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Gaia-X and Business Models:

Types and Examples

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Summary

Due to increasing digitalisation, all companies will to a greater or lesser extent have to base their value creation on data in the future. In many cases, it will be necessary to exchange data with other companies. So far, however, a comprehensive and widespread exchange of data faces many challenges, whether of a technical, organisational or regulatory nature. Gaia-X helps to overcome these challenges. It creates the basis for a trustworthy, transparent and secure exchange of data. This opens up numerous opportunities to optimise existing business models and to develop and realise new business models.

This paper provides an overview of these possibilities. For this purpose, eight business model types and six examples of implemented business models that can be based on Gaia-X are listed. Business models are distinguished firstly according to the role that the respective organisation predominantly assumes in the Gaia-X context. The first role is that of the consumer of data and services, the second that of the provider of data and services, and the third that of the federator, which creates the basis for the exchange of data. Secondly, business models are differentiated according to the main activity of the companies in the data value chain, in particular whether they offer or demand more the generation of data, the analysis of data, the provision of infrastructure or the technical or organisational realisation of data exchange.

Gaia-X offers numerous opportunities – for small and large companies as well as for those with a lower or higher degree of digitalisation. This paper provides an overview in concrete terms of what these opportunities are for which companies. The examples range from a company that uses Gaia-X to request data analysis in order to optimise its own production, to a company that uses Gaia-X to request data for AI training, to a company that uses Gaia-X to organise an industry-wide data space.

The business models explained can in turn be combined in almost any conceivable way. For example, the demand for data can be combined with the demand for analytics services to create a business model that covers the entire process of data value creation but requires a minimum of skills and resources. Gaia-X creates a level playing field for market participants of all sizes and orientations. This ensures diversity in supply and demand and creates the basis for a data economy from which all participants can benefit.

1. Background: Data Economy

The digital age has changed the way people interact, consume and do business. The digital economy enables tech companies to make huge profits from the collection and use of data and to become some of the most valuable companies in the world. For many tech companies, the collection and use of data is either directly or indirectly a central aspect of their business model. It should be noted that there is considerable debate and no clear consensus on exactly how to define the term business model (see Jensen 2014). For the purposes of this white paper, a business model is defined as "the core logic" of an organisation "to create, deliver and extract value within a stakeholder network" (ibid. p. 67).

As the digital economy has increased in sophistication, there has also been a growing interest in extracting value from a wider range of data, particularly industrial data (Sagt 2022). One of the most important ways to generate added value from data is through data sharing. Through data sharing, new data sources can be tapped, and insights gained, whether to eliminate inefficiencies or to identify new business opportunities. In addition, data sharing becomes more attractive when data can be shared and exchanged across divisions and sectors or with a larger circle of partners in general. This can lead to entirely new insights.

However, there are significant barriers to the realisation of data sharing and data ecosystems based on it. These can be divided into technical, business/organisational and regulatory barriers. The technical barriers relate, for example, to the lack of the necessary technical infrastructure for data sharing and to a lack of expertise and interoperability issues. Business/organisational barriers include lack of appropriate skilled personnel, economic considerations, and concerns about disclosure of trade secrets. Regulatory barriers include uncertainty about what does and does not comply with legal requirements. Examples of such requirements include the General Data Protection Regulation (GDPR), which is particularly relevant in the context of personal data, and more recently the Digital Governance Act (DGA). Gaia-X can make a significant contribution to solving all the problems mentioned. It removes barriers to data sharing by providing a trustworthy and scalable infrastructure that ensures legal compliance and enables the implementation of viable business models.

2. Gaia-X

Initiated in a German-French partnership, Gaia-X is now a pan-European project. The aim of the project is to build a trustworthy data sharing infrastructure. This is structured in a federated manner. It is open to all potential users (consumers and providers) without discrimination. Furthermore, the provision of the infrastructure is not reserved for one or a few providers but is fundamentally open to all those who can make a significant contribution to its operation according to the relevant specifications (so-called federators).

The Federation Services of Gaia-X are particularly decisive for the technical implementation. These are open-source software components that form the backbone of the federated infrastructure. These include, for example, services for reliable identification of participants,

services for secure data access with full control by the participants and services for the user-friendly listing of the offerings in Gaia-X.

Through the federative principle and its implementation with common organisational rules and technical standards and components, Gaia-X provides several benefits for data sharing, including:

- Efficiency: data is only exchanged when and to the extent necessary.

- Security: Data is protected from unwanted access.

- Control: Participants can determine exactly what access others have to their data.

- Transparency: Participants are given the necessary knowledge to decide for or against an exchange.

- Quality: It is insured that data and services are of the specified quality.

- Scalability: Required resources can be accessed as needed, quickly and comprehensively.

- Regulatory compliance: The Gaia-X ecosystem is in line with the values and laws of the European Union.

Due to these qualities, Gaia-X provides a **trustworthy** infrastructure. This can be the basis for countless new value creation processes in a data economy that respects and realises European values.

3. Value Creation in the Gaia-X Ecosystem

Gaia-X is an openly designed data infrastructure. Every company that works with data – and thanks to digitalisation this will be every company in the long term – can in principle use Gaia-X. This applies just as much to large internationally active companies as it does to small and medium-sized enterprises. Gaia-X provides on the one hand, the possibility of better optimising existing business models and on the other hand, the chance to create entirely new business models.

In order to recognise which opportunities Gaia-X offers for one's own company, it is worthwhile to consider at least two things. Firstly, it is necessary to understand how the basic function of Gaia-X enables value creation. Secondly, it is important to consider which concrete business models can be implemented with Gaia-X. Both aspects are discussed below.

In order to create value from data, a series of steps must be completed. The entirety of the steps is described with the term (Big) Data Value Chain. Individual steps that can be distinguished are (according to GSMA 2018) for example: The acquisition, collection and analysis of data. Currently, many companies have the skills to complete individual processing steps, but rarely can they complete all processing steps. If a company does not have all the necessary skills, it cannot implement data value creation processes on its own. Rather, it is necessary to draw on the skills of other companies and provide data access for this purpose. However, as explained in Section 1 and illustrated in Figure 1, there are often still barriers and risks to such data sharing.
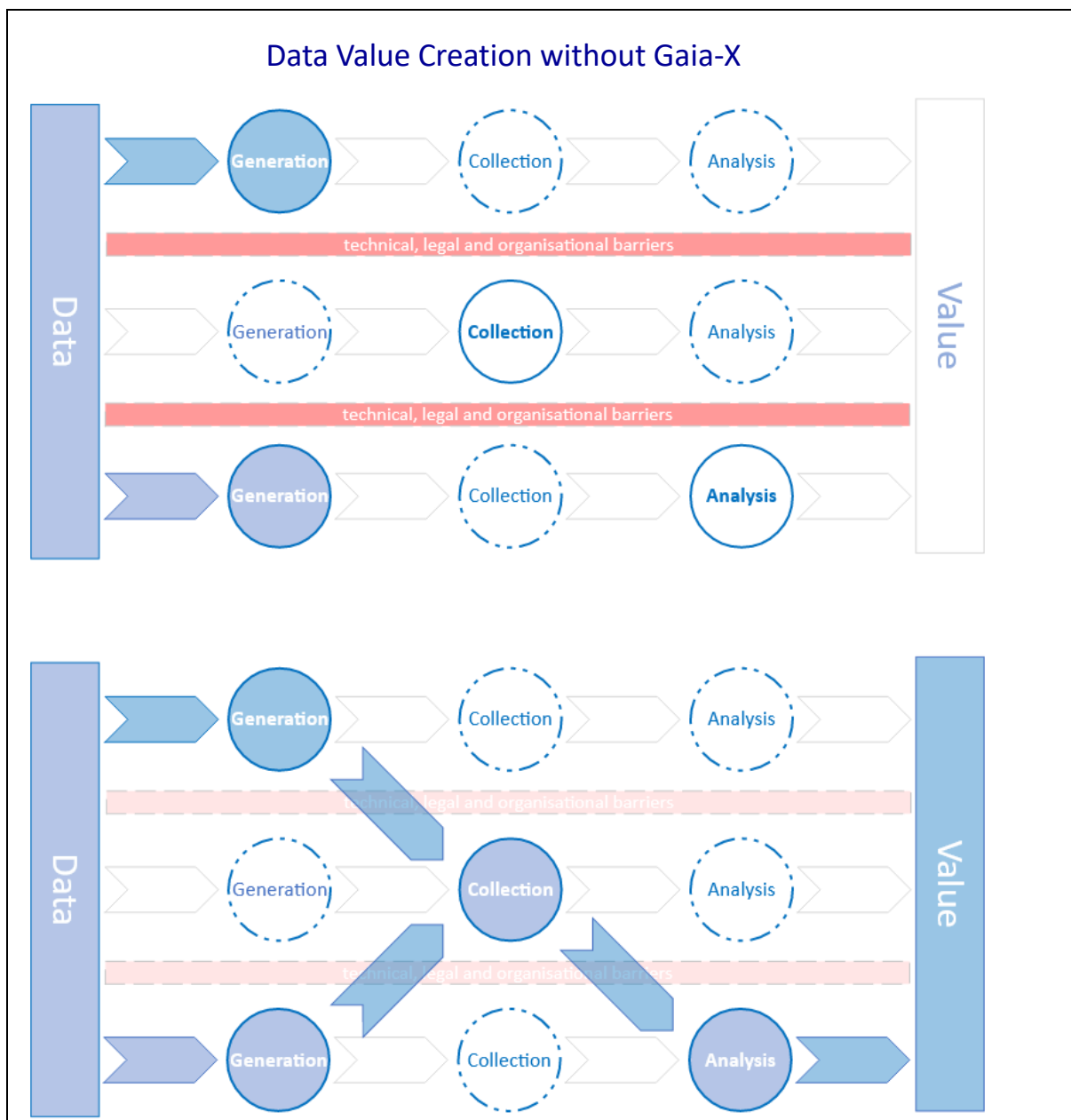
Figure 1: Value Creation Enabled by Gaia-X (Source: Own Illustration)

These include in particular technical, legal and organisational barriers. Until now, companies have therefore often been faced with two suboptimal options. Either they could make significant investments to build their own capabilities and complete value creation processes themselves or they could turn to the large centralised platforms to obtain services from them. Both options come with specific but often significant economic as well as other risks.

Gaia-X though offers an alternative way to overcome the obstacles of data sharing. It enables data sharing across borders within and between organisations. Thanks to this intra- and inter-organisational exchange, companies or relevant units in the companies can focus solely on that step of the data value creation that has already been implemented or could easily be implemented. This can be, for example, the extraction of raw data or the analysis of external data. In principle, a business model can be based on each of the data value chain steps as well as on any combination of steps.

4. Differentiation of Business Models

Since Gaia-X supports all steps of digital value creation, countless examples of business models that are enabled or facilitated by Gaia-X can be named. In order to systematically list a number of examples of business models, it is useful to first name characteristics according to which business models are differentiated and then list examples of individual business models. There are numerous proposals in the literature for possible distinctions between business models. For example, Hartmann et al. (2016) and Bock and Wiener (2017) offer an overview and synthesis of different approaches. They distinguish business models on the basis of five and six characteristics respectively and take into account, for example, the income or price model, offer types, platform properties, customer segment and data sources, etc. In the section below, business models are distinguished on the basis of two characteristics: firstly, the role that the companies in question predominantly adopt in the Gaia-X context and secondly, the value creation step that they predominantly implement.

4.1. Categorisation Characteristic 1: Role in the Gaia-X Ecosystem

In the Gaia-X context, it makes sense to first distinguish business models according to the role that the Gaia-X architecture envisages for participants in the Gaia-X ecosystem. This role defines how participants can concretely act in the ecosystem. It is closely related to the value creation opportunities: which role is predominantly taken indicates the selection of the respective business model. Conversely, if a company already has an established business model, it can be deduced which role it will primarily choose in the Gaia-X ecosystem. In total, participants can take on three different roles (also simultaneously): The role of consumer, the role of provider and the role of federator.

Providers are described in the Gaia-X Architecture Document as those participants in the ecosystem who operate resources in the ecosystem and offer these as services to other participants (Gaia-X Architecture Document 2022). Consumers are defined as participants who seek services and demand instances of the services to provide offerings to end users (ibid.). Finally, federators are participants who provide or organise the federation services and activities (ibid.).

For example, in a transaction via Gaia-X involving a simple exchange of raw data, providers would be participants who provide the data, consumers those who request it, and federators those who enable the data sharing by providing the federation services. These services include, for example, the catalogue in which the data has been listed and the service for the secure transmission of the data.

The role – according to the business model – can be chosen for each transaction in the ecosystem. Those companies that were providers in the above example because they provided data could, in another example, demand data analysis services from other companies to gain new insights from their own data. They would thus take on the role of consumer.

A company is therefore not fixed to one role, but can and usually will take on several roles, possibly even simultaneously. However, in most cases, one choice of role will dominate. Therefore, it makes sense to categorise business models according to the predominantly chosen role.

4.2. Categorisation Characteristic 2: Main Activity in the Data Value Chain

In addition to the role in the Gaia-X ecosystem, other characteristics can be used to distinguish business models. Many categorisations of business models and approaches to business model development focus on the main activity of the company as a relevant aspect (Zott and Amit 2010, Ostenwalder 2010). This can be seen as the activity that makes the company's main contribution to value creation. The main activities of the companies are classified here according to the data value chain as described by GSMA (2018), building on the work of Miller and Mork (2013), Curry (2016) and Tang (2016). GSMA (2018) identifies the value chain steps as: data generation, data collection, data analysis and data exchange. Enabling is mentioned as another step that can support all the aforementioned steps, which is to be understood as the provision of infrastructure (GSMA 2018: 18).

In the section that follows, all the steps mentioned are considered, with a slight adaptation of the understanding according to the Gaia-X context. Data generation and data collection are summarised as the step in the course of which data are obtained through provision or observation, for example through the use of sensors or a user interface. Data analysis, on the other hand, is seen as the step in which insights are gained from data, including the necessary pre-processing of the data. In the step of data exchange, others are granted access to the data, or the insights gained from it. Enabling can be seen as a further component of the data value chain (GSMA 2018). It comprises supporting measures that facilitate the implementation of the aforementioned value creation steps.

The classification defined in this way (according to the company's main activity and role in the Gaia-X context) can now be used for an overview of the business models that can already be found in the Gaia-X context or that can be implemented in the future.

5. Examples of Gaia-X Business Models

In the section below, an overview of business models that are enabled or facilitated by Gaia-X is given. For this purpose, individual business models and related examples are provided, taking into account the differentiating characteristics which were previously outlined (role in the Gaia-X context and main activity).
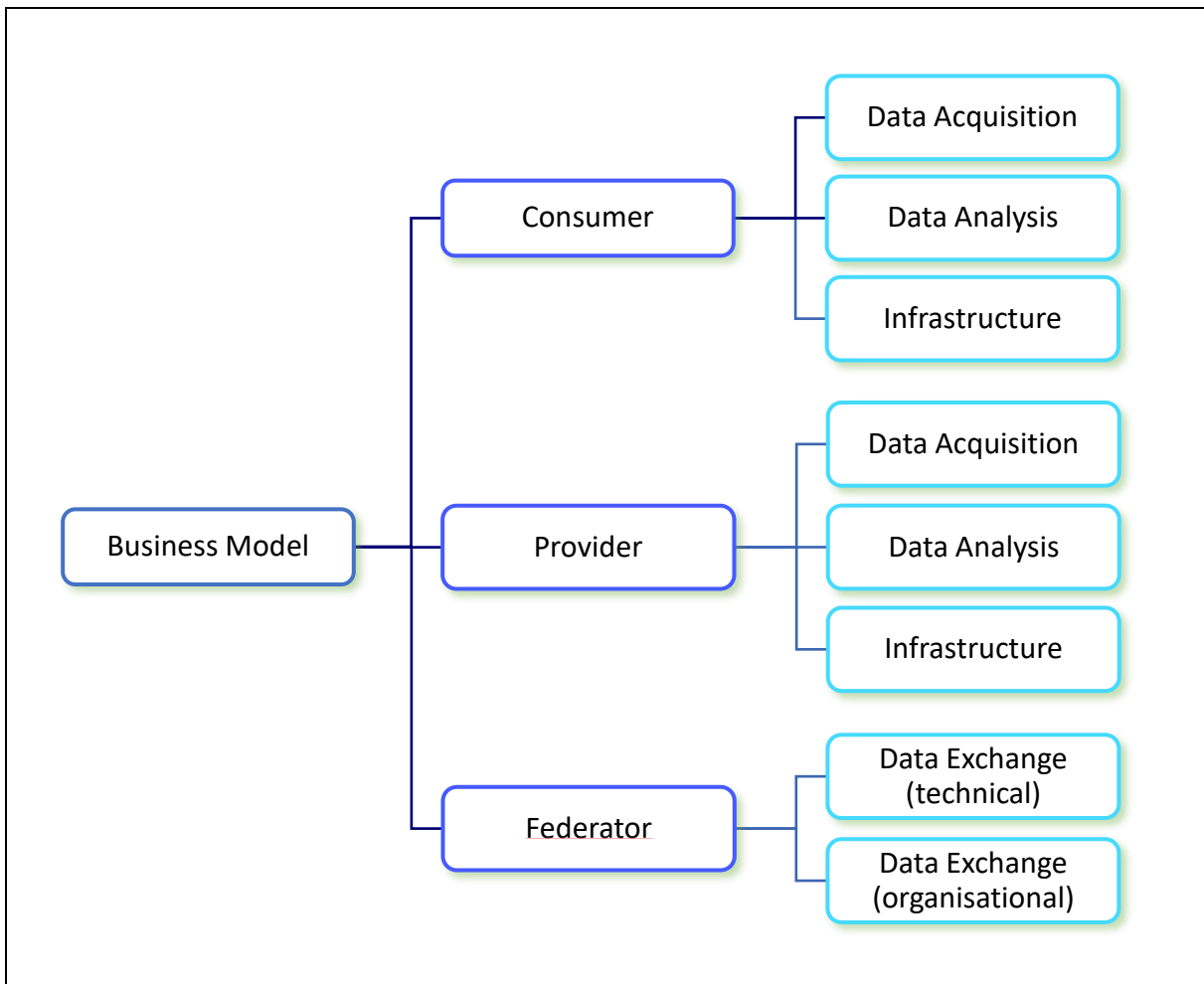
Fig.2: Business model types enabled by Gaia-X (source: Own representation)

5.1. Provider-Business Models

Provider-Data Acquisition: A company acquires data and offers it. The data can come from different sources. For example, data can be generated through the use of sensors or collected through user input. The data is then offered via Gaia-X, possibly after several processing and documentation steps. Monetisation can take place in various forms, for example through subscriptions or one-off payments. This business model is also of particular interest to small and medium-sized companies (SMEs). As these are often active in niche markets and have a corresponding specialisation, they have the opportunity to collect data that is particularly rare and therefore possibly valuable. Thanks to Gaia-X, the companies can then offer this data with

a high degree of control. All that is required is integration into the Gaia-X ecosystem. Building up their own competences and systems is largely unnecessary.

Infobox 1

Example Provider-Data Acquisition:

A small German company produces special components for the automotive industry. The company works in a niche and collects rare raw data. This data is collected anyway as a kind of by-product of the production process. Therefore, the company can offer it without much additional effort – apart from ensuring sufficient data quality – whilst always maintaining control over its use. The rarity of the data makes it particularly valuable and provides the company with a relatively high additional revenue. Although the company operates in a niche that gives it relatively stable product demand, there is competition and increasing digitalisation requires adjustments. Gaia-X provides the necessary infrastructure for this. It is also possible that the company will adapt its role after realising that its data is particularly valuable. For example, it could change from the role of provider-data acquisition to the role of consumer-data analysis and gain insights from its own data in cooperation with an analytics company. This would open up further business opportunities, leading to a diversification of revenue streams and ultimately a change in the business model.

Provider-Data Analysis: The companies in this category offer data analysis as a service. They monetise their analytical capabilities, with Gaia-X opening up new customer segments for them and thus enabling the company's business model. The analytics can take a variety of forms, such as simple statistical methods or highly sophisticated machine learning procedures. Gaia-X offers a demand for providers with a wide variety of specialisations and analytical tools. In this way, both providers with a more general orientation and providers with a highly specialised orientation can find demand for their services and realise their business model.

Provider-Infrastructure Enabler: Providers in this area do not offer acquired and processed data itself, but rather provide the tools for the acquisition and processing of data. These can be, for example, providers of cloud services such as Infrastructure as a Service, Platform as a Service or Software as a Service (Gaia-X Architecture Document, p.54). Through Gaia-X, a larger circle of partners can be made available to cloud providers. This makes it easier to develop and implement specialised offerings and new business models beyond the current

services offered by the large cloud providers. In addition to the provision of cloud services, the provision of network resources (ibid.) is also possible. In this case, certain connection services are offered that are highly specialised and oriented (e.g. in terms of latency and security) to the needs of specific consumers – for example, companies in the field of medical technology. Gaia-X opens up a range of customers to such providers, for whom specific services can be developed and offered.

<div style="background:#1a2a8f; color:white; padding:4px;">Infobox 2</div>

Example Provider-Infrastructure Enabler:

A cloud provider that has its servers in Europe wants to scale its operations. The provider's goal is to offer its services in compliance with both horizontal European regulations such as the GDPR and – depending on the customer's sector – sectoral European regulations. In addition, the provider wants to adapt its services – for example, for anonymisation – as precisely as possible to customer wishes. In the current market, however, the provider faces major challenges especially from the larger providers benefiting from network effects. The Gaia-X ecosystem now offers new opportunities for the provider. Since all cloud providers offer their services within the same infrastructure, a company can more easily switch between providers to have specific functions fulfilled. As a result, the cloud provider can reach a wider range of customers while focusing on its core competencies.

5.2. Consumer-Business Models

Consumer-Data Acquisition: This category includes companies that acquire data via Gaia-X. Tapping data sources can be relevant for any company that wants to realise one of the further data processing steps of the data value chain. An example would be a company that wants to

<div style="background:#1a2a8f; color:white; padding:4px;">Infobox 3</div>

Example Consumer-Data Acquisition:

A company specialises in developing AI models for medical image recognition. Large amounts of data - including personal data - are needed to develop the models. However, the General Data Protection Regulation (GDPR) and other requirements for accessing and sharing data pose a legal challenge to the implementation of the business model. To meet these challenges, the provider uses Gaia-X. Based on Gaia-X federation services and compute-to-data procedures, the provider can ensure that data remains at the source and that the development of AI models is legally compliant. The company, along with AI providers in general, may thus have the opportunity to gain a global competitive advantage with Gaia-X, because its own models can be trained on data of the highest quality with an authenticated origin.

combine its own data with data from other companies in the sector to gain insights about it. Gaia-X offers such companies the opportunity to tap into data sources while ensuring that the

data and data sources in question are sourced according to their own requirements in terms of price, quality, trustworthiness, legal certainty, etc.

Consumer-Data Analysis: This category includes companies that request analyses. These can be based on data from the consumer, the provider or third parties. The Consumers receive insights that enable them to better implement their current business model, optimise it or open up entirely new business opportunities. Gaia-X can create a broad range of services for such companies. As a result, a service provider can be found even for very specific requirements. The necessary data and inputs can also be obtained (from the provider or consumer) via Gaia-X-compatible data spaces.

Infobox 4

Example Consumer-Data Analysis:

A medium-sized shoe manufacturer wants to gain more insights from its own data. The company has considerable expertise in manufacturing shoes, but limited IT capabilities. There are many competitors in the market, some of whom have greater resources to implement data analytics. In order to prevail over its competitors, the medium-sized company wants to gather more information about its customers' preferences and requirements and uncover any inefficiencies in its processes. However, there are several obstacles to this: First, the company does not have the resources to build its own data analytics infrastructure. Secondly, there are concerns that trade secrets could be revealed. Thirdly, there is also uncertainty about the use of personal data and compliance with the GDPR. To overcome these obstacles, the company uses a Gaia-X infrastructure offering. This allows even those with limited knowledge to use analytics services while protecting their own trade secrets and ensuring compliance with the GDPR. Ultimately, the company can gain important insights from its own data that allow it to optimise its business model and take advantage of new business opportunities.

Consumer-Infrastructure Enabler: Companies in this sector procure infrastructure services. For example, they may be companies that offer data analytics services. They may, for example, demand storage space for their data or development platforms for the development of their analytics services. Gaia-X can open up a diverse offering to such companies. It offers uniform standards on the basis of which providers of the most diverse size and focus can become active. In this way, solutions can be found that are tailored to the respective business model and, for example, represent an alternative to the large established cloud providers.

5.3. Federator-Business Models

Federator-provider of technical exchange services: Companies in this category provide federation services. For example, they operate services for the secure transmission of data, the cataloguing of offerings, the identification of participants, etc. Payments are made to the

companies for the provision of these services, either by the users or the operators of a data space. Gaia-X opens up the companies' business field and provides them with the means to meet technical and organisational challenges. The companies can, for example, focus on the open-source Gaia-X Federation Services (for which reference implementations already exist) while ensuring that the Gaia-X specifications, which can be found in the Gaia-X Policies & Rules document, are complied with. In accordance with the Data Governance Act (DGA), the companies are not allowed to process the exchanged data for their own commercial purposes. However, options for monetisation remain. For example, data processing services that serve to facilitate data sharing can be offered and monetised. In addition, the provision of these services offers companies the opportunity to enter an entirely new market and thus increase the awareness of their brand.

Federator-provider of organisational exchange services: The companies addressed here act as operators of a data space. In particular, they take on the tasks in the area of governance of a data space. This includes, among other things, the structured integration of relevant stakeholders, the elaboration and further development of the basic organisational and technical requirements, prerequisites and foundations of the data space, the onboarding of new members and the strategic linking of the data space with other data spaces. As neutrality and stability are key to fulfilling this role, it will often fall to governmental or non-profit non-governmental organisations (NGOs). To the extent that they need to generate revenue to cover their costs, a business model is also necessary for these providers. Monetisation can take place, for example, through membership fees or payments according to the scope or number of exchange processes facilitated. This business model can also be particularly attractive for organisations that already act as a neutral body in a certain economic or social area and would like to contribute and expand their competences for data sharing. As federators, they could take on a completely new role that is only made possible by Gaia-X in this form.

Infobox 5

Example Federator-Provider of Organisational Exchange Services

A non-profit institute acts as a neutral intermediary in a sector characterised by diverging interests of the actors. The institute enjoys a high reputation in the sector in terms of its neutrality and mediation competence. However, it has so far lacked the digital skills to remain sufficiently relevant in the 21st century. As a federator in the relevant Gaia-X data space, the institution can contribute its trustworthiness and management skills and benefit from becoming more anchored in the digital economy. In this way, the organisation can tap into sources of service-based or institutional funding.

5.4. Combination of Business Models

As already elaborated, the above business models are distinguished on the basis of two characteristics: the company's role in the Gaia-X context and its main activity in the data value chain. It should be noted that a company is not limited to one role and one main activity. Rather, it can be anticipated that most companies will to a similar extent have different roles and different main activities. In these cases, the companies do not pursue one of the above-mentioned business models, but a combination of different business models. Almost all logical combinations of the above-mentioned business models are also practically conceivable. The combination of the model "consumer data acquisition" with the model "provider data analysis" for example is particularly likely. This combination would be given, for example, if a company as a consumer obtains data in order to analyse them and then offer the results of the analyses (see example 6).

Other examples of business model combinations are in turn particularly unlikely because they face legal or other obstacles. For example, the federator model for technical exchange services can only be combined to a limited extent with the data analytics provider model. One reason for this is the provisions of the Data Governance Act, which prohibit providers of data intermediation services from using the shared data for their own business purposes. Thus, only data analyses that are useful for the data sharing processes are permitted (Ditfurth and Lienemann 2022).

As indicated here, the combinations of business models can include two and more business models. For example, companies may emerge or participate in the Gaia-X ecosystem that cover (in a specific area) the entire data value chain. It is also likely that companies will use Gaia-X to shift or expand their activities along the data value chain, which is one example for the dynamics of business models.

5.5. Business Model Dynamics

In the light of fundamental changes to the economic and regulatory environment, companies often have to adapt or expand their own business model in the course of their history. In particular, processes of profound social and economic change – such as those caused by an increase in digitisation – require a corresponding ability to adapt. Decentralised infrastructures such as Gaia-X offer particularly favourable conditions for adapting and expanding one's own business model. Thanks to their open design and the resulting integration of companies of different sizes and types, Gaia-X creates a field of action that provides space for both singular and collaborative initiatives. The existence of an open infrastructure means that there are minimal investment costs, so that low prices are ensured for both the purchasing of resources and inputs as well as the provision of products and services. Companies can thus gradually gain experience in new areas of activity. Business models made possible by the Gaia-X ecosystem can thus be continuously adapted and expanded (see Infobox 6).

Example Business Model Dynamics

A company provides its own raw data in order to receive financial remuneration. In doing so, the management realises that not only can insights be gained from the data that are of use to others, but also insights that are relevant to their own company. The company therefore begins to use services to analyse its own data via Gaia-X. Based on the analyses, the company can eventually identify previously untapped business opportunities. In order to exploit these opportunities quickly and efficiently, the company intensifies its cooperation with the partners found via Gaia-X.

5.6. Business Model Synergies

As a rule, it is thanks to the interaction of different business models that value creation is made possible in the first place. Depending on where you start observing, practically every company is linked to other companies in terms of upstream or downstream value creation steps and is thus part of a network.

Furthermore, particularly close company networks offer specific added values. If, for example, companies come together in the sense of a "digital business ecosystem" (Nachira 2002, EU Commission 2007) in order to jointly realise a value proposition, entirely new business areas, essential knowledge, resources and demand segments can be developed.

Consequently, it makes sense and may even be necessary for the success of a company to identify and exploit synergies of business models. Here, too, an open data sharing infrastructure offers special opportunities. By reducing transaction costs for data sharing and data-based value creation, companies can establish and evaluate new partnerships more efficiently. In this way, networks can be established with less risk and in shorter time intervals.

5.7. Other Influencing Factors Relevant to the Business Model

The categorisation explained above can be used to determine one's own role and to use business model opportunities that Gaia-X enables. It should be noted, however, that in addition to the aspects mentioned, many other aspects can or should be considered in order to distinguish and implement business models. For example, consideration of value propositions for customers (Johnson et al 2008, Ostenwalder et al 2015:), main partners in implementation (Chesbrough 2002, Amit and Zott 2012), distribution channels (Osterwalder et al, 2010) and pricing models (Teece 2010) is recommended. Furthermore, two aspects should be addressed, namely the value of data and the revenue model:

Especially in the Gaia-X context, in which the exchange of data is of central importance, the potential value of data plays a decisive role for the success of business models. Regarding this topic, there are already research results, e.g. Bruns et al. (2020) outline the "High Value Data

Sets in Germany". Hupperz et al. (2022) also describe how data can be valued. However, there is no universal benchmark for assessing the monetary value of data. The number of factors that can influence the value of data is high, and some of these factors are difficult to systematically incorporate into a valuation system. For example, the value of datasets can be strongly influenced by sudden global events or developments, which means that a dataset can fluctuate strongly in value from one day to the next. For business models, this ultimately means that two companies can have a very similar business model but be very different in their success due to the valuation of the data.

Another aspect to consider is how a company generates revenue from its business model. For example, a company acting as a provider for data could opt for either a subscription-based system or a per-transaction payment. While the first option would be better suited to ensure a constant income stream, the second option could be more advantageous if the value of data fluctuates significantly. In any case, the choice of revenue model will usually have a strong influence on the success of the company.

6. Conclusion

Gaia-X offers companies a wide range of possibilities to better implement existing business models and realise new business models. A selection of these possibilities was presented in this white paper. For this purpose, eight business model types and six examples of implemented business models were explained. These examples range from companies that already have digital competences and offer, for example, analytical services via Gaia-X, to companies that take their first steps in the data economy by monetising existing data via Gaia-X.

In addition to the above, Gaia-X also offers companies many other possibilities. To begin with, a wide variety of combinations of the eight business model types are conceivable. Furthermore, for the sake of simplicity, only two characteristics of companies were used in this paper to distinguish between business models. However, many other characteristics can be used to explain value creation possibilities. Here, further research can make important additional contributions to capture the potential of Gaia-X and similar decentralised data sharing infrastructures.

However, it can already be seen that Gaia-X is laying the foundations for a thriving data economy that offers numerous opportunities. These can equally be exploited by small and large companies, as well as by highly digitised companies or companies that are participating in data value creation for the first time with Gaia-X.

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