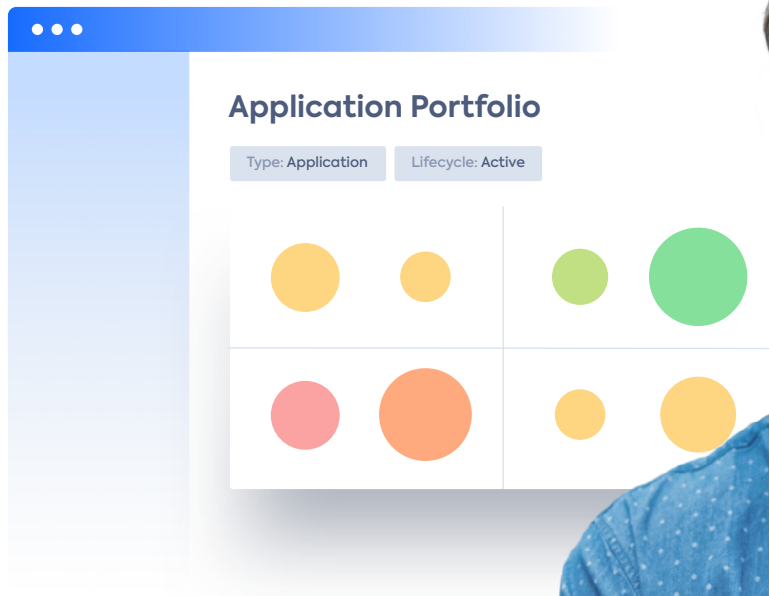


WHITE PAPER

The Enterprise Architect of Tomorrow



Q1 Q2 Q3 Q4 Q1 Q3 2022

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Introduction

An Enterprise Architect's (EA) role is elaborate and extremely dynamic. They deliver great value to an enterprise — cutting down IT complexity and costs by aligning concerns, technology tools, and strategic business goals. EAs spent vast amounts of time producing exhaustive, idealistic plans based on excessive amounts of analysis, slow timelines, and rigid conceptual models. Such plans were often impractical to execute and were less adaptable to the changing business environment.

But the rapid expansion of the technologies and digital methodologies, including cloud native, agile and DevOps practices, as well as the shift from monolithic to microservices have created a need for a more flexible, data-driven, and pragmatic enterprise architecture. Business success is suddenly being dictated by new drivers such as digitization and agility, which has forced traditional EA practices into obsolescence. To be successful, the EAs of tomorrow must develop the knowledge and skills to stay relevant in the age of digital and business transformation. They are the new superstars for driving strategic IT changes in the enterprise. The EAs who own the right traits will enable their enterprises to scale up and quickly meet the speed and demands required by digital transformation.

By becoming data-driven, agile minded, and forward-thinking, the EAs of the future will be acknowledged for their significant contribution for invaluable IT insights and the execution of the strategic IT vision.

This white paper will:

- Explain the factors that shape the role of the EAs
- Describe the five most important traits high-performing EAs must possess
- Offer practical insights for developing and applying the five traits

Factors Shaping the Role of Enterprise Architects

The practice of enterprise architecture has changed drastically, from a supporting one into a leading one, since it first emerged in the late 1980s. As enterprises strive to become more agile, the role of IT has changed. IT is now perceived as a key contributor to business enablement whereas it was once seen as a cost center. It is now less about individual technologies, and more about technology-enabled business models and solutions.

Enterprises no longer expect their EAs to be focused on IT standards, structure, and control, but rather want them to fulfill the business needs of flexibility, innovation, and collaboration. In addition to the conventional challenges of managing and controlling the IT landscape, new challenges such as cybersecurity and expanding cloud sprawl have also emerged. This adds to the EAs' responsibilities and simultaneously provides more opportunities to contribute to the success of the enterprise.

One such technology from which hardly any organization has remained untouched is cloud transformation. As IT infrastructure progressively moves towards the cloud, enterprises need to understand not only the business value of developing and deploying cloud native applications but also how to deal with the strategic IT management challenges in multi-cloud and hybrid cloud environments. Enterprise architecture for the

cloud must be top of mind, with EAs as the glue that helps tie all disparate IT threads together.

In a cloud native environment, the large number of granular components scaling at an exponential rate (e.g. Amazon's website uses more than 100,000 microservices) makes it difficult to inventory these components manually, track their relationship to business capabilities, and visualize their dependency to other components. Increased incidents of cloud configuration mistakes cause unexpected outages and take longer to analyze and solve in an obscured IT landscape.

Furthermore, the cloud native environment is characterized by decentralized teams, which makes it difficult to share critical information due to the unavailability of suitable processes and efficient tools to support those processes. All this has a detrimental impact on the whole IT decision making process and has the potential to snowball into catastrophic decisions for the business. The success of cloud native will to a large extent depend on how enterprises create transparency of their hybrid IT (on-premise and cloud IT) landscape for stakeholders and promote a collaborative culture to meet changing fundamentals in technology and business. On the next page, Table 1 lists some changes to the IT landscape caused by cloud transformation and the challenges it poses for EAs.



Table 1
Challenges of Moving from an On-premise to Cloud Native IT Environment

On-premise IT	Cloud Native IT	Resulting Challenges
<ul style="list-style-type: none"> • Lesser number of applications and IT components • A few hundred IT components with slow system changes 	<ul style="list-style-type: none"> • A large number of applications and IT components • Tens of thousands of granular cloud components, microservices, VMs, interfaces etc. 	<ul style="list-style-type: none"> • Managing complexity of business and IT relationship • Monitoring dependencies of cloud components • Tracking violations
<ul style="list-style-type: none"> • Takes a few days to a week to commission a new server 	<ul style="list-style-type: none"> • Takes approximately 30 seconds to launch a new server in AWS cloud 	<ul style="list-style-type: none"> • Keeping inventory up to date • Avoiding human error in data management • Preventing the accumulation of shadow IT
<ul style="list-style-type: none"> • Small number of centralized teams 	<ul style="list-style-type: none"> • Many decentralized teams 	<ul style="list-style-type: none"> • Sharing information to collaborate across silos

Source: LeanIX GmbH

Considering the above challenges, EAs need to develop their abilities to be successful in creating value to the enterprise and stay relevant in these tumultuous times. Some of the areas where EAs can add value are:

- Bridging an enterprise’s current and future state objectives
- Managing current cloud-based systems and ensuring that disparate cloud systems fit with the legacy systems
- Prepare IT better for the future to adapt faster to the changes with minimal disruptions and costs



Five Traits of Tomorrow's Enterprise Architect

There are five characteristics the enterprise architects of tomorrow must possess if they are to be successful. These traits include the ability to be strategic and think like a business leader, be agile, embrace data to make decisions, and be an EA evangelist within the organization (see Figure 1).

Figure 1

Five Traits of Tomorrow's Enterprise Architect



Source: LeanIX GmbH

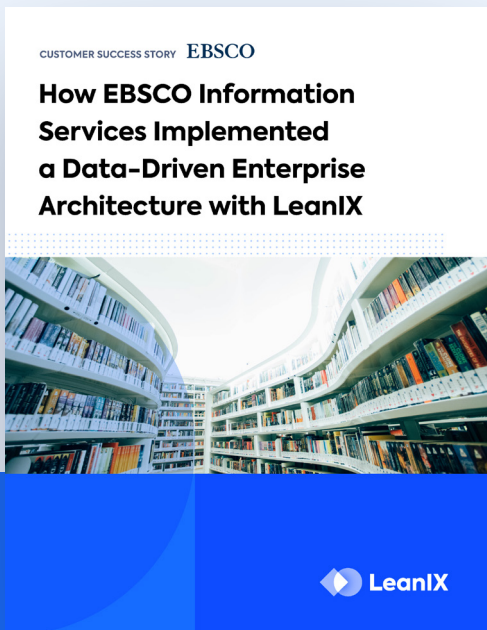
Strategic IT Decisions Driver

EAs need to develop a strong understanding of business and IT to be successful in executing their responsibilities. They must be strategic and forward-thinking, yet their decisions must be rooted in an in-depth analysis of the micro and macro technological changes impacting their enterprise. As a strategic decision-maker, EA must forecast the potential outcomes of the various technological decisions and must weigh them against business value and risk factors.

In the past, some EAs invested a disproportionate amount of time documenting information and collecting hordes of data for the sake of collecting it. They used static spreadsheets that never seemed to be current. As a result, the data actively decreased in relevance, but EAs still used aging data to perform IT planning. For incorporating an IT change, EAs would go back and begin the same inefficient and ineffective process again. Such mundane processes hold EAs back from realizing their real potential in an environment of high agility and competitiveness.

EAs of the future must track systems and processes that exist and keep a sharp lookout for the imminent challenges and opportunities ahead. They must quickly grasp, store, structure, and analyze information that could help solve an oncoming problem or even prevent one before it occurs. They must develop a long-term

future state of their target IT architecture quickly while understanding the needs of the business. These EAs not only propose and investigate possible resolutions but remain helpful and accessible, offering supplemental support until a solution is reached.



Read Now

EBSCO Industries Inc. (EBSCO), the leading provider of premium information, research databases, e-journals, magazine subscriptions, e-books, and discovery services to libraries of all kinds, embraced enterprise architecture within their organization. EBSCO needed to align its business units with IT operations, which required documenting the holistic IT landscape and visualize it with an interactive view.

EBSCO used static spreadsheets and Gantt charts for documenting and planning their IT needs, which resulted in large management and maintenance overheads. They frequently missed important pieces of information that would enable them to perform an objective analysis. It quickly became apparent enterprise architects needed a data-driven tool to track the IT inventory and help drive their analysis for planning and making decisions.

In a short span of 18 months, EBSCO built a single source of truth for enterprise architecture by fully automating its data collection and reporting processes using [LeanIX EAM](#). This has provided increased visibility while aligning all the business units with the IT landscape. In addition, teams now have a stronger sense of ownership for the company's overall digital transformation. The LeanIX solution also provided EBSCO with more flexibility and agility by breaking down the silos that impeded its ability to fully utilize its IT environment. A new dialogue has emerged in which the EA team also can now provide business value and risk data, and technical and functional fitness metrics to offer guidance for strategic decisions, asset management, and roadmap prioritization.

Tech-Savvy Business Leader

Enterprise IT architects play a vital role as visionaries and technology masters who help shape and implement mission-critical projects and efforts. In the past, more generalized IT experts who provided higher-level technical oversight and guidance for projects might become a successful EA. But in the digital age, when every company eventually becomes a software company, EAs have to have a deep understanding of the technologies, and specifically the opportunities and risks they bring, to stay ahead of the competition.

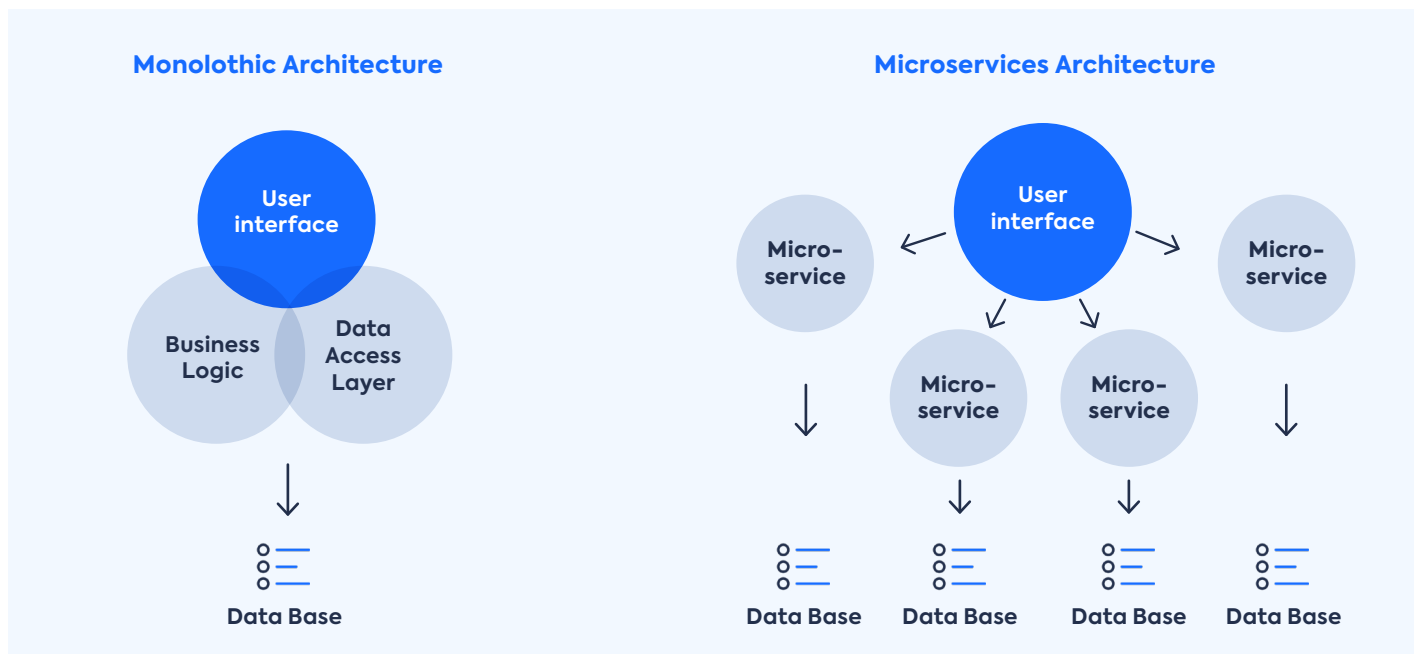
The EAs of the future must not only be aware of the availability of industry-relevant APIs, microservices, and emerging technologies, but also need to understand how a proposed service might improve or negatively impact the company. Where EAs of the past would have nominally researched possible solutions and handed it off to the prospective team to resolve, tech-savvy EAs of tomorrow are in close continual contact with CIOs, application leaders, and IT teams, educating themselves on the technical mechanics of each project.

For example, one of the key architectural changes happening is microservices. EAs will undoubtedly have to give well-founded advice on this framework, and its possible benefits to their company (see Figure 2).

The microservices architecture develops complex application software from small, individual applications that communicate with each other using language-independent application programming interfaces (APIs). Companies run into trouble if they are unable to scale a monolithic architecture developed over time, especially if their architecture is difficult to upgrade or maintenance becomes too complex. Microservices can address this problem, as they break down complex tasks into smaller processes that work independently of each other.

However, it is extremely important to define a target architecture before beginning to implement microservices. Otherwise, the IT landscape may end up devolving into chaos and exhibit worse properties than the existing monolithic applications. Tech-savvy EAs give clear-cut advice and implement a framework to benefit from microservices, service oriented architecture, DevOps, or any other emerging trends.

Figure 2
Monolithic vs Microservices Architecture



Source: LeanIX GmbH

Agile Thinker

EAs are slowly moving away from a supporting role to a leading one. More and more EAs are participating in and directing their enterprise’s business prioritization, strategic roadmap planning and optimization, portfolio management, and product management activities.

Agility has become a key characteristic of top-performing EAs of tomorrow. An important EA goal is to implement enterprise-wide agile methodologies and agile operating models to speed up software deployment timelines. For instance, EAs can explore agile development using scrum frameworks for completing complex projects. Originally designed for software development projects, it works well for any complex, innovative scope of work.

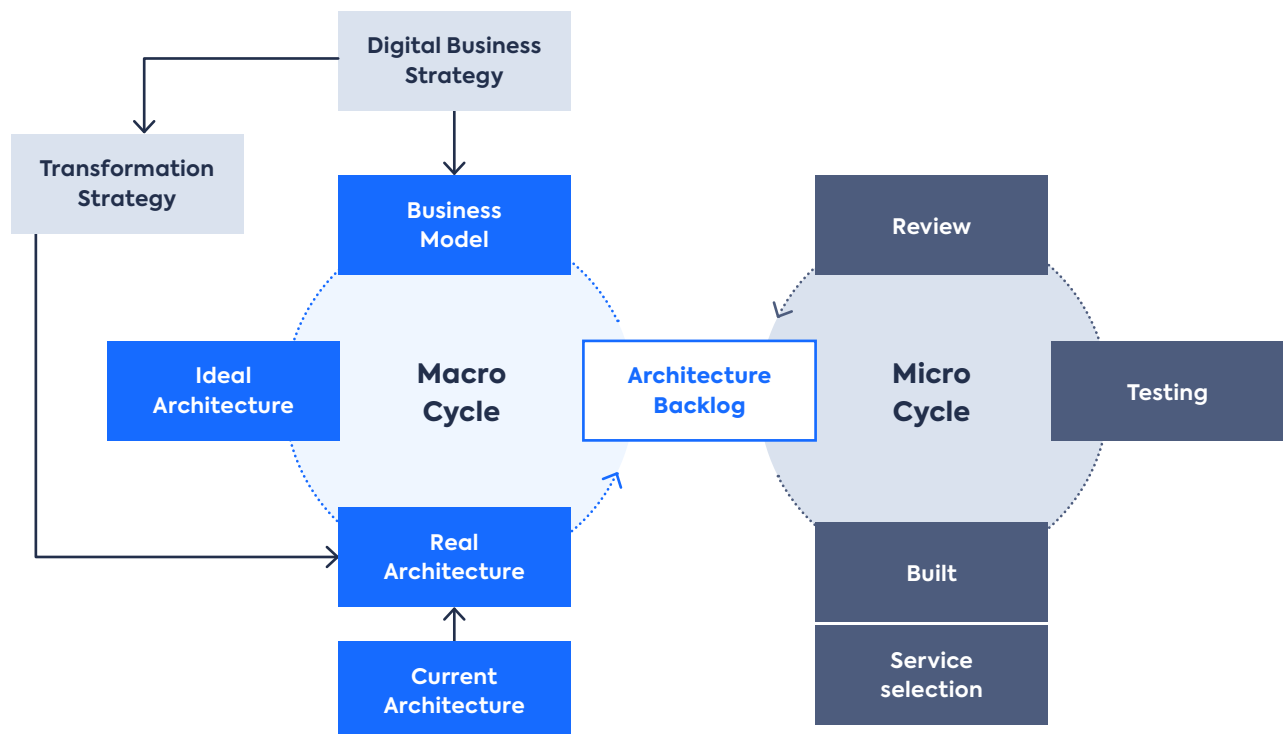
Over the years, agile software development accentuated by DevOps methodologies has empowered enterprises to develop and release services at a rapid rate. According to a recent [State of DevOps report](#), high-performing enterprises deploy code to production 208 times more frequently than their low-performing

peers. They also have 2,604 times faster ‘time to recover from incidents’ and a 7 times lower change failure rate.

Once shifted over from the “Ivory Tower” mindset to an agile mindset, EAs can actively map out systems and processes that foster high project deliverable rates, generate quick results, and produce critical business outcomes while supporting the important requirements like security, data privacy, and compliance.

Their approaches are complementary. The harmonization between architecture and agile teams can contribute to the delivery of successful projects aligned to corporate strategies. Figure 3 shows the EA approach for digital transformation, embedded into agile development methods. The macro cycle defines the architecture of the entire enterprise while in the micro cycle, single functions are implemented and tested. An ideal architecture provides the EA room for new ideas without considering legacy systems or strategic restrictions. Afterward, the real architecture is derived from the ideal architecture

Figure 3
Agile Enterprise Architecture for Digital Transformation



Source: *Enterprise Architectures for the Digital Transformation in Small and Medium-sized Enterprises*, David Goerzig and Thomas Bauernhansl, 2017

Data-Driven Decision Maker

The sheer number of assets that EAs are expected to manage and control has increased exponentially with the growing granularity of application and solution assets. This explosion in IT assets has turned traditional EA drawing tools obsolete. The EAs of tomorrow must make their decisions based on current data to ensure they can execute upon actionable business outcomes. Data-driven decisions help leadership make the right investments and ensure the organization is working on the most impactful tasks to improve its competitive edge.

High performing EAs are on top of up-to-date analytics, prove hypotheses with data, regularly A/B test the practicality of current systems, and make decisions only from admissible data. In today's world of information overload, the real task for EAs is to filter the data, determine what is useful to them, and use it in a meaningful way.

The SaaS-based [LeanIX Enterprise Architecture Management](#) has revolutionized the enterprise architecture practice of more than 300 enterprises around the globe. By providing a flexible data model, making it easier to collaborate between different stakeholders, and delivering instant reporting

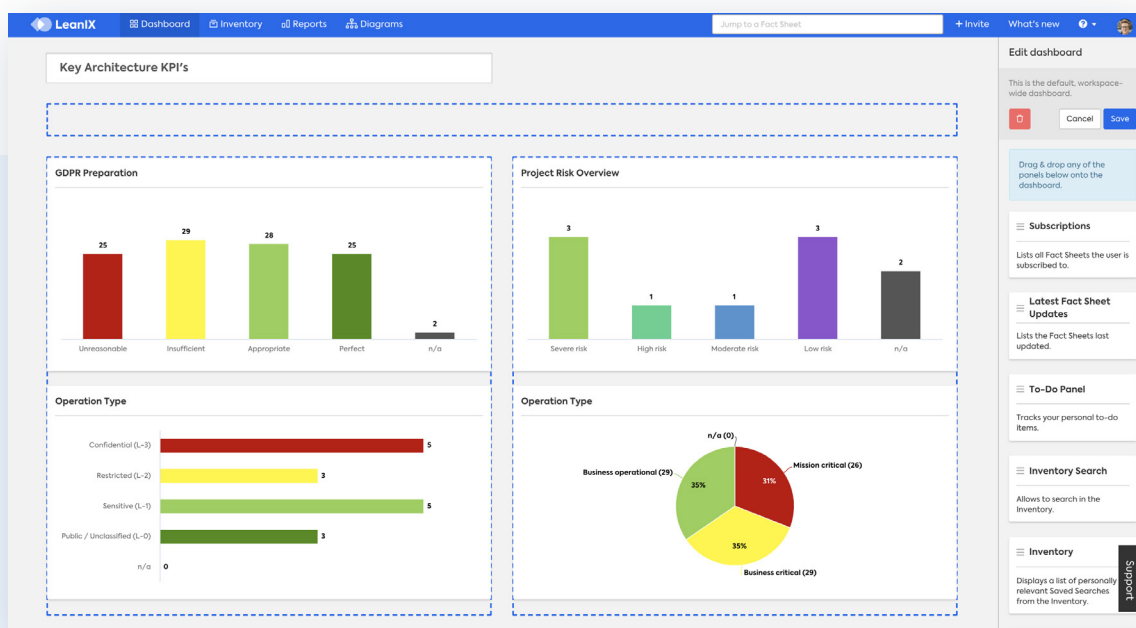
“Data will become a strategic asset to the adaptive enterprise and analytics will enable the organization to distinguish the signals from the noise and focus on outcomes, resulting in business ROI.”

Björn Goerke, Former Chief Technology Officer (CTO) of SAP

capabilities on real-time information, LeanIX provides EAs with analytics on a visual dashboard to enable them to make data-driven decisions quickly.

Figure 4 shows the customizable LeanIX dashboard with key architecture KPIs. The flexible dashboards assist organizations with turning data stored in their EA inventories into actionable insights. The user-friendly functionality gives LeanIX users fast and easy access to new and pending actions and information, simplifying workflows and creating more efficient processes and robust actions. The dashboard allows a swift real-time overview of the most important statistics of your architecture. This results in developing measurable improvements in the EA initiatives. Without access to current EA data, enterprises tend to suffer from bad decision making, lost communications, neglected issues, slow response times, and disorganized efforts.

Figure 4
LeanIX Dashboard Illustrates Key Architecture KPIs



Evangelist

Whereas EAs of the past were seen as data collectors creating far-flung models for various project teams, EAs of the future must see a benefit in constant application changes - and be able to convince teams to test out new processes regularly. Evangelistic EAs can select one important topic that would benefit the company whether it is cloud native transformation, AI, DevOps, IoT, microservices, etc., and champion and strongly advocate for its cause.

One hot topic for most industries is cloud transformation. Cloud native technologies such as containers and Kubernetes are continuously rising in adoption across a wide range of industries. Docker containers are now being used by 57% of enterprises, up from 49%

in 2018 while Kubernetes adoption has grown to 48% enterprises, up from 27% percent in the same period as stated in the [Right Scale 2019 State of the Cloud Report](#). Forward-thinking EAs of tomorrow will take this information, research how cloud native technologies will provide opportunities or threats to their organization, build a broad understanding of the business impacts of these emerging technologies, expose the challenges they will pose to the enterprise, and devise solutions to tackle those challenges. By thoroughly researching the technology and the resulting ideation, evangelical EAs can provide both IT leaders and business leaders with more than just a list of “cool” set of technology ideas (see Table 2).

Table 2
Differences Between Past and Future Enterprise Architects

Enterprise Architect of the Past	Enterprise Architect of the Future
Deals mostly with on-premise IT	Deals with hybrid IT (on-premise and cloud IT)
Is considered a technical professional with little business acumen	Has mastered both technical as well as business acumen
Is stuck in obsolete practices of enterprise architecture	Continuously incorporates new methodologies of doing things faster and cheaper
Is more concerned about controlling and standardization	Has eyes on achieving business goals. Controlling and standardization are still important but are not allowed to interfere with business agility
Uses legacy EA tools, more focused on drawing features with almost no integration capabilities to other tools	Uses modern data-driven EA tools with relevant APIs to connect to the broader IT management ecosystem

Source: LeanIX GmbH

How to Develop These Five Traits as an EA

Having understood the factors that are shaping enterprise architecture and the traits that will be required to be successful in this new world, let's explore how these essential traits of the future EA can be cultivated.



Be customer-centric

Enterprise architects should develop a practice that is customer-driven, where different business units within the enterprise collaborate to innovate operational models, products, and services. It requires interactive and proactive services, individualized customer understanding, and the elimination of organizational information silos.



Emphasize a data culture

Not all data is useful for business decisions. Real-time, relevant metrics are an EA's best tool to detect faults and areas for improvement. Ensuring all relevant data is captured for EA decision making based on a flexible data model will go a long way in furthering an overall data strategy.



Embrace agility

Enterprise architects should shed the old mindset of where the emphasis was on control while flexibility and innovation took a back seat. It's time to maintain a balance between risk-taking and risk mitigation to support innovation while ensuring compliance and cost optimization.



Use modern data-driven EA tools

Be sure to employ EA tools, which offer real-time insights and provides contextualized information for stakeholders. A tool that can be easily integrated with other IT management tools will make it easier to collaborate across business units and functions.



Appreciate the totality of architectures

Enterprise architects should align with other sets of architects such as cloud architects, solution architects, and domain architects to benefit from their expertise and understanding of their particular niche. Similarly, by leveraging EA expertise, other architects can improve the outcomes of their activities by aligning with enterprise-wide efforts. Cloud architects, for example, can design better cloud applications, get faster approvals, and have storage capabilities in place for enterprise data and services.



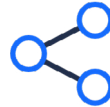
Be a prolific communicator

Regularly check in with key stakeholders to understand their explicit and implicit needs. Schedule review meetings as often as needed. Use the language of the stakeholders to convey viewpoints and perspectives easily.



Continuously look for areas of improvement

Ask questions like, “Are these applications still relevant?” or “Is this system working?” or “How I can I make this system better?” on a regular basis. Compare yourself to other organizations in the industry to see where your business is not performing as well and may have addressable gaps. Assess how you can make a difference to propel your organization to become an industry leader.



Stay abreast of industry trends

Attend conferences in person or virtually to update yourself about recent innovations and trends in the industry. Analyze how these developments may impact your business and IT organization. Spread awareness among company stakeholders and brace yourself for these changes. If required, you should enroll in relevant university tech courses to stay abreast of emerging industry standards or take EA certification classes and apply constructive knowledge to EA projects.

The top EA-related certifications that will help strengthen your resume are:

- AWS Certified Solution Architect
- Axelos ITIL Master certification
- CISSP Information Systems Security Architecture Professional (CISSIP-ISSAP)
- Dell EMC Proven Professional Cloud architect training and certification
- EC Council Certified Network Defense Architect (CNDA)
- Google Professional Cloud Architect
- Microsoft Certified: Azure Solutions Architect Expert
- Professional Cloud Solutions Architect Certification
- Red Hat Certified Architect
- Salesforce Certified Technical Architect (CTA)
- The Open Group TOGAF 9 Certification
- The Open Group Certified Architect (Open CA)
- Virtualization Council Master Infrastructure Architect certification



Get started today

Pick one current project where you can apply the five traits for high-performing EAs. Get buy-ins from the stakeholders and make a measurable difference for your company sooner rather than later.

Conclusion

EAs with tunnel vision on long-term plans and conceptual processes don't provide as much value to their teams and underutilize their potential. The EAs of the future architect the organization's IT landscape to meet the requirements of the digital age. They understand business and IT to drive a transformation conversation

among various communities of stakeholders. They strive to master the five traits expected of EAs to make a measurable impact on their enterprises. Above all, they understand the fact that the world is not static, and their role will continuously evolve with the changing business needs.

FREE DEMO

Learn about the enterprise architecture tool built for the EAs of tomorrow.

Schedule a Demo!



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