the most effective path of migration.

EA can also assist in the acquisition process indirectly by providing resources used by the acquisition team in a number of tasks. Members of the acquisition team may use the enterprise reference model, capability heatmaps, and the EA health metrics dashboard to guide work. Commonly, within these activities, members of the acquisition team need the means to express their vision for how they want the organization to work post-acquisition.

The two modes of engaging EA in the acquisition process place fundamentally different requirements on the EA capability. Indirect engagement corresponds well to a *description* purpose of EA. This represents a relatively basic use of EA, and we argue that most organizations with an EA capability would start with the

description of enterprise capabilities. Therefore, it is likely that most organizations actively pursuing EA could fulfill the demands of the indirect engagement of EA.

Direct engagement corresponds well to the *design and evaluation* purposes of EA. To be able to complete these purposes, the EA team needs a profound understanding of not only the technical aspect of EA, but also of the strategic business objectives that the firm seeks to achieve. Without such an understanding, the EA team cannot be given the responsibility to complete tasks such as investigating the potential of reverse integration, developing the to-be state definition, and completing a progression analysis.

Direct engagement of EA in the acquisition process also requires that members of the acquisition team be able to understand and express ideas about the future business strategy in terms of capability maps. Absent this understanding of the EA approach to business modeling, there would be limited use of these capability maps, even if the EA team maintained an updated enterprise reference model.

In our experiences collaborating closely with EA practitioners and leaders in various industries and geographies, we have typically found that EA is primarily a technical capability and engaged in a constrained fashion. In most firms, the EA team does not possess the necessary critical business knowledge and, therefore, is not able to contribute to the acquisition process through direct engagement. At some pioneering firms, however, the reformation of EA has explicitly aimed to build a business strategy competence in the EA team by giving enterprise architect roles the responsibility for business and operations architectures. Such efforts can develop an EA team that transcends technological and business domains, enabling direct engagement in the acquisition process.

Conclusion

In the fast-moving digital era, the companies that will come out on top are the ones that better manage the continuous, multilayered organizational transformation required to seize opportunities and respond to threats. At the heart of this ability rests a sophisticated EA capability that has both engagement and layer-spanning qualities. In this *Executive Update*, we have illustrated how such an EA capability can contribute to an acquisition process by preparing the firm, so it is ready to acquire, by identifying value-creating possibilities, engaging in direct integration efforts, and monitoring the progress of work. Through our research and practical experiences, we've come to appreciate the value of EA as an activity or action (the process of *architecting*) over that of a static framework (the concept of *architecture*), thereby focusing on the outcomes and impact of EA rather than the idea.

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