

HOW ENTERPRISE ARCHITECTURE FOSTERS INNOVATION

Why insights provided by enterprise architecture are critical for companies to keep up with continuous innovation



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Introduction

As businesses move to the cloud and try to keep up with evolving new technologies such as artificial intelligence and machine learning that are available for transformation programs, they need to bring information, business requirements and technology together to implement them successfully where they bring the most value.

Enterprise architecture (EA) provides a clear vision on how information, business and technology flow together, which proves useful for companies embarking on digital transformation projects. By continuously providing insights that help modernize systems and implement technologies, it aids business innovation as an integral part of their way of working.

This *PEX Network* report, produced in collaboration with LeanIX, investigates the role of EA and EA leaders in helping their companies modernize their IT infrastructure and implement innovation. Featuring real-life case studies and insights from Walgreens Boots Alliance, Utrecht University and Abcam, the report looks to showcase the value of EA at a time of continuous innovation.

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“EA is about helping stakeholders see what is possible, how the organization works, which technologies are available and which ones are planned, how we are going to achieve our goals in the coming years and the roadmap for the business transformation plan.”

Tim van Neerbos

Lead enterprise architect at Utrecht University



How enterprise architecture helps modernize IT infrastructure

Many organizations had to adapt to remote-working practices suddenly in 2020, which highlighted the need for them to modernize their IT systems. *PEX Report 2021*, published in November 2020, showed results from *PEX Network's* global survey in which 31 per cent of respondents said IT infrastructure modernization was an area in which the Covid-19 pandemic forced them to ramp up digital transformation efforts.

There is a drive for organizations to continue these efforts in 2021, with IT ranked fourth on the list of departments responsible for driving operational excellence (OPEX) and transformation programs in *PEX Report 2022*. By bringing systems, processes and people together, EA provides a holistic view of how a company operates. It also plays a role in aligning IT capabilities with process needs, which is one of the top 10 focus areas for process improvement in *PEX Report 2022* and a requirement for transformation programs.

An organization currently going through a digital transformation is Abcam, a global producer, distributor and seller of protein research tools. The company is undergoing an installation of and enabling capabilities phase started in early 2021. David Migdal, director of strategy and architecture at Abcam, explains that the legacy environment in which the company operated was not sufficient to meet Abcam's growth plan.

By placing these systems with target states, or new systems, Migdal is aiming to base the organization's digital principles around Agile, domain-driven design, native cloud and decoupled services.

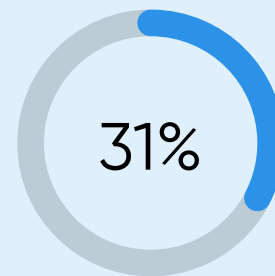
"The intention is to move the value pods of the transformation and deliver it by working in local squads and work with the new capabilities of native cloud to be able to explore, innovate and run values and concepts in continuous innovation while protecting us from a security and governance standpoint," he says.

Tim van Neerbos, lead enterprise architect at Utrecht University, sees EA as enabler of the hybrid cloud strategy

that determines reasons to move to the cloud and what parts of an organization to migrate. Utrecht University has a hybrid cloud strategy and van Neerbos looks at how this will affect the projects the university is currently running and which ones he can move.

Van Neerbos notes: "EA is looking at the bigger picture in order to steer the organization in the right direction."

By bringing together people, processes and systems, EA can help companies implement new technologies such as artificial intelligence and machine learning. The next section of this report looks at how it acts as a framework for their investment.



Number of respondents who picked IT infrastructure modernization as an area for digital transformation during the Covid-19 pandemic

Source: [PEX Report 2021](#)



IT's rank in all departments responsible for driving OPEX and transformation programs

Source: [PEX Report 2022](#)

EA as a framework for innovation

By focusing on the current status of legacy systems to modernize them, EA helps companies form a more seamless environment. According to Utrecht University's van Neerbos, "EA is all about removing silos because it takes a holistic approach to technology and business, which helps see dependencies between and within systems and processes".

Van Neerbos believes that the insights provided by EA is one of its most critical elements to break down IT silos. He explains: "You have to know what applications you have, what they do, which data is in them to then think about your target state."

"Without having the capability to ensure the information we leverage is trusted and reliable, the insight we produce will be biased – the data needs to be clean and come from reliable sources to produce trusted outcomes."

Grant Ecker

Vice-president global enterprise architecture at
Walgreens Boots Alliance

At Abcam, the course of action used to be to keep all assets and catalogues of the company's capabilities in a spreadsheet, which Migdal notes was a challenge.

Migdal remarks: "It was hard to maintain how many systems we had, where they were, who owned them and who ran them."

The protein company implemented LeanIX to build a product self-service catalogue which contains all the data from the spreadsheet where owners, product managers and domain architects are assigned. It provides information on all the products, their lifecycles, their criticality, their parent capabilities and data points across the organization that all 1,600 global users can access.

This allows Migdal to identify the organization's capabilities, its complexity, the heat map of system overlaps and helps outline the ownership of applications and systems as the company is moving toward a product mind-set.

He explains: "It is really important to have the business understand what we do and when I can share a dashboard and report on the number of applications, their cost and the overlap. It is much easier when you have the data and visualization behind it."

EA helps companies have guidelines and agreements on how their systems communicate with each other by describing which agreements are in place and measuring whether a new implementation helps break down silos.

At Utrecht University, van Neerbos adds a layer in-between systems through an integration platform to avoid them connecting directly with each other. This allows them to communicate with a specific language and data model that allows for more agility. He says: "If you are able to do this you will be more flexible, agile and able to move to the cloud easier since you are not dependent on systems connected directly to each other."

As a company moving to the cloud, Abcam is starting to use LeanIX's software-as-a-service (SaaS) Management Platform (SMP) to get insights into its own cloud capabilities.

"In the cloud-native world, being able to identify all of your SaaS reduces the risk around shadow IT," Migdal says. "We are starting to understand the SaaS's cost and use it to drive initiatives around sustainable architecture and application rationalization."



An important source of information for EA leaders is data, which Grant Ecker, vice-president global enterprise architecture at Walgreens Boots Alliance, sees as a “key part” in terms of information architecture. He says: “Without having the capability to ensure the information we leverage is trusted and reliable, the insight we produce will be biased – the data needs to be clean and come from reliable sources to produce trusted outcomes.”

To ensure the cleanliness of the data, Ecker notes companies need to start with curating the technology landscape used to collect and manage it. He says: “Organizations need to know where they are, understand the operational constraints of how that data comes to be what it is, then map the insights we are trying to draw and determine where to go from there based on the opportunities and gaps.”

The insights provided by the data’s gaps and opportunities helps EA leaders play a key role in building a foundation when companies look to implement new technologies such as machine learning and artificial intelligence. It is about translating a business vision and strategy to deliver outcomes into what it means in terms of the maturity in people,

processes, information, and technology across a company that are needed to get there.

Ecker sees the value of EA in technological implementations specifically in the “what before how” approach, which starts with the outcomes the company is seeking and traces them back to how the technology will need to enable them to arrive there.

EA helps understand the capabilities required for these outcomes and the maturity of people, processes, information, and technology. He notes: “Understanding the current maturity level in a capability and where the company needs to be is important to ensure EA can steer investments towards the right-sized investments.”

“If different, unrelated departments invest in the same technology, EA plays a role in aligning the investments across the organizations to ensure that the company seeks the same things in different pockets – and in doing that EA is helping to shape the enterprise’s approach to these outcomes,” he states.

The next section of this report discusses how EA leaders help to integrate innovation within a business strategy.

“In the cloud-native world, being able to identify all of your SaaS [through EA] reduces the risk around shadow IT.”

David Migdal

Director of strategy and architecture at Abcam

How EA leaders can integrate innovation in business strategy and execution

EA is the link between business strategy and requirements. Although it can help implement innovation, Abcam's Migdal believes it must "get out of the way" at the execution level.

"If you think about a company from an EA perspective, there is a strategic element to it – EA sits with the business and assesses what capability the company needs to do its job," he says. "At the execution level, we are there without being there, as long as the guidelines we put in place are followed then we know we are moving in the right direction."

He notes EA is only there to govern and provide the rules, boundaries and overall direction, but it is down to the local squads to execute. He adds: "If you find EA sitting on local squads you have problem."

Utrecht University's van Neerbos explains that on one side organizations want to innovate and start proof of concepts. On the other hand EA leaders want to look at how new technology eventually fits in the target landscape. In this way EA leaders can make sure that new and innovative technology will support business needs and possibly enable new business models.

"EA is about helping stakeholders see what is possible, how the organization works, which technologies are available and which ones are planned, how we are going to achieve our goals in the coming years and the roadmap for the business transformation plan," van Neerbos notes. "It is helping a lot because you are blind without this information."

He believes that if a company does not look into what its strategy means for design of the enterprise in terms of elements such as processes, data and technology, it will be very difficult to achieve and know if it is in any way realistic.

"You need to see what a strategic plan means for the architecture and how the architecture feeds into the strategy, as some technologies will be relevant to strategy," he says. "There should be a feedback loop between strategy development and enterprise architecture."

This communication is an essential part of an EA leader's role. Van Neerbos explains: "It is our role to make complex things simple and communicate them to stakeholders at all levels of the organization – you need to be seen as a trusted advisor and someone they want to listen to."

Ecker believes that EA leaders need to retool their thinking around operating models, processes, problems and ways of working, and apply an architecture mind-set to evolving needs to keep adding values.

Van Neerbos adds that enterprise architecture should be more data-driven and expect models to be generated via automation in the future. They should also align what they do with other processes, for example strategy management, business process management, data management, portfolio management and project management which are all connected with each other, but not necessarily integrated.

"There is a lot of knowledge in organizations about these processes and EA is about getting the information together and drawing insights from it," he says.

The role of EA leaders will remain crucial as organizations keep injecting new technologies in their ways of working, products and services.

As demonstrated in this report, the valuable insights EA brings can help organizations with cloud migration and the implementation of new technologies. By providing a platform on which information related to products, services, systems, processes and people is put together, EA helps give complete visibility into how companies truly operate.

As technologies evolve, the role of EA leaders will have to keep up in order to change their work practice and continuously provide their companies with ways to innovate. Those who fail will miss an opportunity to remain ahead of the competition.

Top three takeaways from this report:



- > EA steers business transformation programs by aligning strategy and requirements.
- > By providing insights into systems, processes and people, EA can help the implementation of technology across a business.
- > EA leaders should be seen as a trusted advisor by the organization.



Please note that the views of contributors from Utrecht University and Walgreens Boots Alliance featured in this report are personal and are not endorsing LeanIX or LeanIX products.

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