

Building Blocks for Digital Transformation

Yearbook 2023/2024

CBA cross business
architecture
lab



**Building Blocks for
Digital Transformation**

2023/2024 Yearbook

Introduction

Dear Readers,

It is both a pleasure and an honor for me to present to you this 2023/2024 Yearbook that so perfectly reflects the journey we have taken together over the last two years as CBA Lab. In the 2022 Yearbook, we reported extensively on the rapid changes that had taken place in society, business, and industry, as well as the effects of digitalization and the added value it has generated. When I now look back on the last two years, it becomes clear to me that these effects have accelerated exponentially, and that there was never really any time to stop and take a breath after having gotten through the pandemic. It seems as if the world and the economy are in crisis more than ever – with trade conflicts relating to critical resources and technologies, and technology developments combined with new region-

al conflicts. At the same time, we have to make our economy more sustainable and we need to understand the leaps being made with technological innovations that display massive disruption potential (for example GenAI). We also have to scale these innovations in order to be able to exploit them.

A modern enterprise architecture organization that has outgrown IT has the potential to address all the complex and volatile challenges together with business, data, and IT experts and develop transformational solution scenarios and targets that make sense to organizations and enable everyone involved to recognize and make the contributions they are capable of. In this way, EA reveals itself not only as a “pilot in the digital transformation”

but also as a trusted adviser for top management when it comes to making technology better, faster, and more agile and flexible in order to master the challenges we face today. This trend can already be seen in the approaches and results of our workstreams, in the demand for talented EA experts in our organizations and, most importantly, in the new training courses that we as CBA Lab have implemented – and which have become very popular as well.

I hope you are inspired by our Yearbook, and that you enjoy reading it, and I also look forward to continued trusting, open, and forward-looking cooperation in the coming years, which is a hallmark of CBA Lab. After all, now more than ever, the principle that “knowledge is the only thing that

increases when it's shared" holds true – and there's no doubt that we need to keep sharing our knowledge in the face of the challenges we are currently confronted with.

Finally, I have something personal to report: After serving many years as a consultant, and six years as the Lead Enterprise Architect at Schaeffler, I have decided to make a career change in order to apply my experience in a different environment, and also to simply take on new challenges outside my comfort zone. Unfortunately, however, this also means that I cannot continue as CBA Lab Chairman, as this position is determined by the member companies and is always occupied by a manager from one of those companies. After more than five years of being person-

ally part of the Lab, four of them as a member of the Executive Board and the last two as Chairman, I will be stepping down in June 2024 and turning things back over to the member companies and the newly elected Executive Board. I can look back on an exciting and successful journey over the last five years. It has been a time during which CBA Lab continuously gained new members, and also a time in which cooperation on EA-relevant topics and questions that were also pushed by EA organizations became increasingly varied. I have always been especially motivated by the CBA principles of a) EA as a pilot in the digital transformation, and b) developing new knowledge and sharing it, so that it may increase. These principles have also served as guide for me when cooperating with others.

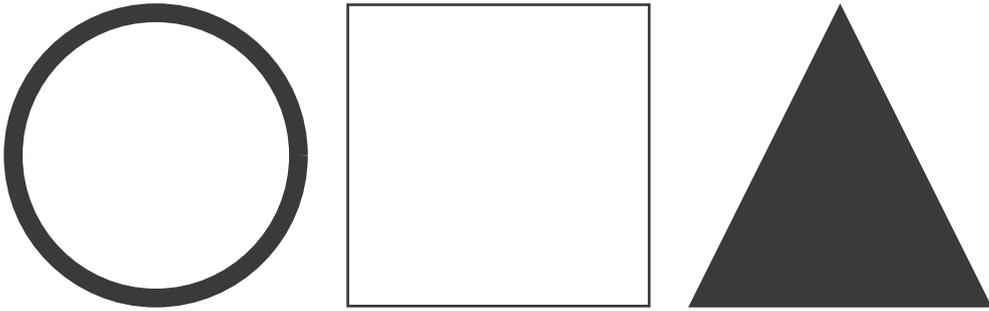
I would like to thank you all for the trust you placed in me and the support you have given me over the last five years as a member of CBA Lab, and later as a member of the Board and then its Chairman. I wish the association and each and every one of you continued success – and also a lot of fun, of course.

Best regards,



Joachim Schmider
Chairman
Cross-Business-Architecture Lab e. V.

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Strengthening EA by exploiting EA's strengths – EA as a new competitive factor

Dr. Karsten Schweichhart



“There’s no such thing as a non-architecture” – this is what our guest writer has to say in his article that begins on page 72. He definitely hits the nail on the head with this statement. Wherever IT is used today in business and society, that is wherever digitalization and automation occurs, which is practically everywhere, they are accompanied by the creation of architectures, regardless of whether or not these were planned in advance, or even desired. These architectures also end up determining the nature of business operations, production, and services – not just when they are implemented, but often over a period of many years afterwards as well.

————— It’s like a city: Should I let the city grow “dynamically” and allow everyone to build whatever it is they need at the moment? This can lead to the creation of charming cities, but also expensive construction wastelands and chaotic slums. Or let’s say I have some design goals such as resident-friendly areas, good infrastructure for water and energy, and also security – maybe a city wall or police and fire stations? Who is going to plan this for me, and who will safeguard my strategy going forward and support its implementation?

The answer to these questions in the digital business landscape is enterprise architecture, with all its strengths in terms of transparency and integrated technology, data, and business planning. A “city wall” – like a firewall, for example – is no longer sufficient for security and actually hasn’t been for some time now, as our “On the Path to Zero Trust” workstream has demonstrated (page 10). This is an important finding, given the fact that security is really of fundamental importance in these volatile times. “Without security,

nothing else matters” is another statement we’ve heard, albeit in a different context – but it applies here as well.

Once everything is secure, the goal is to succeed in the competitive field – today and in the future. Here, flexibility can be more important than a ten-year agreement at a good price with a cloud, standard, or IT service provider. However, flexible architectures require good planning in line with principles that need to be defined. This is precisely one of the things enterprise architecture

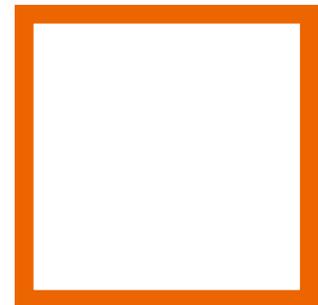
can accomplish, and the “EA Services Catalog” workstream shows us how (page 42).

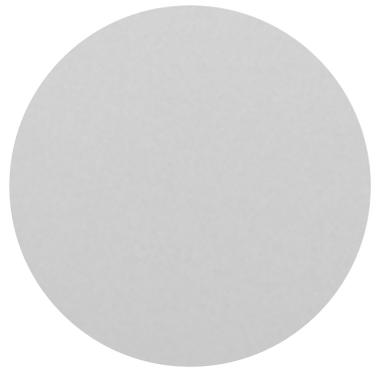
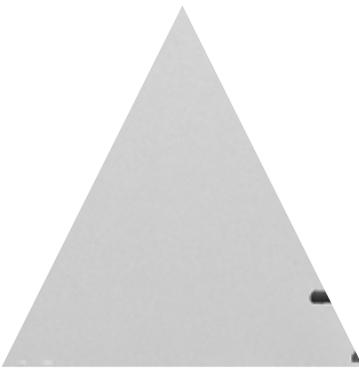
Data has long since become a resource at companies; the “Data Catalog” workstream (p. 26) hammered out the foundations here. The “EA and Sustainability” workstream (p. 34) shows how the fulfillment of even completely new business requirements can be effectively supported.

The biggest surprise in this Yearbook is that the issue of “corporate culture” played a crucial role in several workstreams. For example a “Business-Driven Architecture” (p. 14), modern zero

trust security (p. 10), and the EA dialog with the C-level (p. 38) can be made much more successful with a “good” corporate culture, which is why the latter is increasingly becoming a competitive factor.

To sum up: Those who make use of the strengths of enterprise architecture will be more competitive – and actually already are. This means that EA is becoming an issue for top management. So, my enterprise architect friends, make sure you’re ready for this. Act as pilots and guides for those who manage the companies you work in. We at CBA Lab know how to do that. ● ■ ▲





Workstream
“On the Path to Zero Trust”

More attacks, more security

Dr. Cornelius Krämer

Zero trust is a security approach that has attracted a lot of attention lately. The current popularity of zero trust is also definitely connected to Executive Order (EO) 14028 on Improving the Nation’s Cybersecurity that was issued by U.S. President Joe Biden in May 2021, as well as Memorandum M-22-09 Moving the U.S. Government Toward Zero Trust Cybersecurity Principles that was issued by the Office of Management and Budget. These regulations stipulate that U.S. government agencies are to implement a zero trust strategy by the end of 2024. This stipulation is supplemented by NIST Special Publication 800-207 Zero Trust Architecture.

Germany’s Federal Office for Information Security has also adopted a clear position on this matter, which it formulated in its Zero Trust position paper in 2023 as follows: “Zero Trust approaches can provide better preventive protection in terms of application access and, in particular, further reduce the extent of any damage caused by attacks that may occur.”

A guide based on best practices

Several CBA Lab member companies already have experience in this area. The workstream used the associated knowledge to develop a guide to assist other organizations that are currently embarking upon the path of zero trust.

Zero trust is clearly something that companies should take seriously. Still, what has been the actual experience with the introduction of zero trust approaches? Do the different experiences relate to the introduction of zero trust approaches, to approaches that are currently being implemented, or to approaches that have already been implemented? What were the main drivers that led to the decision to utilize zero trust approaches? To what extent has zero trust influenced the work of enterprise architects? Have any best practices been identified that could help other companies? Are there certain things that one should avoid at all costs? We wanted to find the answers to these

Dr. Cornelius Krämer
Workstream member

Best practices are achieved through close cooperation between architects and cybersecurity experts, as well as through consistent stakeholder management.



and other questions in our “On the Path to Zero Trust” workstream. To do this, we used a combination of a survey, individual interviews, and workshops. We then utilized the actual experiences of the participating CBA Lab member companies to develop recommendations for action, identify pitfalls, and determine the implications all this might have for enterprise architecture management. The results are contained in the “On the Path to Zero Trust” report. Ideally, the guide that was developed should be used by companies that wish to introduce zero trust. More specifically, it should serve as a type of roadmap that can help such companies embark upon the zero trust path without run-

ning into too many stumbling blocks.

The workshop basically addressed the following four questions:

1. Should a company introduce a zero trust approach?
2. What are the motivations and goals associated with the implementation of zero trust?
2. What influence does zero trust have on architecture work?
4. What types of obstacles can arise when zero trust is introduced?

The majority of the companies surveyed reported that zero trust is important to them – and more than half of the companies have already begun

introducing a zero trust approach.

Increasing the level of security – the main driver

The desire to increase the level of a security within a company was the most frequently stated reason for introducing a zero trust approach. Many companies need to adapt their security architecture to new conditions and requirements. For example, infrastructure is now increasingly being used in the form of software as a service or public clouds from cloud service providers, rather than in the form of an internal data center. Alternative forms of working outside of traditional offices have now firmly established themselves

in a development that was accelerated by the pandemic – and these formats are now viewed as being just as good and effective as traditional models. As a result, the previously clear perimeter of the company network in need of protection has been eroded, or else the scope of what needs to be protected is no longer clearly defined. This development has facilitated cyberattacks by expanding the potentially vulnerable scope and increasing the number of access points.

This is where zero trust principles come in: Here, access to resources in need of protection is no longer granted on the basis of implicit trust that results from an access request originating from somewhere within a company's network, or from a source that uses a managed client; instead, access is granted on the basis of a calculated context-related trust score. Depending on the trust score that results, access can be granted directly, only in a secured manner with additional authentication methods, or not at all.

The “assume breach” principle
=
Always assume that there is a possibility of an attack

In the interviews, we found out that some companies are no longer focusing

solely on the objective of defending against cyberattacks but are instead also looking to develop the capability to recognize an attack more quickly than before and then curtail the effects. According to those interviewed, this paradigm change has come about as a result of the experience gained with successful attacks in the recent past. Zero trust is viewed as a way to isolate corrupted components in the IT landscape and keep damage from spreading.

The architecture point of view: Best – but also worst – practices!

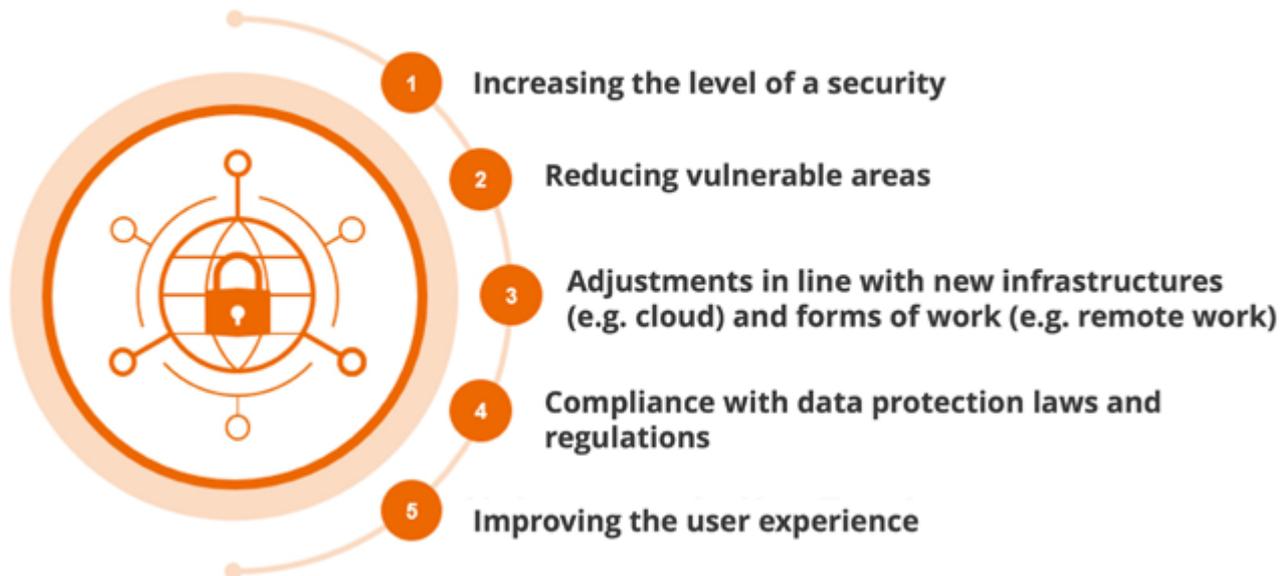
It is often difficult to specifically determine the effects zero trust has on architecture work. We believe this has to do with the fact that the companies surveyed still didn't have very much experience with zero trust at the time the workstream was being conducted. One of our key findings was that zero trust requires architects and cybersecurity experts to work much more closely together than has previously been the case. This makes sense, since a focus on network-specific security measures such as NAC, firewalls, proxies, etc. is no longer sufficient here. Zero trust must be taken into account right from the time when applications are being designed – for example in the form of appropriate IAM services and policy decision and policy enforcement points.

The key obstacles to the introduction of zero trust are uncertainties regarding how to deal with old systems, a lack of knowledge, and a shortage of skilled personnel. On the basis of the experience they have gained thus far, the majority of the companies report that they wouldn't do anything different, although some companies state they would choose different goals, a different architecture, or a different method for the introduction of zero trust.

Based on the workshops and the individual interviews, we were also able to identify a large number of specific best and worst practices in the areas of governance, stakeholder management, implementation management, and implementation. One best practice that was cited was “Begin the implementation of zero trust with identities.” One example of a worst practice was “Blacklisting as a method for access control,” as this leads to exploding costs and effort.

The authors of the workstream report also decided to analyze the issue themselves. The analysis, which can be found in a separate section of the report, covers a colorful mixture of topics such as identity and access management, vendor lock-ins, networks, capabilities, and the user experience. ●■▲

Figure: The five most frequently stated goals for the introduction of zero trust



Workstream
“Business-Driven Architecture”

Focus on business goals and targets

Yannis Baillet

————— The idea behind business-driven architecture (BDA) is to align IT with business goals and targets and promote business agility. Aligning IT strategy with a company's mission on the one hand, and technology investments with a company's business requirements on the other, makes it possible for the IT organization to effectively implement strategic changes.

Achieving the business/IT alignment needed for this is not always a matter of course, however. So how can enterprise architecture support the introduction of BDA? This was the main question addressed by the workstream – and answers to it were in fact found.

Business-driven architecture is influenced by a variety of factors that include both challenges and drivers

BDA is a dynamic discipline that is influenced by various external and internal factors that have an impact on the strategic direction taken by BDA initiatives, as well as their decision-making processes and the results they achieve. It is crucial that architects and stakeholders understand these influences so that they can work successfully within the landscape and maximize the benefits of BDA.

The workstream identified nine dimensions here, whereby each of these also represents a challenge to BDA or an enabler:

- Governance
- Roles and responsibilities
- Organization type
- Guerrilla architecture (shadow IT)
- Collaboration and team setup
- Skill set
- Structured approach
- Culture
- EA asset maturity

It is important to keep in mind that both organization type and culture are deeply rooted aspects in any organiza-

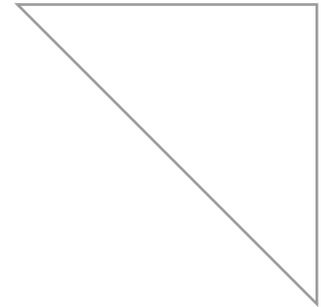
tion. Changing these involves a challenge that cannot be overcome solely from the position of enterprise architecture. Both are important factors that need to be taken into account when BDA is implemented.

A framework for a systematic analysis of the dimensions

A company's approach to its business activities is also one of the most important influencing factors as regards BDA. What does a company focus on when defining its strategy and actions? Five approaches were identified here: a capabilities-based approach, a process-oriented approach, a data-driven approach, a customer-focused approach, and a value-based approach.

Examining all the dimensions in relation to a company's approach to its business activities makes it possible to create a framework for the systematic analysis of a given BDA. This in turn enables an assessment of the actual state of a BDA and the definition of its target state.

Each dimension can have different characteristics which, depending on the approach used, might be more or less suitable for introducing a BDA.



"IT/business alignment is the process for aligning IT strategies and initiatives with the goals and targets of a company with the help of clear interconnections and quantifiable measurements that are defined by business architecture activities. This also includes switching from a technology-centered to a business-centered approach, as well as cooperation with managers in order to identify their needs and goals."
Oracle, 2011

Five dimensions are briefly explained below as examples. Additional detailed information can be downloaded as a white paper from the CBA Lab website.

The **culture** of an adhocracy enables agile decision making and innovations, while market cultures focus on competition and profitability targets. Clan or hierarchy cultures, on the other hand, with their traditional structures and hierarchies, can impede agility and innovation.

With regard to **team setup**, a mixed team with specialists from the business and EA realms enables a comprehensive overview of business requirements and the underlying architecture. Mixed teams are crucial for ensuring that the BDA does not remain a technological concept but is instead developed into an integral and effective strategy that reflects the company's vision and goals.

There are various **roles that arise within the framework of a BDA implemen-**

tation project. The most important role is that of the integrator – the person positioned between technology, processes, and data. This person is given the responsibility for ensuring that different architecture elements interact and work together seamlessly.

A federal **governance structure** is particularly helpful in a BDA context. Such a structure allows the various business units and departments to enjoy a certain degree of autonomy in terms of decision making. It also ensures compliance with higher-level guidelines and provisions relating to overriding strategic goals and targets.

Role-based communities facilitate cooperation between individuals with similar responsibilities, and also promote the establishment of a collaborative environment that is aligned with the BDA's goals and targets. Together, these structures create a framework for consistent communication, the development of skills and expertise, and effec-

tive cooperation, and they also make a major contribution to the implementation and permanent establishment of a BDA in an organization.

EAM and possibilities for influencing the dimensions

It should be noted that from the point of view of enterprise architecture, the possibilities for influencing the dimensions differ depending on the dimension in question. This aspect should be taken into account when BDA initiatives are implemented, as this makes it possible to achieve quick wins and also have a medium and long-term impact on dimensions that are difficult to influence. Indeed, it is easy to influence people's understanding of EA, but it's difficult to influence a company's culture. "Culture" and "organization type" in particular are dimensions that are more or less unchangeable and which therefore need to be accepted as a given. Other dimensions, such as "EA community," are easier to shape for someone in an EA role.

Chart: Four scenarios were defined that are based on the difficult to influence dimensions of culture, organization type, and structured approach

	Scenario 1	Scenario 2	Scenario 3a	Scenario 3b
Culture	Market culture	Hierarchical culture	Adhocracy culture	Adhocracy culture
Organization type	Product-oriented or agile organization	Function-oriented organization	Product-oriented or agile organization	Function-oriented organization
Approach	Customer-focused or value-based	Process-oriented or data-driven	Customer-focused or value-based	Capabilities-based
Implications for BDA	Focus on the customer via products and services	Focus on data and processes	Focus on agile and customer-focused structures	Focus on cross-functional integration of flexible and innovative processes

The BDA guide: 3 steps for introducing BDA.

Step 1: Comparison of the actual and target situations

Using a framework for a systematic analysis that has already been introduced, it becomes possible to use the company's own EA organization to obtain a clear picture of how business and IT currently interact and where

improvements might be made (target situation). This comparison is the first step.

Step 2: Assignment to a scenario

The comparison of the actual and target situations can be used to define specific instructions for BDA implementation. Because this will strongly depend on the circumstances and conditions at the organization being analyzed, four

scenarios have been defined, whereby these are based on the difficult to influence dimensions of culture, organization type, and structured approach. The scenarios are meant to serve as a point of reference when using the BDA guide. Each of these scenarios describes a type of organization structure. Numerous additional scenarios are conceivable.

Chart: Excerpt from the roadmap for Scenario 1 as an example

Dimension	Approach	Target situation	Instructions for action
EA roles and responsibilities	Customer-focused	<ul style="list-style-type: none"> Business architect Project manager 	<ul style="list-style-type: none"> Designation of central contact persons or even business architects for each business department or unit as a contact for architecture Strengthening the role of the business architecture through the definition and operationalization of the corresponding responsibilities and rules governing involvement in the various activities A deep understanding of business operations and customers, and thus close cooperation between architects and business experts, is required in order to be able to develop customer-focused solutions, understand customer requirements, and incorporate architecture aspects and principles into activities as needed. Collaboration and communication capabilities and skills are very important if effective cooperation and an effective exchange of knowledge and information is to be ensured.
	Value-based	<ul style="list-style-type: none"> Business architect Enterprise architect 	
Skill set (capabilities)	Customer-focused	<ul style="list-style-type: none"> (Agile) knowledge in the field of project management 	<ul style="list-style-type: none"> Implementation of collaborative planning meetings, incremental architecture and solution development, and agile methods for communication between business and architecture Utilization of agile tools and methods and an agile mindset in architecture work in order to promote customer focus and adaptability Promotion of the following skills and capabilities for business architects: Technical knowledge and understanding, cost-oriented point of view in line with the given situation in a department or unit, and PM skills
	Value-based	<ul style="list-style-type: none"> Business-oriented thinking and understanding 	
Team structure	Customer-focused	<ul style="list-style-type: none"> Mix of business and IT 	<ul style="list-style-type: none"> Definition of roles and responsibilities for business and IT, including associated tasks and accountability. The latter two aspects can be specified in detail, with the names of the individuals in each case as well. Establishment of joint committees, including their members' roles and decision-making authority, as well as structures for IT delivery processes Activation of architecture roles Joint business and architecture training courses and cross-training courses Definition of common metrics
	Value-based		

Two scenarios are briefly described below:

Scenario 2: Efficient process design in a hierarchical architecture

This organization has a hierarchical culture and a functional organization structure, whereby a structured and process-oriented approach to the architecture is very important to the organization. The challenges in this environment are limited flexibility and hierarchically organized processes. At the same time, the clear structure makes it possible to efficiently design architecture processes and data management activities.

Scenario 3a: Agile architecture and customer-focused solutions in an adhocracy culture

An organization that practices an adhocracy culture and has a product-oriented or agile organization structure is generally characterized by a flexible and innovation-driven environment. Opportunities in such an organization lie in its ability to quickly react to changing customer requirements and develop innovative products or services. Challenges can arise in that the organization's structure is less predict-

able, which means it might experience difficulties in terms of adapting.

Step 3: The BDA roadmap

An individual roadmap and instructions for implementing BDA in the respective organization environment were developed for each of the scenarios mentioned. The roadmap focuses on the known dimension and reflects the sequence of the specific recommendations for action.

No secret formula; instead a feasible path with opportunities for success

Business/IT alignment remains a key element for creating a flexible, business-driven IT architecture that can provide the best possible support for a company's strategy.

The BDA guide gives enterprise architects a tool to help them systematically and continuously lead their companies to the long sought-after business-driven architecture, step by step. ●■▲



Workstream
“Capabilities – Best Practices”

The achievement of business goals depends on capabilities

_____ Capability management makes it easier for companies to act more effectively in both their daily operations and in times of crisis. It also helps with the development and implementation of appropriate strategies and digitalization projects. That, at least, is the way it's supposed to be in theory. CBA Lab conducted interviews with 17 experts from nine different business sectors in order to find out whether the theoretical benefits of capability management actually manifest themselves in practice. CBA Lab also identified the areas in which capability management results in the most added

value, as well as where typical implementation pitfalls are to be found.

The basic idea is quite simple: Your capabilities determine whether you will be able to achieve your goals. Or, to put it the other way around: If you want to achieve certain goals, you need to have certain capabilities. The capabilities approach used at companies is based on this same logic. Still, gaining transparency with regard to existing capabilities is a much more complex undertaking in (large) organizations. That's why companies categorize capabilities and depict them in capability maps in order to

obtain a clear overview of the situation.

Achieving this type of transparency is especially helpful when a company changes its goals or sets new ones. In such a situation, a capability map makes it very easy to determine whether the company actually possesses the right set of capabilities to achieve the new or changed goals. If this is not the case, or not completely the case, the capabilities that are lacking can be developed in a targeted manner, provided the goals in question are important enough to justify the effort and expense involved.



Dr. Karsten Schweichhart
Board

The right kind of communication is crucial.

The cross-silo approach is the key

The benefit offered by the capabilities approach is that it is based on a company-wide cross-silo concept. “Nobody asks whether a certain capability exists in Department XY or Division Z – for example direct online communication with end customers; instead, the question is whether such a capability exists at all, and what its maturity level is,” says Uwe Weber, co-author of the white paper that summarizes the results of the “Capabilities – Best Practices” workstream.

This company-wide approach not only ensures a higher degree of transparency (one that can also be achieved more rapidly) regarding existing capabilities

and those that need to be acquired; it can also lead to a better common understanding of IT and business and the capabilities needed for these, provided the approach is implemented correctly. This in turn means that both the IT and business organizations need to employ the capabilities approach and use the same language to describe capabilities.

In situations in which requirements change quickly and a large number of changes need to be made, a comparison between (business) goals and existing / needed capabilities using the capabilities approach proceeds much more quickly than is the case with conventional analysis and planning methods. In addition, capability management

ensures there will be no differences between the views and perceptions of IT and business organizations and the language they use to describe capabilities – and this is what everyone wants, i.e. to develop a common language.

More specifically, capability management can create added value in connection with the following use cases:

➤ Demand management

Comprehensive resource planning and requirement analyses. Targeted management of resources within the company. Use of synergies to reduce costs. This can be applied far beyond the IT organization. When a new product is to be manufactured, for

example, a company always needs to determine which capabilities and resources already exist and which need to be acquired.

- **Platform strategies:** Specialized descriptions of platforms; integration of existing services. Use of synergies from existing services. This is extremely helpful in connection with loosely linked systems and microservices especially, as one can lose sight rather quickly of the range of existing capabilities in these areas.
- **IT architecture plans:** Structuring and assessment of IT and infrastructure that support business operations. A presentation of the required capabilities makes the “onboarding” of the business organization much easier.
- **Reference modeling:** Structuring standardization at one’s own company or a company spin-off on the basis of the blueprint of the reference capability map. The sharpened focus on the capabilities at one’s own company makes it possible to much more quickly identify missing capabilities at companies to be acquired.
- **Scenario analyses:** Scenario analyses can be used to prioritize the strategic development of a company’s own business capabilities – and thus make the company more successful.
- **Innovation management:**

Professional structuring can, for example, lead to a comprehensive overview of the current status of digitalization, which is very important when new digitalization projects are being planned.

- **M&A assessments:** Faster and more extensive comparison of the capabilities at one’s own company and those at a company that is to be acquired. Rapid identification of redundancies.
- **Competitive differentiation:** Use of various methods for identifying one’s core areas of expertise and the capabilities that can ensure a successful future. This may sound somewhat trivial, but the fact is that if a company operates in a market with similar competitors, it’s very helpful if it can accurately describe its own strengths if it wishes to communicate these to its customers, for example.

Experience with structuring and delineation is important

Experience and communication skills are crucial when it comes to structuring capabilities and differentiating between them. There are three basic approaches that can be used to identify and structure capabilities: The top-down approach, the bottom-up approach, and the bimodal approach. The experience of the companies that participated in the CBA Lab workstream shows that the

bimodal approach is the best approach for describing capabilities as precisely as possible and structuring them in a capability map. The most abstract capability levels – Capability Level 0 and Capability Level 1 – do not display any strong differentiation potential in a company-wide context. Level 0 designations such as “Customers and products” or Risk management” are often the same as the designations for corresponding domains at a company. The situation with regard to Level 1 is similar – e.g. designations such as “Marketing” or “Sales.” Such capabilities can easily be specified by top management.

Differentiation becomes more pronounced on Levels 2-5. Whereas, for example, the “Sales management” capability on Level 0 appears to be generally applicable, and the “Acquisition and sales” designation on Level 1 is viewed by responsible managers as encompassing similar capabilities (even at different companies), the associated Level 2 capabilities of “Sales negotiation,” “Quote generation,” and “Sales processing” can be quite different from one another. The members of the workstream therefore recommend incorporating those directly responsible into the process for defining the elements of this level and granting them at least the right to make proposals.

The following key questions can help with formulating capabilities and differentiating between them:

- How (finely) granular do I need the capabilities to be?
- What is the specific question that I wish to model?
- How big is my company?
- What is my idea for structuring?
- Where can standard capabilities be utilized?
- What belongs together technically and in terms of business – and what doesn't?
- In which areas is a high degree of flexibility needed?

As few maps as possible

Defining and structuring capabilities can be a drawn-out process, and a company-wide capability map can be used much more efficiently than a large number of different maps. That's why the workstream members urgently recommend that a separate map not be created for every new use case. Instead, the existing company map should be used and only expanded for areas where such expansion is truly needed.

Dos and Don'ts

The dos and don'ts of capability management were extensively discussed in the workstream. Here are some of the conclusions drawn by the working group for the various phases of capability management:



With regard to the “Development” phase, the working group recommends the following, for example:

- Do not create a new capability map for every question in the development process but instead pursue the goal of a company-wide capability map for the entire organization – and only go into more detail if this generates added value. If companies don't take this to heart, those involved will get bogged down in details and at some point will no longer be understood by everyone else.
- Don't develop business capabilities along the existing organizational structure or the existing application landscape; instead, initially exam-

ine them independently of these. If one focuses on the requirements of the organizational structure or the existing application landscape, they will just get more of the same, but they won't get a cross-silo layer of transparency.

Instead, the working group recommends the following, for example:

- Keep business capabilities and the methodology used as simple as possible. Lucidity and transparency are the key to capability management that is effective and successful – and not just carried out over and over again as a type of dry run.
- The right stakeholders need to be brought in at the right time. If I bring

in experts at the generalized level, I will never be able to establish highly abstract capabilities that can be used for an entire domain. Conversely, if I get members of the board of management involved at the detailed level, I will never be able to produce a sufficient specialized description of the desired capability.

With regard to the “Utilization” phase, the working group recommends the following, for example:

- In projects, do not focus on explanations but instead on the application and the added value of capabilities. If the people involved want to convince departments or units of the effectiveness of the capabilities approach, the best thing to do is to explain what the capabilities can be used for and what benefits they offer – and not focus too much on what each capability actually means.

With regard to the “Governance” phase, the working group expresses its opposition to rigid corporate bodies, for example:

- Do not discuss changes in rigid corporate bodies. Rigid corporate bodies are not useful here; commu-

nities consisting of people who are directly involved with the capabilities are much more efficient.

Communication, communication, communication

Effective communication is the decisive factor for gaining acceptance for the capabilities approach. “Without the right communication strategy and its smooth implementation, you run the risk that capability management will just turn into a bunch of colorful pictures stowed away in a drawer somewhere,” says CBA Lab Board member Karsten Schweichhart.

The workstream therefore specifically references four best practices:

1. **Define, explain and clearly differentiate between the terms you use, and do so in an understandable manner** – It is crucial to establish a common understanding of capabilities and to ensure that definitions are as simple, clear, unambiguous, and understandable as possible. A key aspect with regard to making sure that terms are unambiguous is to view and describe capabilities independently of processes and organizational charts. Business units often think in terms of processes

(how is something done) or organizational charts (who does what). Capabilities enable a more general view of things and describe WHAT the company actually does.

2. **Keep things simple at the beginning and then expand later on** – The capability model should initially be kept simple and only expanded later (when the main features are generally understood) to include additional artifacts or objects.
3. **Design capabilities to be self-explanatory** – The concept of capability management already offers the ideas, terms, and differentiation possibilities that are needed for a definition. The workstream recommends making capabilities as self-explanatory as possible using a clear vocabulary that doesn't leave room for interpretation. That way, users can quickly get accustomed to the approach.
4. **Always define and describe the context** – The context in which capabilities are to be used must be defined and clearly described.





Workstream
“Data Catalog”

Data Catalog – Its importance and the challenges it presents

Melanie Czink

_____ In today's data-driven business world, access to reliable, accurate, and understandable data is crucial for a company's success. Data catalogs play a key role in supporting companies with regard to the organization, administration, and use of existing internal data records and assets. This innovative technology enables users to find data quickly and understand and apply it in order to make sound decisions. Despite the clear benefits offered by data catalogs, introducing them in an organization involves a range of challenges.

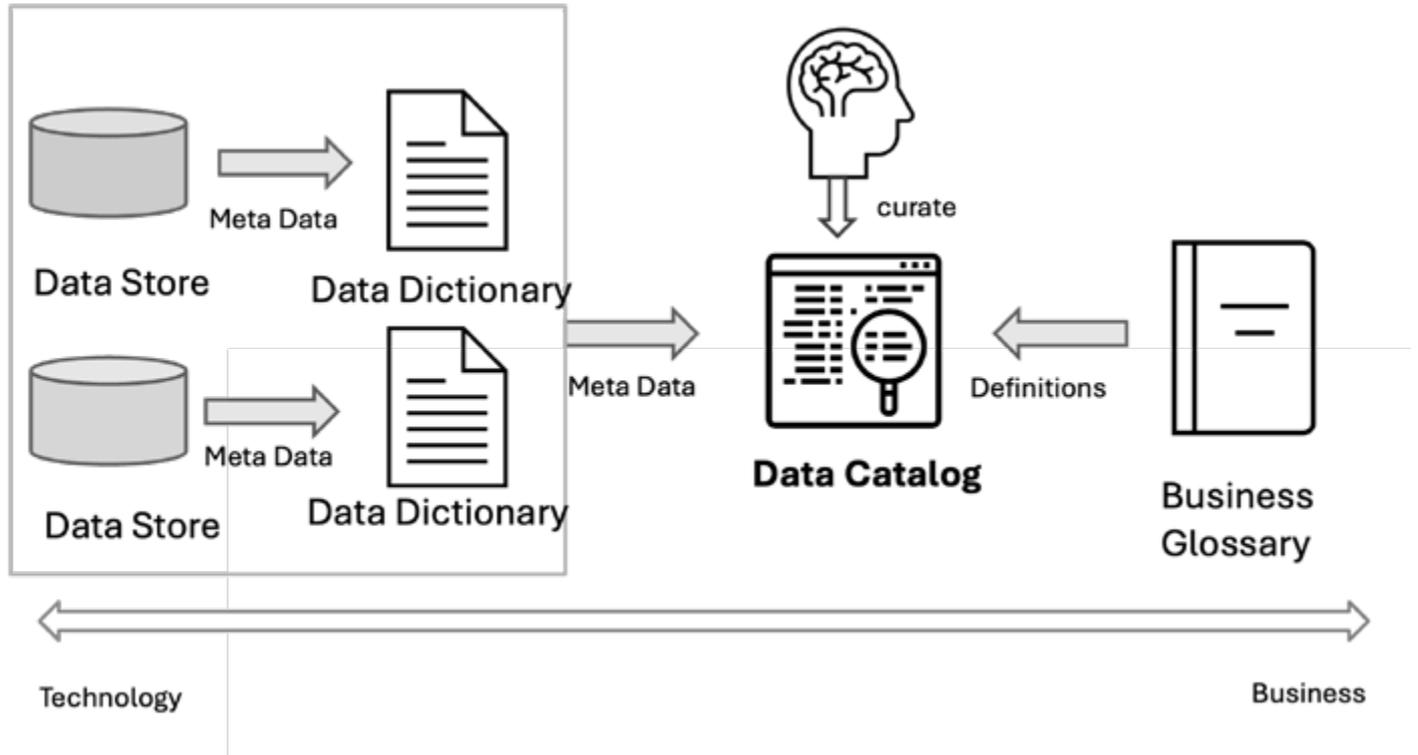
This article explains why data catalogs are important, presents information on the experience six companies that introduced data catalogs gained, and discusses common and differing approaches and the lessons that can be learned from their application.

The importance of data catalogs

Data catalogs can do a lot in terms of making a company's data transparent and accessible – and also getting people to trust it. Data catalogs serve as a central tool for obtaining information

about data, including metadata and data origins and quality. By providing an integrated overview of a company's data landscape, data catalogs make it possible for users to improve their knowledge about existing data and how to use it. In addition, data catalogs form the foundation for effective data quality initiatives. The biggest benefit offered by a data catalog is increased transparency with regard to existing data assets, which is very important, particularly in these times of digitalization and the increasing significance of data evaluation.

Figure: Sources for a data catalog



Challenges associated with the introduction of data catalogs

Introducing a data catalog involves several challenges with regard to technical complexity, integration into existing business processes, and ensuring a high level of data quality. Technical implementation requires extensive knowledge about the existing IT infrastructure and the data landscape. In addition, it is very important to incorporate the company's business logic into the implementation process so as to ensure that the data catalog effectively supports the given business requirements. Another critical element is data quality, as the ability to enjoy the benefits of a data catalog depends directly on the accuracy and reliability of the information such a catalog contains.

Practical experience at six companies

Various motives, strategies, factors of success, and lessons were identified on the basis of interviews with staff from six companies that have already

created data catalogs. In the interviews, these companies emphasized the value data catalogs were able to create for them in terms of transparency, data quality, user friendliness, and governance. An iterative approach was often chosen for the implementation process in order to efficiently address problems such as data silos and a lack of data quality. Support from management and the presentation of the practical benefits offered by the data catalog were also cited as essential preconditions for a successful introduction.

Commonalities and differences in the approaches

Despite the individual differences between the different companies' needs and strategies, several common factors of success were identified. These include the significance of metadata, step-by-step implementation, and user friendliness. Differences were discovered mainly with regard to specific requirements, governance practices, and technology integration. These find-

ings underscore the fact that there is no single approach for introducing a data catalog; instead, success here depends on adapting to the specific conditions and challenges at a company.

Conclusion and outlook

Data catalogs are a powerful tool that companies can employ to effectively manage and utilize their data records and assets. The experience gained and lessons learned by companies that have successfully introduced data catalogs offer valuable insights into the best strategies and practices.

It is clear that successful implementation of a data catalog requires careful planning, support from management, and adjustments in line with a company's specific needs. Future workstreams could further examine the detailed skills and trends associated with data catalog technology in order to help companies use and manage their data records and assets more effectively.





Workstream
“Data Spaces Integration”

Getting ready for data spaces

_____ Why is the topic of data spaces especially relevant and the subject of so much attention at the moment?

With the European Data Strategy (2020), the EU has set itself the goal of establishing a data-driven economy with a single market for data. The idea here is to enable a seamless cross-border data flow among companies and people in compliance with EU legislation and EU values (e.g. data sovereignty). The result should then form the foundation for sound decision making at European enterprises.

Companies are motivated to participate by the possibility of gaining economic advantages in relation to the use of data:

- Increase in a company's ability to react, and sustainability and transparency in the supply chain.
- Reduction of the initial effort and expense associated with exchanging data with business partners along the value chain (e.g. for establishing interfaces and concluding agreements).
- Increased protection of data and information.
- Uniform and legally sound framework conditions.

- Simplification of data collaboration along the value chain.
- Data-based value chains and data sovereignty.

The following use cases are typical within the data context in various industries and sectors:

- **Reduction of the effort and expense associated with exchanging data**
A lot of effort and expense currently goes into exchanging data with each and every customer and supplier. This pertains to negotiations, contracts, definitions, agreement on interface concepts, semantics, etc. Companies that use a data space

need to invest this initial effort and expense only once. After that, predefined use cases (including semantic models on the basis of a Gaia-X layer for data sovereignty) can be applied, for example – both for customers and for suppliers, government agencies, and other data partners.

➤ **Reduction of the effort and expense associated with recalls**

Transparency with regard to installed parts and components reduces the effort and expense associated with recalls, as only the affected end products need to be recalled.

➤ **Reduction of the effort and expense associated with CO2 reporting**

The legal obligation to report on carbon footprints requires relevant figures to be obtained from / exchanged with / provided to primary and intermediate product suppliers, customers, and government agencies. This is the central use case for data spaces such as Catena-X in the automotive industry.

The establishment of common European data spaces is being supported by the EU and EU member states. The workstream establishes clarity with regard to how data spaces are defined and when a different type of data exchange is to be used.

Data spaces enable participants to

adopt a completely new approach to cooperation. Indeed, data spaces are considered to be the new innovative way to exchange data. They offer the best possible reaction capability in terms of responding to increasing requirements for data protection, more stringent legal regulations, security issues, market changes, crises, etc.

The Data Spaces Radar from the International Data Space Association already now has more than 100 entries relating to data spaces and data space projects. Notable initiatives in Germany include Catena-X, Mobility Data Space, and Factory-X.

Still, the large number of data space initiatives also means that many companies do not fully understand the significance of the various data spaces, their application possibilities, and the benefits they offer. Many open questions remain. For example, which data spaces are relevant for my company? What specific benefits do they offer? What effect can I expect them to have on my business, what risks do they pose, and what opportunities do they offer? How can I connect with relevant data spaces and how can I effectively prepare for an integration process?

One of the key objectives of this workstream is to create an interactive guideline that can be used as a structure for an integration roadmap. Here,

legal aspects are considered along with technical aspects, although added value for the business is also a major consideration. After all, participation in a data space would seem to not make any sense if no business benefit can result from it. On the other hand, it's also important not to overlook possible business benefits, as such neglect can have negative consequences in terms of competitiveness.

That's why the workstream offers a structural point of view in order to identify the added value that data spaces can offer one's own company, and also highlight how this consideration can be incorporated into decision-making processes.

Requirements for participating in a data space

Executives must ask themselves if their company is prepared to participate in a data space. Does the company meet the requirements for this? At what level of maturity is the company with regard to data spaces, and what architecture effect will participation have in the company and its business and IT organizations? Here, the workstream recommends a structural evaluation of the situation.

The following tools were developed for this evaluation:

➤ A guideline for determining the company's maturity level, including

recommendations for achieving the next-highest maturity level.

- A checklist containing the skills and capabilities needed for data space integration.
- A to-do list that each person involved creates, with information on what they have to do themselves, the individual(s) who can support them with their work, and the services they are able to procure.
- Here a specific example: Employing a real use case as a basis, we can present a complete run-through – from the analysis and the identification of requirements to implementation and integration. This process is supported by various templates and questions that then need to be answered.

The results to date already clearly reveal initial key requirements for data space maturity at a company

- Clarity and transparency when it comes to managing the company's own data
- Establishment of a data governance system that is aligned with corporate governance
- Firm establishment of roles and rights at the company with regard to the company's data

Clarity from the very beginning – recognizing potential/necessity and understanding options

So when does it make sense to use a data space, and how can one know

whether a certain data space is the “right” one? What are the requirements associated with participating in a data space? Are there alternatives?

A comparison of data channels and channels for data exchange creates initial transparency. The key questions relating to this are:

1. Which data objects do I need for my use case?
2. Which of these data objects do I already have, and which do I still need to obtain?
3. Which platforms do I get the existing data objects from, and which business units or departments are relevant here?
4. Where can I obtain the data objects that I still need?
5. How much will it cost me to obtain the data objects (internal effort and expense, procurement, etc.?)
6. Which business case supports my use case?

Establishment of a data governance system that is aligned with corporate governance

A sufficiently developed data governance system is a key enabler and an absolute requirement for incorporating data into a data space in a business sense, and then making the data available to others via that data space.

The company must be capable of

identifying its data: Which data objects do I need for the use case? Where is the data located? How can I access it? Who is responsible for the data? What is the quality of the data? What are the rules that apply to handling the data? Here, a data catalog can be helpful with regard to obtaining a structured overview of the data at a company. The CBA Lab “Data Catalog” workstream addressed this aspect in detail.

Roles and rights

What form should a data operating model take if participation in a data space is to be successful? At the very least, rules on the following must be included:

- Overall data governance
- The definition of roles and rights: Data owner, data steward, data architect
- Data release/sharing processes
- Transparency regarding data – e.g. with a data catalog
- Statements regarding the use or non-use of data standards

Summary – CBA path to data spaces

As is now clear, the basic requirements are to gain clarity and transparency with regard to the company's data. While the required governance has to open the door here, so to speak, enterprise architecture methods bring structure and clarity to the data landscape and thus enable the necessary decisions to be made – e.g. with regard

Figure: CBA path to data spaces



to data ownership and the responsibility for data quality in each case. Data governance is the key.

All in all, the workstream results offer a good foundation for enabling a company to clarify two things that will allow it to participate in data spaces – regard-

less of whether it simply wants to or absolutely has to: First, the definition of the point of departure for the company (its current situation), and secondly the steps that need to be taken in order to eventually achieve data space maturity.

Indeed, the business objective is ulti-

mately to be prepared to participate in data spaces as soon as this becomes necessary to safeguard business success. Here, being prepared means being prepared in a technical, economic, and legal sense. Data clarity and transparency are the basic requirements for all three areas. ●■▲

Workstream
“EA and Sustainability”

Sustainability and EA – a multidimensional topic

————— Is sustainability management the new best friend of enterprise architecture management? This question was answered in the workstream, which examined the specific ways in which enterprise architecture and its methods can support and improve sustainability management at a company. In the following discussion, Workstream Coordinators Melanie Czink from Beiersdorf and Sylvia Lakämper from Dr. Oetker explain the work they conducted. TEASER: The answer is “yes.”

Melanie: Welcome to our Yearbook discussion about our “Enterprise Architecture and Sustainability” workstream. Sylvia, what got you interested in this topic?

Sylvia: My motivation comes directly from our business demands and requirements. Our Sustainability Team, which is an administrative department in our executive management organization, has specific requirements for IT that it communicated to the IT organization, whereby these requirements relate in particular to reporting. Because the business architecture did not have a dedicated team for sustainability, my colleague Moritz Kelm and I, together with colleagues from relevant business units and the data management organization, decided to take the initiative here by establishing the Business Architecture Team for Sustainability.

In other words, we were motivated to

take action by the urgency brought about by the requirements, in particular external legal requirements such as the Corporate Sustainability Reporting Directive (CSRD), whose rules will soon have to be applied, as well as the EU Taxonomy and the Plastic Tax regulations, to name just three examples.

Then there’s our own internal Sustainability Charter. Indeed, sustainability is highly relevant for us in terms of our communication as a multibrand group in the food and high-end food sectors – and it’s important not just for consumers but also for the public, including NGOs.

Melanie: That sounds a lot like our



Sylvia Lakämper
Workstream Coordinator



Melanie Czink
Workstream Coordinator

early days with the topic, although there was more pressure and enthusiasm with us on the business side of the equation. We've since established a large Sustainability department on the business side, while on the IT side the infrastructure for this is being systematically developed by data and analytics specialists.

How did this workstream actually get started, Sylvia?

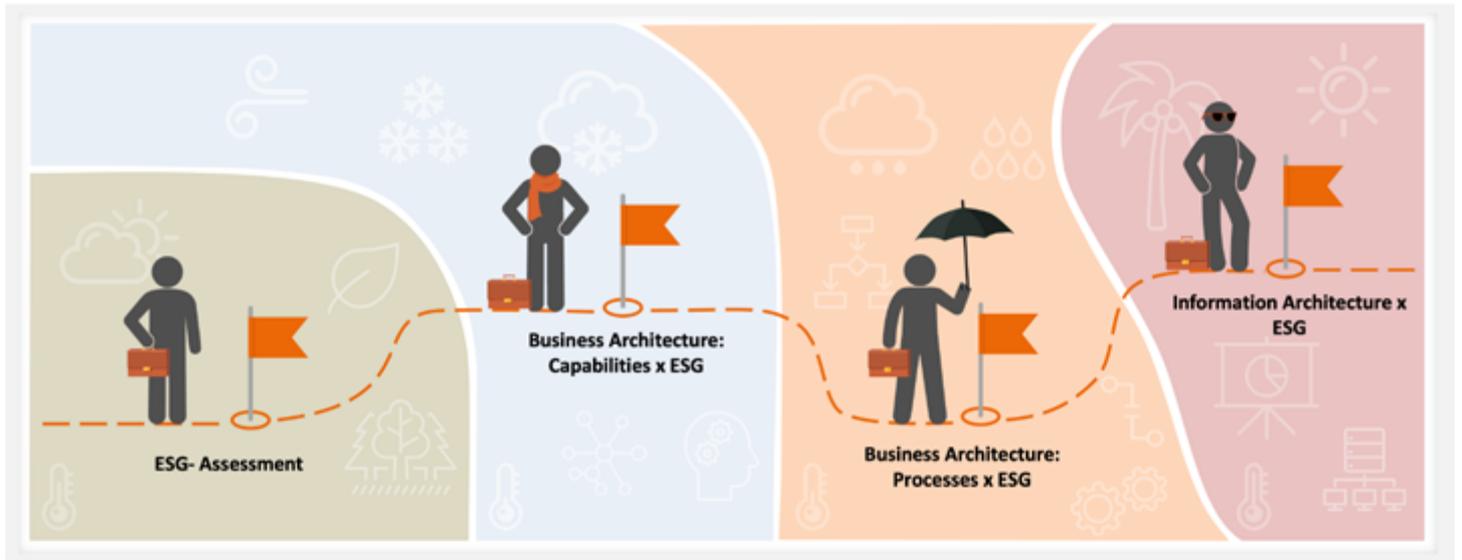
Sylvia: The workstream began with the enterprise architecture team considering how we could integrate sustainability at all architecture levels – from capabilities and processes to data, applications and technologies. Our goal was to find a method that would allow sustainability to become a firmly established and fully functional capability across a large number of departments. I presented this initiative to CBA Lab in the summer of 2023 – and I was very pleased when you immediately agreed

to serve as co-lead with me, Melanie.

Melanie: I remember that, and also that we quickly agreed on a pragmatic approach that eventually led to the creation of a comprehensive playbook. We also just as quickly came up with the idea of a design sprint in order to create a basis that would be further developed through work online.

Sylvia: The design sprint took place at your company, Beiersdorf, and with the

Figure: A journey through the architecture landscape; excerpt from the playbook



support of Detecon experts it enabled us to gain an understanding of the complexity of the issue and then develop a clear roadmap.

Melanie: In the work sessions that followed, which were held every two weeks online, we refined the content and were able to continuously improve the results by regularly exchanging information and ideas within the core team.

Sylvia: The different points of view and the input we received from various companies clearly showed just how multidimensional the topic is. The extensive specialized discussions with the presentations of specific examples from the participating companies were especially valuable.

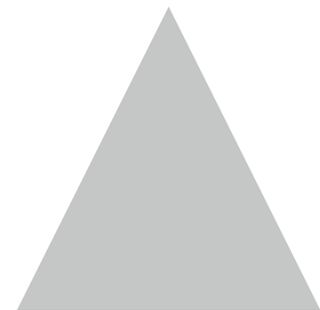
Melanie: Yes, exactly: The utilization of use cases closely related to actual practices – for example for CO2 emissions and supplier management – helped us sharpen and adjust our methodology.

Sylvia: And we shouldn't forget the information we researched ourselves and the templates we developed, which can now be used exclusively by CBA Lab members.

Melanie: This workstream wasn't just efficient; it was also a lot of fun. Even though we had to make some compromises in terms of the amount of detail we went into, it still forms a solid foundation for projects.

Sylvia: We've already collected some ideas for other topics that can be addressed in more detail in CBA Lab in 2024, and we documented all of these in the appendix to our PowerPoint playbook.

Melanie: All in all, we created a practical playbook that shows just how much enterprise architecture can support sustainability management, specifically in terms of capabilities, business processes, and data. ●■▲



Workstream
“EAM for Top-Level Management”

How EAM and top management can get better together

————— It generally seems to be difficult, or at least challenging, to be able to reach top management as an enterprise architect and get through to executives in a way that will cause them to invest the time and energy needed to take action on a given issue. This can be the case with one’s CIO or IT organization manager – and things become even more difficult when higher-level executives or even the CEO need to be contacted. After examining all our experiences in this regard, we have come to the conclusion that various factors that in some cases build on one another need to be taken into account if one wishes to increase the influence they can exert on top management. Still, why would an EAM department even want to talk with top management? Isn’t it enough to simply play the enterprise architecture role well in the operating business? In other words, to not simply remain in the ivory tow-

er but instead to keep development projects on track with architecture principles, guidelines, and committees, create transparency in the application and data landscape, define responsibilities, provide an implementation structure for the IT strategy and, perhaps as the icing on the cake, sort out business strategies with a good capability management approach? After all, there’s certainly enough to do.

So: Why approach top management?

Here an example: On 2/23/23, the *Ostseezeitung* newspaper published an article titled “Have you been hacked” that addressed “near-death business experiences” in the aftermath of a cyberattack. The article reported that 84% of the companies surveyed confirmed that they had been the victim of at least one attack over the previous 12 months. The effects of such an attack

pose a threat, are often devastating, and are always expensive. The conclusion of the newspaper was as follows: “Cybersecurity must become an issue for top management!” The question is: What exactly needs to be done here? First of all, the state of cybersecurity at one’s own company needs to be evaluated honestly and consistently improved: What impact can an attack have? How many users are there actually at the company – and how many devices do they use? How are these users and devices secured? How are the users trained? Where is all the data located? In which applications? How is the data handled and managed? And so on, and so on. It should already be clear the EAM can offer several answers here. Moreover, if cybersecurity is an issue for top management, then the answers to these questions must make their way to the CEO, who then also needs to be able to understand the answers.

This is just one example of many issues – in other areas as well – that have become top-management issues due to digitalization and other circumstances. Sometimes these are general issues, often they arise very suddenly, and sometimes they only remain critical for a short but very intensive time. EAM's transparency and ability to structure can be crucial here in terms of helping managers take quick action and make better decisions.

In other words, the fact that an EAM department is able to speak with top executives can definitely be relevant, and it's also important that these executives understand what the EAM experts have to say. But how can this be done? First of all, it should be noted that such communication requires a completely different type of presentation, dialog, and packaging than is the case at the business operations level. So what are the keys to success here?

There are business factors (1.-3.), factors concerning specific circumstances, content, and facts, as well as soft factors such as personality, language, and culture (4.-10.). Basically, it has to do with the successful establishment of contact by enterprise architecture management experts with a company's top executives, in both the IT and business realms. This not only relates to the C-level (i.e. executive boards, owners) but also to all managers with business

decision-making authority – for example plant managers, branch managers, etc.

Business factors

1. The basic requirement is to move within the world of top executives, so to speak – in other words to be acquainted with their ways of thinking and taking action and then act and present arguments in this context. This form of thinking and action is often fundamentally different from what results when one addresses specific operational or specialized business issues, and it generally involves looking at things from the strategic point of view and a perspective in line with overall operations. Thinking and presenting arguments that relate to the company's corporate strategy is a good way to start: In which direction do the top executives wish to take the company? Which steps and milestones are important to them in this regard?

Recommendations: Think and act in line with the top-management context

What you should do

- Be curious
- Participating in strategy information meetings is a must for enterprise architects
- Enterprise architects know the business challenges their “customers”

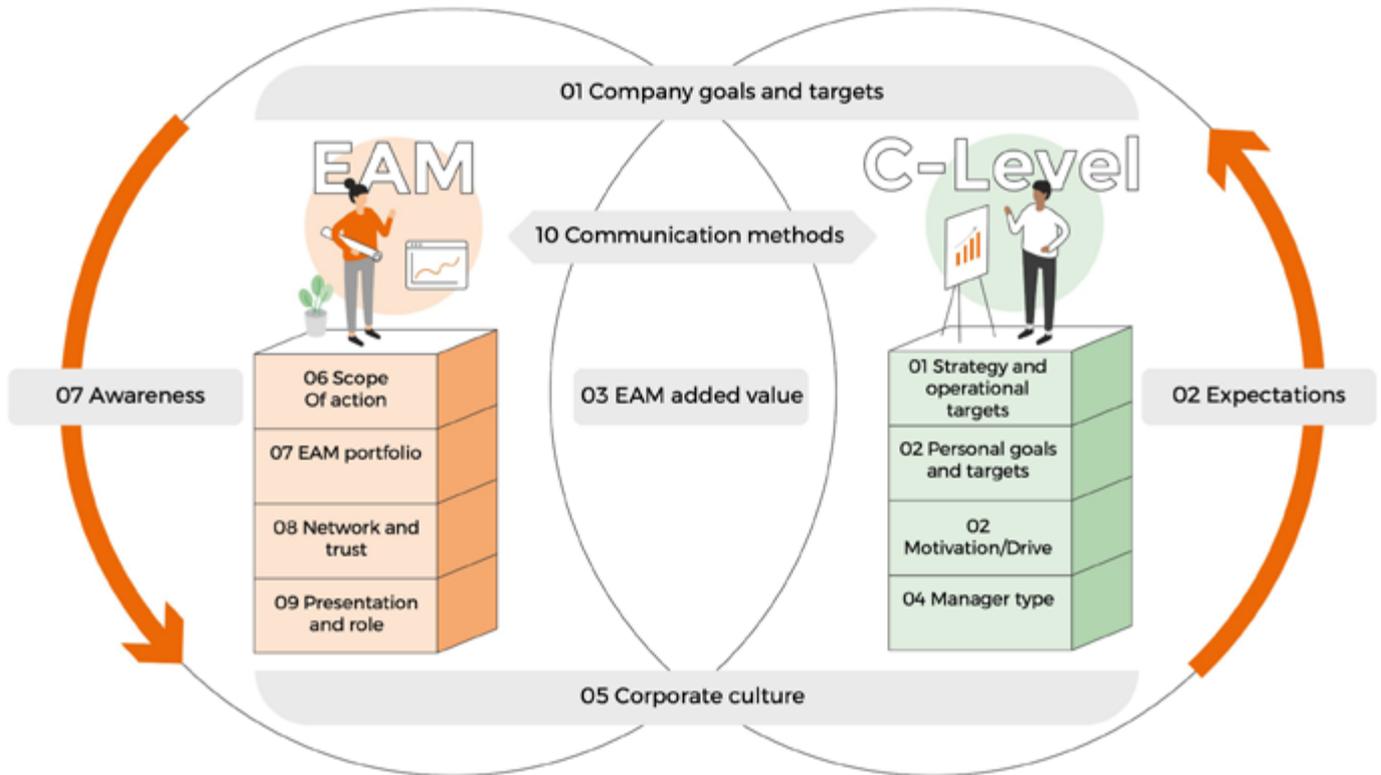
face

- Enterprise architecture and business strategy organizations should exchange ideas and information and work together

What you should not do

- Stick your head in the sand: This is when EA only deals with its EA tool and EA reports
 - Ivory tower: This is when EA acts as a closed unit with little external communication
 - Not be curious
2. Still, what exactly are the personal contribution, the personal interest, and even the personal objective of the top executive(s)? If it's to make the company more profitable, a CIO might, for example, then decide that IT costs need to be lowered – but they could also decide to invest in automation that will help the business side reduce costs. The CFO, on the other hand, will be interested in achieving cost transparency at all units and departments, for instance. Determining the personal contribution in this context here is the best way to ensure successful contact.
 3. The most important thing, however, is the EA contribution itself. After all, the best approach to establishing contact, and the best presentation, will achieve nothing if one cannot offer something useful. If we assume that EA can contribute something

Figure: The area of action for understanding and agreement



relevant, which is exactly the firm conviction expressed in the results report for the “EAM for Top-Level Management” workstream, then the important thing here is to latch on to this aspect as a strong argument in the context of top management. The argument should then be presented as a type of translation of EAM facts into a business meaning – this might possibly be the most important factor of success in these 10 steps presented here, and also the most difficult to achieve.

Non-business factors

4. What type of person is the executive you plan to approach? This is an important question if you want to get through to them. Are they a detailed type of person who wants to understand your Excel table and be given an explanation of the value entered in Cell B72, for example? Or are they more of a generalist who wants to be able to vividly understand the big idea and the big picture and trust the experts to implement it successfully? Materials need to be prepared in completely different ways for these two types of people, which means it's important to gain a pretty good understanding of who you're dealing with.
5. What type of culture exists at the company? How openly can I speak my mind? How should I act? The way in which you are allowed to talk about other units or departments is an extremely important point because enterprise architecture generally makes a company-wide contribution across all departments and units.
6. How much scope for action does the company's current organizational form allow me? Is responsibility decentralized or even localized and am I talking to an entity that decides on how much freedom of action I will be given? How is authority structured then – for example what types of proposals can one make with regard to collecting information on applications? Is the company characterized by strict hierarchies? Or is it a family-run company in which tradition plays a key role at times? Or perhaps it is owned by a foundation, as is the case with ZF and Bosch?
7. In what role and with what kind of reputation do I present myself? How is enterprise architecture viewed within the company? Experts? Ivory tower? Exotic individuals? Strong architects? Will skepticism need to be overcome, or even ignorance – i.e. “Do I have to explain who I am and why I'm here?”
8. How much trust do I and EA enjoy in this dialog? What you want to achieve here is for top management to trust the EA role as much as it trusts its finance or strategy departments. The question is whether the executive already views EA like this because EA has already earned and gained this trust. Which leads to the question as to what needs to be done to establish such a situation.
9. It is therefore also important to understand how an EA manager should present themselves – how they should act, and in what role. More specifically, EA managers can make an impression by acting as a moderator, a mediator, a translator, or even an oracle at an interface between different parts of a company. They can also present themselves as a consultant or a catalyst, a leader, a driver, or an enabler. A controlling or governance role is possible here as well. Which is appropriate, which is expected, and which makes sense?
10. All 9 points need to be considered when addressing the decisive question as to what type of communication has the best chance of success in a given situation. A slide show with facts? The use of analogies? An intro or a film? Quotes and attestations? A previous workstream – “Architecture Emotions” – presented some possibilities in this regard. Its key finding was that a bad message presented well will be more successful than a good message presented badly.



Workstream
“EAM Services Catalog”

A foundation for better EA decisions

————— Companies, analysts, enterprise architects, and stakeholders often perceive and interpret enterprise architecture management differently. This means that no common foundation exists upon which different approaches can be compared and assessed. However, without such a foundation, companies will find it difficult to determine their EA maturity level and identify the areas where action needs to be taken. In addition, existing services cannot be fully exploited because their benefits have not been communicated to the various departments and units in a sufficiently clear manner.

In workstreams such as “Accessible EA” and “EA Repository Integrations,” CBA Lab was able to show that EA accessibility depends heavily on the degree of service orientation and the integration

of the most diverse sources of information. The “EAM Services Catalog” workstream set itself the goal of building on these findings in order to create a catalog for EA services that can serve as a basis for a maturity level analysis and the further development of EAM. In addition, the service catalog should make it possible to facilitate communication of the EA services that already exist at a company, and also make it easier to access these services. “We want to be able to more precisely define what we’re talking about,” says Workstream Coordinator Hannes Schleibinger, Enterprise Architect at MTU Aero Engines.

The first thing the workstream members did was conduct research in order to find out how EA services are defined in the relevant literature at analyst firms such as Gartner or Forrester, for

example. They then used a web-based whiteboard to collect topic and idea proposals, and they also compared the EA services that have already been established at their companies. In addition, they incorporated definitions from standards like TOGAF and ITIL/ITSM, as well as best practices from the areas of IT service and UX design. “We took a look at which services there are, which ones we actually use, and which appear to be the most useful,” Schleibinger explains. The workstream was able to get business information systems expert Dr. Stephan Zimmermann from Technical University of Applied Sciences Augsburg to review the results. “That gave us additional valuable input,” says Schleibinger.

It quickly became clear that the descriptions of EA services differed greatly in

Hannes Schleibinger
Workstream Coordinator

With the catalog, we ensure that we are all in fact talking about the same things – both within an organization and when information and ideas are exchanged with other companies.



terms of depth and the degree of detail involved. The next step therefore was to agree on a service template that can be used by all companies as a basis but at the same time allows for individual adjustments in line with a company's specific conditions and circumstances. As a result, the workstream team decided to use a two-step approach: Along with a fundamental classification of all the services into different categories, the idea was to make available a detailed description of each service that could then be used as a type of information base.

With regard to categorization, the workstream members were able to make use of their experience. One company, for example, had divided its EA services into five activity fields and it then presented a report in one of the

workshops on its experience with this. Another company had used the plan-build-run model as the basis for the definition of its service categories and, thanks to its many years of experience with the provision of EA services, it was able to present the advantages and drawbacks of this approach in detail.

The benefits are key

The work conducted in the workstream showed that the communication of potential benefits plays a key role in the acceptance of EA services. That's why the workstream used typical questions posed in this regard as a basis to define and present the benefits of each service. "In order to establish a common foundation for implementation, every service description also includes detailed information on what the EA team has to offer, as well as information on

what the commissioning department or unit will need to do to ensure smooth and effective cooperation," Schleibinger explains. According to Schleibinger, categorization based on the plan-build-run approach makes it possible to understand the relationship between each service and the company strategy and organization: "This means that every user knows at all times where they are, so to speak," says Schleibinger. Pictograms are also used to provide a quick overview of which stakeholders are affected, what type of feedback (if already received) customers have provided, and what type of effort and expense is needed/arises when the services are used. Finally, each template has information on versioning and the contact person responsible

Figure: The EA Services Catalog created in the workstream has six categories and a total of 33 services. The chart can be downloaded at www.cba-lab.de.

Enterprise Architecture Management Services



for the service in question. “As a result, everyone at the company knows which services EAM provides, who they can contact regarding a specific service, and what the procedures are for using the service,” Schleibinger explains. “This ensures transparency and ultimately benefits both enterprise architects and the people who use the services.”

33 services in six categories

The EA Services Catalog created in the workstream has six categories and a total of 33 services (see the figure). The categories are as follows:

› Analyze/Strategize

Among other things, the seven services in this category are used to determine and benchmark the EA maturity level at a company, develop EAM, business and IT strategies, and manage the project portfolio in a targeted manner.

› Transparency & Reporting

This category has five services that mainly address the documentation of actual and target states, reporting on EA decisions, and support for IT security, data protection, and risk management.

› Plan & Consult

The five services in this category help with the development of an architecture to the point where the target state is achieved, after which a roadmap can be created on this basis. The services are also used to analyze

technical feasibility and verify this feasibility within the framework of a PoC. In addition, the services can be used to support the creation of a new company site or the implementation of a merger or acquisition.

› Guidance & Governance

This category brings together nine services that relate to enterprise architecture principles, standards, and roles. The services also provide recommendations for implementation and identify architecture enablers.

› Tooling

The three services in this category are used to ensure the availability of EA tools, to continuously adjust the tools in line with stakeholder requirements, and to support stakeholders when they use the tools.

› Communication & Training

This category has four services that involve training and knowledge sharing, the establishment of internal and external EA communities, and the planning and implementation of EA communication activities.

Workstream summary

The catalog that was created establishes a solid foundation for the use and further development of EA services in business organizations. “Companies can use the catalog to determine their EA maturity level and define the next steps to be taken,” says Schleibinger. “This is very valuable, in particular for those companies that

are in the process of establishing an enterprise architecture. However, the catalog also presents new approaches and ideas that can help organizations that already have an established EAM system in place.” In addition, the catalog can help clarify the role EAM should play at a company and what goals and targets should be set for EAM. Says Schleibinger: “One workstream member, for example, decided to use the catalog as a basis for formulating a service statement in order to clearly present and explain the meaning and purpose of EAM at their company.”

According to Schleibinger, the service categories defined also expand possibilities to make comparisons: “With the catalog, we ensure that we are all in fact talking about the same things – both within an organization and when information and ideas are exchanged with other companies.” In addition, the catalog can improve cooperation with stakeholders and increase the demand for the services offered: “In the future, I’m going to provide more information within our company about the EA services we offer, and this can be done very effectively using the catalog,” Schleibinger explains. ●■▲

Workstream
“Global Distributed IT Architecture”

How EA supports geopolitical resilience

Dr. Jürgen Klein

————— **The legal and geopolitical situation has become very dynamic**

We currently find ourselves in an IT situation that has been heavily impacted by international developments. The starting point is what used to be a mostly decentralized and not very standardized IT environment, and the trend is now pointing in the direction of a more centralized and standardized IT structure (see the information in the figure below). From a geopolitical perspective, we are now on the verge of a transition from a basically stable world to a rapidly changing and unstable one. All political crises, such as wars and restrictions on trade, have a huge

impact on companies and thus on their business and enterprise architectures. These changes are leading to an adjustment of original IT strategies toward a more flexible and localized structure.

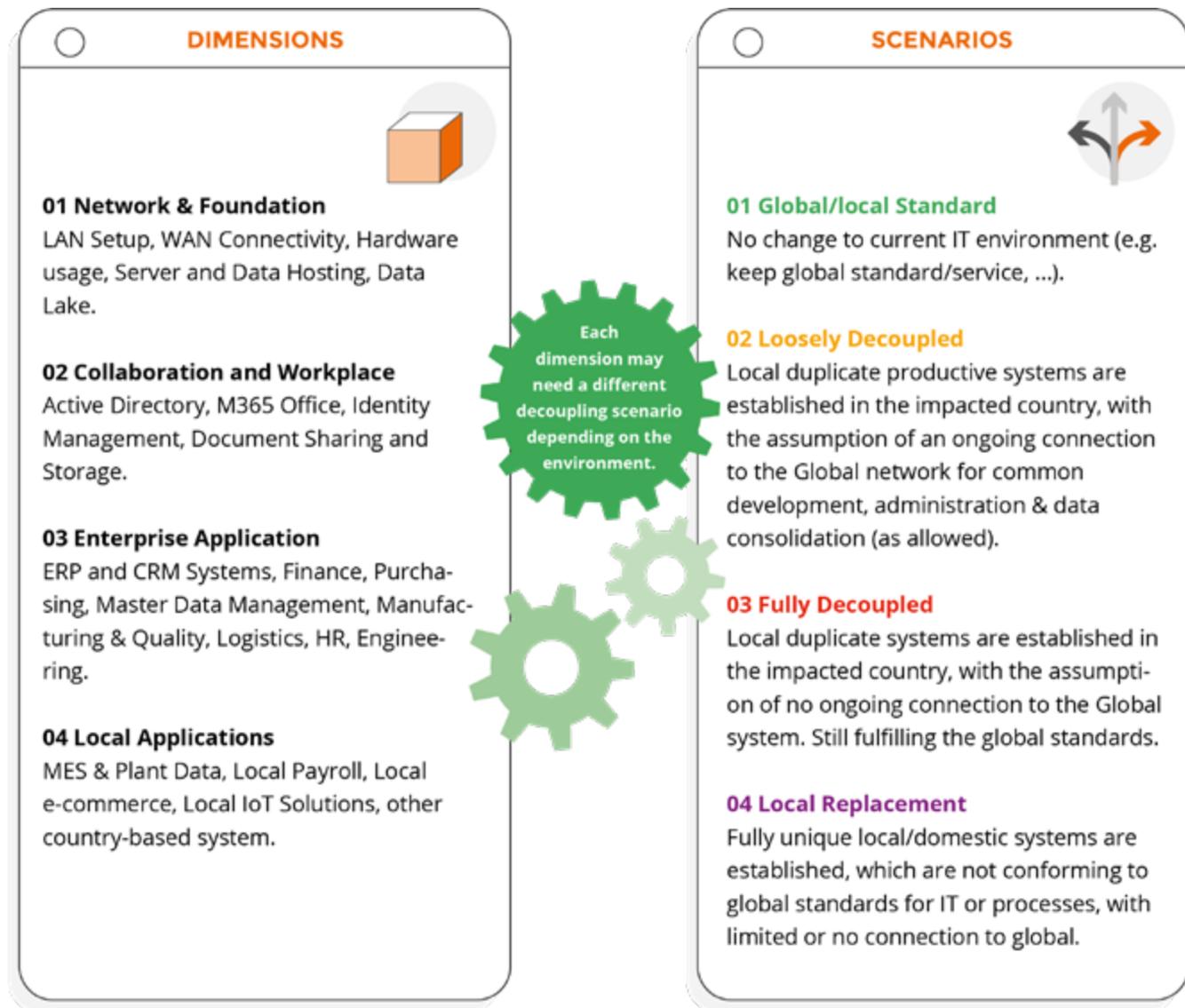
Our white paper makes it possible for stakeholders to use enterprise architecture (EA) to support their risk minimization efforts

The purpose of the white paper is to help various stakeholders who focus on IT and corporate functions (e.g. corporate data protection) to reduce and better manage risks at their companies in their role as the individuals responsible for global IT and data services. “Re-

sponsible” for company-wide services here means also taking into account the entire lifecycle of a service. It is a well-known fact that a clear view of the big picture and an understanding of the requirements involved are a must if an adequate solution proposal is to be developed. This is why the white paper also includes examples of these requirements and excerpts of their descriptions – in particular with regard to requirements stemming from local regulations and the local environment.

Another important element in the white paper is the collection of “solution examples” it contains. These were taken

Figure: For every region or country, a different combination of aspects and scenarios is needed that take into account the requirements in the respective local environment.





Dr. Jürgen Klein
Workstream Coordinator

Enterprise architectures must be regularly reviewed and adjusted in relation to their “localization” or “global distribution” in order to be able to respond to changed conditions and anticipate future requirements.

from the best practices in the architecture landscape at the companies where the authors of the white paper work.

De-risking and decoupling require a strategic point of view

Implementing a strategy of localization and decoupling means adapting operations to the specific requirements in a country to the greatest extent possible. The most important foundations for designing an appropriate IT architecture here are the general company strategy and the overriding business model as they relate to the global economy, as well as the specific position of the company in view of the global vs. decentral-

ized influences.

Generally speaking, many possibilities exist for meeting IT-relevant requirements. Our white paper divides this range of options into four main dimensions that show which departments, units, etc. might be affected by specific requirements and how the dimensions can be addressed using specific IT measures. Several possible scenarios are used to illustrate the connections and relationships here.

Our compliance and risk radar

The current (and future) nature of the requirements landscape are character-

ized by a term known as VUCA (volatility, uncertainty, complexity and ambiguity). Companies need to constantly pay attention to general conditions that are subject to change, and they also need to comply with external requirements. That's why it must be possible to understand the requirements situation at all times and ensure it remains transparent. This must be done in order to be able to react to observed changes and, in the best case, to take action before one already faces environmental factors that have changed.

One proven method here is to observe the entire changing environment in the

manner of a radar, so to speak. This means not only analyzing the current situation of the environment but also making an effort to predict imminent changes to both the environment and requirements. Our white paper offers a structure and examples for such a “compliance radar.”

As-is – EA transparency is the foundation

One thing that is necessary in order to be able to (re)act appropriately to changing local requirements (e.g. geopolitical, legal, regulatory) by utilizing suitable EA designs is to ensure transparency regarding the existing IT and data landscape. This information must also include EA data whose degree of detail and quality are sufficient to allow an estimation of the consequences and support an efficient and targeted adjustment of the EA landscape in line with the changing requirements.

There are different methods for compiling information on the IT and data landscape. However, the majority of the methods are not based on a specified framework for the enterprise architecture and they also don't include a corresponding meta model for content that takes all relevant aspects into account, including business activities, data, and IT.

The white paper uses a best practice

example to show how an EA framework and a meta model can be applied in order to achieve the right level of transparency and conduct an impact assessment.

Assessment of risks and determination of the right EA responses

In the special and comparatively complex case of China, a combination of local laws and provisions such as the Chinese Cybersecurity Law (CSL) and regulations concerning data (e.g. the Chinese Data Security Law – DSL, and the Personal Information Protection Law – PIPL) creates a situation in which companies need to evaluate their IT landscape in order to determine if any regulatory risks exist within their organizations.

The Maturity Assessment heat map can be a useful instrument when it comes to visualizing and prioritizing concerns regarding a company's compliance level in relation to a specific market, a country, or a supranational body. This heat map helps identify the biggest gaps and thus the most urgent problems that need to be addressed in order to ensure compliance in a certain setting.

The white paper contains several specific examples from the real business world that show how CBA Lab members successfully address the challenge of correctly designing global distributed

architectures. These examples relate to the architecture areas ERP, data lake, IT network, API management, e-commerce, and social CRM.

Continuous governance of global distributed architecture is a must

How can we make it possible for stakeholders at a company to always make optimal decisions and choose the best possible design for a global distributed architecture? Using the governance system as a foundation, it must be ensured that the “right” EA variant is selected on the basis of the given requirements and conditions. The selection of the suitable EA variant must be reproducible – i.e. the same input parameter must always lead to the same solution. Decision trees are a powerful tool for the operational application of the criteria and parameters mentioned in the white paper. ●■▲

Workstream
“Governance of Low-Code Development Platforms”

Utilizing low-code development platform potential the right way

Hendrik Grosser

————— Low-code platforms offer the possibility of simplifying programming tasks through the use of prefabricated functional building blocks that enable people with little programming experience to create apps, interfaces, and process automation systems. If the right platform is selected and then introduced at a company, all company divisions, units, departments, etc. can be supported by so-called citizen developers, which significantly eases the strain on IT departments. The use of low-code technologies remains a booming field, and according to Gartner these technologies will be used by more than 65% of application develop-

ers worldwide by the end of 2024. The analysts expect that the global market for associated tools will reach a volume of around US\$26.9 billion next year.

In the first workstream on this topic, a checklist was developed for decision making with regard to the introduction of low-code platforms (see the 2022 Yearbook). This checklist addressed the following questions:

- For which tasks does it make sense to use low code?
- What benefits and drawbacks does low-code development offer?
- What are the characteristics and

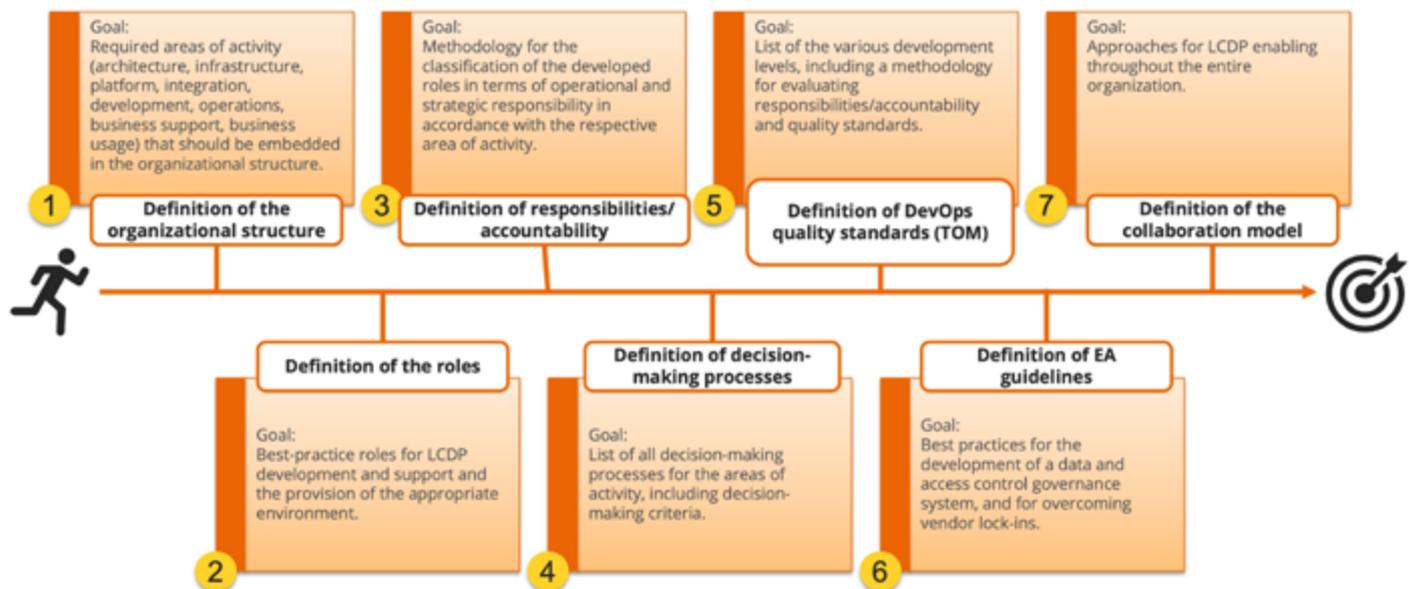
pitfalls associated with low-code development platforms (LCDPs)?

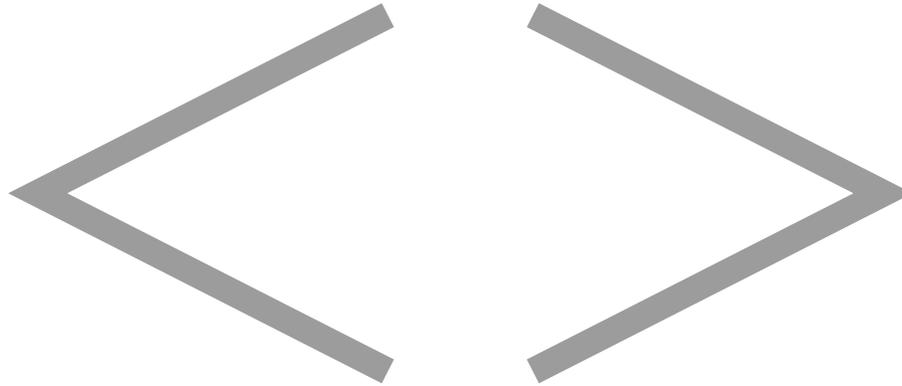
- What are the strategies for deciding on and introducing LCDPs?
- What challenges exist with regard to support, monitoring, and managing low-code development processes?

The findings here were used as a basis for a follow-up workstream for defining a specific approach for establishing a governance model for LCDPs. The result was a guideline for companies containing 7 main steps (see the figure).

Steps 1-3: Definition of organization structure, roles, and responsibilities

Figure: Guideline for the establishment of governance models for low-code development platforms





There are a total of 8 areas of activity for which decision-making roles and operational roles need to be defined:

1. Architecture
2. Infrastructure
3. Platform operation
4. Integration
5. Application development
6. Application operations
7. Business support
8. Business use

With regard to software development activities, the IT department focuses on complex projects in which knowledge of regulations, documentation and structuring in particular is required. The citizen developers in the business units or departments need to acquire development capabilities either through self-learning tutorials or with the assistance of professional developers. They can then obtain certificates in line with their enhanced skills, which would also

make it possible for them to participate in development projects that involve greater responsibility. Initially, it makes sense to establish a Rapid Development department that focuses solely on development with low code, supports citizen developers with their training, and assists them when they encounter problems.

Step 4: Definition of decision-making processes

If an LCDP is to be successful, decisions have to be made by various roles and committees on the basis of certain criteria. Important decisions are:

- Which and how many platforms are to be introduced? Experience shows that companies rarely get by with only one platform because the specific requirements at the company's various divisions, units, departments, etc. need to be addressed. A decision also has to be made as to whether

processes are to be conducted in a self-service or demand management setup.

- How should the infrastructure be designed? Should the LCDP(s) be on premises or cloud-based? How many licenses will be needed and on which hardware should they be used?
- Who will set up the platform and handle the maintenance? Which security guidelines need to be complied with? Which training approaches should be used for citizen developers, and who can offer these?
- Which operating systems, applications, and data should be used with the LCDP(s)? Who should be given access to what?
- Who will define the applications that are to be developed? Who will maintain an overview of all the work being performed? Which quality standards should be maintained, and who will ensure compliance here?

- Who may conduct which tasks with regard to criticality and complexity, and how will these tasks be prioritized? Who will be able to use the applications, and in what ways?

Step 5: Definition of DevOps quality standards (TOM)

DevOps quality standards can be depicted using the structure of a target operating model (TOM). Quality standards of different degrees can be defined along the low-code development and operating phases in order to achieve the best possible compromise between implementation speed, costs, and quality. It is therefore recommended that only low to medium quality standards be set for citizen developers and rapid development teams, and that very high standards should then be set for classic IT and external development services.

Step 6: Definition of EA guidelines for LCDP implementation

The goal here is to clarify which type of data may be used and in what ways, how the access boundaries in LCDP development should be structured, and which criteria should lead to a vendor lock-in, both in a technical and financial sense.

Data and access control governance should be firmly embedded in LCDP

policies, whereby this governance should be based on existing approaches specific to the organization. The existing IT policies can also be reviewed to see if they can be applied to low-code programming as well. It should be assumed that these policies will have to be expanded. Companies should also define the risks they are willing to accept with regard to vendor lock-ins. A certain dependence on LCDP suppliers cannot be avoided, but this can also lead to benefits such as access to established LCDP communities and the possibility to gain knowledge.

Step 7: Definition of cooperation models for business and IT

Successful collaboration between business and IT with regard to low-code empowerment throughout the entire organization can be built upon the following:

- The establishment of a community that offers support with knowledge building and the development of solutions to problems
- A strategic exchange between business and IT at regular intervals in order to identify problems
- The establishment of a demand management process in order to consolidate and prioritize the requirements of business units and departments
- The structured identification of and

support for interested citizen developers (e.g. by means of surveys and training courses)

- A transformation from high-code to low-code programming through assessments and the classification of development tasks

Summary and outlook

Specific questions and solution approaches for the establishment of a low-code governance model are addressed in the guideline, whereby these questions and approaches were also standardized so as to ensure they can be used in all industrial applications and then be adapted as needed. Additional relevant questions were also identified:

- How can a company's maturity level for low-code development be determined?
- How should the strategic goals of low-code development be formulated?
- How can the most efficient distribution of professional developers, citizen developers, and power users be achieved?
- How can low-code structures be flexibly adapted in line with the dynamic requirements of various markets and digitalization processes? 

Workstream
“Legacy Integration”

The proper way to deal with legacy software

————— Most companies have software that they actually should have replaced long ago but which they continue to use for historical or functional reasons. Such old systems not only slow down digitalization and pose a security risk; they also cost a lot to keep around. “We examined ways to identify legacy software, keep running it if necessary, and in the best case get rid of it,” says Simon Döbereiner, Team Leader Enterprise Data Management at KUKA and coordinator of the “Legacy Integration” workstream.

To this end, the six workstream members met up with representatives from the Detecon consulting firm every two

weeks for a two-hour workshop. “We worked out what we as enterprise architects can do to improve legacy management, and we also identified the organizational and technical templates that exist for this and discovered ways to accelerate the integration of legacy systems,” Döbereiner explains.

The team initially worked out a definition for legacy systems and identified the problems associated with them. “Statistics show that 83 percent of Germany companies view outdated technologies and technical debt as significant cost factors,” Döbereiner says. “Nevertheless, 58 percent of the companies still don’t have a procedure

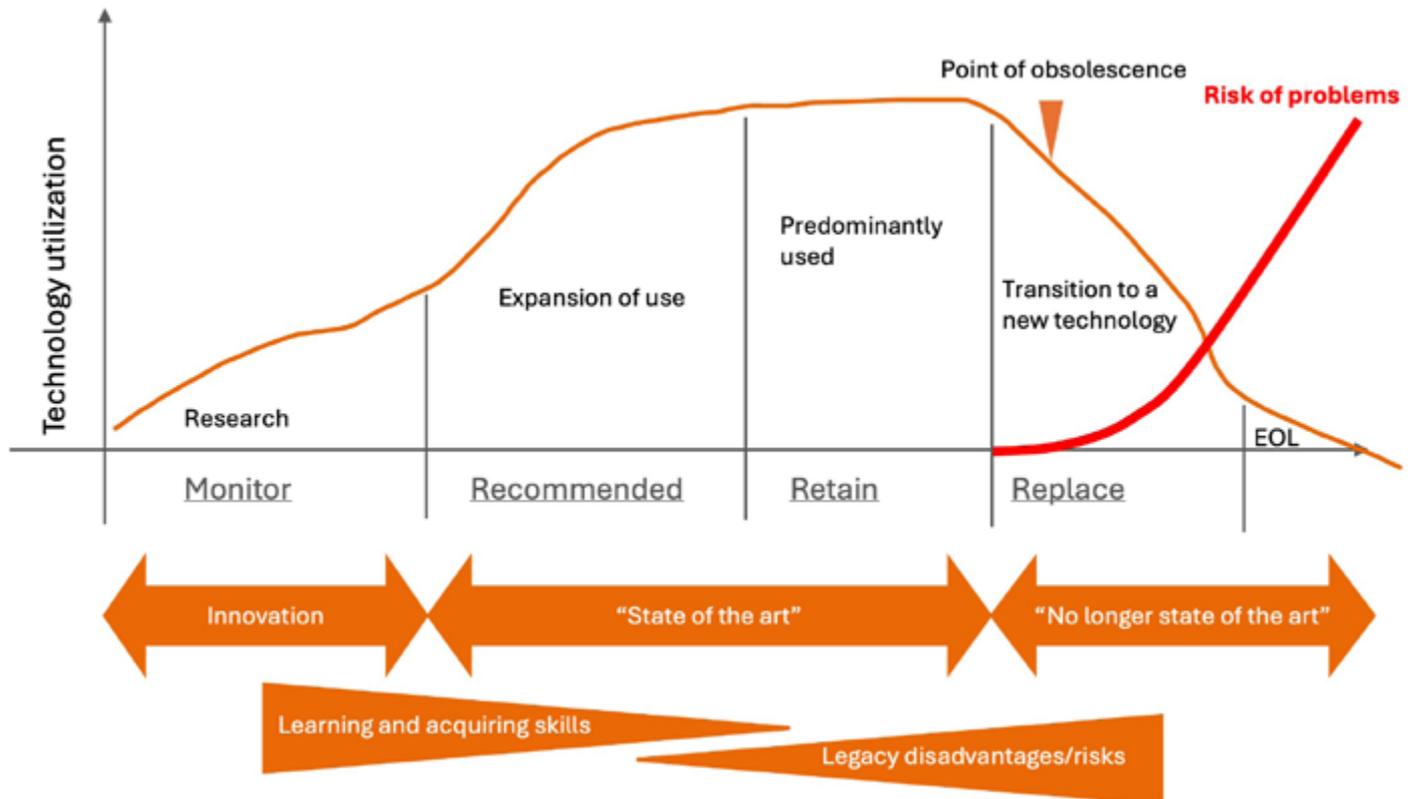
in place for dealing with outdated systems.”

How legacy software comes into being

A software program becomes a legacy application when it reaches its so-called point of obsolescence (see the figure). At that point, it no longer corresponds to state of the art in any way and becomes ever more expensive, less efficient and effective, and more prone to failure. “At this point at the latest, you need to begin thinking about how you can replace or modernize the application,” Döbereiner explains.

There are basically two ways that

Figure: Software lifecycle – every IT system will become a legacy system at some point. Replacement must begin when the point of obsolescence has been reached.



legacy software comes about: Either the system in question was developed internally and is perfectly aligned with a business process, but has now become outdated, or mergers and acquisitions have led to a situation in which outdated and/or incompatible software systems have made their way into a company's IT landscape.

Certain strategic decisions, business requirements, and external influences can also turn an application into a legacy system – for example when it cannot be migrated to a cloud environment, is not compatible with modern applications, cannot depict country or language-specific processes, or can simply no longer be supported because no support system exists for it anymore.

Why legacy software often continues to be run, and run for too long

There are many reasons why legacy software is allowed to continue running. For example, legal requirements as contained in the General Data Protection Regulation (GDPR) or compliance directives might force companies to continue operating outdated systems. Difficult to manage dependence on critical business processes and workflows also make it hard to replace outdated systems. "However, simple

things like claims of ownership and established power structures also often prevent legacy systems from being replaced," Döbereiner points out.

Indeed, letting the software or system continue to run often seems like the easiest and most pragmatic solution at first glance – but it also involves significant risks. "At some point, experts who are familiar with the system can no longer be found, as is clearly evidenced by the recent increase in demand for Cobol programmers," Döbereiner explains. "Then you have to recruit specialists and/or train them, which costs a lot of money." From the point of view of a company, letting a system continue to run in such a situation poses a threat in that the enterprise could become less competitive, face the risk of security gaps, or become dependent on one or just a few suppliers and service providers that are still familiar with the system. From a technical point of view, the effort and expense needed for maintenance, modifications, and upgrades will only increase and become more complex, given the lack of functionality, scalability, and possibilities for integration .

In order to be able to identify and assess the risks, the workstream team

developed an exemplary template for an aggregated analysis of all factors, taking into account the probability and impact of business, technical, and personnel risks. "The actual implementation then needs to be done by risk management teams or with the support of an appropriate consulting firm," Döbereiner explains.

The four pillars of legacy management

The core element of the work conducted in the workstream was the development of a framework for legacy management. This framework is based on the following four pillars:

› Legacy governance

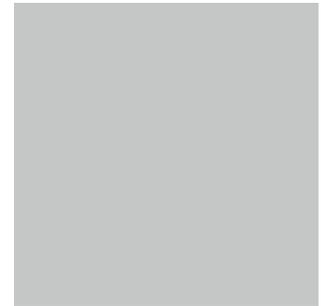
Governance is the foundation of any legacy strategy. Legacy governance can be seamlessly integrated into an existing EA governance system. "The goal is to regularly review the IT landscape in order to identify legacy systems on the basis of defined assessment criteria, and to then formulate modernization measures, ensure their implementation, and integrate legacy management into EAM lifecycle management," Döbereiner explains.

The workstream members believe



Simon Döbereiner
Workstream Coordinator

Every software system will become a legacy system at some point.



architecture principles should be used as a controlling method, whereby these principles should define rules for designing the IT architecture and help with the definition of a target state and development from the actual state to the target state. Says Döbereiner: “The architecture principles are like a guide for the further development of the entire IT architecture at the company in question. Compliance with the principles is to be made transparent and thus ensured with the help of measurable parameters and metrics.”

➤ Identification

In order to be able to manage legacy systems, they first need to be identified. For this task, the workstream members developed a cycle that consists of five phases: First a catalog of criteria must be created for identifying legacy systems, and this catalog also needs to be updated on a regular basis. The systems should then be assessed in accordance with architecture principles and reference architectures, after which the assessment rankings should be documented and the results sent to the responsible committees and boards.

Once the rankings have been made, the lifecycle of the IT system is to be adjusted accordingly and planning for the replacement of the systems should begin, even if such replacement might not occur until far into the future.

When making a decision as to whether a system should continue to operate, be integrated into another system, or be replaced, both business and quantifiable risk and cost aspects and qualitative aspects like technological modernity and future viability should be taken into ac-

count. “This assessment can be used to create a ranking of those legacy systems that should be replaced on the basis of their importance, costs, and risks,” Döbereiner explains.

➤ Continued operation / Integration

In the case of legacy systems that cannot or should not be immediately replaced, their continued operation and possible integration into the IT landscape need to be planned and implemented. If integration is necessary, it can be done using established integration solutions and software development kits (SDKs), robotic process automation (RPA), or the decoupling of old systems with the help of middleware or wrappers. “The selection of the right integration method is a key factor of success with legacy integration, as this is the only way to ensure that integration

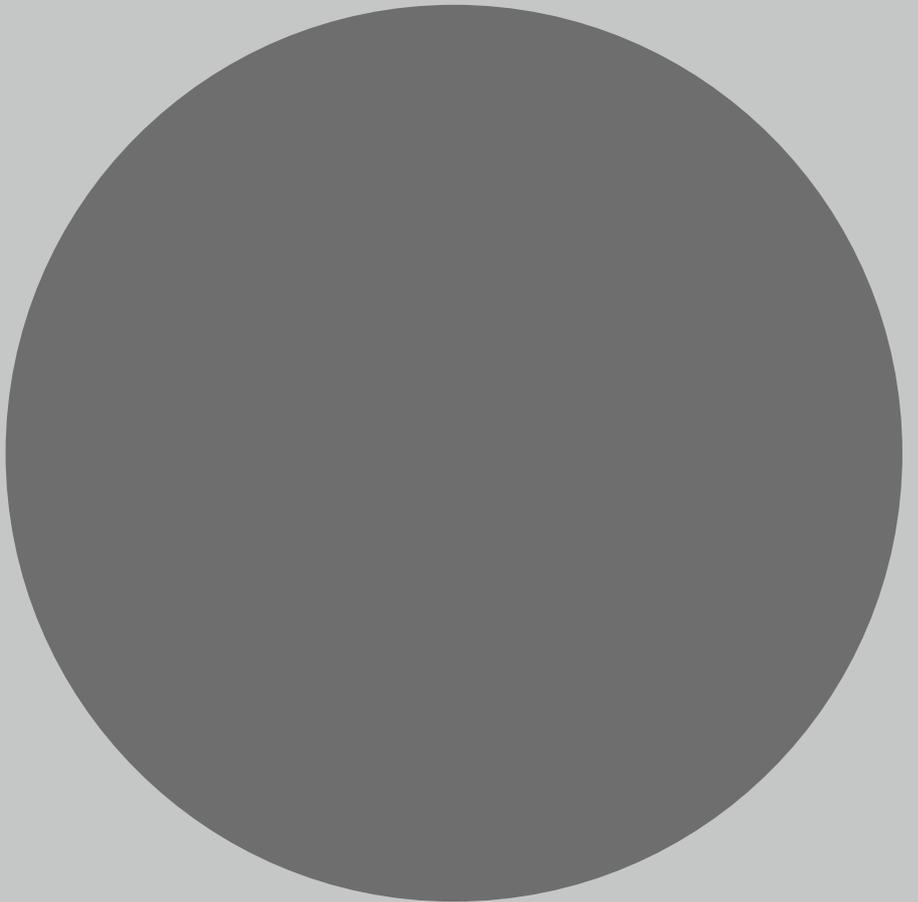
will be successful, efficient, and sustainable,” says Döbereiner.

➤ Replacement

Any continued operation should be limited in time and replacement processes need to be planned in advance. The procedures used here must always be monitored and supported by the change management organization in order to minimize possible resistance and promote acceptance of new IT systems and processes. A distinction is made between three different methods for legacy system replacement: Complete replacement in one step (“big bang”), the gradual introduction of new systems in departments, units, and divisions, and a modular migration to a new solution. “Decoupled systems are generally the easiest to replace,” says Döbereiner.

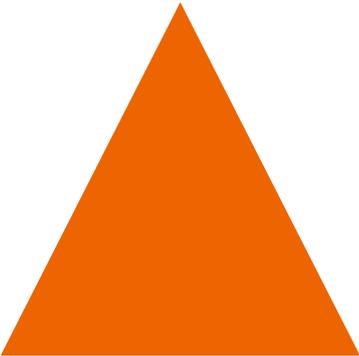
Workstream summary

The workstream results were structured in a clear way and summarized in a playbook that offers enterprise architects valuable support in terms of identifying, integrating, or replacing legacy systems. Best practices, effective arguments, and exemplary integration patterns supplement and clarify the theoretical foundations here. The difficult topic of IT/OT integration was also taken into account. “We made an effort to put together the playbook in such a way that it can be understood without anyone having to ask follow-up questions,” says Döbereiner, who also says he’s convinced the topic will play a key role in EAM in the future as well: “Every software system will become a legacy system at some point.” ●■▲



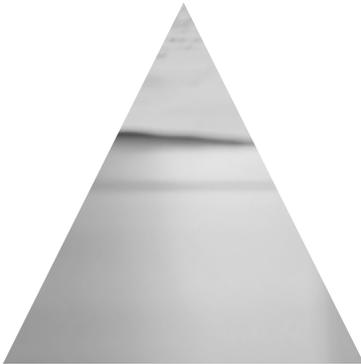
Workstream
“Scaled EA Organization”

A blueprint for a federal enterprise architecture



————— Companies differ from one another in various ways. Along with attributes that are for the most part static, such as organization structure, size, and sector/industry, there are also dynamic factors such as business and technology trends and geopolitical and regulatory changes, whereby these can have very different effects on business operations and success. Some companies grow and expand, while others struggle with declining revenue and layoffs.

The goal of the “Scaled EA Organization” workstream was to develop a blueprint for an EA structure that takes this diversity into account and can be adjusted flexibly in line with the most varied conditions. The EA maturity level was also to be taken into account here. Both companies that already have an established EA structure and those that are only just beginning to create an EA organization should be able to benefit from the workstream.





Hannes Schleibinger
Workstream Coordinator

You need have the approval and trust of the executive management level. Any roll-out not preceded by a clear implementation assignment is doomed to failure.

Workstream Coordinator Hannes Schleibinger, Enterprise Architect at MTU Aero Engines, explains which factors play the most important role in terms of achieving a scaled EA organization

Editors: Hannes, you and your team in the “Scaled EA Organization” workstream identified the distinguishing features of a scaled EA organization and examined the best ways to establish such an organization. What aspects did you focus on here?

Hannes Schleibinger: One the one hand, we examined the services that EA can potentially offer and which we defined in the “EAM Services Catalog” workstream, for example. We also focused on the idea of “purposes” and tried to define the goals that an EA organization can pursue. The TOGAF Leader’s Guide defines four purposes here: EA for Strategy supports the achievement of overriding company goals and targets, EA for Portfolios ensures that projects do not overlap and are aligned with the overriding goals and targets, EA for Projects ensures that EA requirements in the individual projects are met, and EA for Solution Delivery examines the introduction of new solutions and offers support when changes are made or occur.

What influence does this division have on the structure of an EA organization?

Using the purposes as a basis makes it relatively easy to decide whether a unit should be structured in a centralized or decentralized manner. If, for example, EA for Strategy is to provide support for strategy development, the unit in question must be situated close to the board of management in an organizational sense – not only to ensure the effective exchange of information but also to make it possible in the most extreme case to escalate up to the executive management level if there are problems with implementation.

In your opinion, what form should the basic structure of a scaled EA organization take?

The basic structure should be designed along the lines of the business units for production, IT, development, or communication and marketing, for example. From the point of view of the “business”, “applications and data,” and “technology” architecture levels, a decision can then be made as to how centralized or decentralized the organization should be. Certain tasks will

be conducted centrally by an architect team, while at the same time contact persons in the respective business units will be available to assist with operational implementation.

Are these contacts in the business units architects or general staff from the units or their individual departments?

There’s no general answer to that question because it all depends to a large extent on the situation in the unit in each case. There are no standardized descriptions of the job positions here, and our experience shows that there cannot and will not be such descriptions. From our point of view, it’s enough to define the tasks as well as the results that are to be achieved.

So are you saying that companies should not get bogged down too much with defining job titles for these roles?

Exactly – generally there will always already be some type of enterprise architecture that one will have to adapt to.

Not all decisions can be made in a decentralized manner in departments.

How can companies establish company-wide EA structures?

This can be done through boards, by which I mean groups of individuals who are authorized to make decisions. Such a board is particularly important for companies that have to meet certain compliance requirements. Boards are also responsible for standardization, and depending on how they’re designed, they may also have budgetary responsibility and a governance function. Boards can be set up at the business unit level or else as an overarching body made up of architects from various units and departments.

That sounds a lot like a federal approach...

... That’s right. One of the key findings of our workstream was that neither a purely centralized nor a purely decentralized approach is ideal for a scaled EA organization. A central EA department is too far removed from the core business – it is not sufficiently familiar with the problems in the business units and might make decisions that are not optimal because they do not take local conditions and circumstances into

account. Purely decentralized organizations, on the other hand, are characterized by insufficient communication and cooperation. This can lead to an architecture that displays an extensive lack of coordination and is also very expensive.

What would be your recommendation to companies that wish to establish a scaled EA organization?

It's important to define what the EA organization is supposed to accomplish. What are its purposes, which goals and targets are associated with these purposes, and which services need to be created? The answers to these questions can be used as a basis for deciding how to implement the architecture. It's also important not to want to do everything at once, but instead, in the sense of a multiple nuclei strategy, to create a set of impulses, so to speak, that offer added value that can be recognized and felt. These core services can then serve as a basis for the step-by-step expansion of the architecture.

In your workstream, you also examined how companies can determine their EA maturity level...

Yes, although there's often no such thing as a definitive maturity level for a company. For example, various business units and departments can display very different maturity levels. That's why we recommend that a detailed analysis be conducted for every business unit so that the necessary activities can be specifically defined in each case.

What are the essential factors for ensuring the success of a scaled EA organization?

First you need to have the approval and trust of the executive management level. Any roll-out not preceded by a clear implementation assignment is doomed to failure. Ideally, two members of the board of management or executive board should support such an undertaking. If only one person supports it, there is a danger that the project will fail if that person leaves the company.

In addition, you obviously need to know the current state of your architecture and how you want to improve it, which means you absolutely have to define the actual and target states. For me personally, it's also important to pay attention to people, skills, and training.

The brownfield approach especially offers the possibility of hiring new people or, preferably, further developing existing staff members. The creation of a corresponding change program with the necessary training courses is therefore extremely important as well.

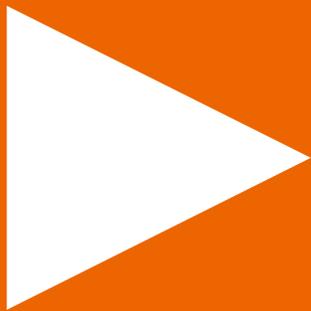
In addition, the EA organization should not be a stand-alone organization, so to speak. Instead, it should be incorporated into the target processes in line with the purposes, and also with the services that are to be created. For example, in the demand process, it must be determined whether the purchase of new software, for example, makes sense, or if a suitable solution already exists. Finally, you need to continuously evaluate your success and iteratively adjust the organization whenever deviations are discovered.

What type of blueprint do you make available to the member companies?

There is a white paper and also a chart that serves as a foundation for describing an EA organization in detail. Members can, of course, also get advice from us at any time. ●■▲

EA training

Critical to success! Establish EA knowledge – now!



What all CBA Lab members have in common is the fact that they all face the same or very similar challenges. One of the biggest challenges, if not the biggest, is to be able to make available a sufficient number of qualified EA specialists.

The solution here is offered by joint

training courses managed by CBA Lab. Highly qualified EA expertise, gained mostly through our own workstreams, forms the foundation for our EA training approach. It's no surprise that this aspect was the use case which was addressed when our association was founded in 2007: The establishment and expansion of joint training curricula, and the joint implementation of that curricula.

Our training courses are thus now part of the range of our CBA Lab products for members. Marc Haines from Schaeffler is head of our Product Development department. We continuously revise and update our training material.

Whenever three members discuss a new training format, we ensure its implementation by developing it ourselves or procuring external development services.

Our current training portfolio consists of three courses, which are conducted either in German or English.

1. CBA Lab EAM Foundation Training (2 days onsite, free for members)
2. TOGAF®10 training, 3 variants (each 2 days, online, offered to members at unbeatable conditions)
3. SAFe for Architects (4 days, online, offered to members at unbeatable conditions)

CBA Lab EAM Foundation is our in-house training course. It is mostly based on our own results and is therefore offered free of charge to members. The course provides enterprise architects with key fundamental knowledge. It shows where the EA playing field is or can be, who the partners and customers are, and which use cases can be addressed with which methods. It is therefore perfect for beginners or staff from other fields, and also for know-how updates. Most of all, however, it offers an ideal way to develop a common understanding of EA, and an EA language, in one's own EA team. In addition, participants are able to become part of a strong cross-business EA network.

Four courses are being offered in 2024, each of which are onsite and run for two days. The courses are held in German or English. A digital badge is issued as a certificate of participation. The courses are hosted by the member companies. Early registration is recommended. Registration is via e-mail to our administrative office: info@cba-lab.de.

TOGAF®10 is an online training course that will be conducted for us by training service providers. We are offering it in the variants EA Foundation, EA Practitioner, and EA Leader. Registration is via our administrative office; dates will be set as soon as a sufficient number of participants have registered.



SAFe® for Architects: The specifics here are nearly the same as for TOGAF®. This is also an online training course, which runs for four days, however. Registration is via our administrative office; dates will be set as soon as a sufficient number of participants have registered.

Nowhere else can one find as much EA application knowledge and expertise as this course has to offer. The affordable training courses also offer solid added value in relation to various business cases, and are thus just one more reason why CBA Lab membership is such a great investment. ●■▲

CBA Lab

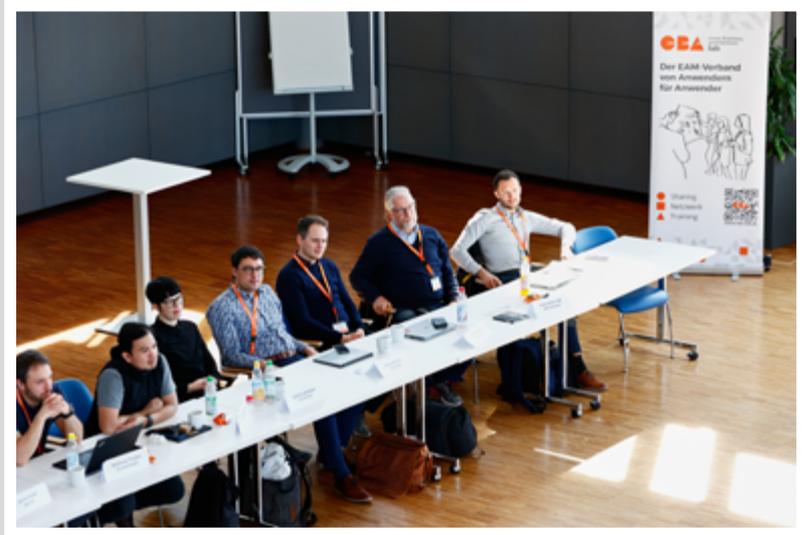
Finally Face2Face again

———— The first Round Table to be held as an in-person event following a break of three years due to the pandemic took place in March 2023 at the invitation of the Hoffmann Group in Munich.

The Hoffmann Group thus served as both a guest of and the host for CBA Lab. More than 30 people accepted the invitation, many of whom were very much looking forward to seeing some familiar faces from the CBA Lab network, or to getting to know new people from companies that had joined the network in the interim.

It's therefore not surprising that the two-day event seemed to go by much too quickly, and that the time for networking was thus too short, despite the many breaks and the event dinner.

“The Round Table is much better in person than as an online event, and also much more interactive,” the partic-



ipants concluded during the feedback session. Participants also praised the event and the many interesting topics that were addressed in a very inspiring and motivating, and also very honest, manner.

The second Round Table in 2023 brought members to northern Germany for the first time. Meetings were

held at two locations: at Beiersdorf in Hamburg and Jungheinrich in Norderstedt – and there was also some unusual background noise.

The Round Table included several new features. As was mentioned, it was held in northern Germany for the first time, and its staging at two companies and two different locations was also a first.



Things kicked off on the first day with a round of speed dating in Beiersdorf. This was also a new format, one that focused on highlighting CBA Lab's role as a network. The speed dating session served as a successful introduction to the subsequent working phase, which featured reports from current workstreams and the companies participating in them. In order to loosen everyone up after all the discussions, an "Active Break" was offered, and all participants gladly took advantage of it. "During long meetings, I like having the chance to get my body moving for 20 minutes in between," says Melanie Czink, Head of Enterprise Architecture at Beiersdorf, and thus one of the hosts

of the Round Table.

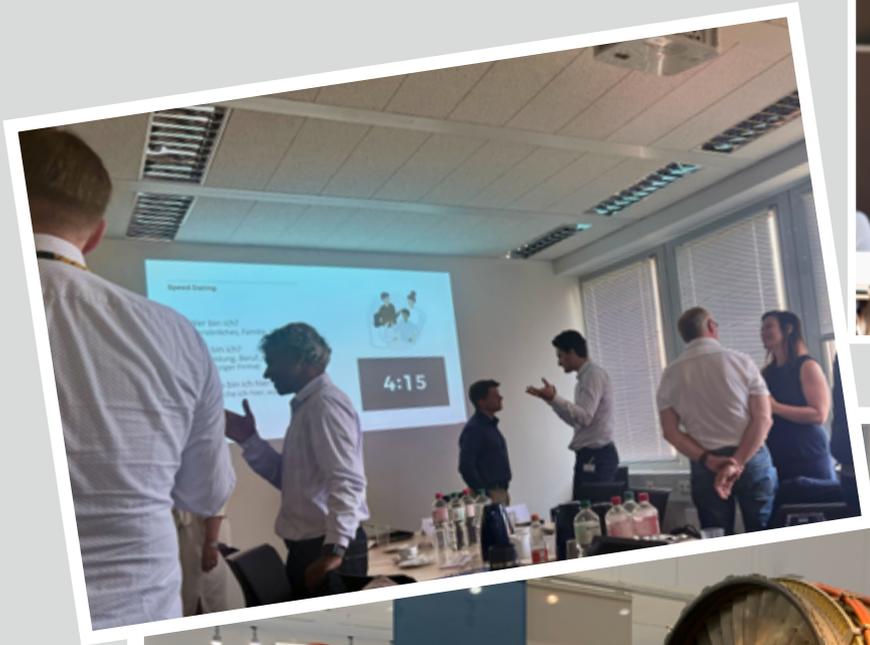
On the second day, participants headed over to Jungheinrich, where an interesting and extensive program of meetings was supplemented by a site tour. This gave participants a good opportunity to obtain an overview of plant operations for manufacturing many different products – and not just forklifts. It also allowed them to get to know a CBA Lab member company even better, and learn more about its operations. In the feedback round, all participants agreed that the meetings were excellent and offered some great opportunities to learn more about different companies in a fantastic atmosphere,

and with valuable interactions, whereby participants were also able to enjoy a completely new user experience: the sound of the cries of seagulls outside the window.

The first Round Table in 2024 was also held in Munich – this time at our member company MTU, where participants were also treated to a tour of the plant and the company museum.

The second Round Table in 2024 will be held in Cologne at the invitation of TÜV Rheinland. ●■▲

Impressions from our Round Table events





Guest article

Getting into the mindset of company management at warp speed

Make EAM sexy, and strategy NICE!

Christian Morbach

————— EAM is without a doubt a MUST for any company that wishes to survive the digital transformation. In an ever-more complex business world with constantly growing challenges, as well as boundary conditions that change rapidly, EAM offers a stringent and robust methodology for the active management of a company's architecture. *"Fascinating!"* Mr. Spock would say. Still, do you know any satisfied and successful enterprise architects who have really been able to successfully introduce EAM at their companies? Well, first define successful!

Sometimes I question my belief in EAM. Are we enterprise architects merely

peculiar scientists who are neither understood nor capable of building something useful? Corporate consultants are successful without ever having to utter the term EAM. Perhaps that is the better strategy. And here we are again with the S word: STRATEGY!

That doesn't seem to excite anyone anymore. And especially not the executive management bodies at large companies. But strategy is an issue for top management. There you go! Make a strategy without EAM. Remember corporate consulting firms and strategy programs at large companies. Without EAM!

Which leads to a question that's not only important to Captain Kirk: *"How do we get out of here? ... Do you have an idea, Mr. Spock?"* And Mr. Spock's answer *"Well, sure I have ideas. But it's a little difficult to put them into practice at the moment."* indicates that the problem is not one of understanding but instead of implementation.

The situation is completely different with regard to what are fundamentally much more complex issues, like AI and ChatGPT at the moment. In this case, the masses and also the executive management teams at companies were thrilled with AI and ChatGPT from more or less the very beginning. Only very

few people fully understand the associated technology and thus the possibilities the various approaches offer – but also the limits to these approaches. Nevertheless, everyone immediately wants to know how quickly we can start using these “machines” to help us.

This type of tech hype is sexy and therefore appealing. It plays on people’s fantasies and (secret) desire that it should be possible for everything to just happen by itself – and that everyone can claim to know and be able to do everything. This is what enables such phenomena to thrill the masses and have such a powerful effect on them. Hopefully, Spock would confirm our ideas here and say: *“An extraordinarily astute observation!”*

This is in fact the greatest challenge that we as enterprise architects face: “How do I explain it to a child!”; or:

“How to make EAM sexy!”

EAM departments and units are usually part of a company’s IT organization. After all, who else in a company wants to deal with such a peculiar topic, or can figure out a way to use an EAM approach – for example to manage application repositories and perhaps the technology used with them as well. The way a company’s executive management team views IT is also often marked by expectations that are not aligned with one another, as well as an

insufficient degree of mutual understanding. This isn’t exactly the best breeding ground for getting executive management excited about topics like EAM.

So EAM simply leads a shadowy existence – and in order to get it recognized and utilized as a methodology for strategy management, EAM must emerge from this shadow cast by IT. EAM needs to be understood as a holistic company function, whereby data centeredness is a strong enabler here. Process management and EAM both win when they interact in an integrative manner.

In the best case, we will find the answer to the following question: How can we help make sure that EAM doesn’t stand in the way of the implementation of a corporate strategy but instead becomes crucial for its successful implementation?

Moreover, how can we make EAM as sexy as ChatGPT, for example? Although I’m not implying here that ChatGPT is the cure-all for EAM. It’s really all about another question: What makes something like ChatGPT so successful with the general public, and what aspects of these ingredients of success can we put to use for EAM.

Just imagine making EAM a type of ChatGPT in the eyes of executive

management: “Tell us where you want to take this company, and we enterprise architects will show you the way and take you there.” *“Kirk to Enterprise: Beam me up, Scotty!”* - or

“Autonomous driving of the enterprise by EAM at its best!”

This sounds as simple as many people imagine ChatGPT to be, but it is of course as strenuous as the creation and operation of a really well functioning AI solution. Crap in – crap out!

Unfortunately, this is not a new realization for enterprise architects, since we all know that the creation and maintenance of a depiction of a company’s architecture doesn’t just happen on its own – just like the creation and maintenance of the much-lauded large language model as a basis for AI doesn’t happen on its own either. Nevertheless, it would amount to the key to success for EAM if “autonomous driving by EAM” were to be accepted by executive management at its face value, so to speak – and if EAM were to be able to deliver.

Indeed, the success of AI never would have been possible without visible results in the form of AI deliverables (and mostly in the form of appealing and often sexy images). After all, the ability to deliver is the only factor of success that counts!

What appears to be more important than anything else is the question as to what it takes to be able to deliver.

“How to deliver the sexy machine!”

It actually takes less than what a conscientious enterprise architect would initially expect. In its first publicly accessible version, even ChatGPT was limited to an LLM that corresponded to the state of the art in 2021. This is exactly the art of selecting a limited range of the right features for making it possible to convince and thrill others – and to then step things up quickly. No one wants to know at first how the mysterious machine actually functions. Everyone is simply thrilled by what is shown and promised, and at a certain point in time everyone gets to try it out and use it for themselves.

The decisive advantage that ChatGPT has is its ability to utilize an existing database – the Internet! But then of course there is the strenuous job of having to train it.

Before we can thrill everyone with EAM, we need to clarify two things:

- How do we efficiently create the necessary database?
- How can we intelligently ensure high-quality answers?

EAM needs to answer two fundamental questions if it is to be used

to achieve a company's strategic goals:

- Architecture: How do things look? What is the current state of the company and its IT organization?
- Management: What's the plan? What path do the company and its IT organization need to take in order to achieve their goals?

“What we need to make strategy nice!”

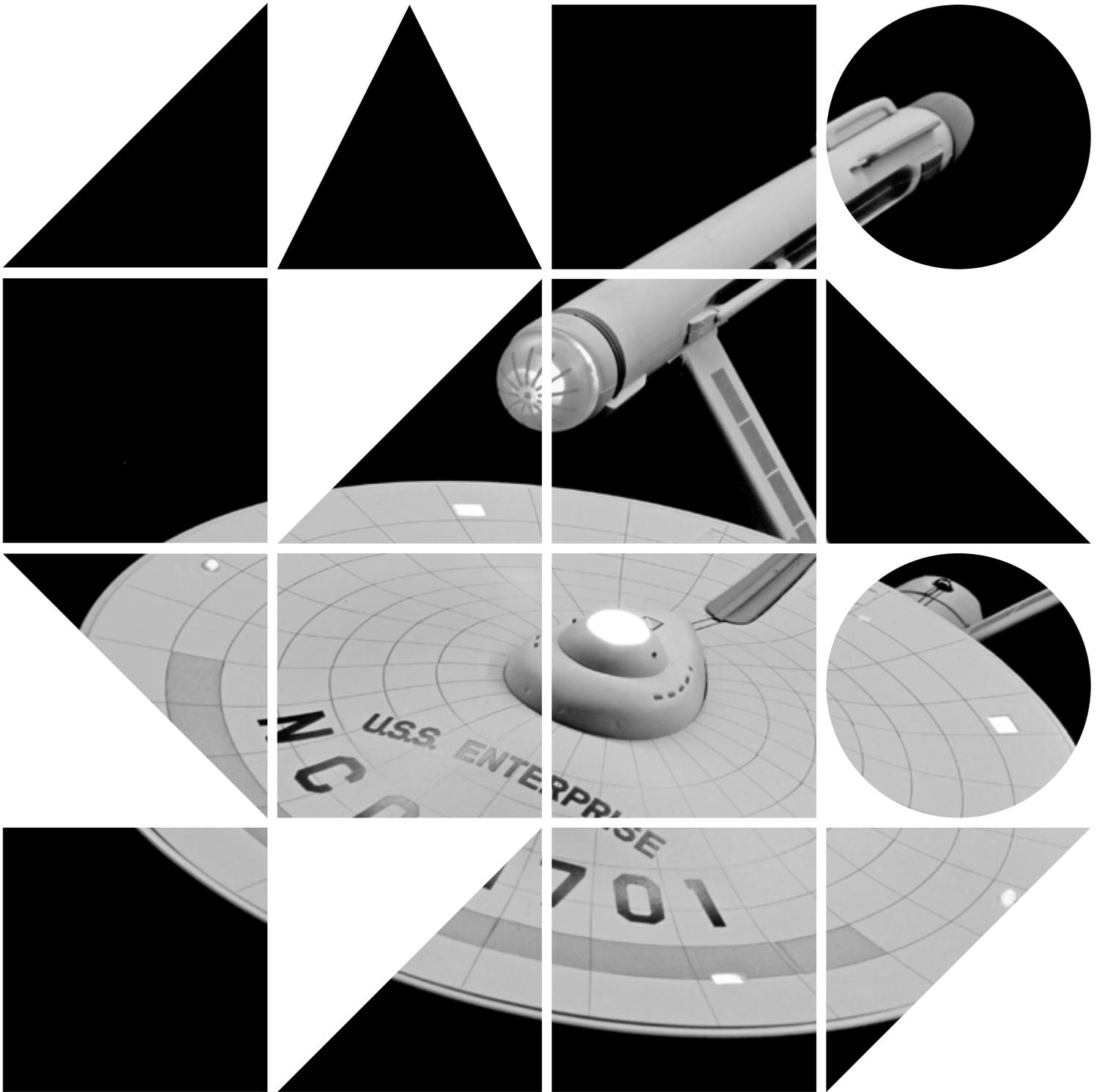
In line with the TOGAF® definition, the content of a company architecture must include all business activities and capabilities, as well as information and technologies, including processes, functions, and their information systems, which all taken together represent a company's entire infrastructure and management approach.

Management tasks at a company involve enabling the achievement of a proper balance between business transformation and continuous operating efficiency. Another aspect is the secure introduction of innovations in order to achieve business goals and targets that are constantly developing, and to thus gain a competitive advantage. It seems almost like an afterthought to mention the ability to completely meet numerous global requirements (e.g. with regard to data protection) for processes, data, and systems.

Nearly every day, the question arises as to how one can pull the right strings in company structures that are constantly becoming more and more complex in order to achieve strategic goals and targets, but without endangering what are hopefully successful operations and also while fulfilling all legal requirements.

Enterprise architecture management: Circling the square

“A magic dwells in each beginning” (Hermann Hesse) – this also applies to architecture work, as everything begins in a set environment with existing dependencies and constraints, as well as either more or less clearly defined boundary conditions and strategic goals and targets. Nevertheless, this wild forest must be given some type of order so that one can once again distinguish the forest from the trees. It seems like a never-ending task to establish order in a growing environment – in a place where things seem to change more quickly than order can be established. Many people contribute to the disorder, even if often unintentionally, although these same people can also contribute to establishing order for everyone if a common approach is taken. As long as everyone involved is only selfishly focusing on their (short-term) results and does not know or recognize some type of big picture as a common goal, trying to use EAM to establish the necessary common order will remain a hopeless undertaking.



What needs to be done, therefore, is to get everyone involved to focus on a common goal, clearly defined responsibilities for content, and a structure for order that they all believe in and are working to achieve. In other words, all the parties involved at a company need to agree on common EAM goals and thus be able to utilize existing skills and capabilities efficiently and successfully.

Antoine de Saint-Exupéry once coined a simple phrase that describes the idea behind this approach: “To see clearly, it is often enough to change the direction of your gaze.”

To put it another way, an important task when establishing a common EAM is to reverse the perspective of everyone involved. More specifically, this means viewing the problems of others as your own, for example, and then being able to see what you and every other person can do to establish the common order that is the goal.

However, it's also very important to understand that the common structure for order is defined and specified. This means that the WHAT (in this case the structure for order) will be defined as the goal by a central EA function in line with the requirements for an LLM.

All parties involved manage the content and training. Here it makes sense to use an agile approach based on the

principles of agile software development. This means early and continuous delivery, flexibility with regard to change, functioning deliverables in short regular intervals, and all other agile principles. This is ultimately the most strenuous and difficult part of the work. Doctor McCoy would at this point say: *“I’m a doctor not a magician!”*

The first thing that is required here, however, is management knowledge and the will to change one’s perspective and to work to achieve the common vision, the common goal. This doesn’t have to happen on the management board level, but rather at those departments or units that provide the content for the company’s LLM. Neither selfishness nor vanity are helpful here; instead, what is needed is the unrestricted will to take integrative entrepreneurial action.

In such a situation it then becomes possible to use existing resources to jointly establish EAM as its own ChatGPT – and then deliver it. Delivery is initially to the participating units or departments – i.e. business management, information management, application management, and technology management. Not coincidentally, these are the well-known TOGAF® domains. The idea is to be able to evaluate the quality of the results and actively participate in measures designed to achieve improvements. The “machine” needs to

be trained so that it can deliver reliable quality at the operational level and replace manual tasks with automated processes.

After that, the strategy and motivation levels have to be established. Once again, this is to be done initially in the participating units or departments, but these also already need to be networked in order to be able to identify and eliminate interdependencies, contradictions, and inconsistencies at an early stage. As is the case with highly automated driving in the automotive industry, ever more complex “driving situations” need to be managed by the machine. Then in a manner similar to what has happened in the autonomous driving sector, people “outside” will become more and more excited and curious about the magic they learn about. The point will then be reached where it will seem possible that EAM as a type of ChatGPT at the company will attract interest and be able to present its successes – just like enterprise architects like to imagine in their wildest dreams.

The road to be taken here certainly won’t be easy; everyone now understands that. The guarantees for success here are not a better EAM tool, or orders issued from above, and most definitely not the efforts of a single individual. Again, we can learn from Antoine de Saint-Exupéry: “If you want to build a ship don't drum up the men to gather

wood, divide the work and give orders. Instead teach them to yearn for the vast and endless sea.”

To sum up: EAM must become a common goal if company strategies are to be successfully implemented. Enterprise architecture is not created through the selfishness and efforts of individuals. Instead, it is the result of the joint work performed by everyone in clearly defined processes in a holistic structure with defined responsibilities.

EAM is thus the key corporate task for ensuring survival in the digital transformation.

If this type of logic can firmly establish itself, and if an LLM for a company can be created through the joint efforts

of many individuals, then EAM can become the ChatGPT at a company and provide answers to questions relating to how an organization can achieve its strategic goals – i.e. move from its actual state to its target state in the most effective, rapid, secure, and cost-effective manner. Or to put it like Mr. Spock: *“Logic is the beginning of all wisdom, not the end.”*

Still, in this case as well, EAM initially needs to demonstrate the benefits it can offer and also deliver these – just like ChatGPT had to do when all the hype around it started. In other words, clever answers need to be provided for what appear to be simple questions, and hard work needs to be completed automatically and with the type of quality that exceeds expectations.

We who understand the technology behind ChatGPT know that large amounts of networked and machine-readable data of good quality will be needed for this, and that this data can only be collected and made available through the efforts of many. In addition, we will need training cycles for checking the quality of the results and then either confirming this quality or adopting measures to improve it.

If all of this can be done, then it's mission accomplished, and: *“Mr. Sulu: Take us out of here at WARP speed.”*

“End of task-forcing – EAM makes strategy NICE!”



The author

Christian Morbach held various architecture management positions at AUDI AG for more than 20 years and served as Chief Enterprise Architect before leaving that company. Since 2023, he's been imparting his knowledge and experience to students as a lecturer at the universities of applied sciences in Ingolstadt and Trier, where he teaches a course on Enterprise Architecture Management. He describes the goal of using EAM to establish excellence at companies as follows: “There is no way of not having enterprise architecture, but different ways to get the one your business deserves! - Let your business grow to a strong fruitful living tree, able to adapt to its continuously changing environment – MAKE STRATEGY NICE!”

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Board





Joachim Schmider Chairman

Work in multidimensional solution spaces with volatile business, technical market, and technology boundary conditions has always been very motivating and inspiring to me. That's why as a trained engineer with a business background, I have always worked exactly at such an interface, so to speak. I began my professional career in consulting (as CIO Advisory, Digital Strategy & Transformation). Over the last few years, I have been able to create an enterprise architecture at Schaeffler in a holistic manner across several IT and business units and departments and successfully establish it as a strategic/tactical discipline across business, data, and IT dimensions. Highlights here included the implementation of target architectures for individual domains such as supply chains, manufacturing, and engineering, as well as cross-domain architectures for impacts such as sustainability, sanctions / foreign trade, data spaces / Catena-X, and new technology innovations.

My goals for CBA Lab over the next two years are to further increase the added value offered by a modern enterprise architecture, and to establish such an architecture in the top-management organization. I also plan to make use of the knowledge network in a more active, rapid, and agile way in order to address strategic, tactical, and operational challenges and make expertise available for others to use. For me, CBA Lab is a living and inspiring association with great member companies and great people who accomplish more together than as individuals, in line with our motto: "Knowledge increases when it is shared."

Christian Schwaiger

Deputy Chairman, Secretary (until 3/31/2024)

I've been interested and excited about digitalization and supporting business processes with IT for more than two decades now. I was able to become acquainted with the most diverse business models, customers, and technologies during my time at the Deutsche Telekom Group. Later, at KUKA, I became involved in the planning, development, rollout, and operation of global IT applications for optimizing business processes. Throughout my career I have also always focused on ongoing learning and further training and education, and I continue to do so. Still, how can an IT landscape be continuously optimized in line with the needs and business goals at a global corporation? I've always been interested in this question, and it's also what got me so interested in enterprise architecture management. Studying while working offered me the perfect opportunity to examine the question more closely, and to then permanently establish EAM at the KUKA Group. I've been head of EAM at the KUKA Group since 2017, whereby I focus on optimization in combination with lean and efficient governance.



When it came to launching an EAM department on a small scale, but also successfully and with the ability to quickly and permanently expand it, CBA Lab offered a perfect network for me, and it still does. It's like the motto "Start smart, scale fast." CBA Lab offers a space for cooperation in an atmosphere of trust in which knowledge and experience are shared and you can always find like-minded sparring partners, all of which I find very valuable. My goals for the next two years are to further strengthen the network, expand our relationships with academic institutions and research facilities, and generate new momentum with joint workstreams and training initiatives.



Dr. Arun Anandasivam Treasurer

The process of increasing digitalization in nearly all sectors and industries makes it necessary to adopt holistic approaches and develop clearly formulated digital strategies. At the same time, all employees at companies need to change the way they think and look at things. Every opportunity digitalization offers – from process optimization to the new “as a service” business models (in traditional industrial sectors as well) – needs to be considered at all workforce levels at a company, and the associated potential also has to be evaluated. In view of my background in research at Karlsruhe Institute of Technology, I think it’s very important for everyone to utilize a clear methodical approach for addressing and overcoming digital challenges. However, from my many years of experience in various roles, both at IBM and at TRUMPF, I also know that ultimately only those results count that noticeably generate added value for customers and employees.

This is exactly what CBA Lab offers – a mix and interaction of methods in a strong community whose members share their best practices with each other in a way that benefits applications, or else jointly develop new approaches for dealing with new topics and issues. My goal for the next two years is to focus more strongly on applications when working on relevant topics and issues and, in particular, to offer advice and support on how our knowledge and findings can be more effectively incorporated into the organizations of participating companies.



Dr. Johannes Helbig Responsible for R&D

My key area of expertise is the digital transformation both in terms of the transformation of complex IT application landscapes and the development of innovative digital business models and business systems.

I spent nearly 15 years managing activities in this area as Chief Information Officer and Chief Innovation Officer in the Post and Parcel Division at Deutsche Post DHL. Our approach was new, as we used modular enterprise architectures as a foundation for disentangling application landscapes, and thus also as a key governance instrument for the decentralized management of flexible business initiatives. Knowledge increases when it is shared: Encouraged by multiple awards, we then teamed up with several major companies with similar views on the subject to establish what is known today as CBA Lab, whereby one of our goals here was to establish the aforementioned approach on a broader basis throughout business and industry. This issue is just as important today as it was back then. Indeed, structural flaws are punished more severely than ever before in the competitive field: Only flexible companies can digitalize their operations and management, and only digitalized companies will survive.

Transformation must originate at the top-management level. Over the next two years, I want to make use of my networks in the community in order to make the C-Level managers at our member companies more aware of the work we do at CBA Lab, and to then get these companies more involved in the associated activities. The great and vibrant exchange of ideas and information with our members in an atmosphere of trust is still the best motivation for me.

Dr. Karsten Schweichart Responsible for External Partners, Press and Communications

As a computer scientist, IT specialist, and economist, I believe in the power of enterprise architecture to creatively and effectively address all issues relating to digitalization in business, industry, and society. I have held this belief ever since 2006, when in my capacity as Chief Architect at Deutsche Telekom AG, I planned the IT aspects of the large-scale merger between Deutsche Telekom AG and what was then known as T-Online AG using what were completely new EA methods at the time. The merger was very successful, which surprised a lot of people. So this is where my passion for EA comes from. As early as 2007, I helped establish the SOA Innovation Lab, which today is known as CBA Lab. Since that time, and in my capacity as a member of the Board and a moderator, I've been working with great dedication to shape and further develop our association together with other Board members and the members of the association.

And because there will be more of everything in the future – more digitalization, more complexity, more interaction, and more data – I also want more for CBA Lab: more members, more results, more voices, and more highly skilled enterprise architecture in more and more companies and government agencies.



The **Cross-Business-Architecture Lab** is an association created by application users for other application users.

The CBA Lab works with and for its members to develop innovative "building blocks" for digital transformation, which shape and organize the architecture. Best practices that have been tried and tested in the field are shared and further refined into leading-edge results that are reliable and ready for immediate use.

The Cross-Business-Architecture Lab is happy to take on new member companies that use EAM.

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