OPERATIONAL

Networked business design in the context of innovative technologies: Digital transformation in financial business ecosystems

DENNIS VETTERLING | ULRIKE BAUMÖL

ARTIFICIAL INTELLIGENCE

a **wipro** company

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

CONTENTS

TECHNOLOGICAL

OPERATIONAL

ORGANIZATIONAL

DEAR READER,

As the financial services industry continues to embrace transformation, advanced artificial intelligence models are already being utilized to drive superior customer experience, provide high-speed data analysis that generates meaningful insights, and to improve efficiency and cost-effectiveness.

Generative AI has made a significant early impact on the financial sector, and there is much more to come. The highly regulated nature of our industry, and the importance of data management mean that the huge potential of AI must be harnessed effectively – and safely. Solutions will need to address existing pain points – from knowledge management to software development and regulatory compliance – while also ensuring institutions can experiment and learn from GenAI.

This edition of the Capco Journal of Financial Transformation examines practical applications of AI across our industry, including banking and fintechs, asset management, investment advice, credit rating, software development and financial ecosystems. Contributions to this edition come from engineers, researchers, scientists, and business executives working at the leading edge of AI, as well as the subject matter experts here at Capco, who are developing innovative AI-powered solutions for our clients.

To realize the full benefits of artificial intelligence, business leaders need to have a robust AI governance model in place, that meets the needs of their organizations while mitigating the risks of new technology to trust, accuracy, fairness, inclusivity, and intellectual property. A new generation of software developers who place AI at the heart of their approach is also emerging. Both GenAI governance and these 'Developers 3.0' are examined in this edition.

This year Capco is celebrating its 25th anniversary, and our mission remains as clear today as a quarter century ago: to simplify complexity for our clients, leveraging disruptive thinking to deliver lasting change for our clients and their customers. By showcasing the very best industry expertise, independent thinking and strategic insight, our Journal is our commitment to bold transformation and looking beyond the status quo. I hope you find the latest edition to be timely and informative.

Thank you to all our contributors and readers.

Lance Levy, **Capco CEO**

NETWORKED BUSINESS DESIGN IN THE CONTEXT OF INNOVATIVE TECHNOLOGIES: DIGITAL TRANSFORMATION IN FINANCIAL BUSINESS ECOSYSTEMS

DENNIS VETTERLING | Doctoral candidate, Institute of Information Management, University of St. Gallen

ULRIKE BAUMÖL | Executive Director of Executive Master of Business Administration in Business Engineering, and Senior Lecturer on Business Transformation, University of St. Gallen

ABSTRACT

Business today is not conducted by single organizations alone but in networked designs with diverse actors. A construct where actors engage in joint value creation is called a business ecosystem. Specifically, within the context of core services originating from the financial services industry, such constructs are called financial business ecosystems. Innovative technologies and intelligent methods enable value creation in these organizational setups. To effectively participate in these ecosystems and exploit the potential of innovative technologies and intelligent methods, organizations need to develop a novel operating model. We propose a blueprint for such an operating model building on two levels of capabilities: first level capabilities that enable the exploitation of data and the number of partner relations as underlying resources of business ecosystems. The proposed second level capabilities enable the organization to engage in business ecosystems. By suggesting these capabilities, we aim to guide organizations on a targeted transformation journey and enable them to leverage innovative technology for actively engaging in financial business ecosystems.

1. THE EVOLUTION OF BUSINESS ECOSYSTEMS AND THE ROLE OF INNOVATIVE TECHNOLOGIES

Helvetia, a Swiss insurance company, and myky, a Swiss financial services company, are two companies that have one thing in common: both use the potential of partners to provide as complete a service offering as possible to customers. Data and its targeted use, supported by new technological developments such as AI (artificial intelligence), often form the basis for such service offerings today.

Doing business today is formed by organizations that do not work alone but try to form networks of organizations, within which forces are joined to create value for end customers by utilizing distinct capabilities and innovative technology. Prominent examples include Apple, PingAn, Amazon, and Alibaba.

One specific form of these constructs of different organizations is called business ecosystems. Ecosystems in biology describe the organisms and the interactions between them and their surroundings within an integrated system [Tansley (1935)]. In management, a business ecosystem is a unique form of joint value creation by a group of organizations [Adner (2017), Jacobides et al. (2018), Moore (1993)]. The examples of Helvetia and myky are defined as financial business ecosystems. Financial business ecosystems, more specifically, denote the structure of organizations that enable a joint value proposition to arise, whereby the core service around which

the organizations group is related to the financial services industry. In the case of Helvetia's "home ecosystem", Helvetia tries to provide all possible services related to housing [Seehofer and Lechner (2023)]. To do so, they combine the offerings of a wide range of partners, from mortgage lending platforms to home-security providers [Seehofer and Lechner (2023)]. The financial business ecosystem myky supports homeowners with tools to manage their properties and their move toward more sustainable housing [myky AG (2023)]. Originally, myky was founded by an energy provider, an insurance company, and a regional bank in Switzerland. Since then, even more regional banks are backing myky, and the expansion of the service portfolio with partners in the business ecosystem is being driven forward to increase the benefits to end customers. In the case of myky, the core of the business ecosystem is constructed by a digital "house file" that serves as the point of gravity for curating the customer journey, incorporating information on the housing situation.

The evolution of business ecosystems is, to a high degree, driven by innovative technologies and the respective capabilities of the organizations within to exploit the potential of data and relations with other organizations. Among others, some examples are using AI models to create innovative customer solutions, explore new business models, or manage the value creation process among the different actors. At the current rate of development of AI applications, this trend is likely to accelerate significantly in the future. Consequently, the database as a source for the AI models becomes a critical success factor for organizational designs, such as business ecosystems and other design variants. One important thing to remember in the context of organizational designs is that exploiting the potential of technology by focusing on a single element, such as data as the basis for exploiting AI, will fall short. Rather, it is important to cover the entire operating model and identify necessary capabilities for the organization in the various areas involved.

Organizations today turn to business ecosystems because their surroundings demand a transformation of their value creation process. In the light of a holistic approach, three main topics drive this transformation: the evolvement of (1) society, (2) customers, and (3) IT innovations.

Turning to (1) societal developments, connectivity and individualization are two so-called megatrends [Zukunftsinstitut GmbH (2023)]. Almost no individual or organization exists independently, but always in connection with others. This is a development that also grounds the analysis of business ecosystems provided by Moore (1993). Technology enables

> *One important thing to remember in the context of organizational designs is that exploiting the potential of technology by focusing on a single element, such as data as the basis for exploiting AI, will fall short.*

interconnectedness – be it between individuals or organizations or both and machines. Nonetheless, individuals strive for individualization. This exemplarily manifests itself in the many different ways users of smartphones can individualize their phones (or other devices) and install apps to manage their daily lives or wellbeing. Such individualized offerings are rarely provided by one single organization – imagine Apple providing all existent applications on their own.

Further, customers (2) are increasingly demanding services or products that are complex and hence can often not be provided by one single organization [Dattee et al. (2023), Moore (2023)]. Reasons for this are, on the one hand, that customers have access to much more information on what is possible for a product or service concerning design, functionality, and pricing. On the other hand, the megatrend individualization drives the need for a unique solution tailored specifically to individual requirements. Consequently, to stay with the smartphone example, it's likely that no two smartphones have the same setup. For the financial services industry, that already leads to service offerings that are combined of service elements (also called increments) of different providers from different industries, as, e.g., in the cases of myky or Helvetia.

Evolving information technology (3) supports these developments, both from a customer perspective as well as from an organizational perspective. The modularization of services and, with that, offering single increments or individually combined increments for a joint value proposition is one important part of implementing customer centricity. In the financial services industry, this is shown, for example, in the evolution of so-called fintechs (financial technology companies), offering specific increments of a financial service solution as a single solution or in the "open banking initiative" that aims to integrate payment services into value

creation processes. The occurrence of fintechs offering increments and initiatives in the direction of open banking calls for more flexible and adjustable core banking systems that possibly allow for the inclusion of the offerings of other organizations than the original bank. Standardized protocols such as application programming interfaces (APIs) efficiently support connecting different players from various industries. These allow for connecting various organizations based on prescribed conditions and foster a trend of organizations moving towards opening for collaboration. Seeing more customer value created in settings of different actors, APIs might be seen as the enabler of such joint settings in providing a way of efficient interconnection.

Today, a second important aspect connected to the development of innovative technology, such as AI models, and their application is, as mentioned before, the database and shared data underlying the value creation structure. If intelligent algorithms are to be used to generate new service offerings, propose new business models, drive hyper-automation, or orchestrate players in a business ecosystem, the "right" data must be available.

Following the holistic approach to technology-driven transformation, this article aims to develop insights into an operating model for financial services companies that consider being part of a business ecosystem and using innovative technologies, such as AI.

2. DIGITAL TRANSFORMATION AMPLIFIES BUSINESS MODEL TRANSFORMATION

A growing amount of data exists, underlined by the development that an increasing number of services and products are provided digitally or evolve from a solely physical to a physical and digital world – a story that certainly accelerates data growth. Exemplarily, some years ago, refrigerators had the sole purpose of sustaining goods – a rather physical service. Nowadays, the refrigerator is a connected assistant that might schedule groceries or even order them without human interaction necessary – the payment services included as an increment. Hence, data about the status of the refrigerator becomes an intervention point for businesses – something that was not possible before having the refrigerator as a data producer in the kitchen. Consequently, it transforms from a "physical" provider of sustained goods to a "digital" recommendation and processing machine for doing groceries. Additionally, devices like smartwatches produce more data

every second, enabling new services by organizations, like alarming the user when detecting early signs of disease. In both examples, the potential of data is excavated by using AI to identify patterns and conduct or trigger activities such as scheduling groceries or alarming the user. On the one hand, the high amount of data created at the customer interface calls for database models that allow for storing and making this data available for joint value creation of different organizations. On the other hand, innovative technologies and respective methods, such as intelligent algorithms, are needed to exploit the potential, for example, by identifying patterns. It is probably safe to say that digital transformation and, with that, business transformation is very much driven by the ability to manage data.

Data management in business ecosystems faces several challenges. First, data is created in the individual organizations being the actors in the ecosystem, and second, data is created in the ecosystem as a whole. The respective data models need to be coordinated with respect to a logical integration, and managing data quality is key to the quality of the service solution. As the more critical discussions around machine learning applications such as ChatGPT show, it only provides "valuable" results when the data from which it sources the answers is available and correct [Dumitru et al. (2023), Yao et al. (2020)]. Furthermore, a challenge for integrated data management in ecosystems is the reliable creation of increments. If only one increment of the whole service solution fails, the entire solution is probably at stake. An explanation for this can be found in the dependency of the organizations providing increments for the overall solution [Lingens et al. (2023)]. Helvetia, for example, tries to cover a rather long and diverse customer journey from the interest in a property, financing, to its management in one single solution [Seehofer and Lechner (2023)]. They exemplarily offer the opportunity to increase the validity of the individual decision to buy a house by integrating PriceHubble, a self-owned venture of Helvetia, in their service offering. Furthermore, they offer the choice to compare and purchase a mortgage by integrating services from the organization Moneypark. For the management of a house, they include services from organizations providing burglary prevention or digital access systems. Following the vision of "Offering everything related to accommodation from one source" [Helvetia, n.d. (2023)], Helvetia here integrates the increments of various organizations into an as complete as possible service offering provided at one place. Even more organizations might be included in the overall service provision in the future. This might increase the complexity

and further create the need to guide the customers through the system. Imagine Amazon not offering a search function or providing recommendations – customers would value the service's usability significantly less. To be able to guide the customers and develop the business ecosystem in general, the increments and the related data (input data, i.e., the identification of customer needs, "production" data, and output data) must be available for analysis, and use.

The complexity within the framework of business ecosystems and the fact that data plays a prominent role here, whether on the side of the "provision" of digital increments by the organizations in the business ecosystem or through the fact that more and more interaction points with customers generate more data that must be used, highlight, once more, the importance of data for today's value creation in business ecosystems.

The business transformation, driven by the digital business that ecosystems pursue, starts with developing data management capabilities and creating the right database(s). However, for organizations, it is not "just" about having data but also about organizing and using it in a targeted way. A main step in the transformation here is to break up data silos and integrate the data either in a data lake or a consistent database that serves the entire business ecosystem.

Based on the integrated data, innovative technologies and methods, such as the diverse instances of AI, can take effect. As previously mentioned, they can have an impact on the interface to the customer by providing tailored solutions, and they can have an impact on the more efficient creation of these solutions in the backend, which are provided by the network of organizations that enable their creation. To exploit this potential, at least in the business ecosystem, capabilities to use AI must be developed. The capabilities cover, for example, understanding the mechanisms behind the specific model that is to be used, being able to create a suitable business concept, or building the operational readiness in the business ecosystem to integrate AI. Operational readiness is obviously a key factor and does not only refer to the business ecosystem as a whole, but also to the individual company being part of it. Consequently, the transformation of the operating model as the main source of operational readiness is discussed in the following section.

3. NETWORKED BUSINESS DESIGN AND THE TRANSFORMATION OF THE OPERATING MODEL FOR DIGITAL VALUE CREATION

To understand the capabilities that must be developed in a business ecosystem to create a complex service solution based on data, it is important to understand their coordinative design.

In business ecosystems, the actors provide increments that, when connected, form the overall service offering. Due to the dependency of the actors on one another, coordination is necessary, a task that is often conducted by one organization named the orchestrator [Lingens et al. (2023)]. However, the dependency does not only create the need for coordination, but it is also a driver of why business ecosystems are a relevant modus operandi of value creation today.

To profit from the chances offered by the construction of business ecosystems, organizations have to transform their business models based on shifting their focus of interaction. In rather classical settings, differentiation from competitors by delimitation was oftentimes considered a good way for creating value. In business ecosystems, differentiation does not build on delimitation but on the provision of the best capabilities and cultivating a relationship with other actors in the construct based on both competition and cooperation (sometimes called coopetition). Due to the dependency on increments offered by other organizations for producing the overall service and maximize value creation, opening up and jointly developing the whole system is key. Data as a key resource, as well as the connection to partners, gain importance to manifest their own position within the business ecosystem. Furthermore, excavating these key resources in applying their own capabilities leads to a new form of differentiation and will create a goal-oriented position within the business ecosystem. However, what is important to keep in mind is that the focus of an organization needs to shift away from "getting the largest piece of the cake" towards "baking a larger cake together with other actors"– organizations need not focus on accumulating most of the value created themselves, but rather increasing the overall value created within the business ecosystem.

As mentioned before, data and data management play a crucial role in creating value within the business ecosystem – no matter which innovative technology or method is applied. In the following section, we highlight differentiating capabilities that enable organizations to utilize data and relationships as a second value-driving factor in business ecosystems. With that, we also suggest a new and holistic operating model for business ecosystems.

4. TOWARDS AN ECOSYSTEM OPERATING MODEL BLUEPRINT

The transformation of organizations toward business ecosystems is driven by society, customers, and IT innovations. For guiding transformation endeavors, we here provide an operating model blueprint for business ecosystems based on capabilities that are necessary for an effective construction. A graphical representation is shown in Figure 1.

The operating model is constructed of two classes of capabilities: first-level capabilities provide the necessary capabilities for operating a business ecosystem in exploiting the basic resources of such constructs, namely, amount of data and number of existing partners. We define second-level capabilities as those that enable organizations to effectively take part in business ecosystems.

In the following, we elaborate on the two first-level capabilities necessary for operating in business ecosystems, data and partner relations, that ground themselves in the existence of two core resources for business ecosystems – amount of data and number of existing partners, which were already highlighted above. Furthermore, we elaborate on five classes of (second-level) capabilities that enable an organization to take part in a business ecosystem. While the capabilities "data" and "partner relations" provide the essential basic elements for a business ecosystem to create value and are crucial capabilities for its orchestration, the five additional classes provide a home for capabilities necessary to leverage

and coordinate the essential basic elements. We base our analysis on the idea that an organization, in general, needs the following elements to function: a "human" element, since organizations consist of humans (people and culture); an operational workflow element, since the organization works in processes (processes); a structural element, since policies and decision-making mechanisms need to be applied (governance); a controlling element, since organizations strive for improvements that are enabled by monitoring and assessing (performance and measures); and a technological element, since organizations today are empowered by technology (tools and technology). We here aim to connect these elements to business ecosystems.

4.1 Data

We have already highlighted the importance of data to business ecosystems. However, it is not only the amount of data, but the consistency and possibility to jointly exploit the data within the business ecosystem that is necessary to consider. Besides managing the data within the organization, managing the data across the business ecosystem becomes an important pillar for providing the most value to customers and possibly enable the exploitation of new business opportunities. Imagine, in the case of the Helvetia Home example, the user would be forced to re-enter the same data for each organization taking part within the business ecosystem. In such a setting, the perceived value of the business ecosystem would be significantly reduced. In addition, data is key for recommending the right increments to be connected within the business ecosystem

Figure 1: Operating model blueprint for business ecosystems
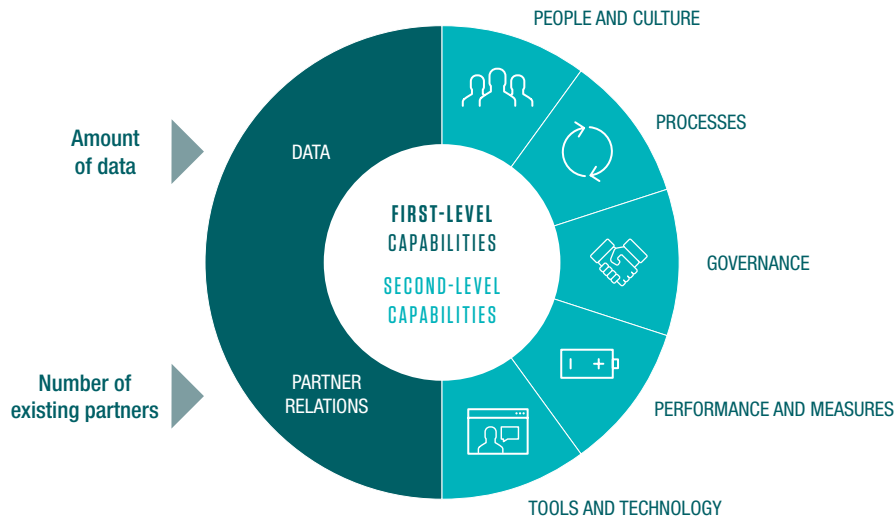
for a customer-centered solution. Exemplarily, it is necessary to provide information about the type of housing to identify the right solutions for the management of the accommodation – recommending a gardener to an owner whose house does not have a garden does not offer much value for the customer and does not create trust in the solution.

Moreover, managing the data across organizations becomes key beyond the aforementioned examples. Organizations might already have some information on the same customer. Bringing together the data sources within a business ecosystem offers the possibility of increasing data quality by filling gaps in a central data source. This further benefits the application of intelligent methods for identifying patterns and possible new business opportunities.

Different data management capabilities can be considered important for organizations in the realm of business ecosystems. For example, Vetterling and Hackl (2022) focus on data management capabilities and highlight various findings. In the early phases of business ecosystems, capabilities that enable the organization to make decisions based on the available data are particularly relevant. In later-phase business ecosystems, capabilities such as maintaining the highest possible data quality in connection with data can be highlighted as particularly important.

4.2 Partner relations

The relationship management between the organizations within the business ecosystem is an important resource, and its orchestration is one of the distinguishing capabilities that differentiates business ecosystems from other value-creation settings. Each organization entering the business ecosystem brings its own partner relations to the overall setting, thereby increasing the number of connections within the overall business ecosystem. However, it is not only the number of partners that counts but the underlying logic that an organization cannot act alone in a business ecosystem. Organizations are dependent on each other's increments for the overall service to be combined. The complementarity of the increments is considered one of the basic elements in business ecosystems and distinguishing them from other networked value creation settings [Jacobides et al. (2018)]. The higher the degree of complementarity, the higher the possible value created when the increments are correctly combined in one service offering. However, a high degree of complementarity also brings risks, as the failure of one organization to provide the right increment threatens the entire business ecosystem [Lingens et al. (2023)].

For organizations, it is, therefore, necessary to shift away from seeing partners as sole providers of sub-products for the good of a product offering provided by the organization towards considering them as partners in a joint endeavor of providing as complete a service as possible. Organizations need to work together on equal terms with the other organizations in the ecosystem.

Shifting the focus away from delimitation towards coopetition was already mentioned above. This includes not only working in a network of organizations but also identifying "the right" organizations to work with. Based on an example of the housing sector, Maicher et al. (2023) highlight the importance of identifying and orchestrating shared values between partners. Furthermore, an element of trusting each other needs to be mentioned here. Data was already mentioned as a key resource of business ecosystems, and we also highlighted not only the necessity but also the benefits of sharing data. Nevertheless, sharing the resulting information between organizations demands that it is not excavated for a one-sided benefit.

What further complicates the environment is that partners in business ecosystems might change over time despite all efforts to sustain the relationship. New partners then need to be identified, providing the necessary increments for the overall service offering, and need to be integrated into the group of existing actors.

Data and partner relations form the first level capabilities that are necessary for value creation in business ecosystems. In the following section, we present the second-level capabilities that are necessary for organizations to effectively take part in business ecosystems.

4.3 People and culture

Business ecosystems pose a challenge to both organizational structures and individual employees, requiring a shift from an isolated to a collaborative mindset.

Maicher et al. (2023) emphasize the importance of a clear organizational mindset and internal clarity about roles within the ecosystem and advocate for a culture that celebrates shared success and supports adaptability in dynamic environments. This adaptability is critical because business ecosystems are inherently dynamic and require a resilient organizational culture to manage change and uncertainty.

It helps organizations to learn from the past and to be able to experiment to discover new business opportunities. Such organizational capabilities as network learning [Buck et al. (2021)], experimentation with business opportunities, and exploiting these [(Achtenhagen et al. (2013)] are already beneficial for organizations today and have an amplified power in business ecosystems.

Lastly, business ecosystems are networks of organizations. Hence, collaboration is a key aspect within and across organizations. Regarding ecosystems, Schreieck et al. (2021) highlight the "digital business innovation capability" as a capability of organizations to drive innovation through a collaboration of independent actors. This capability might be grounded in the people who form the organization, since they need to have the mindset to collaborate with other organizations. It might even lead to joining forces with competitors to create a valuable service offering. Such a setting can be observed in the business ecosystem of Well Gesundheit AG [Well Gesundheit AG (2023)] in Switzerland, where the healthcare insurers Visana and CSS, normally competitors, joined forces to innovate in the Swiss healthcare sector.

4.4 Processes

The consequent establishment of coordinated and scalable processes is the necessary basis for a successful business ecosystem. In general, processes define how activities are organized, managed, and executed. In a business ecosystem, these processes do not end at one organization's borders but span organizational borders within the business ecosystem. In addition, due to the dynamic element in business ecosystems, processes must be easily adaptable for change.

Already today, reconfiguring processes toward a specific target is an essential organizational capability [Buck et al. (2021)]. This capability is even more critical in business ecosystems when considering the dynamic structure of the overall system [Moore (1993)]. Further necessary organizational capabilities regarding processes might be seen in establishing and sustaining connections between different entities – within and across organizations [Buck et al. (2021)]. This capability might be further amplified in its importance in business ecosystems due to their networked structure. In addition, the automatization of processes by applying state-of-the-art technology might help to pave the way toward scalability of the process stack.

4.5 Governance

Providing the right governance framework for a business ecosystem is one of the pressing challenges in establishing and maintaining such a construct [Pidun et al. (2020), Schaefer et al. (2023)]. Overall, the governance needs to ensure that all partners are working towards a shared goal and underline the "on-equal-terms" working mode of all partners.

Regarding business ecosystems, organizations need to distribute power across the partners in order to establish a basis for jointly developing the system. This can be done in several ways, exemplarily by having a consortium building the backbone for the development or by providing a shared ownership structure. A good example for the first exemplary type might be observable in myky, the business ecosystem in the housing sector in Switzerland. Here, a consortium of banks, as well as an insurance company and an energy provider are backing the development of the business ecosystem. An even more powerful approach for distributing power is undertaken by SmartWE – who are building a CRM platform that is set up as a self-owned participatory joint stock company [(SmartWE World SE (2023)]. In essence, this means that participants in the business ecosystem around the platform can acquire shares of the stock company, through which they receive corresponding voting rights. As is usual with public limited companies, the voting rights regulate the co-determination. If a participant leaves the business ecosystem, they must return their shares. In addition, there are limits to the maximum number of shares that can be acquired by one organization, to avoid a corresponding concentration.

To optimize the utilization of data and partner relations within a business ecosystem through technology, it is necessary to implement mechanisms for monitoring activities and identifying wrongdoing. In addition, having punishment mechanisms in place for identified wrongdoing is important. If a group of partners are working together on the same foundational elements, in our case it is data and partner relations, then mechanisms need to be established that enable the partner to behave in a way that benefits all and not just some. In order to establish such governance mechanisms, the use of technology, among other things, may offer added value. For example, Schaefer et al. (2023) point to the prospects of blockchain technology to help solve governance problems in business ecosystems.

4.6 Performance and measures

In an earlier publication, we had proposed a set of performance measures that could generally enable the controlling of business ecosystems [Vetterling and Baumöl (2023)]. Here, we want to focus on aspects related to exploiting the grounding resources of business ecosystems, "amount of data" and "number of existing partners". Consequently, we identify here three areas of development for capabilities based on the different levels of value creation. These areas are customer interaction, the backend for service creation, where the activities of the individual organizations are orchestrated, and the overall business ecosystem [Vetterling and Baumöl (2023)].

Considering the customer interaction, the performance of AI-based applications, such as chatbots, can be measured by considering successful customer interactions, since not only the successful provision of the right service needs to be taken into account, but also the perception of the interaction by the customer. The generated data then needs to be used in a learning loop to further improve the service offered.

In the backend, especially in later stage business ecosystems, efficiency needs to grow. Hence, inefficiencies can be identified by analyzing the data using intelligent methods. Furthermore, such methods can be used to predict possible bottlenecks when the whole system grows.

Organizations in business ecosystems need to not only monitor their own organizational performance but also the overall performance of the entire business ecosystem. This shift in perspective, as well as the respective controlling instruments, need to be established in the individual organizations in order to successfully engage in business ecosystems.

4.7 Tools and technology

The use of technology is promising in the context of business ecosystems. Business ecosystems are more complex than other value networks. Accordingly, intelligent methods can ensure efficient control on a scaled basis. Analyzing and evaluating large amounts of data is one of the core applications where new technologies can be utilized in business ecosystems.

Image generated by Adobe Firefly

Furthermore, the provision of (technical) interfaces, such as application programming interfaces (APIs), is a necessary prerequisite for the cooperation of different organizations in the business ecosystem. These interfaces facilitate seamless interaction and data exchange, thereby bolstering the interconnectedness and cooperative synergy essential for the thriving of business ecosystems.

To create and put IT solutions into action in a manner that meets business requirements in a way that is both cost-effective and well-managed is an essential organizational capability [Wang et al. (2012)]. This capability might be particularly important for operating models in business ecosystems. Furthermore, as a mixture of different capabilities might be needed to be implemented to generate the best possible tech stack, the organizational capability to use different technologies, which Buck et al. (2021) identified as technological capability, might be a differentiating factor in business ecosystems.

5. CONCLUSION

Innovative technologies and applying intelligent methods capable of performing tasks that on a scaled basis enable new value propositions and support new organizational designs for value creation are today's differentiating factors. Based on the example of business ecosystems, it becomes clear how these innovations impact value creation. New service offerings can be promoted for the customers, and new ways of creating these service offerings are enabled as well. This leads to adapting the existing operating models by focusing on data and partner relations as a main lever. Hence, capabilities for managing these need to be developed with priority. The second-level capabilities enable goal-oriented part-taking in the business ecosystem from the individual company's perspective.

For the future of developing business ecosystems and – as a special instance – financial business ecosystems, both the structural and incentive-driven organizational design have to be transformed. Data and partner relations are understood as important drivers and with that collaboration and standardization capabilities must be developed. That also requires a transformation of the mindset in the individual organization to form the mindset for the business ecosystem. This journey must be carefully planned and coached in a joined effort.

REFERENCES

Achtenhagen, L., L. Melin, and L. Naldi, 2013, "Dynamics of business models - strategizing, critical capabilities and activities for sustained value creation," Long Range Planning 46:6, 427-442

Adner, R., 2017, "Ecosystem as structure: an actionable construct for strategy," Journal of Management 43:1, 39-58

Buck, C., T. Grüneke, and K. Stelzl, 2021, "Structuring the jungle of capabilities fostering digital innovation," in Ahlemann, F., R. Schütte, and S. Stieglitz (eds.), Innovation through information systems, Springer International Publishing.

Dattee, B. A., L. D. W. Thomas, and E. Autio, 2023, "The limits of innovation ecosystem strategy: a demand-side view," Academy of Management Proceedings 2023:1

Dumitru, V., D. Iorga, S. Ruseti, and M. Dascalu, 2023, "Garbage in, garbage out: an analysis of HTML text extractors and their impact on NLP performance," Proceedings - 2023 24th International Conference on Control Systems and Computer Science, CSCS 2023, 403-410

Helvetia. (n.d.)., 2023, "Vision of the home ecosystem," in Seehofer, T., and C. Lechner, The evolution of the "home" ecosystem: the case of Helvetia, University of St. Gallen, 11, https://tinyurl.com/e9a2y9uz

Jacobides, M. G., C. Cennamo, and A. Gawer, 2018, "Towards a theory of ecosystems," Strategic Management Journal 39:8, 2255-2276

Lingens, B., V. Seeholzer, and O. Gassmann, 2023, "Journey to the Big Bang: how firms define new value propositions in emerging ecosystems," Journal of Engineering and Technology Management, 69(July), https://tinyurl.com/mr25cxy2

Maicher, L., T. Lenoci, and D. Vetterling, 2023, "Controlling-erkenntnisse beim Aufbau eines business ecosystems," Controlling - Zeitschrift Für Erfolgsorientierte Unternehmenssteuerung 05, 33–38

Moore, J. F., 1993, "Predators and prey: a new ecology of competition," Harvard Business Review 71:3, 75-86

Moore, J. F., 2023, "Navigating the death of competition: the emergence of business ecosystems and beyond," Network Law Review, https://tinyurl.com/2p8nywkn

myky AG., 2023, myky. https://www.myky.ch/

Pidun, U., M. Reeves, and M. Schüssler, 2020, "Why do most business ecosystems fail?" Boston Consulting Group, June 20, https://tinyurl.com/45uaz48d

Schaefer, B., D. Vetterling, L. Wrobel, and R. Jung, 2023, "Where blockchain can help – an analysis of challenges in ecosystems blockchain technology may help to solve," AMCIS 2023 Proceedings 24, 1-5, https://tinyurl.com/bdcvda34

Schreieck, M., M. Wiesche, and H. Krcmar, 2021, "Capabilities for value co-creation and value capture in emergent platform ecosystems: a longitudinal case study of SAP's cloud platform," Journal of Information Technology 36:4, 365-390

Seehofer, T. M., and C. Lechner, 2023, "Evolution of the "home" ecosystem: the case of Helvetia," The Case Centre, University of St. Gallen, https://tinyurl.com/57avvm9s

SmartWE World SE, 2023, SmartWe – Wir, https://tinyurl.com/tdyjkzu2

Tansley, A. G., 1935, "The use and abuse of vegetational concepts and terms," Ecology 16:3, 284-307

Vetterling, D., and U. Baumöl, 2023, "Ecosystems als Quelle kundenzentrierter Wertschöpfung," Controlling - Zeitschrift Für Erfolgsorientierte Unternehmenssteuerung 05, 04-11

Vetterling, D., and T. Hackl, 2022, "Data management im Ecosystem-lebenszyklus," Controlling - Zeitschrift Für Erfolgsorientierte Unternehmenssteuerung 34, 12-19

Wang, N., H. Liang, W. Zhong, Y. Xue, and J. Xiao, 2012, "Resource structuring or capability building? An empirical study of the business value of information technology," Journal of Management Information Systems 29:2, 325-367

Well Gesundheit AG., 2023, Über uns. Über Uns, https://tinyurl.com/56ue8eck

Yao, L., A. Cahill, and D. F. Mccaffrey, 2020, "The impact of training data quality on automated content scoring performance," Association for the Advancement of Artificial Intelligence

Zukunftsinstitut GmbH, 2023, Die Megatrends, https://tinyurl.com/2phstcsf

ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy focused in the financial services industry. Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its award-winning Be Yourself At Work culture and diverse talent.

To learn more, visit www.capco.com or follow us on Facebook, YouTube, LinkedIn and Instagram.

WORLDWIDE OFFICES

APAC	EUROPE	NORTH AMERICA
Bangalore – Electronic City	Berlin	Charlotte
Bangalore – Sarjapur Road	Bratislava	Chicago
Bangkok	Brussels	Dallas
Chennai	Dusseldorf	Hartford
Dubai	Edinburgh	Houston
Gurgaon	Frankfurt	New York
Hong Kong	Geneva	Orlando
Hyderabad	London	Toronto
Kuala Lumpur	Milan	Washington, DC
Mumbai	Munich	
Pune	Paris	**SOUTH AMERICA**
Singapore	Vienna	Alphaville
	Warsaw	São Paulo
	Zurich	

THE COVER IMAGE WAS CREATED USING JASPER AI, AN AI ART GENERATOR

WWW.CAPCO.COM

CAPCO 25
a wipro company