Building Blocks for Digital Transformation

2022 Yearbook

CBA

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Introduction

Dear Readers,

We are pleased to present to you the new CBA Lab Yearbook. A lot has changed in the world over the last two years since the last Yearbook, and has made the challenges of digitization even clearer to us.

To us as a society: Could the storming of the Capitol in Washington last year have taken place in this form without the echo chamber and build-up effects of digital social media?

To us as families: could we have had our children educated during the pandemic without digital platforms for video conferencing?

To our business enterprises: Experts estimate that we jumped ahead half a decade with the digitalization boost from the pandemic. Were we sufficiently equipped for all of this? Were we all able to keep up the pace? Since the pandemic at the latest, digitization has no longer been a differentiator for the best, but a permanent transformation imperative for all those who do not want to fall behind.

The development of enterprise architecture management (EAM) has also accelerated in line with the rapid development of digitalization as a result of the pandemic. Among other things, the increasing number of new members who have joined CBA Lab makes this very clear. Without EAM and the structural transparency it enables, it would no longer be possible today to effectively manage the complexity of the continuous transformation that's being driven by systematically digitalized business systems and models. *Architectural thinking* is becoming the basic skill that *every* manager needs to transform EAM from a governance instrument into an enabler for shaping the business landscape.

In his guest article for this edition of the CBA Lab Yearbook, André Christ from LeanIX discusses this noticeable transformation and the momentum it continues to gain. Karsten Schweichhart's article takes things a step further by calling upon us all to reveal the secrets behind our enterprise architecture "tarot cards" and work to achieve a better future.

We've actually been doing this in our workstream portfolio over the last two years: With our *Next-Level Enterprise Architecture Plan* , we are developing a new approach that is people-centric rather than system-centric and focuses on the responsibility individual managers have with regard to the transformation. The approach developed in our *EA Communities & Communication* workstream makes it possible to spread

this way of thinking throughout a company in a participatory and collaborative manner, while capability maps and *product IT organizations* enable the transformation of the business models themselves. In terms of the technological implementation, *low-code* platforms make it possible to incorporate more and more people responsible for digitalization topics into specific software development activities at a company as well. In addition, MLOps enable the establishment of professionalized launch processes for *AI and machine learning* that are similar to the processes used with everyday software components. Finally, a little information about CBA Lab specifically: The world is changing significantly, and CBA Lab is also changing somewhat as a result. For example, the introduction to this edition of the Yearbook was written by two of us: That's because Johannes has been given a professorship at Friedrich-Alexan-

der-Universität Erlangen-Nürnberg and has therefore turned over the duties of CBA Lab Chairman to Joachim, after having held the position of Chairman for 15 years.

We wish you pleasant reading and exciting new insights and ideas!
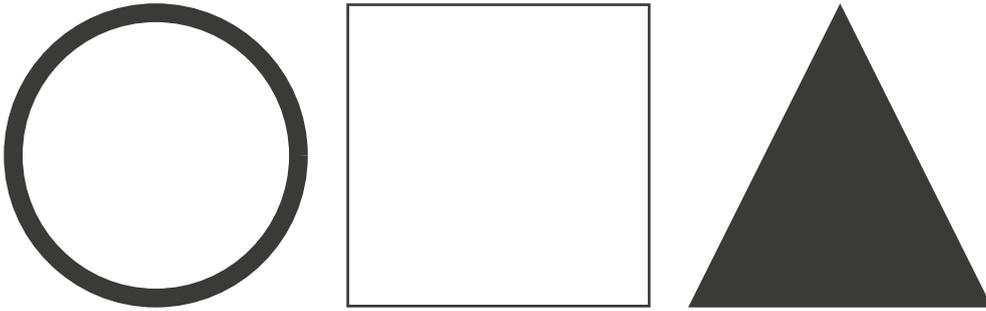Best regards,

Joachim Schmider
Chairman
Cross-Business-Architecture Lab e. V.
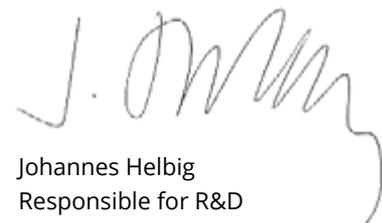
Johannes Helbig
Responsible for R&D
Cross-Business-Architecture Lab e. V.

Contents

"Revealing the secrets behind our enterprise architecture 'tarot cards'..." – A skill that is becoming increasingly critical for business success

Dr. Karsten Schweichhart

Laying tarot cards is a mystical-magical affair, and reading the cards is an art based on secrets known only to experienced card readers. If this is also how enterprise architecture works in companies today, then the time has probably come to change things. And with good reason.

————— Just about all the major trends and megatrends today also serve to promote further digitalization, while at the same time raising demand for new digitalization solutions. Whether it's COVID-19, climate change, electric mobility, global supply chains, digitalization as an end in itself, or the data economy – IT and digital components are almost always part of the solutions needed in these areas.

The more digital restructuring that is implemented in areas and fields that require an architecture, the more architects, decision makers, and stakeholders will need to be involved, along with an increasing number of business units, disciplines, and technical, financial, marketing, and legal departments, etc. Basically, every part of a company will need to get involved – i. e. the entire enterprise.

So, how can EAM help? Ideally by providing a type of structural leadership – in other words structural transparency, implications, and options – in those cases in which business and IT join forces to design digitalization approaches. Leadership can be defined in several different ways here. For our purposes, the following definition is helpful: "Basically, leadership can be defined as an influential power relationship in which the power of one party (the 'leader') promotes movement/change in others (the 'followers')" [Northouse, Peter G. (2018), Leadership: Theory and Practice].

In other words, from the structural perspective, the stakeholders mentioned above follow the EAM architects, much in the same way someone who wants to build a house relies on architects to ensure the house will be structurally sound.
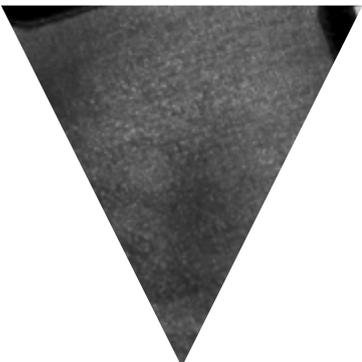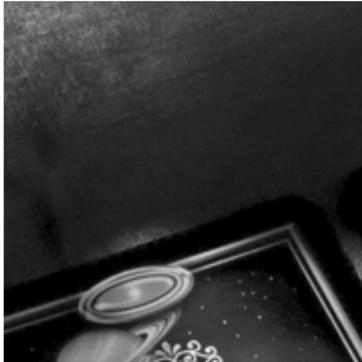
Dr. Karsten Schweichhart
Responsible for External Partners, Press, and Communications

The time has come to begin using enterprise architecture methods to develop viable and sustainable structures for addressing key issues, whereby both IT and business aspects need to be consistently taken into account here as part of a greater whole.

Still, how does one establish EAM leadership? Where does the power that causes others to follow originate? What is necessary to establish that power? Well, the first thing one needs is knowledge about EAM and a willingness to trust EAM and the experts in the field. EAM output, and its services, need to be relevant and understandable so that stakeholders will accept them. This also includes the ability to speak the language of the respective stakeholders and (top) management, which means possessing expertise in business, production, and products. One has to

be able to "interfere" in the structural design of a company in a manner that creates value, and it's also important to take on responsibility. Many new CBA Lab workstreams specifically address these requirements and issues.

A brief review of global markets, supply chains, products, and data shows just how relevant and even necessary EAM leadership is set to become for business enterprises.

Global markets

Germany and Europe are (still) con-

sidered to be the "world's equipment suppliers" in many economic sectors and are home to a large number of champions and hidden champions in these industries. Whether it's mechanical engineering, automotive production, chemicals, pharmaceuticals, medical systems, or even organ-building and wine production – German and European companies are the leaders across numerous industrial and business sectors.

Global supply chains and products

These companies increasingly rely on

global partners and suppliers on the one hand and their own ability to deliver their products to markets around the world on the other. This has led to the establishment of global supply chains in both directions, so to speak, whereby the transparency, stability, and reliability of these supply chains have become critical for business success, as was demonstrated by the pandemic over the last two years and by the Suez Canal blockage in 2021. Digitalized business processes and functions are now being used in order to ensure greater transparency, reliability, and flexibility in supply chains. Digital solutions, along with the data they provide, increasingly need to be implemented on a global level for all processes, products, and platforms.

Global data

Governments have come to view data has an important resource, which is one reason why the creation, utilization, and management of data are being regulated ever more extensively and stringently by governments around the world. These regulations are not uniform; instead, they are aligned with the values and intentions of the political leadership in each country. Europe has its General Data Protection Regulation (GDPR), which focuses mainly on personal data, and a new EU Data Governance Act is now being developed as well. Other countries, such as the U.S., China, Turkey, etc., have completely different rules and regulations that need to be complied with when digital architectures are created.

More and more companies are feeling the regulation pressure and view enterprise architecture as an important instrument, perhaps even a strategic one, for dealing with this pressure. CBA Lab expanded more extensively than ever before in 2021, and the number of inquiries from companies – from all sectors – continued to increase at the beginning of 2022 as well.

So, what does all of this mean? It means that the time has come to begin using enterprise architecture methods to develop viable and sustainable structures for addressing the issues described above, whereby both IT and business aspects need to be consistently taken into account here as part of a greater whole. Managers, and even top management teams, need to start asking the right questions and begin using enterprise architecture management tools in the same strategic way that financial management tools are used, for example.

Put simply, the time has come to reveal the secrets behind our enterprise architecture "tarot cards" and establish EAM leadership. Fortunately, CBA Lab knows how to do just that. ●■▲
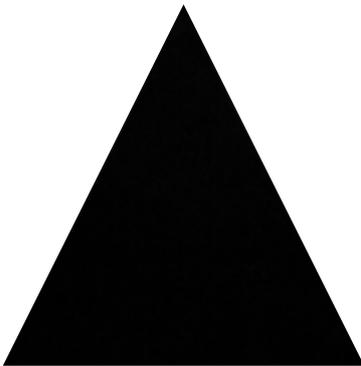
Workstream
"EA Communities & Communication"

"EA campfire": How communities make architects stronger

————— The term communities these days refers to groups of people who have a common interest. These communities can be very big and diverse (e. g. cooking communities) or very focused – on the procurement of spare parts for certain vintage cars, for example. What's relatively new here is the fact that these mostly self-organized / loosely organized groups are also able to learn collectively, develop things together, and change views and even attitudes. Not surprisingly, companies have now begun exploiting the power of communities. Among other things, the increasing implementation of agile work methods at companies is promoting the trend toward specialized communities in business organizations. These communities tend to be less hierarchical and more collaborative than the organizations in which they exist, but they also present several challenges.

The "EA Communities & Communication" workstream therefore examined how EA communities can be established and managed at companies.

Susanne Huber
Workstream Coordinator

We ourselves actually worked a little like a community. This became an option because all of our meetings were virtual.

Several of the ten companies that participated in the workstream already had some experience with EA communities, and they contributed their knowledge to the workstream. Certain approaches are also now being used to expand the scope of EA communities beyond pure enterprise architecture to include related operations in IT and business units and departments.

"We ourselves actually worked a little like a community," says Workstream Coordinator Susanne Huber. "This became an option because all of our meetings were virtual. It led to a few challenges at first, but we quickly adjusted to the new conditions. For example, we started meeting much more frequently than we would have if the meetings had been in person. The meetings themselves were very efficient, but we were also able to loosen things up by incorporating social components."

The workstream determined that the following aspects are important when setting up and managing an EA community:

- Delineate a clear "sphere of activity".
- Select the target group of individuals who are to be approached.

› Analyze work results, feedback, and suggestions from the community.
› Find a balance between business (EA) and social interaction.
› Stay focused on the needs and expectations of community members.
› Be tactful when it comes to balancing autonomy and management.
› Identify suitable analog and digital formats for exchanging knowledge.
› Ensure marketing – i. e. regular communication and dissemination of work results beyond the community.
› Pay attention to the community lifecycle that extends from the establishment and development phase to the maturing and cell division phase.
› Companies need to promote and support the formation of communities if these are to function properly.

Good community practice among the workstream participants
Workstream participants conducted research using many sources that have analyzed specialized communities. At the same time, the participants were able to contribute the experience they have gained at their own companies. Here are some examples:
One of the participating companies operates a system known as Architecture Sync, which is a community of practice that conducts working sessions on a regular basis in which senior architects from the areas of digital solutions, digital services, and digital governance get together to exchange ideas and information. The overriding goal of the community is to achieve "the participatory further development of the discipline of enterprise architecture and its methods" within the company. The community sees itself as a working group that jointly develops decisions and shares responsibility for their implementation and success.

The same company has also established another open format known as the "Architecture and Data Community Event", which addresses not only employees who work on architecture or on something relating to architecture but also all other employees who are interested or involved in architecture and data issues.

EA Jour Fixe and BAT Face2Face
Another workstream member company has organized two community events: EA Jour Fixe and BAT Face2Face (BAT = business architecture team).

The EA Jour Fixe is something like an "EA campfire". Here, business architects who are members of the enterprise architecture teams meet onsite oder remotely once every quarter for two hours. Other individuals who are involved in architecture work are also invited to attend these meetings when their particular input and expertise is needed. The meetings help align the activities conducted by the various business architecture teams and also make it possible to coordinate these activities with those carried out by the enterprise architecture team. The result is an inspiring exchange of ideas and better operational collaboration. Short presentations and descriptions are used to place current issues in the architectural context. Subsequent feedback and discussions then serve to promote further cooperation. In-person activities such as meeting for drinks, dinner, bowling, cooking courses, etc. are now being planned as COVID-19 restrictions are eased.

The BAT Face2Face meetings are also held every quarter. Two business architecture teams and the enterprise architecture team always participate in these meetings, whereby the enterprise architecture team acts as a coach and enabler. The goal is to establish an extensive exchange of ideas and

Infographic: EA communities & Communications

The infographic provides concrete advice on how to build and run an EA Community.

information and direct operational collaboration between all parties. One of the two business architecture teams manages the meeting invitations and preparations, while the enterprise architecture team proposes the agenda for each meeting.

EA Community Round Table and EA Community Channel

Another workstream member company holds a monthly EA Community Round Table and also has an EA Community Channel in MS Teams.

The company's EA department invites enterprise architects, solution architects and representatives of relevant internal EAM interest groups to the Round Table, which usually lasts about 90 minutes and is meant to promote the exchange of ideas and information within the EA community and relevant internal interest groups. The Round Table meetings are moderated by an enterprise architect and have a standard agenda.

The EA Community Channel is a closed channel in MS Teams. This channel can be accessed by the IT management committee, all IT architects, and representatives from EA-related fields such as IT security, DevOps, application management, infrastructure and cloud management, data management, etc.

The goal of the EA Community Channel is to gather and exchange information on new developments in enterprise architecture management (e. g. governance-related adjustments, EA tool adjustments, meetings and events, training courses, etc.) and share news about things like application approvals and their documentation.

Workstream summary

There is no single recipe for success when it comes to establishing an EA community and ensuring it will offer a company and its employees real benefits. The approach used to establish an EA community will depend on the context in which such a group will operate at a company. It also depends on the employees themselves and their willingness to effectively organize, manage, and protect small communities in their early stages of development. In those companies that already have experience with EA communities, the groups have now become an indispensable part of communication and collaboration on issues relating to enterprise architecture.

The workstream has published a white paper and infographic that offer interested companies specific instructions on how to establish and effectively operate and manage an EA community.
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Download the infographic:

https://www.cba-lab.de/custom/ attachments/1000366/cba_lab_in- fografik_community_canvas.pdf

Workstream
"EAM-ISMS Integration"

UNECE is driving ISMS and TISAX – EAM is helping

——————— Constantly increasing requirements in the area of information security pose a challenge to companies. UNECE R155 in particular calls upon the automotive industry and its supplier companies to establish information security management systems (ISMS) and verify these by means of a TISAX assessment (see box on p. 20).

If you had problems understanding that last sentence, you should read this article. This issue is important and is becoming more urgent due to United Nations Economic Commission for Europe (UNECE) Regulation 155 (UNECE R155), which deals with cyber security and cyber security management systems.

Most companies today already utilize several management systems (e.g. sys-

tems for enterprise architecture management (EAM), information security management (ISM), business continuity management (BCM), business process management (BPM), etc.) – and certain types of information are needed by all of these management systems at one time or another. It therefore makes sense to use EAM's "core expertise" and overarching data model to integrate the various management systems.

This is why CBA Lab has been promoting the idea of exploiting synergies between the various management systems for quite some time now. The latest example of its efforts is the **One Company Workstream** (see box on p. 21) known as "EAM-ISMS Integration". The basic idea here was to integrate EAM and ISMS in order to

help meet the increasing requirements for information security, especially in the automotive industry. More specifically, ISMS needs to be able to use the information that exists in EAM as a basis for further assessments of a given situation.

ISMS requires a lot of information that already exists in the EAM data model
The proposed type of data utilization across different systems offers various benefits:
- It ensures that the same data won't be collected multiple times.
- It increases data quality, consistency, and transparency.
- It lowers the cost for ISMS implementation and operation.
- It helps companies prepare more

Figure: EAM application basics – meta model and main relations
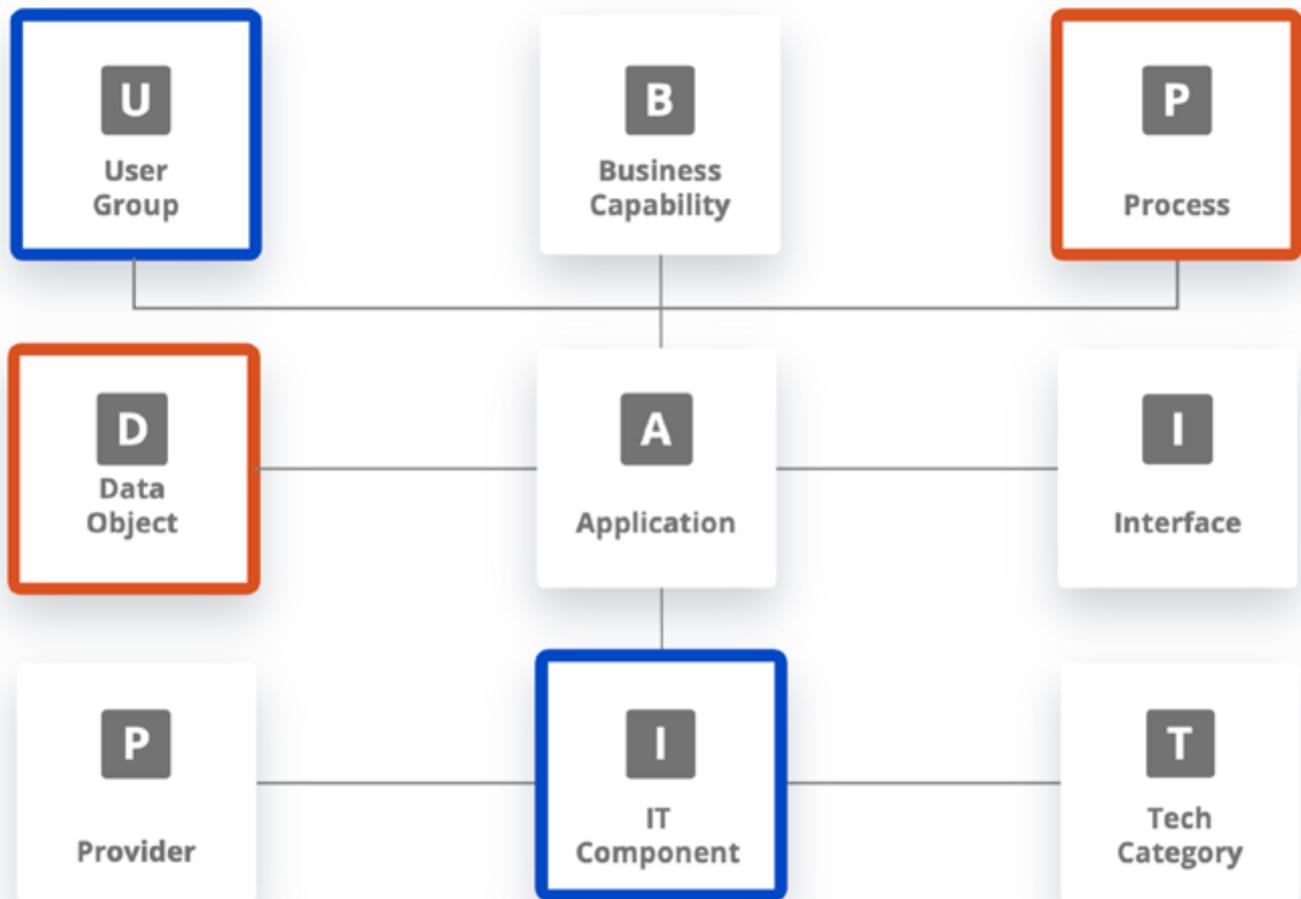
Key
Primary assets e. g. business processes and information assets
Secondary assets e. g. supporting assets

Udo Delker
Workstream Coordinator

EAM allows us to make a preliminary identification of critical objects in ISMS. The data doesn't need to be collected multiple times.

TISAX stands for Trusted Information Security Assessment Exchange. The audit criteria used for TISAX were defined in 2017 by the German Association of the Automotive Industry in order to ensure secure processing and the exchange of information between companies in an atmosphere of trust. TISAX is now in its 5th version. Unlike the ISO 27001 standard, which describes the general requirements for introducing, implementing, operating, monitoring, assessing, and ensuring the continuity and continuous improvement of information security management systems, TISAX also takes into account special requirements for the automotive industry – for example the protection of prototypes.

quickly for security audits (ISO 27001, TISAX).

A true EAM system will have all relevant and current data on business processes, data objects, hardware, software, networks, locations, and personnel – and all the relationships these have with one another. ISMS can use this information, while also taking the risk catalog into account, in order to support the risk analyses, audit preparation processes, and resulting assessments that are so important for companies – but it can only do this if everything is properly processed and integrated via an interface.

In EAM as well, business processes are critically evaluated in terms of the

business results they achieve, while data objects are classified as confidential and strictly confidential. EAM also reveals the dependencies of the various processes and data objects used, and the degree to which they are networked with one another. The greater the requirements relating to process availability, or the higher the level of protection that is defined for the associated information in EAM, the higher the protection requirement will be in ISMS.

"EAM allows us to make a preliminary identification of critical objects in ISMS," says Workstream Coordinator Udo Delker, who is also an enterprise architect at the automotive supply company Benteler. "The data doesn't need to be collected multiple times."

Workstream tasks

The One Company Workstream performed the following tasks in order to implement the basic idea:

> Formulation of the specific demands to be placed on EAM by ISMS.
> Development of a specific integration model.
> Implementation of an interface prototype.
> Description of the added value integration will generate.

Example: TISAX assessment

The example of the security audit that automotive supplier companies need to undergo if they wish to receive TISAX certification clearly shows the benefits offered by the type of EAM-ISMS integration described above. "These audits are conducted separately at each plant," Delker explains. In the case of Benteler, that means that security systems and measures at more than 70 facilities have to be audited at intervals of no more than three years. "If we can make the IT security data, which is always up to date in the EAM system, available to one or more information security management systems, we could save a huge amount of time in terms of audit preparation, and we could also lower costs," says Delker.

The workstream will be completed in 2022.● ■ ▲

One Company Workstream – one for all

The workstreams conducted by CBA Lab e. V. follow the tried-and-tested rules of our cooperation approach: If at least three member institutions wish to address a certain topic, a workstream will be established and funded for it. After checking the availability of resources and participants, the workstream team will put together a workstream plan consisting of one-day meetings or meetings lasting several days, either over a period of weeks or months, or as blocks etc.

A One Company Workstream is subject to different rules, however. Here, employees from only one company suggest a topic that they plan to work on independently. If the topic suggestion is approved, the company in question will be given a budget for tasks and assignments, support, the acquisition of expertise, workstream moderation and management, documentation, etc. The only condition here is that the results of the workstream must be made available to all member companies, and that the results should have potential value for the other members. In other words, Company A may not address a special problem that only Company A has.

The reason why a One Company Workstream is so valuable is that it enables CBA Lab to effectively address topics that are not yet, or not at the moment, pressing issues at a lot of companies, but which could turn out to be. The ISMS workstream offers a good example of this: Benteler wishes to address the problem now, but the legal situation will force other companies to do the same somewhere down the line. Benteler is thus looking and moving ahead, with the help of a budget provided by CBA Lab – and everyone will benefit from this later on: It's truly one for all and all for one.

Workstream
"EA Repository Integrations"

EA repository as a basis for cross-silo manage-ment systems

———————— Having different manage-ment systems existing in parallel makes company-wide architecture operations more difficult. A more effective ex-change of data between previous silo structures also offers advantages for in-dividual business and IT domains, such as security and software asset manage-ment organizations, for example. CBA Lab conducted a study to determine where the introduction of a data syn-chronization system makes the most sense – and how such a system can be implemented across various silos.

Silos and the silo mentality are the enemies of modern business and IT management organizations. The insu-larity they create and foster disrupts the development of new digital busi-ness models, makes business processes less efficient, blocks data flows, and prevents effective data analysis. This is a recognized fact – which is why every-one is now talking about the need for interdisciplinary work across silos.

If you examine things in more detail, however, you'll quickly notice that many management systems are also still trapped in a silo mentality.

Working together – not in parallel
The "EA Repository Integrations" workstream therefore developed approaches designed to enable various management systems to work together rather than in parallel. These approach-es explain how software asset manage-ment, information security manage-ment, business process management, and project portfolio management can benefit from the data collected in an EA repository, and also how enterprise ar-chitecture management (EAM) can use the data from the other management systems at a company.

Workstream Coordinator Thomas Schreiner, who is also Head of EAM at Fresenius Digital Technology, offers an example of how useful the exchange of data between different manage-ment systems can be. "Risk manage-

Figure: Domains examined

IT Cost Management
- Appli-cation
- Business Capability
- Project
- IT Compo-nent

Organization Management
- Organi-zation
- Person

Business Process Management
- Process
- Appli-cation
- Business Capability
- Data

Project Portfolio Management
- Project
- Process
- Business Capability
- Appli-cation

Data Privacy Management
- Data
- Appli-cation

Information Security Management
- Appli-cation
- Infra-structure Element
- Organi-zation
- Interface
- Business Capability

Data Management
- Data
- Interface
- Appli-cation
- Business Capability
- Process

Configuration Management
- Appli-cation
- Tech-nology Stack
- Business Capability
- Infra-structure Element
- IT Compo-nent
- Provider

Software Asset Management
- Appli-cation
- Infra-structure Element
- Business Capability
- IT Compo-nent
- Provider

Risk Management
- Appli-cation
- Data
- Process
- Organi-zation

Center:
- Strategy
- Organi-zation
- Project
- Business Capability
- Process
- Interface
- Appli-cation
- Data
- Provider
- IT Compo-nent
- Tech-nology Stack
- Infra-structure Element

Thomas Schreiner
Workstream Coordinator

> A company needs to know which capabilities will be needed in order to implement certain business ideas and models. Nobody has to reinvent the wheel if the EA repository's capability map can be used for this.

ment teams can use data from the EA repository that shows how old each application is, for example," Schreiner explains. This enables a more precise determination of risks that take the form of missing security updates, expiring manufacturer support agreements, or insufficient compliance with legal provisions, for example." This type of data exchange also offers benefits in the areas of cybersecurity and portfolio management. "A company has to know which capabilities it needs in order to be able to implement certain business

ideas and models," Schreiner explains, "and nobody has to reinvent the wheel if the EA repository's capability map can be used for this."

User stories highlight the benefits
Such approaches should actually be a matter of course, but IT, organization, and business silos often prevent integration, even if it only involves making lists or data visible. It's therefore not a matter of course at all for data protection officers to be able to see in their data protection tools an up-to-date list

of all IT systems so that they can identify which data is processed by which systems. If such a list could be seen, data protection officers would not only be able to provide information on IT system responsibility in each case and also know where all different types of data can be found; he or she would also be able to show which systems have processed which data for which department, unit, business line, etc.

It's also not a matter of course at the moment that someone responsible for

applications can see at just the push of a button which IT components his or her application depends on.

Integration with an EA repository offers advantages for other domains and use cases as well. CBA Lab has produced a white paper that identifies ten domains and assesses them in terms of their relevance for EA integration analyses. The white paper determined that risk management, data management, data privacy management, and software asset management can benefit the most from integration with an EA repository. Config/ITIL management and organization management were also identified as being very relevant in this regard. The benefits for IT cost management, business process management, information security management, and project portfolio management would be less extensive, but since such operations are closely related to the business side of the equation and are part of the digital value chain, greater transparency would take on greater meaning here as well.

CBA Lab has collected information on stakeholders, data contexts, expected value contributions, data that is relevant from an EAM point of view and needs to be made available, and data that needs to be consumed by EAM in each domain. A white paper presents this detailed information for all ten identified domains.

Integration of an SAM system and an EA repository offers an ideal example of the benefits that can be achieved

Domain software asset management (SAM) offers a good example of how integration with an EA repository can lead to key benefits.

For example, integrating software asset management systems such as Snow, Matrix42, etc. into a central EA repository enables the identification of a large number of application scenarios that offer benefits for both EAM and SAM. Because SAM tools generally include automated inventory solutions that continuously take inventories of the system landscape, information on the "actual state" is usually always available. If this state is automatically checked against information in the EA repository, the most recent data can always be made available for analysis without having to conduct manual data management operations. As a result, SAM data could be used to determine the technology risks associated with applications, for example, or to assess the business criticality of IT components on the basis of the application criticality.

Automated scans ensure that the actual state is always recorded and that SaaS or cloud applications are recognized in some cases, which means that EA integration can also be used as a powerful tool to gain an insight into shadow IT and to uncover maverick buying as well.

The workstream has come up with various criteria to help companies select the right technical integration tools and methods. The rule of thumb is that the more frequently data is to be exchanged, and the greater the amount of data that is to be exchanged, the greater will be the need for technical integration with scripts, ESB, middleware, or APIs. However, the cost and complexity of implementation are much higher here, and the skill sets needed are much greater, than is the case with manual integration or when RPA bots are used to manage the data exchange.

It has become clear that EAM performs even better if it's implemented across silos. The repository integration that the workstream proposed and outlined for ten different domains shows how this can work in a real setting. CBA Lab has thus demonstrated that IT and business domains that opt for integration can obtain clear benefits for their own operations.● ■ ▲

Workstream
"AI & ML"

Professional transfer of machine learning models to the productive phase

———————— "It took me three weeks to develop the machine learning model. Now, a year has passed and it still hasn't been put to use in production." This complaint by an AI developer describes the dilemma that many companies find themselves in when they conduct ML projects in order to be able to exploit the benefits of artificial intelligence and machine learning (AI/ML) on a large scale.

Some CBA Lab members also believe that certain challenges remain when it comes to transferring to production operations ML solutions developed as prototypes. Companies still have a

long way to go in terms of implementing an advanced and well established DevOps approach, the use of which is now part of the normal development and production process for non-AI/ML systems. DevOps describes the interconnections between the development process and IT operations. The current AI/ML workstream at CBA Lab therefore focuses precisely on this transition between development and production. The goal here, according to Workstream Coordinator Dr. Jürgen Klein, who is also Chief Architect at Carl Zeiss AG, is to develop an approach that meets all requirements relating to quality and the degree of automation in ML projects.

For this reason, the workstream has also extensively examined the so-called MLOps approach. MLOps is an approach that utilizes both machine learning and the benefits offered by the development and operations model (DevOps).

The workstream addresses some of the challenges that accompany the use of ML:

> Operating ML systems is more complex and expensive than is the case with traditional software because ML models require more extensive training, deployment, and monitoring, as well as periodic retraining. Version-

Dr. Jürgen Klein
Workstream Coordinator

We want to develop an approach that meets all requirements relating to quality and the degree of automation in ML projects.

ing is also demanding because ML models, training programs, and validation and test data have to be versioned as well in order to ensure clarity across the board.

> Data protection issues are often more complex and unclear with ML. For example, there is the question as to whether images of people may be used for ML model training courses. In addition, when decisions are to be made by an ML system (e. g. loan decisions), there are no clear rules regarding how detailed the decision needs to be presented to the those affected by it in order to ensure they completely understand it.

> Experienced data science and ML engineering specialists are a rare resource on the labor market. Such specialists are needed, however, in order to put together competent development teams and ensure sufficient expertise in software engineering and operations. The teams that are being used at the moment also lack expertise diversity, and this can lead to a situation in which pilot projects function well on a small scale but cannot be scaled up in terms of technical functions and organization (cross-functional teams could offer a solution here).

> Costs are often underestimated because those who calculate them fail to take into account that greater expense is involved here than is the case with traditional software projects (e.g. higher costs for personnel, data preparation, special hardware, training courses for models, waiting times on the business end, transfer to production).

> There is a lack of clarity with regard to decisions.

> Unknown dependencies exist regarding the data that is used for model training.

> There is often a lack of data, or else unreliable data is used.

Some of these challenges can be addressed by structuring ML applications using an expanded DevOps approach – the so-called MLOps approach, which expands the familiar DevOps principles in order to specifically support the development and operation of ML-based solution components in an optimal manner. The addition of new data sets, as well as the gradual degradation of model performance, requires a system of continuous training (CT) in order to keep everything stable or make improvements. Because an ML model is usually only a small but nevertheless critical component of a software system, its interaction with other components must be constantly monitored and analyzed. This also means that new models need to be checked using special test procedures such as data and model validations.

At the same time, the MLOps principle only works if the organization in question also has the required capabilities and expertise as defined by the workstream in a capability framework. The principle consists of the following elements:

People and expertise
People and the required expertise are the fundamental requirement for successful MLOps. It's not just data scientists or ML engineers who are needed, as a large number of different skills and capabilities are required. The individuals who possess such skills and capabilities need to be recruited, trained and retained by the organization.

Culture
The organization also needs to prepare its culture for new technologies. The individual participants in an MLOps initiative, as well as others throughout the organization, must all be willing to accept ML-supported processes and assist with their further development. Support from top management is also crucial here, as it is not possible for the organization to dedicate itself to MLOps until top management has indicated that it will fully support such an approach.

Processes
Changes that occur when ML is introduced always influence the processes in an organization. More specifically, processes undergo changes as a result of the systematic incorporation of data streams.

Data
Data is the fuel for an ML organization. There can be no ML without correct high-quality data. Companies often have problems with the quality of historical data, which is why basic capabilities such as data preparation, processing, and quality assurance need to be improved in order to get companies ready for ML.

Technology and infrastructure
ML is based on a complex technology stack and requires high-performance infrastructure that needs to operate in a very dynamic environment. Continuous technological innovation and maintenance are also a basic requirement for ML, which means the financial and human resources needed for this must be made available.

Risk, compliance, and ethics
The use of systems that might potentially make autonomous decisions harbors certain risks. For example, unbalanced data can lead to biased results and unethical decisions, which in the worst case could endanger people and threaten the entire organization. This presents new challenges in terms of managing risks and ensuring compliance.

The workstream has summarized its results and findings in a detailed white paper. In addition, the workstream made it possible for all participants to see which ML tools are used for which purposes at CBA Lab companies that utilize AI. ● ■ ▲
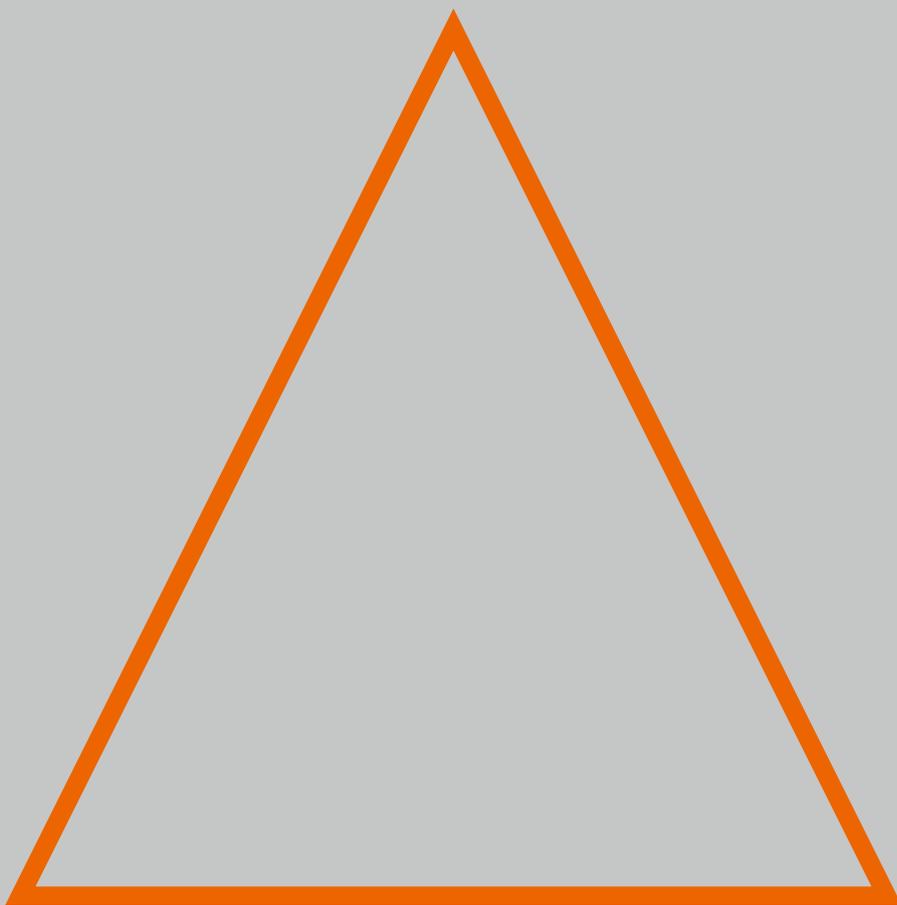
Workstream
"Low-Code"

Low-Code has high potential

———— The low-code trend harbors great potential, but relevant open questions and risks nevertheless remain. Low-code involves application development on the basis of "prefabricated" components that require little or no hard coding. Low-code is generally used in conjunction with low-code platforms in the cloud. These platforms are mostly designed as development platforms in line with the platform as a service (PaaS) model. The platforms enable users to develop turnkey applications and they also support a large number of APIs.

Low-code platforms offer the potential to significantly accelerate the development of new applications

Uwe Weber
CBA Lab Ambassador

Low-code is what enables it us to exploit all the possibilities for using data to generate information that has a real impact on business.

and services. Companies employ them both inside and outside IT departments because they are easy for people with little or no programming experience (citizen developers – CDs) to learn to use. The challenges and risks here frequently relate to issues associated with governance and infrastructure, data, and application management.

The "Low-Code" Sprint Workstream therefore extensively addressed these issues as they relate to the launch of low-code platforms and tools. The participating companies developed a detailed checklist for determining whether a low-code platform should be introduced in a given environment. The checklist includes aspects such as security and risk management, enterprise

architecture, capacity management, systems integration, and APIs. The best practices of workstream companies that use low-code were also incorporated here.

Low-code is already used in many areas ranging from operations (e. g. workflow management), IT (e. g. application management), and support (e. g. user interfaces) to HR (employee surveys), finance (e. g. reporting) and marketing (e. g. product catalogs). Consultants from Gartner say that by 2023, the number of CDs at large companies will be at least four times higher than the number of professional developers. "Citizen developers will be increasingly used in simpler projects, while more complex projects will continue to be

handled by the professionals," says Hendrik Grosser from Detecon, who organized the workstream. "Nevertheless, we also expect that cooperation between CDs and professionals will not only speed up development but also simplify the requirements management process."

The workstream members nevertheless believe that solutions are still needed for many issues, such as:

> A certain lack of understanding on the part of business users and citizen developers.
> Problems with integration as it relates to linking all relevant systems in order to ensure benefits can be fully exploited.
> Low-code systems are not always

designed for high performance, and their use can therefore become inefficient.

> Data protection and security risks need to be taken into account when low-code systems are to be used.
> Depiction of the software development lifecycle for low-code (design, test, deployment).
> Fragmentation risks due to the use of multiple specialized platforms.
> Risk of vendor lock-ins.
> Employee training for the respective platforms, and training in agile cooperation.

Summary
The workstream arrived at a positive conclusion, despite the existing issues. Performance is improving. The workstream's results white paper concluded that for simple products, low-code development is unbeatable in terms of speed and the low commitment of resources involved. Nevertheless, companies should not forgo tradition-al programming in conjunction with complex products and should use the checklist to thoroughly weigh the pros and cons in each case.

The platforms offer a broad range of instruments that can be managed centrally. The ease of use of such instruments mean they can be utilized throughout a company.

Pressure on the IT department also decreases. Because the low-code platforms are relatively easy to create, the business units and departments can design products in line with their specific requirements. This frees up capacity for IT departments, which means developers can focus on critical core applications.

Citizen developers should be supported by a community and structures that ensure data transparency. Low-code communities and centers of excellence are particularly helpful for citizen devel-opers, as they encourage people without a coding background to develop products on their own and also provide the guidance that is needed in the initial phase especially. It must be possible to locate data in a transparent process and it must also be possible to use this data within the framework of an access control system.

"Low-code is what enables us to exploit all the possibilities for using data to generate information that has a real impact on business," says CBA Lab Ambassador Uwe Weber, who initiated the workstream. ●■▲

Workstream:
"Next-Level Enterprise Architecture Plan"

New EA concept focuses on people

The Next-Level Enterprise Architecture Plan, which was developed by CBA Lab, is a concept that makes it possible to meet the requirements that IT and business managers have for structure and transparency in a digital business environment – without making any sacrifices in the way of agility or flexibility. The new thing about this concept is that it's people-centric and focuses on the stakeholder(s) in question in a given area or domain. In addition, the Next-Level Enterprise Architecture Plan involves a lot more than just IT applications and infrastructure, as data, processes, information flows, business

goals, current issues and gaps, and change projects and the impact they have on architecture and the project goals that are to be achieved in each case all play a key role. This type of "hack" divides the complex architecture of an entire organization into individual areas of responsibility that are personalized for and made clear to those who are responsible – who can also take action to redesign these areas in each case. Enterprise architecture experts put together the overall plan from the individual pieces that were previously developed jointly with business and IT departments. The EA experts also

ensure that the individual pieces fit together, or can be made to fit together, from an "end-to-end" point of view.

This approach makes it possible to give every affected area, unit, etc. its own personalized plan. Although this plan is "only" one part of the overall plan, it focuses on the point of view and the design framework of a specific area without losing sight of the big picture. As a result, the unit or department head receives a plan that is different from the ones given to the project manager, the head of security, the CIO, or the CEO.

Workstream Coordinator Joachim Schmider, who serves as Vice President Enterprise Architecture Strategic Digitalization at Schaeffler, explains how the Next-Level Enterprise Architecture Plan works, and how it has impacted Schaeffler.

Editoral Office: Joachim, your company and CBA Lab developed a blueprint for this new type of enterprise architecture plan. Can you explain the principles underlying the "Next-Level Enterprise Architecture Plan"?

Changes always occur in several dimensions and enterprise architecture plans need to take these different perspectives into account. Every stakeholder should be able to see that their own requirements are being met by such a plan, which always includes aspects such as security, data and information flows, processes, and the assignment of responsibilities. A lot can be accomplished here if one is able to personalize such a plan and align it with specific contexts, thereby ensuring that

a CEO is offered a different view of the architecture plan than a CISO or project manager, for example – even given the same data.

What effect does such personalization have?

It makes the overall picture less complex because each individual immediately sees the tasks, processes, and data that correspond to their role. Moreover, because people are familiar with the areas they're responsible for, we can help them develop the architecture that's right for them. If such individuals then notice that an adjoining or higher-level department or unit using a certain design is less effective in terms of achieving its desired results, or is even being blocked from doing so, they will usually be willing and able to discuss alternative scenarios and achieve a win-win situation together. In other words, the personalized view enables a much more collaborative and interactive approach for work on such an architecture plan, and the plan is

also quite dynamic. What I mean is that the plan is not just something that's put together once and then implemented; instead, the architecture components constantly change, but this only works if everyone involved talks to each other, develops a common language for this, and monitors all transitions and interfaces.

Enterprise architecture plans specifically define a future approach, even if they are dynamic, as you pointed out. So how do such plans fit into an agile environment?

Perfectly, actually. The development of a business and digital strategy leads to the establishment of certain guidelines and limitations within which one still has plenty of room to maneuver and act in an agile manner – that's no problem at all. Of course, it's also possible to move outside these limitations, but you need to have a good reason for doing so. You can also adjust the guidelines and limitations in line with the acceleration of learning that agility leads to.

Joachim Schmider
Workstream Coordinator

> The new type of enterprise architecture plan is not designed to create rigid barriers or limitations. Instead, these are to be repeatedly adjusted on the basis of the experience gained.

The new type of enterprise architecture plan is not designed to create rigid barriers or limitations. Instead, these are to be repeatedly adjusted on the basis of the experience gained. In other words, the architecture plan doesn't inhibit new developments but instead points them in the right direction.

You refer to the Next-Level Enterprise Architecture Plan as people-centric and no longer system-centric. How are you going to get people motivated to get involved with this major plan rather than continuing to focus only on dealing with their daily challenges?

We don't expect people to constantly address the plan, especially since an architecture plan like this is developed in fragments. If we are able to focus on the responsibilities people have while also grouping the architecture elements in accordance with the different areas of responsibility, then everything will be made clear relatively quickly and this approach will also help people effectively address their daily challenges – which is what their primary task is to begin with.

So are you saying that the information needed in each case gets to the responsible individual more quickly?

At Schaeffler, for example, we have a digital portfolio manager. The part of the architecture plan that relates to this manager presents the things that the manager needs to address. However, the manager is also responsible for ensuring that the information we need for that particular part of the plan is correct. It's a win-win situation. We help the portfolio manager by providing relevant information that makes it possible for him or her to more effectively structure and successfully complete the tasks that need to be performed, and the portfolio manager helps us by providing us with accurate information that makes the architects' work easier

– and therefore ultimately the portfolio manager's work easier as well.

It sounds like it's all about helping people in an organization achieve their goals.

Yes, that's exactly what an enterprise architect does – help people to help themselves.

You're already using this new type of enterprise architecture plan at Schaeffler. What's been your experience with it, and how does it work?

We've had very good experiences with it. Obviously, it's led to major changes for the architect team. For example, we've had to learn how to depict and communicate the complexity involved. We've now completed pilot projects with those responsible for data, business, and IT, and the results have been very promising. Our people not only accept the new type of enterprise architecture plan; they also understand the need for them to participate. We're slowly moving from the push to the pull mode. In other words, we no longer need to explain how valuable EA is, as word has already gotten out about how helpful EA can be, and we have also received requests to actively participate in complex projects, strategy development, and active governance operations.

What aspect of the Next-Level Enterprise Architecture Plan stands out for you the most?

Having to adjust our approach in line with each area of responsibility cov-

ered by those involved was a real game changer. This people-centric approach, with its roles and the automatic generation of role-specific depictions, is what makes EA something that can be felt and experienced by everyone. It's also what enables the establishment of the basic EA structure, which can then be further developed by anyone who is interested in doing so, or needs to do so. That's why the collaborative aspect is almost as important as the people-centric attribute.●■▲

Workstream
"Microsoft / Office 365 Governance"

Rapidly acquiring and using knowledge – in a Sprint Workstream

Sometimes things need to move very fast – for example when a new task has to be performed that requires the acquisition of additional knowledge, but the normal workload doesn't allow the time needed for this. Sometimes circumstances can also change suddenly and staff need to introduce new software that the company has no experience with, and therefore little information about.

CBA Lab created its Sprint Workstreams in order to help companies deal with such situations. Whereas conventional workstreams often address an issue for a period ranging from nine to 12 months, a Sprint Workstream works in a very focused manner, and usually only virtually, for a period of just a few weeks and can thus produce a result after two or three months that can be applied immediately. Sprint Workstreams involve very specific tasks that rely heavily on an exchange of the latest knowledge and experience.

CBA Lab's first Sprint Workstream addressed 15 specific questions relating to Office / Microsoft 365. These included issues associated with the tenant identity strategy that companies need to define themselves because intensive cross-company collaboration in the Microsoft world is anything but self-explanatory. The members of the Sprint Workstream also discussed questions relating to access via private devices and the allocation of resource contingents for various services, as well as the question of whether additional governance instruments are needed in certain situations.

The questions were very pragmatic:

> What proved to be reliable after the introduction of Office / Microsoft 365, and what was no longer reliable?
> Are there pain points, and if so, where?
> What special challenges resulted from the home-office strategy?
> Which 365 governance principles are needed for operations?

"We addressed Office 365 governance as a Sprint Workstream," says Benjamin Zimmermann from KUKA, "because we needed to react quickly to the rapid implementation requirements of the business units and departments due to the need for remote IT solutions for home office environments. Nevertheless, we still wanted to use proven architecture and proceed in a structured and sustainable manner – quick and dirty wasn't an option here."

The EA teams at the companies provide support to the IT and business units and departments, whereby governance no longer plays the type of dominant role that it did as recently as a few years ago. This is also why CBA Lab wants to quickly provide answers to current questions, and thus facilitate daily tasks and interaction.

Sprint Workstreams can be supported here by experienced moderators who manage aspects such as timeboxing, organization, and documentation in detail, thereby reducing the strain on team members. External expertise is also incorporated in order to obtain new knowledge more quickly. This ex-

Benjamin Zimmermann
Workstream Coordinator

We wanted to use proven architecture and proceed in a structured and sustainable manner – quick and dirty wasn't an option here.

Infographic: Office 365 from Microsoft

OFFICE 365 FROM MICROSOFT

cross business architecture lab

FUNKTIONEN& MÖGLICHKEITEN

MIGRATION & ENABLEMENT

BETRIEB & DAILY BUSINESS

"Microsoft 365 ist die Challenge für alle Legacy-Architekturen - und eine große Chance für Standardisierung"

"Coole Features, Sharing und unternehmensübergreifende Kollaboration sind en vogue, in Sachen Compliance aber nicht ohne"

„Funktionen sind das Eine, erfolgreiche Einführung das Andere – Nutzer und Bedürfnisse müssen konsequent adressiert werden"

„Zeitgemäße Lösung trifft auf gewachsene Architekturen – die Hürden und Quick Wins zu kennen, ist der Schlüssel zum Ziel"

"Covid-19 als Accelerator: Cloud, Standardisierung und Self-Service auf dem Vormarsch und als große Chance für die IT"

„Self-Service und Governance müssen sich nicht ausschliessen – aber gesteuert, gemessen und prozessual solide sein"

The infographic is poster and checklist for anyone who wants to introduce Microsoft / Office 365 at their company, or anyone who wishes to optimize the use of software that affects virtually all employees in some way.

pertise can be contributed by member companies that already have experience with the topic – in this case Deutsche Telekom – as well as by research institutes or other providers.

The Sprint Workstreams sometimes approach documentation differently than other workstreams because they seek to quickly put together documentation for the individual sessions and the workstream as a whole, and they therefore use creative depiction approaches in many cases.

Lessons learned
> Plan at least one half day per workshop!
> Remote workshops need to have a fixed agenda.
> A digital whiteboard is highly recommended for working out the results.
> Digital surveys are helpful when prioritizing issues in advance.
> If the results are documented as minutes only, a great deal of follow-up work will be necessary, which is why a results document should be produced directly in the workshop!
> Sprint Workstreams are good for rapidly enabling an exchange of ideas and information between experts.
> Sprint Workstreams require a lot of discipline from participants.

The format and content of this first Sprint Workstream's results were quite impressive. Among other things, an infographic was created that can be hung up as a poster, whereby this infographic can also serve as a checklist for anyone who wants to introduce Microsoft / Office 365 at their company, or anyone who wishes to optimize the use of software that affects virtually all employees in some way. ● ■ ▲

Download the infographic:

https://www.cba-lab.de/custom/ attachments/1000366/cba_lab_mi-crosft_office_365_governance.pdf

The workstream was called "Office 365 Governance", and its results document also references this product name, which has since been changed to Microsoft 365.

Workstream "Product IT"

Product IT and its implications for companies, IT, and enterprise architecture

_____ Product IT can be tricky. Several important questions need to be answered here, such as: How should product IT be defined? Which capabilities are needed? What are the interrelationships between product IT and commercial IT? How is the "new kid on the block" to be integrated into the company as a whole, and what do stakeholders need to pay attention to here?

The Cross-Business-Architecture Lab defines product IT as a pool of resources for all technologies and functions that are necessary for the development and execution of digital customer projects. The Product IT Sprint Workstream assumed from the outset that creating digital customer products and services (e. g. apps, digital services, predictive maintenance tools) requires close coordination between commercial IT and product IT because there are few companies that are able to begin creating digital products in a greenfield environment.

Changing business models
At the strategic business level, digital customer products and product IT lead to changes to business models in the direction of data-driven business models that not only use data as a key resource but also pass data on and sell it as well. In this sense, data becomes a core activity that accounts for a large share of added value. This change in turn requires the utilization of new organizational capabilities involving agile work organization, for example, as well as new and expanded technical capabilities.

Three questions determine actions
The workstream also offers a basic recommendation for action when implementing a product IT system. This
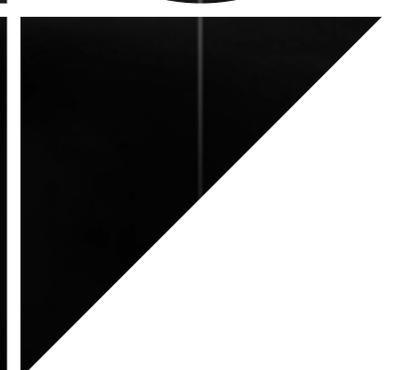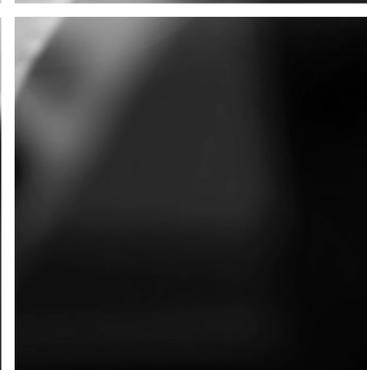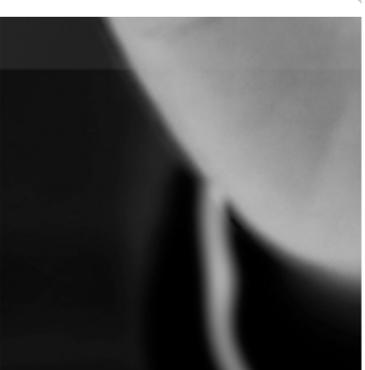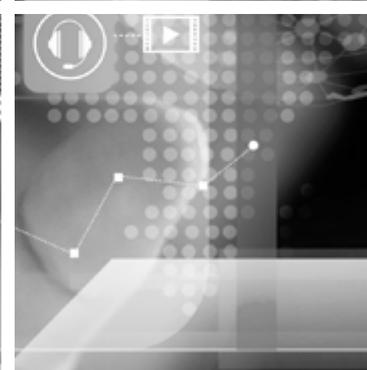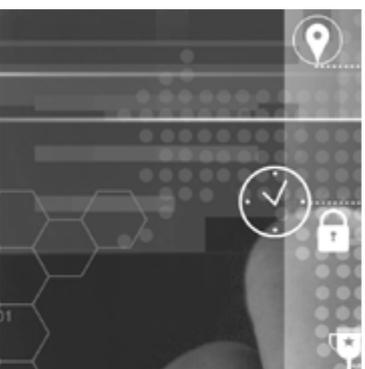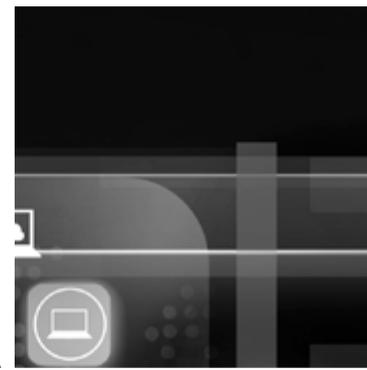
> **Christian Schwaiger**
> **Workstream Coordinator**
>
> The development, sale, and operation of digital customer products as a service basically amount to a new business model. This means certain business capabilities and even new business units need to be established, or else existing ones have to be further developed – for product development, commercial IT, and all business units and departments that are needed here.

recommendation defines questions relating to the goals to be achieved, the conditions needed to achieve them, and the associated implementation process:

What do I want to do?

- Develop a common understanding of product IT and digital customer projects.
  - Find out what the expectations of the stakeholders are.

What do I need in order to do this?

- Identify the required technical and business capabilities at your company.

- Fit/gap analysis – how fully are capabilities, skills, and degree of maturity requirements covered at your company as a whole, and in its various departments?
- How can identified gaps be closed and existing capabilities optimized?

How do I implement what I want to do?

- An idea-to-EOL process for digital customer products must be established (EOL = end of lifecycle). This will form the foundation for the process organization and the organizational

structure to be derived from it.
- Along with assigning tasks, authority, and responsibility, it makes sense to utilize an accompanying change management program for the entire company, not least in order to learn and internalize the various agile work methods.

Which requirements require which capabilities

Enterprise architecture must therefore more extensively address additional requirements and the capabilities needed to meet them. The workstream defined the following

requirements:
- Compliance in target markets; industry-specific requirements.
- Legal requirements – e. g. GDPR, Germany's Product Liability Act, Chinese Cyber Security Law.
- Data ownership – provider, customer, both? Depends on the location where the data was created.
- Invoicing and licensing models for digital customer products and their combination with traditional products; calculation of ROI and analysis of the business case.
- Market analysis and pricing, consumption measurement and monetization.
- New business models (freemium, pay-per-use, razor and blades business model).
- Digital product delivery and entitlement with on-premises installation.
- Positive value generation – cost to revenue when digital customer products are introduced.
- Sales model and incentivizing: Cost of sales in the context of margins.
- Skills at all levels relating to digital customer products.
- Customer success management – retention and loyalty in the subscription economy.

In order to identify the capabilities needed for all of these aspects, the workstream participants analyzed several capability maps from the participating companies, whereby they considered business and technical capabilities separately. The companies need to expand – and in some cases develop from the ground up – many of the capabilities needed for product IT. Examples here include retention and loyalty management, product license management, operation of digital products and services, data management, and business case evaluation.

IT needs to address the following requirements

In general, commercial IT specialists need to expand their expertise. They need to obtain a better view of what's going on outside their company so that they can better understand customer requirements and help the company meet them. It's clear that commercial IT and product IT must complement one another. The respective specialists need to decide among themselves which of them should take on which tasks for the development and operation of digital customer products, and in which situations. Here, three basic questions need to be answered first:

- What types of demands are placed on commercial IT in connection with digital customer products?
- In which areas should commercial IT be involved with digital customer products?
- What expectations do the company's

business units and departments have?

"The development, sale, and operation of digital customer products as a service basically amount to a new business model for many companies," says Workstream Coordinator Christian Schwaiger, who is also Head of Enterprise Architecture at KUKA. "This means that certain business capabilities and even new business units need to be established, or else existing ones have to be further developed. This also applies to product development, commercial IT, and all business units and departments that are needed here."

The workstream produced an extensive presentation and detailed documentation

The workstream has since been concluded, and CBA Lab members now have access to an extensive presentation of the results that also includes a video. The work and results have also been documented in detail. The participating companies analyzed examples from their own and other participants' organizations, presented examples of innovation processes, examples of how agile teams are organized, and much more. All of this can help companies develop and launch their own digital customer products.●■▲

Outlook

New topics at CBA Lab
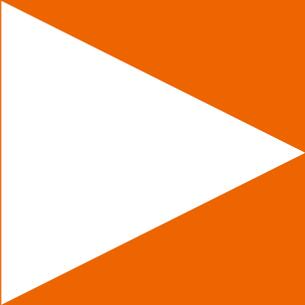
——————— As this Yearbook is being produced and we report on our results and experiences from the last two years, the enterprise architecture organizations at our member institutions are already facing new challenges that we plan to overcome together. The following section offers an outlook for EA on a global scale, EA program launches, and EA in top management.

EA global – creating regional-specific architectures through the decentralization of services
Global supply chains, global distribution of the most interesting markets for products that need to work in the same way all over the world – in the past, customs laws, exchange rates, and a few ships were enough to ensure profitable international business. The Hanseatic League first pointed the way forward here and introduced several standards – e. g. for weights – that allowed commerce to develop relatively smoothly.

These days, digital services and data move along with goods – but services and data are not very standardized on the global level. Even worse is the fact that services and data are subject to different regulations in different regions, as national governments and free trade associations have come to recognize data as a valuable commodity – in a political sense as well. The technical and regulatory framework is also often very specific to certain regions or countries (e. g. the Tencent ecosystem in China). In other words, it has become increasingly important that products and processes be made suitable for use on a global scale. There is no longer one single global architecture, if there ever even was one to begin with. Large and abundant markets like the U.S. and

China demand that digital products be designed on the basis of their regulations. The question is how enterprise architecture management (EAM) can help improve this state of affairs.

We will address the challenges associated with regional architectures using the different regulations in various regions as a basis for defining IT and business capabilities. The exchange of information between regions will be important here, but how should this exchange be structured? Will something like a data visa ultimately be required?

EA program launches – establishment and expansion of EA at new companies and in new application areas

We have frequently addressed the question of EA program launches in the past, but this issue remains important, as it always affects current developments. This is due to the way the issue impacts more and more areas and becomes more dynamic over time. It also has to do with the growth of CBA Lab, which welcomed five new members in 2021 from sectors in which EA has hardly been used to date, which means the topic is more or less completely new in those sectors. Here once again, we are faced with questions relating to effective implementation, tooling, and the adjustments that need to be made to company cultures.

At the same time, EA continues to follow in the footsteps of digitalization and thus continuously expand into new areas: The original field of IT systems, applications, and data have long since been joined by business capabilities and processes. Bridges are now being built to product IT (see the article beginning on p. 42), production, logistics, real estate, and other digitalized artifacts and approaches. So, what types of bridges can EAM build? How can tried-and-tested procedures be used to provide support in areas in which they have never been used before? Should engineers be used here instead of computer scientists?

EA in top management – EA as a component of strategic management

How do I manage a company successfully? This question has been asked for generations – and answers can be found in countless management books, theories, and doctrines. The three production factors of raw materials, labor, and money have a major impact on a company's financial figures, which have also become increasingly important. Whereas the scorecard approach weighted several figures more or less equally, the annual financial statements, or even quarterly results, now basically determine whether a company's performance will be viewed as outstanding or poor. The enablers

here are revenue, costs, margins and, increasingly, customer satisfaction. The prevailing wisdom is that IT needs to function properly and remain secure, and all at a fair cost, while EAM is something that most CEOs and management boards aren't even interested in.

Nevertheless, upheavals are beginning to occur and new opportunities are arising that will make it possible to change this situation. The disruptions to global supply chains have once again put the focus on raw materials as a factor of production, as access to materials, their availability, and their on-time delivery are no longer a given. And what about the new raw material – data – which is needed for all of the digitalized products and processes? HR has traditionally been responsible for making the raw material of "labor" available; in the case of digitalized capabilities, IT has long since stepped in. There is already enough evidence to justify using IT and, above all, EAM, as strategic tools at the top management level. So, the key issues are: Which questions can be put to a strategic EAM organization? What type of answers can a strategic EAM organization provide? What type of knowledge and conclusions can a strategic EAM organization deliver to pave the way for successful data-driven business models? CBA Lab is finding the answers to these questions.●■▲

Coyo app

CBA Lab's digital home – easy to access via the app

———————— CBA Lab has developed an app known as "CBA Lab Coyo" that offers members of the Cross-Business-Architecture Lab fast and direct access to the Coyo digital work platform at any time with just a tap on a smartphone. The platform presents the areas covered by the current workstreams and the results of all previous workstreams. It also has CBA Lab publications on file and offers news from CBA Lab, interesting reports and stories about EAM, and information on upcoming conferences,

events, etc.

The app is available from the public Google Play Store and the private German Apple Store. You can find both app versions by using the following link:

https://mobile.coyoapp.com/cba

If required, the app can also be deposited in the Apple stores of other countries. ● ■ ▲

App download:

https://mobile.coyoapp.com/cba

CBA cross business architecture lab

Timeline

News

Christian Schwaiger
28.02.2022, 12:18

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Gartner: 2022 Leadership Vision for Enterprise Architecture

Gartner hat die strategischen Top 3 Prioritäten für EA Leader benannt. Details findet Ihr im anhängigen Slideck.
Executive Summary:
Weiterlesen

The Future of Business Is Composable - Gartner Keynote
gartner.com

PDF **2022-leadership-vision-for-enterprise-a...**
PDF • 293 KB

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Kerstin Schweichhart > Aktuelles
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Round Table Q1-2022 mit Vorstandswahl
22. März - 23. März

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EA Community & Communication

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Timeline

Dokumente   Alle   Info

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Guest article
The challenge of continuous transformation

Enterprise architects in new key positions

Thinking in terms of linear processes no longer works: The digital transformation is not a one-time event and there is no completion date. The number of changes that are occurring and need to occur, and their complexity, are increasing at a fast pace. Permanent change is becoming the new normal. By utilizing a modern EAM approach, enterprise architects can play a key role in shaping this paradigm change.

Whether it's cloud migration, large-scale projects like the SAP S/4HANA transformation, increasing decentralization of offices and workstations, new security vulnerabilities, rising customer expectations regarding a seamless customer experience, or growing pressure caused by competition – the digital challenges companies are now facing are tremendous, and more and more are arising each day.

Companies are developing into technology enterprises in just about every sector and industry, as software has now become the distinguishing feature that can set one business apart from the rest. IT is thus now more important than ever before when it comes to safeguarding the future viability of a company, and its business success.

The goals here are to minimize costs, eliminate potential risks, and promote agility in a targeted manner. All of this is just the tip of the iceberg, however, and hidden below it is the real challenge, which involves managing the ever-growing complexity of software and its components.

As an example, consider the fact that most companies already can no longer maintain a coherent overview of all the SaaS applications that employees have procured and implemented without any central coordination. Industry analysts generally agree that the costs involved here will continue to increase and will

end up accounting for more than half of all public cloud expenditure in the future[1]. In addition, the highly integrated ERP landscapes, with their numerous dependencies, are making the required SAP S/4HANA transformation a herculean task for companies. IT teams are struggling to secure API endpoints and increase efficiency by reusing APIs. There are already more than 24,000 public APIs on the web today[2] – and this number is increasing.

IT landscape experts are in greater demand than ever before
Given these circumstances, most companies have come to understand that they need to have specialists who can design architectures for IT landscapes. However, as the discipline becomes more important, companies now also expect more from enterprise architects. The important thing in the future will be to determine whether a particular architecture is good enough in a given situation and environment: Does the architecture allow for the fast and flexible incorporation of new technological requirements? Is it geared toward actual business value? Does it make resilient systems available and ensure the capacity to act at all times? And, ultimately, does it help enable the establishment of a new culture of continuous transformation at a company? Additionally, there is the question as
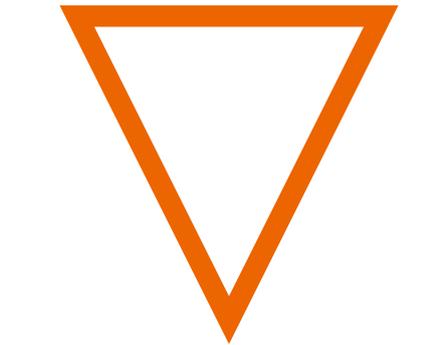
to what form such a culture should take. For a start, there has to be a clear commitment to customer focus as one of the top priorities, if not *the* top priority. In such a culture, innovation and development is no longer thought of in terms of projects but instead in terms of products whose status is consistently clear. Companies always have a comprehensive and up-to-date overview of software that they have purchased, leased, or developed themselves. All of this detailed information is available to all relevant stakeholders via a central source. This not only makes it possible to make data-driven decisions at all times; it also leads to the creation of a common language for business and IT – and thus the conditions needed to ensure more effective collaboration with regard to the company's business objectives and targets.

Some of this may sound utopian, but it's not.

Architects can make permanent transformation possible
Data-driven enterprise architecture management (EAM) helps companies organize, plan, and manage their IT landscape in all of its increasing complexity and within the context of a company's business capabilities. In this sense, it also paves the way for a company's continuous transformation. Three aspects are crucial if such a solution is to be successfully implemented: transparency, context, and collaboration.

If you want to ensure comprehensive and consistently up-to-date **transparency** with regard to all utilized systems and their interdependencies, you need to be able to collect information automatically. The more data that can be linked via integration with sources such as systems for process modeling (e.g. Signavio) or IT service management (e. g. ServiceNow), the better will be the decisions that are made in a particular area – and it will also be possible to implement the decisions in other areas.

Evaluating and taking stock of the IT landscape is only the first step, however, as information must also be made available in an aggregate form and in the right **context** . It is in fact the direct linking of data with a company's business activities and products that

André Christ
LeanIX CEO

Companies now need to change the way they deal with change, as the establishment of a culture of continuous transformation is the only way to ensure a company's survival and future success.

transforms a simple depiction of an IT landscape into a valuable foundation for decision making. The classification of business capabilities in particular generates the type of added value that is possible with the pace-layered application strategy: This classification of business capabilities as either innovations, process differentiations, or commodities enables the close coordination of business strategy and IT strategy.

A modern EAM system is more than just a discipline for specialists, since data that is easily accessed integrates all relevant stakeholders and promotes

collaboration at a company. In their capacity as a single source of truth, modern EA tools offer a central point of entry into a company's data world and also establish a common language for business and IT. It's only after everyone understands each other that real cooperation becomes possible.

EAM that benefits everyone
The time when enterprise architects existed in an ivory tower is long gone. When experts for IT landscapes utilize a modern approach in their discipline, they can take on a decisive role when it comes to achieving business success

and safeguarding the future viability of their company.

❯ Creating a better user experience
Major elements of the customer experience and employee experience are now created using software. Those who have extensive and up-to-date information about the availability, utilization, and influence of software can continuously improve its performance.

❯ Accelerating the transformation
Every transformation begins by taking a look at the current situation, and every change that is then made impacts the

entire company. It doesn't have to be the case that 70 percent of all transformation projects fail[3]. A common language for business and IT enables transformations that are both rapid and successful.

> ### Identifying and managing risks
Whether it's compliance violations, security vulnerabilities, or system failures – software is critical to a company's operations, which means companies need to know all about the software they use, as well as all the interconnections involved. Those who can identify and depict potential risks at any time will also be able to stop a threat like Log4j vulnerability in just 48 hours[4].

> ### Enabling the use of intelligent technologies such as SAP S/4HANA
SAP S/4HANA, with its postmodern ERP approach, offers many opportunities to companies. Migration proves to be difficult for many, however, because S/4HANA is not simply a new technical release but instead also leads to the transformation of a company's entire

business operations. The mutual dependencies in the SAP landscape and IT environment pose the biggest challenge for most companies. It is precisely in this context that enterprise architects can become real game changers – but at the moment only half of them feel that they have been sufficiently incorporated into the SAP S/4HANA transformation[5]. Valuable potential is thus being wasted.

Innovative solutions for the companies of the future
Data-driven EAM can shape the future. In order to enable continuous transformation, however, companies need to look beyond their architectures and examine two other areas:

On the one hand, if you want to create an optimal employee experience, you need to ensure that employees can easily access all relevant SaaS applications. Without automated management of applications that are mostly procured in a decentralized manner, it becomes almost impossible for companies to

create transparency and fully exploit the potential offered by innovative solutions. At the same time, in-house software development is becoming increasingly important. Agile methods and DevOps initiatives improve development work but also make everything more complex. This makes it difficult for teams to figure out the actual value that their work generates for the company. This is where value stream management comes in, as it makes the value stream within an organization measurable and establishes a connection between code and the business result. This relatively new discipline will fundamentally change the way software development works.

As is the case with EAM, the efficient management of an SaaS portfolio, as well as value stream management in software development, requires the interplay of extensive transparency, information in the right context, and close collaboration in order to ensure a successful permanent transformation. Companies now need to change the

way they deal with change, as the establishment of a culture of continuous transformation is the only way to ensure their survival and future success.

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1   https://www.fiercetelecom.com/telecom/spending-public-cloud-will-more-than-double-by-2023-report

2   https://www.programmableweb.com/apis/directory

3   https://www.mckinsey.com/business-functions/transformation/our-insights/why-do-most-transformations-fail-a-conversation-with-harry-robinson

4   https://www.leanix.net/en/blog/log4j-vulnerability-log4shell

5   https://www.leanix.net/de/download/involvement-of-enterprise-architects-in-sap-s4hana-transformation

The author

André Christ is a business information systems specialist and CEO and co-founder of LeanIX. The German IT company operates a Continuous Transformation Platform® that offers innovative solutions for enterprise architecture management, SaaS management, and value stream management. Before co-founding LeanIX, Christ worked for many years as an IT consultant at the world's largest logistics company, DHL. His entrepreneurial vision enabled him to firmly establish LeanIX as a global tech enterprise within a ten-year period, and the company now works with more than 650 prestigious clients around the world.

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Guest article
Trends in enterprise architecture management

9 theses from the scientific community

Enterprise architecture management (EAM) is a topic that is discussed and analyzed extensively outside the realm of practical application as well. After the Zachman Framework was published, researchers and academicians began to examine the topic more closely. Studies from the last three years were examined for this article in order to identify the areas research has focused on over the last few years, as well as the research trends that have emerged. This analysis yielded nine key areas of research that examine new approaches, old familiar problems, and incremental further developments (see chart).

1. Business, technical, and social transformation: EAM as an enabler
Driven by new potential and trends in actual operations, research groups are particularly interested in finding out how EA models can be utilized and expanded for new use cases. For example, one research group examined how EA can support compliance with data protection regulations (Burmeister et al. 2020). Other examples relate to software variability management, digital twins, data-driven business models, smart cities, and even sustainability. Research groups also frequently develop metamodel extensions in order to incorporate these use cases into EA

modeling and thus into their further management as well. One systematic review identified trends for other use cases in the areas of cloud computing, sustainability, and the Internet of Things (Gampfer et al. 2018).

2. Never-ending story? Measuring the value of EAM and communicating this information throughout a company
The lack of communication on the specific value EAM brings to the table continues to be a problem in terms of EA commitment – i.e. the extent of dedication displayed by participants in EAM initiatives. That's why researchers

are also now focusing more on calculating and communicating this value. Recent studies on the benefits offered by EAM do in fact show that EAM has both an indirect and direct positive impact on profitability, compliance, risk management, project success, and decision making (Niemi and Pekkola 2020). Nevertheless, the calculation of a specific return on investment remains a challenge that has yet to be overcome. One systematic review has shown that measurements here are usually based on subjective values (Abdallah et al. 2021) and are therefore not really suitable for objective calculations. EA principles have also been analyzed as a necessary instrument for achieving EAM objectives and targets, which demonstrates at least an indirect value contribution for EAM. One study developed a label that can be used to show the success of EAM. This label is similar in appearance to the energy label found on electrical appliances. The label divides the progress made with EAM into different categories and thus visually depicts the actual status of EAM at a company (Schilling et al. 2019).

3. Mutual beneficiaries: EAM and agility at companies

As the trend toward greater agility at companies in general continues, researchers who study EAM are also taking a look at agile and adaptive approaches. On the one hand, some stud-

ies show that EAM can support agility at companies by establishing the right IT capabilities. On the other hand, agility in EAM itself is also being examined. Here, researchers have presented principles that can make EA agile. Studies in this area emphasize the fact that EAM can react quickly to changes if EA communities are called into action. Another agile principle involves the simplicity of modeling that should be designed in a standardized and user-focused manner (Cammin et al. 2021). A systematic review in this field describes agile EAM – in connection with sustainability as well – as a trend worthy of further research (Gampfer et al. 2018).

4. Not outdated approaches: Ways to deal with changes to EA models

Another field of research analyzes changes to EA models and the use of new models. The focus is on how EA models and metamodels can be maintained at the moment. Application monitoring is used here to update EA models with an automated system (Kleehaus et al. 2019). One study examined how the lifecycle of a metamodel might be structured in order to ensure that changes to data can be managed and documented. Other studies have explored how changes in EA can be used to identify changes in a company itself. For example, EA models can be used to identify consolidation efforts and outsourcing activities and
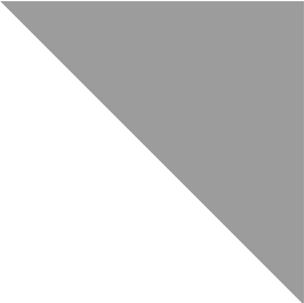
uncover migrations and even shadow IT (Fürstenau and Woo 2019). One systematic review here has determined that the issue of how up to date a central EA repository is will become more relevant within the framework of trends such those relating to smart industry (Vernadat 2020).

5. The big picture: The challenges of EAM in actual operations

Many research groups continue to examine the challenges associated with establishing EAM. Several studies highlight these challenges from different perspectives. In some cases, the studies analyze EA commitment, which was mentioned earlier. To this end, obstacles on the strategic level are examined (e.g. fluctuation of important stakeholders; lack of a budget), and obstacles on the tactical level (e.g. a change management system that doesn't function properly; a lack of trust) are addressed as well (Kotusev and Kurnia 2019). Another approach to examining the challenges focuses on the issue of EAM

Figure: Results in the order of the number of research groups involved

1. Unternehmerische, technische und gesellschaftliche Transformation: EAM als Enabler

2. Never Ending Story? Den Wert von EAM messen und im Unternehmen vermitteln

3. Gegenseitige Nutznießer: EAM und Agilität in Unternehmen

4. Kein alter Hut: Umgang mit Veränderungen in EA-Modellen

5. Das große Ganze: Die Herausforderungen von EAM in der Praxis

6. EA Strategie: Regelmäßige strategische Dialoge zwischen Fachbereich und IT als Erfolgsfaktor

7. Towards a future EA: New Tech zur Weiterentwicklung der EAM-Aufgaben

8. Capabilities im Lead: Dynamische EA Fähigkeiten für den EAM-Erfolg

9. Governance, Governance, Governance: Die Wichtigkeit von Entscheidungsstrukturen im EAM

= Forschungsgruppe

legitimation (Kohansal and Haki 2021). The study of the practical challenges often involves examining individual companies and analyzing the development of EAM in their organizations in detail. One study extensively examined the challenges that arise when EAM is used to support the digital transformation (Hafsi and Assar 2019): Some of these challenges are of an organizational nature and have to do with stakeholders that are engaged to different degrees – and the methods used to coordinate them. There are also contextual challenges, such as a lack of knowledge of technology trends.

6. EA strategy: Periodic strategic dialog between business and IT as a factor of success

Another research area examines cooperation between business and IT units and departments within the framework of EAM. Because EAM looks at the entire company, EAM stakeholders are to be found at different hierarchical levels and in different functional areas. This can lead to conflicting goals and interests among the stakeholders, whereby the studies have found that the partnership relationships rather than hierarchy should underly collaboration (Kotusev and Kurnia 2019). Other publications have examined how EAM can be aligned with a given business strategy. This can be done by identifying the artifacts needed for this in the EA models. A solid understanding of the business and a common language are also important foundations for effective cooperation. Business IT roadmap workshops are often cited as a support tool here (Cammin et al. 2021). It can thus be concluded that a periodic strategic dialog between business and IT on the basis of a common language, as well as the permanent incorporation of the results in an EAM management system, represent important factors of success for both EAM and IT strategy.

7. Towards a future EA: New technologies for the further development of EAM tasks

Another field of research addresses the use of new technologies or technological concepts for supporting an EAM system. Here, research groups discuss the use of big data or the Unified Modeling Language (UML). One innovative field of research examines the use of augmented reality (AR) as a means of visualizing EA models. More specifically, researchers here analyze the use of AR for EAM in general by showing different models to different stakeholders. EA models are also modeled as cities in order to make them more understandable to the stakeholders (Rehring et al. 2019).

8. Capabilities: Dynamic EA abilities for successful EAM

The EA capabilities needed to ensure successful EAM are the subject of another field of research. The term EA capabilities generally refers to dynamic capabilities that enable companies to utilize existing resources in order to adapt to changed conditions in a proactive manner and thus support their own strategy (Van de Wetering 2019). The capabilities are divided into the categories "EA sensing," "EA mobilizing," and "EA transformation." EA sensing refers to the ability to recognize the value of new technologies for a company and then derive new business models or process support instruments from that information. EA mobilizing involves the evaluation, prioritization, and selection of new IT and business solutions, as well as the use of company resources for their implementation. EA transformation relates to the ability to manage the transformation of business processes, services, and the IT landscape. Various studies have analyzed the value such capabilities have in terms of firmly establishing EAM at a company, and increasing a company's agility (Pattij et al. 2019).

9. Governance, governance, governance: The importance of decision-making structures in EAM

In a constantly changing world, it's important for companies to be able to react rapidly to change. The acceptance of a decision also hinges upon whether those who will be affected by it participate in the decision-making process. One study concludes that EAM decisions should be made collectively throughout a company, rather than just by a central authority (Grave et al. 2021). Another study presents a specific method of decision making that shows how the business and IT organizations can talk about how to integrate shadow IT into central information systems (e.g. ERP systems), after which a joint decision is made (Huber et al. 2020). In any case, well defined decision-making structures make work easier for those involved in EAM, and thus contribute to successful EAM.

Summary and outlook

The results presented here show that research discussions tend to focus on the utilization of EAM for additional application scenarios and use cases. This is definitely related to the issue of demonstrating the value EAM can have for a company in a given situation. Here, specific use cases can reveal the added value of an initiative more quickly than was possible in the past, and quick wins can also be achieved, thereby increasing the number of EAM advocates at a company as well. Researchers are also taking important steps in terms of supporting agility and expanding EAM to include agile methods. Along with the use of new technological approaches, however, researchers are still focusing on fundamental questions, such as how to deal with challenges in daily operations or promote and improve productive cooperation between various stakeholders – especially those in business and IT organizations. One remarkable aspect here is the fact that research is very much concentrated in Europe. The question thus arises as to whether EAM is discussed on other continents

using different categories, or if EAM is instead integrated into discussions on other topics. As IT continues to spread out into all areas of a company, EAM will become more and more relevant over the next few years, and this will be reflected in research activities as well. The complexity of IT landscapes will increase further as a result of trends such as the Internet of Things and smart technologies. As new technologies emerge and new opportunities open up for companies as a result, EAM will need to continue to support fast decision making and analyses. The challenge here will be to figure out how EAM can be applied in a manner that creates value for business and IT at the lowest cost possible, and for the company as a whole. ● ■ ▲

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Both are also doctoral candidates at the Konstanz Institute of Process Control in cooperation with TU Bergakademie Freiberg

Bibliography:

https://www.cba-lab.de/literaturverzeichnis-trends-im-eam

The Board: In their own words

Joachim Schmider
Chairman

> **EAM combines, structures, and orchestrates all aspects of the digital transformation. EAM methods enable communication and collaboration in line with needs and stakeholder interests – the ideal foundation for informed decision making.**

Why I'm an enterprise architect.
I'm an enterprise architect because I am motivated by the idea of shaping and implementing complex target architectures by taking into account business operations, processes, data, and IT, as well as market potential, market constraints, and technological innovation. All of this creates the strategic-tactical framework for the successful digital transformation of entire companies.

How I fulfill my role in my company.
By bringing a lot of passion to my work in an outstanding team that displays the diversity needed in terms of skills, experience, culture, and mindset.

What I'm looking for at CBA Lab, and what I have found there.
I'm looking for and have found experts with a similar motivation and mindset. Together, we are working to further develop the potential offered by EA as a strategic-tactical discipline – but we also learn from one another and inspire each other in accordance with the principle that knowledge is the only thing that increases when it's shared.

What people (still) don't know about me:
My great interest in sports stems from my time running 800-meter races in the past. However, I'm also a passionate golfer and I like to read articles and books about new and innovative technologies and research projects and exciting and inspiring people.

Christian Schwaiger
Deputy Chairman and Association Secretary

> **Our goal as enterprise architects must be to create substantial added value for a company and its customers by implementing a holistic and value-generating digitalization program.**

Why I'm an enterprise architect.
I'm an enterprise architect because I want to make the complexity of digitalization manageable for companies and also make it possible for them to control it. Consistently addressing all levels of enterprise architecture (including business operations, apps, data, and technology) and helping to shape these levels while ensuring an optimal balance between speed, sustainability, and cost efficiency are challenges that I also find very exciting.

How I fulfill my role in my company.
With enthusiasm, a focus on optimization and lean governance, and an efficient, effective, and passionate team.

What I'm looking for at CBA Lab, and what I have found there.
I really like the inspired exchange of ideas and information with like-minded people at CBA Lab. I also enjoy sharing experiences and working together with such people to address cross-sector architecture challenges. The decades of knowledge and experience that can be tapped into at CBA Lab, not to mention the points of view of all different industries and business sectors, make for a unique and outstanding environment.

What people (still) don't know about me:
I like to see new places and meet new people when I travel or ride my motorcycle – I find that very inspiring. I also enjoy reading a good book or watching a good movie – and I like cooking more than cutting up the ingredients I cook with. I like playing basketball and going to the gym more than jogging, and prefer sunshine and the ocean to mountains and snow when I go on vacation.

Dr. Arun Anandasivam
Treasurer

> The "VUCA world" and its complexity can only be effectively managed if technical, economic, process, and organizational aspects are looked at together. EA offers enough tools to address all of these aspects and continuously improve them.

Why I'm an enterprise architect.
Because I'm convinced that strategic decisions in an IT-driven world always need to take account of the big picture – and enterprise architects and EA tools are what make that possible.

How I fulfill my role in my company.
I'm part of the Global Architecture Steering Board, where I represent the interests of the digital platform used at TRUMPF. This gives me the opportunity to help shape EA topics, issues, and decision-making processes.

What I'm looking for at CBA Lab, and what I have found there.
CBA Lab provides an active community for discussing EA issues and learning more about points of view other than those that one is familiar with from their own company. This is how I'm able to get a reality check on whether or not we're moving in the right direction with TRUMPF – it comes in the form of feedback by other CBA Lab members.

What people (still) don't know about me:
I sometimes look at my own private life from an EA perspective: Both my wife and I work and we need to manage that along with raising two children. When I think about that, I realize that I as one person manage things in my private life the way an enterprise architect and solution architect would (defining "processes" / daily routines, coordinating the different "departments", coming up with solutions when a child misses school or is sick, planning strategically for the kids' next 9-12 months...).

Prof. Dr. Johannes Helbig
Responsible for R&D

> Since the pandemic at the latest, digitalization is no longer a differentiator for the best, but a permanent transformation imperative for all those who do not want to fall behind. Without EAM, the complexity of this transformation can no longer be managed.

Why I'm an enterprise architect.
My work at the moment focuses on digital sovereignty. Enterprise architecture supports company sovereignty by making freedom of action and design options in the transformation possible to begin with.

How I fulfill my role in my company.
I also fulfill my role by serving as a moderator at the company because EA structures help enable action to be taken in numerous areas of responsibility. The concept of enterprise architects as "navigators of the digital transformation", which we came up with at CBA Lab, still best describes what we do in my opinion.

What I'm looking for at CBA Lab, and what I have found there.
CBA Lab has truly become a community that offers the best things that a community can provide. At CBA Lab, I've looked for and found the willingness and determination to make changes, and I've also found a deep foundation of trust for the exchange of experiences and expertise, as well as inspiration for new approaches.

What people (still) don't know about me:
There have been architects in my family for generations ("real" architects). I therefore wonder whether it might be possible to inherit a passion for design and structure.

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

" EA gives companies a competitive edge in an increasingly digitalized economy. As a management discipline, EAM will become just as relevant as financial management is today.

Why I'm an enterprise architect.
Because it's the only way to shape digitalization – and thus the future – in a structured manner.

How I fulfill my role in my company.
When you're an enterprise architect, you also always act as an innovator – with many "arrows in your back".

What I'm looking for at CBA Lab, and what I have found there.
I've been looking for and found a network of architects and EA truths – in other words, the things that really function, and function really well. It's true: You can find both here – and much more as well.

What people (still) don't know about me:
I give presentations on seals and nature conservation onboard a cutter in the Baltic Sea.

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 welcomes the participation of companies and organizations that utilize modern applications and systems.

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