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Data Ecosystem Business Models: Value and control in Data Ecosystems

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Abstract

Purpose: Organizations evolve from using and governing data internally towards the exchange of data in multi-organizational data ecosystems. The purpose of this research is to determine a business model framework for actors operating in and/or entering a data ecosystem.

Methodology: To determine a business model framework in data ecosystems. an analysis was made based on how the research fields of "business models", "data governance", "data ecosystems", "data sharing", "business ecosystem" complement each other. A business model framework was created, which was applied to three use case studies in the field of Smart Cities and Urban Digital Twins: The Helsinki Digital Twin, the Rotterdam Digital Twin, and the Smart Retail Dashboard in Flanders.

Findings: The business model of actors in a data ecosystem is determined by value and control factors. Value is determined by the capability to create value through the exchange of data in the ecosystem, and to capture value through revenue (sharing) models and cost (sharing) models. Control is determined by ecosystem control. Governance models on the ecosystem level are required to enable the collaboration and to ensure trust to allow for the willingness to share data. Additionally, data governance on an ecosystem level is required, enabling the data exchange between the actors.

Research Limitations: The model was applied to three use cases in Smart Cities and Urban Digital Twins. Consequently, the data ecosystems concern a high presence of public actors, yet also includes private companies. The applicability needs to be identified in other sectors in further research. Additionally, as the scope of the study was on business models, data governance, data-sharing and data ecosystems, abstraction was made of fields of study beyond these topics.

Value and practical implications: The Data Ecosystem Business Model framework can serve as a guideline for organizations entering a data ecosystem, as well as for actors aiming to establish novel data ecosystems. Additionally, the framework can serve as a high-level overview for further research into the field of business models in data ecosystems.

Keywords: business model, data governance, data sharing, data ecosystem

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Purpose

In different sectors, players are searching for ways to do more with data. The re-use of data in data ecosystems could help create value worth USD 3 trillion per year worldwide (McKinsey,2013) and the OECD estimates that (governmental and private) data sharing can help generate social and economic benefits worth between 1% and 2.5% of GDP (OECD, 2019). Furthermore, the European data strategy aims to create a single market for data that will allow it to flow freely within the EU and across sectors for the benefit of businesses, researchers, and public administrations (European Commission, 2019) and they put forward the proposal of the Data Governance Act to increase the re-use of data. Exchanging data poses different opportunities for companies to create new business models and services as data collaborations can facilitate the discovery of new insights, faster decision making, and increase innovation (Naslund, et al., 2017). For example, in port ecosystems, the sharing of data through the organization NxtPort can optimize the supply chain by matching industrial processes of manufacturers to shipments of logistical companies (NxtPort, 2020). In the medical sector, the exchange of data and equitable benefit sharing of genomic data through the platform LunaDNA can advance medical research (Fox, 2020). For governments and smart cities, it can lead the way to evidence-based policymaking, which is the process of using (big) data in the policymaking process and improving services (Thilo & Verhulst, 2017). The use of commercial data can be utilized to make policy decisions on safety measures during the COVID pandemic, and ultimately also for the economic recovery after the COVID pandemic (Muthukumarana & Perricos, 2020).

Data governance and business models in data ecosystems

Data exchange can occur on an 'intra-organizational scope' on a project- or firm level, for example between departments, or on an 'inter-organizational scope', which encompasses different firms or an ecosystem of firms (Konsynski & Tiwana, 2010). The use of data within an organization is mainly covered within the data governance literature (Khatri & Brown, 2010; Panian, 2010). On an intra-organizational level, data sharing in a data ecosystem results in complexities regarding data ownership and who has decision rights, which results in the need for data sharing policies and agreements (Eckartz, et al., 2014). Additionally, the more actors involved in the ecosystem, the more the creation and allocation of value become difficult, topped with complexities to ensure control of the data (Abraham, et al., 2019). When companies aim to price the data, the valuation remains a daunting task, resulting in complex negotiations (Li, et al., 2019). Besides, when data is shared, different risks occur, such as re-identification risk of anonymized data (Sanderson, et al., 2015) and commercial risk of losing data control or business value. Complying with legal requirements such as the General Data Protection Regulation (GDPR) discourages companies from sharing data (Khuruna, et al., 2011; Sayogo, et al., 2014). Abraham et al. (2019) formulated several further research questions concerning inter-organizational data exchange: How do organizations retain control over their data and design governance in inter-organizational relationships while deconstructing data silos? How are value and trust created in data collaborations?

A novel term utilized in the scope of inter-organizational data sharing and data exchange is "data ecosystems". A **data ecosystem** is a complex network between different actors (Olivieira & Loscio, 2018) where actors use and re-use data for a monetary and/or non-monetary returns between the actors. It is a similar concept to business ecosystems (Adner, 2016) where the main goal is to create a focal value proposition and alignment in the ecosystem. Thus, in the case of data ecosystems the focal value proposition is based on the exchange of data.

In this work, the researchers focused on the following research questions which relate to the business model of data ecosystems:

- *"Which factors determine the business models of organizations operating in a data ecosystem?"*
- *"How is the business model of real-life data ecosystems constructed?"*

The methodology section below describes the literature review and use case application. Next, the

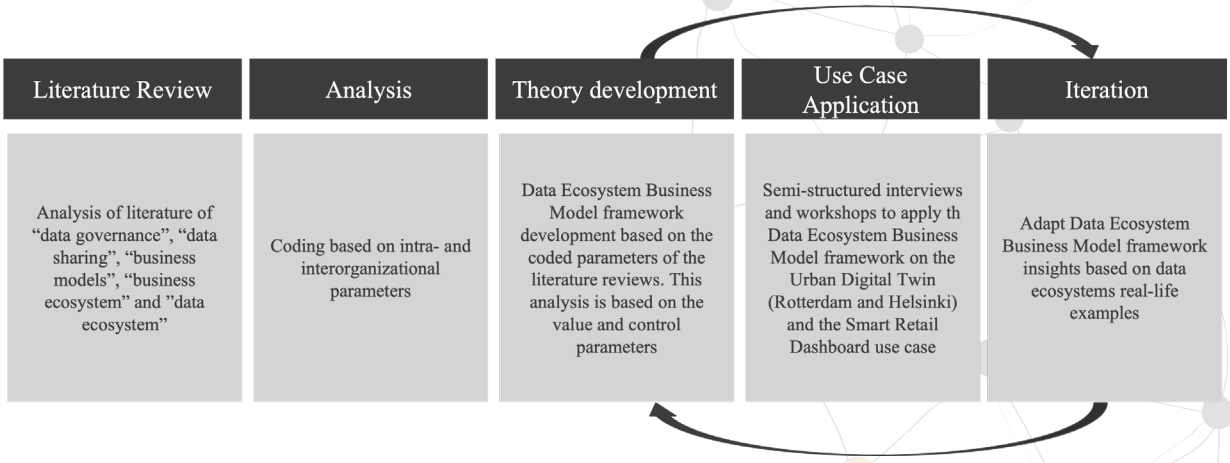

Figure 1: Methodological process

framework, which is based on the literature review, to identify business models in data ecosystems is described. The Business Models for Data Ecosystems Framework is applied in a multiple-case study analysis on two Urban Digital Twins use cases and the Smart Retail Dashboard use case. A discussion on the business model implications of data ecosystems is included. We conclude with the main insights of this work and suggested further research.

Methodology

Figure 1 shows the methodological process followed to answer the research questions below. Based on a **literature review** (Kitchenham & Charters, 2007) the authors identified gaps in the current research to provide a new framework. An initial search focused on the keywords 'data governance', 'business model', 'data sharing', 'data exchange', "data marketplace", "data ecosystem" and "business ecosystem". The search was performed in July and August 2020 and was limited to work in between the year 2000 and 2021 and to academic conference and journal papers. Papers were added when they were mentioned in impactful reviews and papers according to the Snowball Sampling method (Morgan, 2008) and based on their impact on the literature. After identifying referenced papers, they were looked up on ResearchGate[1]. The papers were selected based on whether a taxonomy with determining factors was included in the research. The literature on data sharing, data ecosystems and data marketplaces showed much resemblance and was grouped as terms were used interchangeably. In total, 50 academic works were reviewed (9 in data governance, 19 in business model and business ecosystem and 22 in data sharing, data ecosystem, data marketplace and platform ecosystem literature).

In the **analysis phase**, the literature was coded based on factors determining the 'intra-organizational scope' on a project- or firm level (Konsynski & Tiwana, 2010) and the 'inter-organizational scope', which encompasses different firms or an ecosystem of firms (Konsynski & Tiwana, 2010). The **Theory Development** phase is based on merging and relating key factors in literature (Miles & Huberman, 1994) and resulted in a framework which was developed by applying the division between value and control as proposed by (Ballon, 2007; Walravens & Ballon, 2013). This resulted in the first version of the Data Ecosystem Business model framework (initially named the Data Sharing Business Model Framework), which was published in (D'Hauwers et al., 2020).

After the Data Ecosystem Business Model Framework was **applied to two case studies** in the DUET[2] project as described in (D'Hauwers, et al., 2021) and

[1] An overview of the reviewed papers can be found in the Appendix

[2] *DUET* (Digital Urban European Twins) is a European innovation initiative which leverages the advanced capabilities of cloud, sensor data and analytics in the form of Digital Twins, to help public sector decision-making become more democratic and effective.

the Smart Retail Dashboard[3] project as described in (D'Hauwers, et al., 2021) using the multiple case study analysis approach. The scope of a case study is "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not evident" (Yin, 2014). A multiple case study approach was chosen, as it gives the chance to analyze data within different situations (Yin, 2014). In total 16 semi-structured interviews and 3 workshops were conducted with different players in the distinct ecosystems. The Data Ecosystem Business Model Framework was utilized to create a topic guide for the case studies, and some parameters were selected to develop business model scenarios. In this work, the researchers chose to illustrate the Data Ecosystem Business Model Framework application with the Urban Digital Twin use case and the Smart Retail Dashboard use case. Based on the use case studies, an **iteration of the Data Ecosystem Business Model Framework** was done in September 2021 to include insights on data ecosystems of real-life use cases.

Towards a framework for Data Ecosystem Business Models

This study aims to answer the question "*Which factors determine the business models of organizations operating in a data ecosystem?*". To come to the model, an overview was made of all relevant fields of literature, and which factors they cover to move beyond the boundaries of the organization. The authors aim to link the data governance, data sharing, and data ecosystem literature with the business model literature. Within the business model literature, a distinction can be made between authors that define a business model mostly on the level of the firm (Rappa, 2000; Osterwalder, 2004) while others define it at the network level (Weil & Vitale, 2001; Al-Debei & Avison, 2010; Timmers, 1998). On the network level of the organization, the main questions to be solved are connected with shifting organization boundaries, exploring the relationships that exist between actors in complex value networks and the roles they may play (Walravens & Ballon, 2013).

Thus, the overarching themes in network-level business model thinking are: "Who controls the value network and the overall system design" and "Is substantial value being produced by this model (Ballon, 2007). Given the focus on data sharing in inter-organizational settings, the network-level approach of business modeling provides new insights into the data governance, data sharing, and data ecosystem literature. This led to a framework based on the parameters of value and control (Ballon, 2009) which shows the evolution companies face, and which business model factors need to be identified. The underlying factors which are utilized for this analysis are:

- **Value**
  - *Value creation*: How can a differentiated customer value proposition be created? (Kaplan & Norton, 2004)
  - *Revenue and cost model*: How is value captured based on the use of revenue (sharing) models and cost (sharing) models? (Ballon, 2007)
- **Control**
  - *Value network*: How can organizations control the relationships that generate both tangible and intangible value through complex dynamic exchanges between two or more individuals, groups, or organizations (Allee, 2003)
  - *Data governance*: How is ensured that data meets the needs of the organization? (Panian, 2010)

The data ecosystem literature was grouped on different keywords: data marketplace, data ecosystems, and the platform ecosystem. Business model research which concerns multiple firms (Al-Debei & Avison, 2010) and business ecosystems (Adner, 2016) literature is also covered in the literature review. Data ecosystems are ecosystems in which several actors interact with each other to exchange, produce, and consume data (Olivieira & Loscio, 2018).

[3] *Smart Retail Dashboard* is a project funded by the Flemish government to create a public-private data partnership to develop a dashboard to support local economy policymakers.

Thus, data ecosystems are a type of business ecosystem, where the exchanged value proposition is based on data. Actors in a data ecosystem can be private as well as public. "Ecosystems-as-structure" is defined as a business ecosystem where the actors' interactions serve the fulfillment of a core value proposition (Adner, 2016) or co-created value (Turetken, et al., 2019). A business ecosystem strategy is defined as the alignment structure of the multilateral set of partners that need to interact for a focal value proposition to materialize (Adner, 2017). Each organization aims to position itself in the ecosystem and seeks to capture value, while trading of cooperation with competition. The distribution of value is very complex in the data ecosystem due to the possibility to recombine data (Li, et al., 2019) and due to the intangibility of data (Koutroumpis, et al., 2017). Additionally, a revenue model and pricing model need to be identified, and this needs to be balanced with a cost model to ensure profit (Ballon, 2006; Spiekerman 2019). The value of data is not always recognized between companies, which makes the pricing of data challenging (Spiekermann, 2019; Spiekermann, et al., 2018; Khatri & Brown, 2010). Thus, revenue-sharing models (Fox, 2020; Kembro & Selviaridis, 2015) are challenges in many data ecosystems.

The control of the ecosystem on a value network level is based to a large extent on the power asymmetry (Mason-Jones & Towill, 1999) between companies, as more powerful companies might enforce smaller companies to share data (Kembro & Selviaridis, 2015). To find alignment in the ecosystem and to agree on common standards of interoperability or value-sharing models, the ecosystem is highly dependent on the power dynamics within the ecosystem, as powerful actors aim to protect their data resources (Kembro & Selviaridis, 2015). Additionally, the control within the data ecosystem depends on the market dynamics, thus the collaborative or competitive nature of the value network (Dahlberg & Nokkala, 2019). The data ownership rights describe who owns and uses the data (Konsynski & Tiwana, 2010; Schreieck, et al., 2016; Lee, et al., 2018). Additionally, the openness of the data-sharing model determines which new entrants can enter the ecosystem, and thus also link to the power dynamics in the ecosystem. Different models of data sharing occur, such as in open closed or hybrid models (Spiekermann, 2019). Customer ownership concerns which players hold direct relations with end customers (Ballon, 2006), which in the case of data could be intermediated through a data intermediary or data could be exchanged directly (Wernick, et al., 2020).

On the data governance level, besides ensuring the quality of data such as in single organization and bilateral data use, the provenance plays an important role, as it enables to trace the history of the data life cycle transparently (Lee, et al., 2018; Koutroumpis, et al., 2017). Data licenses can ensure control over the quality of data by describing whether data can be reused, remixed, adapted, or built upon (Creative Commons , 2019) Thus, it can determine the data rights companies and data subjects may have. Further, Interoperability ensures machine readability (Wimmer, et al., 2018). Data control refers to the control of the essential data resources in the data ecosystem (Curry & Sheth, 2018) which can be controlled by a central actor, or can be decentralized and therefore spread across the multiple actors in the data ecosystem (Guggenberger, et al., 2020; Gelhaar, et al., 2021).

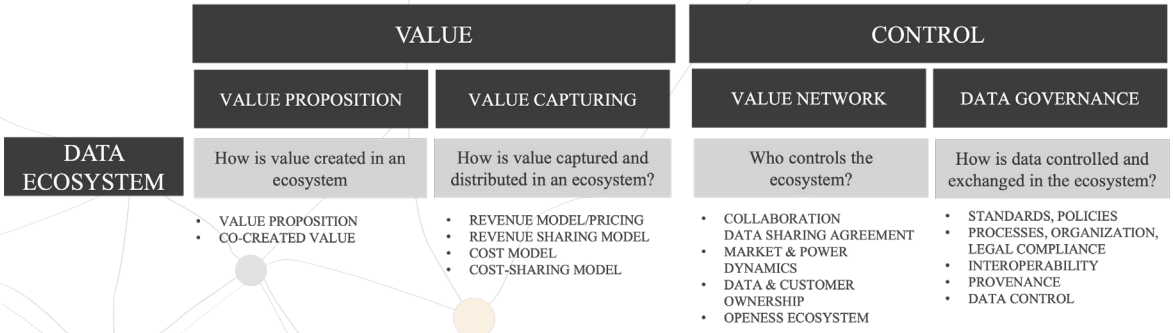

Figure 2: Value and control in Data Ecosystem Business Models

Multiple Case Study analysis: Value and control in data ecosystems

To answer the research question *"How is the business model of real-life data ecosystems constructed"*, the Data Ecosystem Business Model Framework, based on Value and Control (figure 2) was applied to perform a multiple case study analysis of 3 case studies involving cities and private companies:

- A government offering data to engage an ecosystem of co-innovation for companies (Digital Twin Helsinki data ecosystem)
- A government developing a data ecosystem of private and governmental data sources with use cases involving citizens (Digital Twin Rotterdam data ecosystem)
- Private companies developing a data solution for cities (Smart Retail Dashboard Flanders data ecosystem)

Each case study has their own ways of creating, capturing, and distributing value in the ecosystem, which are discussed in the case studies. Each use case also provided an opportunity to zoom into a specific aspect related to the control of the value network and controlling the data exchange in the ecosystem.

Case Study 1: The Helsinki Digital Twin data ecosystem

The Helsinki Digital Twin data ecosystem provides an example of a data ecosystem where a governmental actor provides access to governmental data to enable an ecosystem. Value is created for the city and for the actors in the ecosystem. The model is financed by the city as it helps to reach policy goals. On the control side, it provides insights on the need for data governance in a data ecosystem.

Value creation and capturing

The purpose and value creation of the Helsinki Urban Digital Twin is twofold. A first purpose of the Helsinki Urban Digital Twin is to support the **policy making of the government by including the citizens and ecosystem in the policy process.** One application of the Digital Twin is the Helsinki Energy and Climate Atlas, which is an open web service, built on a semantic Digital Twin model, which can be accessed, used, and shared by citizens and the overall ecosystem. It has four service modules: energy data, solar energy, heat demand, and geo-energy. It can be used by companies, real estate developers, city planners, and building users. Example given, the tool is used by an energy advisory agency that advises people whether to install solar panels or not. Additionally, the tool is used as an information source for energy, heating, and cooling companies to provide a better service.

The added value of the Digital Twin is to gather data from different governmental sources, process data in order to structure the data into a city data model and visualize the data in a real-world environment. The value is captured by the ecosystem, as it enables improved service provision for companies and better decision making. For the city it leads to better services of the city and enables the city to reach climate goals. The service is free for citizens and actors, as the cost is covered by governmental funds.

Additionally, another purpose of the Helsinki Digital Twin is to **drive co-innovation**, which is oriented to engaging the ecosystem to innovate with the data

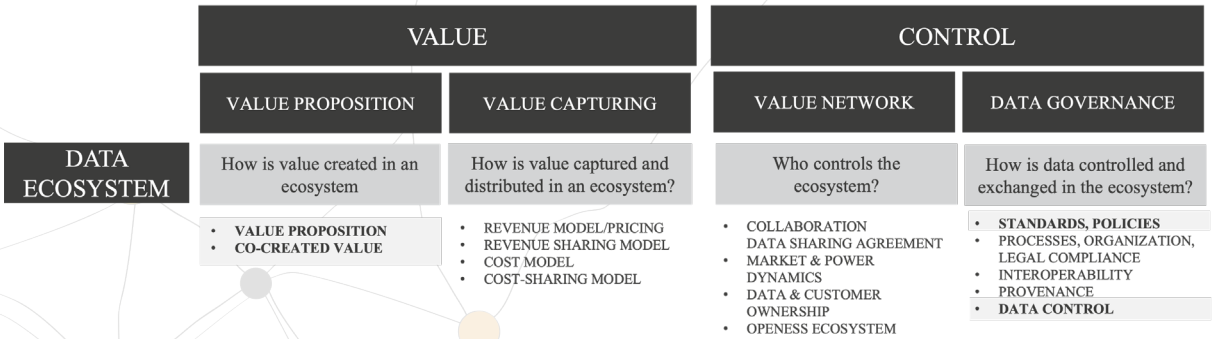

Figure 3: Value and control in the Helsinki Digital Twin

of the urban Digital Twin. This was showcased in a Hackaton where companies could use open data and 5G mobile networks provided by the city, in an augmented reality challenge. The value for the government is mainly to reach policy goals and to engage the ecosystem to innovate. The value is captured as one of the main policy goals of the city is to drive innovation, and they operate under the "open by default' principle. The costs are covered by governmental funds. Startups capture the value as they have access to data and can create new innovations.

Control of the Data governance

In this use case, a major focus of the city concerns the data governance regarding policies and data control. The **data source is mainly governmentally owned data**. The data is often generated and collected by the government, and when needed **purchased from private companies**. In this case, the government also needs to decide on which data can be **open, and which data cannot be shared with the wider public**. Reasons for not sharing the data can be because the data is sensitive, can pose negative effects on society when it comes into the wrong hands or simply because there are no use cases. To open data, a **classification of data** is required which determines which data can be **opened**, and which data needs to remain **closed.** This depends on the confidentiality, correctness, and availability of the data. This depends also on the type of data, as **governmental data** is often seen as data which needs to be 'as open as it can be', whilst some data can be too sensitive to share (e.g. in the case of water piping data this can only be shared on a certain level). In the case of commercial data, the sharing of the data depends on the conditions of the company. In the case of personal, privacy-sensitive data this needs to comply with the GDPR, and some cities even require to set up an ethical commission which needs to determine whether the data can be shared based on what will happen with the data and which data is required.

Table 1.

Use Case	Actor	Value proposition	Value captured	Revenue Model
Energy & Climate Atlas (energy data, solar panels, CO2 emissions...)	Real estate companies, researchers, city planning, citizens...	E.g., Solar panels: give advice by real estate companies to improve renovations E.g., Information for energy, heating, and cooling companies	External: Improved service provision for companies, better decision making Internal: Improved services of the city, reach climate goals	Free for citizens and actors Cost covered by governmental funds
Hackathon and co-innovation	Universities, startups, citizens	Access to data to innovate e.g. open data and 5G challenge, to use geodata to build an AR application	External: access to data, create new innovations Internal: Provide data, create innovation, "open by default' principle	Free for users City provides a prize for challenges Cost covered by governmental funds

Table 1: Value creation and capturing in the Helsinki Digital Twin

Case Study 2: The Rotterdam Digital Twin data ecosystem

The Rotterdam Digital Twin data ecosystem provides an example of a data ecosystem where a governmental actor aims to create an infrastructure for data exchange between private and governmental actors. Value is created for the city and for the actors in the ecosystem. The model is initially financed by the city as it helps to reach the policy goals. On the control side, thus use case provides insights on the need for ecosystem governance in a data ecosystem.

Value creation and capturing

The Rotterdam (Netherlands) Digital Twin is in the process of setting up the **digital infrastructure for a data ecosystem** in Rotterdam to bring different actors together through the Digital Twin and the Open Urban Platform by sharing data within the ecosystem. The Digital Twin is mainly used to engage the ecosystem, with different use cases. There are use cases where the city provides data, and other use cases where the city provides a platform for data exchange.

The data sources for the Rotterdam Digital Twin are based on both governmental data and data from the ecosystem. Therefore, Rotterdam aims to set up a data ecosystem called the **Open Urban Platform.** In this data ecosystem, the role of the city is to connect different actors, to develop the platform, to own the platform, and to invest in the initial stages. Once the platform is operational, the city and the data ecosystem will be able to act as a data provider, developer, user, and customer of the digital data ecosystem. Thus, the data sources of the urban Digital Twin will be governmental data, as well as private data from the data ecosystem gathered from the open urban platform. The added value for the data providers will be to sell their data, and for the data consumers that they will have access to data they previously do not have access to.

The initial use cases of the Rotterdam Digital Twin engages with the ecosystem, as it provides data insights for different players in the ecosystem to make their own decisions (e.g., information on building permits…), and to engage citizens in participation in urban construction processes (an AR application on construction sites, citizen participation by allowing to give feedback). The added value of the Digital Twin is to **gather data** from different governmental and private sources, **process data** to structure the data into a city data model and **visualize the data** in a real-world environment. The value is created externally to the citizens, as the citizen can provide feedback and receive feedback on projects in the city, and they can also engage more with the digital twin. For the government, this can improve decision making, improves processes and reduces cost for future use cases. For companies, this can improve processes. For data providers, this can become a novel revenue source. As the use is primarily **provided for free to the citizens**, the **revenue model is initially based on creating internal value** and use without a direct financial exchange. The costs are covered from the Digital Twin department paid from **governmental funds**.

In the long run, the financing and revenue model of the Rotterdam Digital Twin will probably change. Initially, the city pays for the technological infrastructure and for the structuring and gathering of data. As it concerns public value, the Digital Twin could use governmental funding for the opening of the Digital

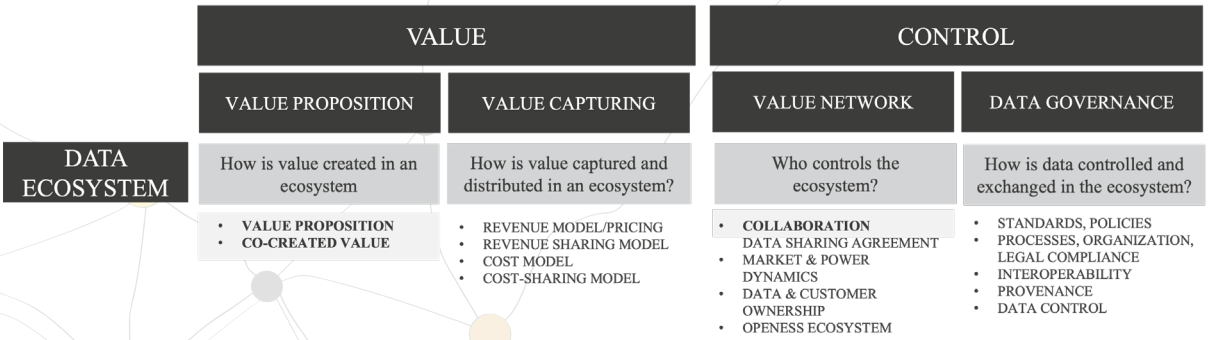

Figure 4 Value and control in the Rotterdam Digital Twin

Table 2.

Use Case	Actor	Value proposition	Value captured	Revenue Model
Building Permits	Citizens who want to request a permit	Quick feedback on whether a citizen will receive a permit	Citizen: quick feedback Government: reduced governmental time spent, better service	Free for city Costs covered by Digital Twin department
Participation	Citizens who want to give feedback on urban project	Informing citizens about urban development projects	Citizen: Better visualisation of the city project Government: Improved decision making, receive feedback from the citizens	Free for citizen Costs covered by Digital Twin department

Table 2: Value creation and capturing in the Rotterdam Digital Twin

Twin and the Open Urban Platform to the ecosystem. In the future and for some use cases, the ecosystem could also be paid for data by other actors in the ecosystem if the value mainly returns to them.

Control of the Open Urban Platform

In setting up the Open Urban Platform, the city takes an active role in the the first phase of setting up the platform. Afterwards, the city will need to identify whether the governance of the Open Urban Platform might need to be transferred to the ecosystem itself. Working with a completely different model which gives more control to the ecosystem, requires a drastically changing role of the government. It needs to move from a more passive role towards taking an active role in the ecosystem and positioning the government and the data ecosystem actively. It requires a governance model for the ecosystem and a role definition for the government. Different activities will be required to facilitate the supply and demand of data in a marketplace, and additional services (such as data storage, geocoding…). Additionally, there is a role for marketplace governance who guards the balance between the commercial exploitation and the societally responsible behaviour of actors in the ecosystem. If the Urban Digital Twin is offered to the ecosystem as an infrastructure for the end users, questions arise on who gains value, who adds value and who owns the results of the outcome of the Urban Digital Twin. Therefore, when opening the Digital Twin to the ecosystem there can be questions on what the role of the city government, beneficiaries and contributors of the Urban Digital Twin are.
Additionally, an Urban Digital Twin with a surrounding data ecosystem needs a governance model which ensures trust in the ecosystem. The data ecosystem needs to be willing to open the data, require clear data ownership rules, which ensure control over the data resources, and to set up conditions based on which the data can be shared. To set this up, collaboration models need to be set up regarding the ownership of data, access to data, and open standards adoption by the ecosystem.

Case Study 3: The business model of the Smart Retail Dashboard data ecosystem

The Smart Retail Dashboard data ecosystem provides an example of a data ecosystem where a consortium of private actors aims to create an offering for data exchange from private actors towards governmental actors. Value is thus created for the cities in the retail sector. This use case provides insights on the need for developing a sustainable revenue and cost (sharing) model in a data ecosystem, and on the control side, it provides insights on the need for ecosystem governance related to the openness of the data ecosystem.

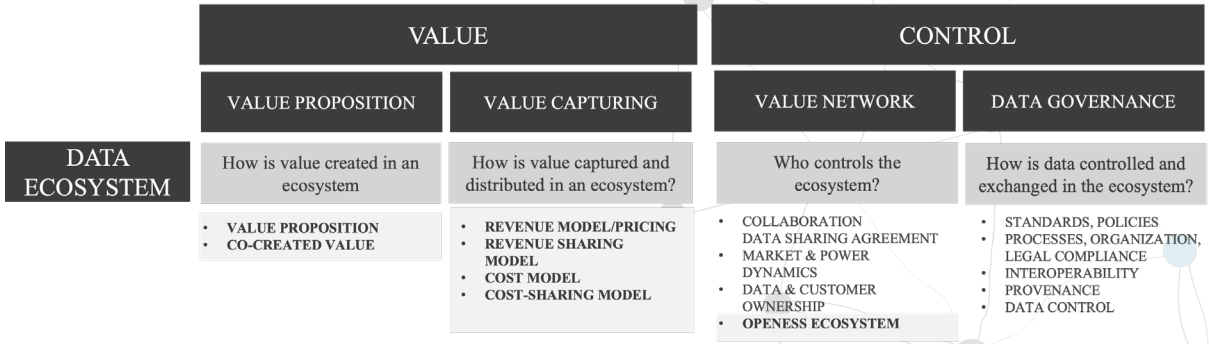

Figure 5: Value and control in the Smart Retail Dashboard

Value creation and Capturing

The aim of the Smart Retail Dashboard is to support policy makers in Flemish cities to make decisions based on urban data sources. The Smart Retail Dashboard is a collaboration of private companies which offers a data platform with combines and visualizes governmental and private data of telecom providers, financial data providers.

The primary focus will be on four use cases (attract retailers to the city, develop a retail strategy, event management and City Marketing). The value of the Smart Retail Dashboard comprises of ensuring that public authorities can make decisions based on actual data. To provide this value, the different actors combine smart city information and data such as transaction data, passer-by, visitor profiles...

Table 3.

Use Case	Actor	Value proposition	Value captured	Revenue Model
Event Management	Policy Maker responsible for city events	Identify the ROI of an event organized by the city (impact on purchases at local retailers)	Government: Able to assess ROI on events Retailers: Events lead to higher purchases	Different models are possible: freemium, subscription model, cost-sharing model Paid in a cost sharing model by cities and by Flemish government
City Marketing	Policy Maker responsible for City Marketing	Identify profiles of visitors in the city to adapt the City Marketing	Government: Assess ROI on City Marketing Retailers: Increased number of visitors in the city	
Retail Strategy	Policy Maker responsible for Retail Strategy	Adapt the retail strategy of the city based on data of purchases and visitors	Government: Develop a Retail Strategy based on data Retailer: Retail Strategy leads to higher profitability	

Table 3: Value creation and capturing in the Smart Retail Dashboard

Revenue and cost (sharing) models:
In the case of the Smart Retail Dashboard, the revenue model of the Smart Retail Dashboard is of a major concern to enable a sustainable business model, as cities have limited budgets and the total addressable market is reasonably small. The model will be based on a basic data offering in a subscription model, with additional possible services of consulting, additional in-depth data, and standardized additional reports.

Three different models were developed to provide an answer to this challenge (a license model, a cost-sharing model, and a freemium model). In the license model, the cities pay 100% of the license cost for access to the dashboard with access to basic standardised reports. Due to the limited budgets of the cities, this model may not be realistic. In the cost-sharing model, the cities pay a percentage of the access to the dashboard and the use cases. Given the societal value of the Smart Retail Dashboard, governmental support of higher governments (on the Flemish level) is included in this model. In the freemium model, the users receive free access to the dashboard and the license cost would be paid by the higher governments. Cities would pay for additional services such as reports, additional data, and consulting.

An example of the revenue model and value network of the Smart Retail Dashboard is shown below. The cities receive access to a basic offering (including the license, access to platform and standardized report). If desired, the city can receive an additional offering in depth data, for which it will pay a premium. The fee will be paid to the platform provider of the Smart Retail Dashboard, who redistributes the fee within the consortium. The redistribution between the different data providers is based on the amount of data it provided based on a contribution percentage of each partner. If insufficient data is available, data providers from outside of the consortium can be added, and they receive a fee per provided data.

Control: Openness of the ecosystem
The market conditions show that many data providing actors of the Smart Retail Dashboard operate in the ecosystem in a competitive environment. Thus, different players may not trust to share data with each other. To overcome this lack of trust in the ecosystem, an ecosystem governance model is required for who can enter the collaboration. To develop a governance model for the ecosystem, three different scenarios arose based on **'open, hybrid or closed'** (Spiekerman et al, 2019) collaboration models.

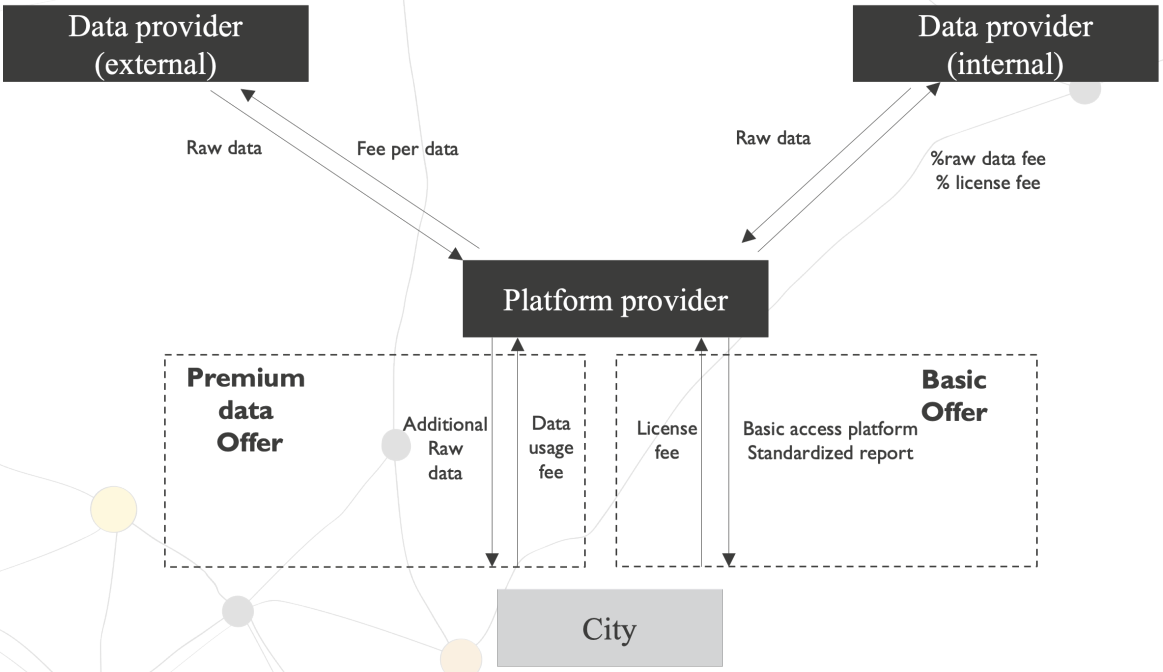

Figure 6: Value network of the Smart Retail Dashboard data offering

In the **open model**, all data owners can join, and receive a fee based on the percentage of their data contribution to the final offering. In the **closed model**, a limited amount of data providers creates a consortium. The consortium is composed of complementary players, who do not compete but collaborate. The data providers receive a fee based on the percentage of their data contribution to the final offering to the cities, as is negotiated in the beginning of the collaboration model. In the **hybrid model**, a limited amount of data providers creates a consortium. The consortium is composed of complementary players, who do not compete but collaborate. The data providers receive a fee based on the percentage of their data contribution to the final offering to the cities, as is negotiated in the beginning of the collaboration model. Yet, through subcontracting additional data providers could be added to the consortium, either on a short term – or long-term basis.

Implications on Business Models of actors entering data ecosystems

If value through data cannot be created and captured sufficiently within organizations, one may need to move beyond the borders of single organizations. Thus, the need for a data ecosystem arises. The business models for entering data ecosystems have implications on different actors: either actors who aim to **establish a data ecosystem** (such as the Rotterdam government use case) or actors who want to determine whether they want to **enter an existing data ecosystem**. This could be as an actor providing data or receiving data, depending on the use case. This may concern governmental and/or private players.

To enter data ecosystems, actors will need to ask questions which can be guided by the Data Ecosystem Business Model Framework. One needs to establish whether value can be created when entering or setting up a data ecosystem: Can the internal data of the individual actors be utilized to create value of data internally within the organization? Or is there a value for exchanging data in a data ecosystem? Will the company require to receive data from other actors, or will it be able to share data? It could be observed that all case studies initially created value through the definition of use cases involving governments, companies, and citizens to kick start the ecosystem. Within these use cases, value needs to be created for all different actors. If there is no value created for one actor in the data ecosystem, the use case will not materialize as no alignment can be found between the actors for a common focal value proposition of the ecosystem.

The actor will need to establish whether value can be captured by entering a data ecosystem. Are there revenue (sharing) and cost (sharing) models which are applicable? In the different use cases, governmentally funded use cases for creating a data ecosystem were required to build a sustainable model (Helsinki, Rotterdam) to kick start the ecosystem. Value can be captured in monetary terms (paying a fee for data in the case of the Smart Retail Dashboard) or non-monetary (e.g., free access to data). In the latter, as value is captured by the government for reaching policy requirements, the governments pay for the development of the use cases in the cities of Helsinki and Rotterdam. The example of the Smart Retail Dashboard and in the future Rotterdam show that there is a need for developing revenue sharing models and cost sharing models between private and public actors. The distribution of value within the ecosystem is a major field of further research, as could be observed in the Smart Retail Dashboard use case.

When the value creation and capturing questions are answered, an actor needs to determine whether it can control its current position in the market by entering a data ecosystem. Additionally, actors aiming to establish a data ecosystem, will need to consider questions regarding ecosystem governance. Can the other actors in the ecosystem be trusted? What are the power dynamics, customer ownership and data ownership tendencies in the ecosystems? Can data be shared with the partners in the ecosystems, or are there competitors with whom data cannot be shared? Is there a need for developing ecosystem governance models in the data ecosystem, and is the company willing to abide to the existing governance models? In the Rotterdam and Smart Retail Dashboard use cases, it became clear

that trust within the ecosystem will need to be created. Companies or governments may not want to share the data with competitors and/or will not want the data to be reshared. Additionally, when setting up a data ecosystem, new roles for the government and private actors arise, requiring novel governance models. One aspect within the governance models is the openness of the ecosystem, which has major implication on the models to collaborate as the Smart Retail Dashboard use case has shown. In closed ecosystems the actors choose with whom the data is shared, while in open ecosystems this creates additional challenges for data sharing governance.

Last, the control over the data resources will need to be ensured as well as the efficient exchange of data. Can agreements be made within the data ecosystem regarding the usage of data? Is the data sufficiently structured and shareable or are interoperability standards required within the ecosystem? If there are existing agreements, is the company willing to adopt the standards, and what are the implications on the existing data governance within the company? This has business model implications, as it may require actors to change their current way of handling data. The example of Helsinki has shown that looking into with whom the data can be shared is of a high importance, as some data may be sensitive due to privacy, competition, or security reasons. Thus, the sharing of data in data ecosystems requires the acceptance of agreements and standards within the ecosystem, which may result into changing certain internal policies of actors.

Conclusions

To define the ongoing evolution towards data ecosystems, a literature review in the fields of data governance, data sharing, business models, and data ecosystems was performed, describing the interdependencies between the different streams of literature. This led to a Data Ecosystem Business Model Framework based on value and control, which includes the parameters of value (how is value created and captured) and control (controlling the value network/ecosystem and data governance). The multiple case study analysis provides empirical analysis of business models of data ecosystems showcasing the factors in three use cases in the Rotterdam Digital Twin, the Helsinki Digital Twin and the Smart Retail Dashboard.

The Data Ecosystem Business Model Framework can be utilized to help to define an alignment strategy between the actors to go towards the same direction by providing an overview of the factors that need to be considered. It shows the need for creating individual business models with value proposition & revenue (sharing) models for each organization that fits the overall ecosystem strategy. Value needs to be created and captured within use cases for the data ecosystem to materialize and for alignment to occur. Additionally, it shows the need for control of the data ecosystem, as governance models are required to develop organizational models in the ecosystems, as well as to develop trust among the partners in the ecosystem to be willing to share data. Lastly, data governance models are required to ensure data can be controlled and exchanged within the ecosystem.

A limitation of this study is that it is applied to case studies in the fields of smart cities and digital twins. As a result, the use cases all deal with ecosystems where governments play an important role. Further research will need to investigate whether these findings can be extrapolated to other data ecosystem with a higher presence of private actors. Another limitation concerns the fields of literature that have been covered. This work concerns data governance, data ecosystem, business models, data sharing literature, and makes abstraction of legal and technical challenges.

Further research is required to determine the underlying business model implications of data ecosystems. Examples of important areas of study are the value of data, the willingness to share data in data ecosystems, revenue sharing models and value distribution models, governance models for enabling trust, the openness of data ecosystems, ... The Data Ecosystem Business Model Framework can serve to further scope this ongoing research.

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Appendix: Overview of analyzed literature

Table 4.

Paper	Intra-organizational	Inter-organizational
(Ballon, 2007) (Control and value in mobile communications)	Not applicable	Control: Value network - Functional architecture Value: Financial model - Value configuration
(Walravens & Ballon, 2013) (Business models for smart cities)	Not applicable	Control: Value network - Functional architecture - Governance Vale:: Financial model - Value configuration – Public Value
(Mahadevan, B., 2000) (Business models for internet-based e-commerce)	Not applicable	Value stream, Revenue stream, Logistical stream
(Alt & Zimmerman, 2001) (Business models)	Mission, Structure Process , Revenues	Not applicable
(Applegate, 2001) (Emerging e-business models)	Concept, Capabilities, Value	Not applicable
(Rappa, 2000) (Business models on the web)	Sustainability, Revenue stream, Cost structure, value chain positioning	Not applicable

Table 4: Data governance

Table 4. *(Continued)*

Paper	Intra-organizational	Inter-organizational
(Weil & Vitale, 2001) (Migrating to eBusiness models)	Revenue Strategic objective Competencies	Roles & relationships, Flow (information money), Customer segments & channel
(Chesbrough & Rosenbloom, 2002) (Business model and capturing value)	Cost structure Competitive strategy	Value proposition, Market segment, Value chain, Value network
(Osterwalder, 2004) (Business model generation)	Key resources, Key activities, Key partnership; Revenue stream , Cost, Customer segment & relationship Channel, Value proposition	Not applicable
(Morris, et al., 2005) (The entrepreneur business model)	Competence, Positioning, Revenu, Value Ambitions	Not applicable
(Bonaccorsi, et al., 2006) (Hybrid business models in open source software)	Products & Service, Customer Cost structure, Income, Network, Network externalities	Not applicable
(Johson, et al., 2008) (Reinventing your business model)	Profit formula (revenue, cost), Resources, Processes, value proposition	Not applicable
(Grefen, et al., 2013) (Turetken, et al., 2019) (Service dominant business model radar)	Not applicable	Co-created value proposition, Actor value proposition; Actor co-productivity activity, Actor cost-benefit
(Weking, et al., 2018) (industry 4.0 – A business model pattern framework)	Target customers, Value Proposition, Value Chain, Key elements, Value capture, value chain	Not applicable

Table 4: Data governance

Table 4. *(Continued)*

Paper	Intra-organizational	Inter-organizational
(Solaimani & Bouwman, 2012) (alignment business model and business process)	Value, Information, Process	Not applicable
(Wirtz & Daiser, 2017) (Business model innovation: conceptual framework)	Target customer, value proposition, value constellation, Macro, and microenvironmental dimensions	Not applicable
(Al-Debei & Avison, 2010)(Unified framework of the business model concept)	Not applicable	Value proposition , value architecture, value network, value finance
(Wiener, et al., 2019) (Data business model framework	Not applicable	Value proposition Value architecture,V value network , Value finance
(Adner, 2016)(Adner, 2017) (Ecosystem-as-a-structure)	Not applicable	Alignment structure, multilateral, set of partners, focal value proposition

Table 4: Data governance

Table 5.

Paper	Inter-organizational	Intra-organizational
(Allen, et al., 2014) (data governance and data sharing in health)	Not applicable	Data Sharing Agreement Who will share or access the data? What types of data? Why?
(Martens, 2020) (The economics of the business to government data sharing)	Not applicable	Market type, Single data source VS. multiple data sources, Quality of data, Transaction costs
(Eckartz, et al., 2014) (A decision model for data sharing)	Not applicable	Ownership of data, Privacy legalities value of data and revenue, Data quality, Data standards
(Kembro & Selviaridis, 2015) (Information sharing across multiple supply chain tiers)	Not applicable	Trust, Benefit-sharing, Information quality, Dominant player/power structures, Confidential information
(Richter & Slowinski, 2019) (The Data Sharing Economy:)	Not applicable	Platform ownership - Openness, Trus , Revenue, Match supply, and demand
(Koutroumpis, et al., 2017)(Potential of data marketplaces)	Not applicable	Provenance (control and quality) Transaction costs
(Spiekermann, 2019) (Data Marketplaces: Trends and Monetization of Data Goods)	Not applicable	Transformation architecture, Market access, Value proposition Revenue model, Price model, Integration , Market positioning
(van den Broek & van Veenstra, 2015) (governance in inter-organizational data collaborations)	Not applicable	Type of data sharing, Characteristics, Coordination mechanism, Control over data

Table 5: Data Sharing/ Data ecosystem/ Data marketplace

Table 5. *(Continued)*

Paper	Inter-organizational	Intra-organizational
(Stahl, et al., 2016) (A classification framework for data marketplaces)	Not applicable	-Hierarchical vs market based -Ownership (private, consortia, or independent)
(Lee, et al., 2018) (Data governance for platform ecosystems)	Not applicable	Definition criteria, Data use case Conformance legalities: Data ownership and access, Contribution estimation, provenance, Monitoring
(Dahlberg & Nokkala, 2019) (Willingness to Share Supply Chain Data in an Ecosystem Governed Platform)	Not applicable	Trust, Control of processes, Data quality, Risk (commercial, technical)
(Schreieck, et al., 2016) (Design and governance of platform ecosystems–key concepts and issues for future research.)	Not applicable	Roles - Control Pricing and revenue sharing - Competitive strategy Boundary resources Openness - trust
(Autry, et al., 2014) (Multiplexidy in the supply chain)	Not applicable	Dyadic vs. Multiple relationships Relational and process-based linkages
(Caridi, et al., 2014) (Virtuality and complexity in supply chains)	Not applicable	Dyadic vs. Multiple relationships Visibility (access/share data supply chain) Virtuality (collaborate supply chain) Complexity supply chain
(Tachizawa & Wong, 2014) (multi-tier sustainable supply chains)	Not applicable	Multi-tier supply chain Power, dependency, distance, industry, knowledge resources

Table 5: Data Sharing/ Data ecosystem/ Data marketplace

Table 5. *(Continued)*

Paper	Inter-organizational	Intra-organizational
(Kembro, et al., 2017) (Information sharing in multiple supply chain tiers)	Not applicable	Information quality, cost IS, power asymmetry, governance/dominant player, trust, benefit allocation, metrics, goals, confidential information
(Pavlou, 2002)(Online marketplaces with institution-based trust)	Not applicable	Trust: Based on Perceived risk, past performance, andtransactiono,n intentions
(Oliveira, et al., 2019) (Data ecosystems: systematic mapping study)	Not applicable	Technical knowledge, complexity tasks, actor participation, organizational structure, privacy & confidentiality
(Azkan, et al., 2020) (Service dominant logic on data ecosystems)	Not applicable	Value co-creation (key offering, value, value capture), Actors (role); Operations/data flow; Data assets; Architecture (type, resources, access), Governance (structure, security, usage)
(Curry & Sheth, 2018) (Topology data ecosystems)	Not applicable	Control of data key resources (central vs decentral); Type of interdependence (reciprocal, pooled)
(Guggenberger, et al., 2020) (Types of ecosystems)	Not applicable	Ecosystem purpose, relational structure, system configuration, system dynamics
(Gelhaar, et al., 2021) (Taxonomy of data ecosystems	Not applicable	Economic (domain, purposeorganizationon); Technical (infrastructure, openness); Governance (interdependence, control)

Table 5: Data Sharing/ Data ecosystem/ Data marketplace

Table 6.

Paper	Intra-organizational	Inter-organizational
(Ballon, 2007) (Control and value in mobile communications)	Not applicable	Control: Value network - Functional architecture Value: Financial model - Value configuration
(Walravens & Ballon, 2013) (Business models for smart cities)	Not applicable	Control: Value network - Functional architecture - Governance Vale:: Financial model - Value configuration – Public Value
(Mahadevan, B., 2000) (Business models for internet-based e-commerce)	Not applicable	Value stream, Revenue stream, Logistical stream
(Alt & Zimmerman, 2001) (Business models)	Mission, Structure Process , Revenues	Not applicable
(Applegate, 2001) (Emerging e-business models)	Concept, Capabilities, Value	Not applicable
(Rappa, 2000) (Business models on the web)	Sustainability, Revenue stream, Cost structure, value chain positioning	Not applicable
(Weil & Vitale, 2001) (Migrating to eBusiness models)	Revenue Strategic objective Competencies	Roles & relationships, Flow (information money), Customer segments & channel
(Chesbrough & Rosenbloom, 2002) (Business model and capturing value)	Cost structure Competitive strategy	Value proposition, Market segment, Value chain, Value network

Table 6: Business models/ Business Ecosystems

Table 6. *(Continued)*

Paper	Intra-organizational	Inter-organizational
(Osterwalder, 2004) (Business model generation)	Key resources, Key activities, Key partnership; Revenue stream , Cost, Customer segment & relationship Channel, Value proposition	Not applicable
(Morris, et al., 2005) (The entrepreneur business model)	Competence, Positioning, Revenu, Value Ambitions	Not applicable
(Bonaccorsi, et al., 2006) (Hybrid business models in open source software)	Products & Service, Customer Cost structure, Income, Network, Network externalities	Not applicable
(Johson, et al., 2008) (Reinventing your business model)	Profit formula (revenue, cost), Resources, Processes, value proposition	Not applicable
(Grefen, et al., 2013)(Turetken, et al., 2019) (Service dominant business model radar)	Not applicable	Co-created value proposition, Actor value proposition; Actor co-productivity activity, Actor cost-benefit
(Weking, et al., 2018) (industry 4.0 – A business model pattern framework)	Target customers, Value Proposition, Value Chain, Key elements, Value capture, value chain	Not applicable
(Solaimani & Bouwman, 2012) (alignment business model and business process)	Value, Information, Process	Not applicable
(Wirtz & Daiser, 2017) (Business model innovation: conceptual framework)	Target customer, value proposition, value constellation, Macro, and microenvironmental dimensions	Not applicable

Table 6: Business models/ Business Ecosystems

Table 6. *(Continued)*

Paper	Intra-organizational	Inter-organizational
(Al-Debei & Avison, 2010)(Unified framework of the business model concept)	Not applicable	Value proposition , value architecture, value network, value finance
(Wiener, et al., 2019) (Data business model framework	Not applicable	Value proposition Value architecture,V value network , Value finance
(Adner, 2016)(Adner, 2017) (Ecosystem-as-a-structure)	Not applicable	Alignment structure, multilateral, set of partners, focal value proposition

Table 6: Business models/ Business Ecosystems

About the Authors

Ruben D'Hauwers is a PhD candidate in the field of Business Models in Data Ecosystems. He worked as a researcher at imec-SMIT, VUB since 2014, with a focus on investigating business models in the fields of smart cities, SMEs and sustainability. He holds a Master in Business Engineering of the University of Ghent and a Master in Innovation Management from the Antwerp Business School. Prior to working at imec-SMIT, VUB he worked as a business developer in Belgium and Myanmar for AIESEC and SBE nv.

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Prof. Dr. Pieter Ballon is the Director of the research group SMIT (Studies on Media, Innovation and Technologies). He was appointed the first Brussels Smart City Ambassador and is also the International Secretary of the European Network of Living Labs. Prof. Ballon holds a PhD in Communication Sciences and an MA in Modern History. Since 2009, he has taught Communication Sciences at the VUB (Free University of Brussels). His expertise lies in the Smart City area for both Brussels and the Flanders Region, on the subject of which he has recently published the book "Smart Cities : hoe technologie onze steden leefbaar houdt en slimmer maakt".

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The Role of Privacy Protection in Business Models for Sustainability: A Conceptual Integration from an Ecosystem Perspective

Fabien Rezac[1]

Abstract

Purpose: The principal purpose of this article is to address a critical issue emerging in the realm of interorganizational dependencies heavily impacted by digitalization, namely developing business models that would protect privacy in a sustainable way. On the one hand, companies have been jointly proposing, creating, delivering, and capturing value through an excessive, unethical exploitation of personal data and information. On the other, restricting and controlling flows of data and information hampers the processes that lead to social well-being. This article reflects on this paradox by building on the theories of business models for sustainability and contextual integrity, while offering a holistic conceptual narrative guiding the sustainable transition towards digital equity and inclusivity.

Design/methodology/approach: This conceptual article can be classified as a theory synthesis paper with the ambition to achieve an outcome that enhances knowledge on concepts and a phenomenon by a conceptual integration across two different, previously unconnected literature streams and theories.

Findings: This article suggests that businesses which play any role in transmission of data and information cannot be sustainable without protecting privacy as a social value. Furthermore, it argues that privacy cannot be protected without addressing the appropriateness of both flow and use of data and information with respect to all involved stakeholders. Ultimately, via linking two distinct yet interrelated and rigorously developed research streams, a heuristic framework for privacy and sustainability in business models is proposed as a system of key considerations for managers to apply in assessing and planning a business practice, so it protects privacy in a sustainable way.

Originality/value: The key theoretical contribution of this article can be considered twofold. Firstly, it unfolds the relevance of privacy protection for the stream of business model research directed toward sustainable development in a way that is theoretically rigorous, complementary with the stakeholder theory, and reflecting the changing interorganizational dependencies affected by digitalization. Secondly, it contributes to the contemporary debate on privacy as a social value through identifying theoretically thorough avenue for adapting the theory of contextual integrity to a social domain where value proposition, creation, delivery, and capture with and for stakeholders involves transmission of data and information.

Keywords: Privacy, privacy protection, contextual integrity, ecosystems, sustainability, social sustainability, business models, business models for sustainability

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Introduction

It is obvious that data-driven technologies have significantly impacted the way how business is conducted (e.g., Johnson, Christensen and Kagermann, 2008; Amit and Zott, 2012; Iansiti and Lakhani, 2014; Porter and Heppelmann, 2015). Literally every aspect of the business landscape has been radically shifting (Westerman and Bonnet, 2015) and with the Fourth Industrial Revolution underway, the biological, physical, and digital worlds have been gradually fusing. People have never been so close to technology before (Schwab, 2016; Rigby, 2014) and, in fact, each of us can now be considered a "walking data generator" (McAfee and Brynjolfsson, 2012, p. 63). Just to illustrate, it is estimated that by 2023, there will be 29.3 billion networked devices, which is approximately 10 billion more than 5 years earlier (Cisco, 2020). With the contribution of the COVID-19 pandemic causing a sudden increase in online presence, more than 59 zettabytes of data were predicted to be created, captured, copied, and consumed solely in 2020 (IDC, 2020). This amount of data is expected to grow with a five-year compound annual growth rate of 26 percent through 2024, and despite the ratio of unique data to replicated data being approximately 1:9, the data created by 2023 will amount for creation of more data than in the past 30 years (IDC, 2020). In the same breath, however, it is necessary to add that technology per se has no single objective value (Chesbrough, 2010) and the same applies to all the data it generates. These barely imaginable volumes mean nothing unless they are processed and used for various purposes – including those of commercial character.

Generally, business environments consist of interdependent bundles of resources, markets and technologies controlled by many (Astley and Fombrun, 1983). Therefore, when proposing, creating, delivering, and capturing value, we can see companies navigating these nowadays highly digitalized spaces jointly, by managing such dependencies with focus on establishing complementarity. On the one hand, they do so by actively engaging in different networks where the interorganizational relationships are governed by an interplay of contractual and relational mechanisms (Aagaard and Rezac, 2022). On the other, we can also see companies becoming embedded in ecosystems – sets of actors with varying degrees of multi-lateral, non-generic complementarities that are not fully hierarchically controlled and cannot be decomposed into an aggregation of bilateral interactions (Jacobides, 2019; Shipilov and Gawer, 2020; Adner, 2017). Underpinned by modularity, the jointly created value ultimately covers customer needs broader than the needs an individual firm would be ever able to address in isolation. Thus, facing the reality that offering alternative value proposition has little or no effect on building up a competitive advantage, the innately self-interested companies cope with the major paradigm shift by co-specializing and opening up for collaboration even with their competitors (Jacobides, Cennamo and Gawer, 2018; Gnyawali and Charleton, 2018, Jacobides, 2019).

Zooming in on the dynamics of ecosystems in particular, we can see companies co-creating products and services that span the traditionally clearly demarcated organizational as well as industrial boundaries – typically by using digital platforms, Application Programming Interfaces, Internet of Things, and other tools for gathering, sharing and analysing data (Desai, Fountaine and Rowshankish, 2022; Fuller, Jacobides and Reeves, 2019, Porter and Heppelmann, 2014). And while there is no doubt that such a substantial data-driven progress has all the required potential to serve as a major catalyst for socially sustainable development, it simultaneously encompasses a number of critical concerns, with privacy protection being one of the most imperative (e.g., Acquisti, Taylor and Wagman, 2016; World Economic Forum, 2021; Gstrein and Beaulieu, 2022). The endless array of notorious scandals of big-tech behemoths has drawn attention to the colossal imbalance of the value created for companies compared to value created for society. It has become widely recognised that organizations capitalize on customers' personal data and often use it on a massive scale without their permission or awareness (cf. Cochrane, 2018; Burt, 2019). Despite the fierce deployment of various regulatory mechanisms the mitigation by external interventions seems to be ineffective or, in fact, even counterproductive for innovation per se (cf. Bansal, Zahedi and Gefen, 2015; Burt, 2018; Martin, Matt, Niebel and Blind, 2019). While the infamous trade-off between customers' convenience versus their privacy gradually escalates into a

crisis of society-wide proportions (e.g., Meyer and Kirby, 2010; Li and Unger, 2012; Wang, 2013; Cloarec, 2020), the business models of many paradigm-setting companies still rely on exploitation of data and information, essentially ignoring their cumulative impact on the social bottom line. Since their products and services embody the very cornerstone of some of the most fundamental daily-life operations, giving up privacy has become seen simply as an inevitable collateral damage of living in this day and age – an ordinary price expected to be paid to be able to fulfil one's basic needs.

The practice of leveraging data for the commercial purpose has become so far-reaching that some researchers even resorted to using terms as expressive as "data capitalism" (West, 2017, p. 20). And although the rise of distributed-ledger created a number of opportunities for levelling out the playing field and establishing digital sovereignty (Montes and Goertzel, 2019), reclaiming the ideals that revolve around the notion of human-centricity requires to stop applying intrusive techniques and find a safer, more inclusive way to develop business (Esteve, 2017; Caputo, Pizzi, Pellegrini and Dabić, 2021). The current status quo residing in pseudo-competition dominated by gatekeeping platforms gradually closing their ecosystems and perpetually reinforcing their walled gardens calls for revisiting privacy protection from a perspective that reflects the current situation underpinned by redefined interorganizational dependencies. On the one hand, it is desirable for customers to share data and information – it makes their life swiftly convenient. On the other, however, one must simultaneously consider the picture in full; when used for generating profit across ecosystems, the data and information must be combined and used only in ways that are sustainable not only for an individual but also for the society at large.

This article attempts to tackle the abovementioned issue by answering the research question "How can companies propose, create, deliver, and capture value while protecting privacy in a sustainable way?" and unfolds followingly. First, due to the generally ambiguous understanding of conceptual articles, the applied process is delineated by presenting the deliberations that constitute the research design. Second, most relevant debates on the topic of concern are introduced and, adopting a perspective that reflects the current multilaterality of interdependencies in the digitalized world, the main limitations stemming from the nexus of the respective concepts are identified. Third, the concepts are integrated and a heuristic framework for sustainable privacy protection through business models is presented. Finally, the article reflects on the presented contribution in terms future research and managerial implications.

Research Design

As Salomone (1993, p. 73) puts it, "a sound conceptual article can be a quantum leap, in terms of value and usefulness, beyond a typical literature review." Overall, as pointed out by Gilson and Goldberg (2015), the difference between a review and a conceptual paper is the question "what's new." Although a conceptual article should include a concise overview of the domain that also describes the state of the affairs in the scientific field in question (i.e., "what do we know, where have we come from, and what are the areas yet to be examined," p. 128), this section should be written in a concise fashion, allowing the author to focus on a specific area that requires attention as well as propose and integrate relationships between constructs that have not been tested before. Although a conceptual article should include a concise overview of the domain that also describes the state of the affairs in the scientific field in question (i.e., "what do we know, where have we come from, and what are the areas yet to be examined," p. 128), this section should be written in a concise fashion, allowing the author to focus on a specific area that requires attention as well as propose and integrate relationships between constructs that have not been tested before. Although the distinction between empirical and conceptual articles is commonly drawn through the assumption that empirical articles have data while conceptual ones do not, not all papers without data are considered to be conceptual (Elder and Paul, 2009; MacInnis, 2004; Cropanzano, 2009).

The understanding of conceptual papers applied throughout this manuscript can be considered in line with a recently published contribution by Jaakkola (2020). This article concurs with her proposition that "a well-designed conceptual paper must explicitly justify and explicate decisions about key elements of the study" (p. 19) and shares her view on the research design elements a conceptual paper should comprise. Firstly, the argumentation in conceptual literature is based "less on data in the traditional sense, but involve the assimilation and combination of evidence that may come from a variety of sources" (Hirschheim, 2008, p. 434); therefore, it is necessary to be explicit about the choice of theories and concepts used to generate novel insights, which could be based on either a focal phenomenon or a focal theory. Furthermore, the authors should clarify their choice of theories and concepts that are being analysed and draw distinction between domain theory (i.e., "particular set of knowledge on a substantive topic area situated in a field or domain") and method theory (i.e., "meta-level conceptual system for studying the substantive issue(s) of the domain theory at hand") (Lukka and Vinnari, 2014). Other elements necessary to consider are the level of perspective, level of analysis, level of aggregation, key concepts used for analysis and explanation, key concepts to be analysed and explained, translating the focal phenomenon in a conceptual language, method of integrating the well-defined concepts, and quality of argumentation (Jaakkola, 2020, p. 20).

As presented further on, the approach towards reviewing literature in writing this article has been predominantly focused on two pertinent research streams, i.e., business models for sustainability and privacy. In both cases, the respective streams have been traced to their very inception and, searching for potential parallels, a theoretical narrative highlighting their emerging complementarity have been developed. Resultingly, adopting an ecosystem angle, this effort allowed for discovering a crucial significance of relating privacy protection to business models that are directed toward sustainable development. This phenomenon focal to the contribution of this article is observable, but not adequately addressed in the extant research (i.e., literature on sustainability in business models and literature exploring with privacy as a social value). The key concepts (i.e., business models for sustainability, contextual integrity) were chosen based on the fit with the phenomenon. Furthermore, due to the complementarity of these concepts, an interdisciplinary synthesis has been found exceptionally promising to address the emerging blind spots in both streams. While empirically interrelated, the research focused on privacy as a social value has foundations in philosophy and does not address business in combination with sustainability, while research on sustainability in business is rooted in management and does not address privacy as a social value in a way that would reflect privacy as a self-contained concept. The selection of papers used for building the argument has, therefore, been based on their relevance to the focal phenomenon and the conducted synthesis. The overview of choices related to this paper are illustrated in Table 1.

Adopting a perspective that takes into account the differences in methodological approach (i.e., how the argument is structured) introduced by Jaakkola (2020), this article can be classified as a synthesis paper, i.e., an article with the ambition to achieve an outcome that enhances knowledge on a concept or a phenomenon by conceptual integration across different, previously unconnected literature streams or theories. To elaborate, adopting the typology of conceptual contributions developed by MacInnis (2011), the general conceptual goal of this article is to relate the concepts of business models for sustainability and contextual integrity by integrating them, i.e., "seeing the simplicity from the complex" (p. 146). The process of integration requires linking the previously unconnected phenomena, seeking a parsimonious and higher-order perspective unfolding the previously unexplored relations. The role of authors is to act as metaphorical "architects" who project an original building from a set of materials through portraying the construction as a whole, while pointing out how the individual elements fit together in an unprecedented way.

Table 1.		
Empirical research	**Conceptual paper equivalent**	**Research design elements of this article**
Theoretical framing	Choice of theories and concepts used to generate novel insights	Privacy protection in sustainable business models from an ecosystem perspective
Data (source, sample, method of collection)	Choice of theories and concepts analysed	Business models for sustainability, contextual integrity
Unit of analysis	Perspective; level(s) of analysis/ aggregation	Meta-perspective
Variables studied (independent/dependent)	Key concepts to be analysed/explained or used to analyse/explain	Sustainable privacy protection in business models
Operationalization, scales, measures	Translation of target phenomenon in conceptual language; definitions of key concepts	Based on a thorough review of relevant literature
Approach to data analysis	Approach to integrating concepts; quality of argumentation	Figure 1.

Table 1: Decisions about the key elements of this study in accordance with Jaakkola (2020)

Understanding Business Models for Sustainability

Although there seems to be a consensus that the motivation of business model research is to systematically and holistically explain how companies do business (Zott, Amit and Massa, 2011), how it is run, and how it is developed (Spieth, Schneckenberg and Ricart, 2014); it is still apparent that the research area suffers from a significant ambiguity caused by a high number of different conceptualizations as well as taxonomies that systematically classify them. To cite Teece, "there are almost as many definitions of a business model as there are business models" (Teece, 2018, p. 41). Although the concept of business models has evolved extensively over the last two decades, it is still being referred to as an "unclear idea with a cannibalizing tendency towards other management terms" (DaSilva and Trkman, 2014, s. 379). On the other hand, explaining its importance for the field of business and management, Massa, Tucci and Afuah (2017) offer a comprehensive account of the key reasons for studying business models. First, business models are instrumental for strategy and competitiveness.

Second, business models embody a new dimension that complements the traditional foci of innovation, i.e., product, process, organization. Third, macro-level changes in the business landscape are blurring the boundaries between formerly distinct industries, and companies are under pressure to rethink the ways of achieving their desired outcomes. This is only evidenced by the expanding body of work carried out by scholars who tap into the increasingly topical field of ecosystems (e.g., Moore, 1993; Iansiti and Levinen, 2004; Adner, 2017; Senyo, Liu and Effah, 2019; Kohtamäki, Parida, Oghazi, Gebauer and Baines, 2019; Jacobides, 2019). Fourth, as explored in the further sections, the business model perspective allows organizations to align their economic interests with the creation of environmental and/or social value, while enabling the researchers to utilize the discussed concept for exploring such angle holistically.

During the last decade, several global economic and financial crises have highlighted the impact of companies on society, leading to calls for revisiting the relationship between business and sustainable development as defined more than thirty years ago, i.e., "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environmental Development, 1987, p. 41). Although the sustainability and green growth policy agenda is evident (Aagaard, 2019; Beltramello, Haie-Fayle and Pilat, 2013), there is also a realization that technology innovation alone cannot resolve all of our sustainability issues (Wells, 2013). Hence, building on Teece's (2010) seminal definition and a literature review by Boons and Lüdeke-Freund (2013), Schaltegger, Hansen and Lüdeke-Freund (2016) came up with a concept of business model for sustainability and defined it thusly: "[a] business model for sustainability helps describing, analysing, managing, and communicating (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries (p. 6)."

Conventionally, value creation has predominantly been considered in terms of product or service bundles offered to customers in order satisfy their needs, or in relation to economic value created for the business in question. In the vein of the frequently referenced triple bottom line approach by Elkington (2004), the business models for sustainability broaden the scope of the field by emphasizing the social and ecological aspects of value creation in connection to stakeholders that lie outside the narrowly bounded scope of parties directly involved in the key processes and activities. Moving beyond the commonly maintained orientation toward customer-centric value proposition and pointing out the lack of research in the area of stakeholder relationships in value creation, Freudenreich, Lüdeke-Freund and Schaltegger (2020) expand the conventional one-directional understanding of value creation by exploring it from the stakeholder theory perspective, which considers business "a set of relationships among groups which have a stake in the activities that make [it] up" (Freeman, 2010, p. 7). The authors hence highlight the importance a joint purpose around which a business is built and argue mutually beneficial value creation, i.e., with the stakeholders as well as for them. The stakeholder approach is especially resonant in the context of sustainability management, as elaborately discussed by Hörisch, Freeman and Schaltegger (2014). Firstly, both perspectives explore business beyond the limited egocentric focus on creating value only for the customer and the company itself. Acknowledging broader societal and natural embeddedness of businesses, they both reject separating business and ethics, hence condemning various forms of philanthropy, unless the value creation that leads to the resources distributed is sustainable and responsible by design. Followingly, they both resolutely oppose the thesis that profit is immoral, but also expand the short-term business outlook by seeking for value creation in a long-term horizon, especially in terms of financial, societal, and/or natural considerations, which connect them to the domain of strategic management. The key higher-level argument is that business and ethics are interrelated and inseparable. Asserting relationships and joint purpose as the key elements of business models, Freudenreich et al. (2020) hence developed a stakeholder value creation framework that diverges from the classical customer value proposition view by considering not only

what is the value and how is it created, but also with and for whom. This framework distinguishes between five interdependent stakeholder groups (i.e., customers, business partners, employees, societal stakeholders, and financial stakeholders) and explicitly considers the value flows that take place in their relationships. Given the presumption that value creation occurs between multiple different actors, it is necessary to view the outcome of the process as a portfolio. Naturally, this contribution has significant implications for the discussed concept of business models for sustainability, manifested through four theoretical propositions. Firstly, the identification and solving of sustainability issues as a part of value creation processes involve all relevant stakeholders (Stubbs and Cocklin, 2008; Aagaard and Ritzén, 2020). Secondly, how the particular stakeholders contribute to achieve the business model's joint purpose, which is oriented toward sustainable development, is clearly formulated (Bocken, Short, Rana and Evans, 2014; Lüdeke-Freund and Dembek 2017; Schaltegger, Hörisch and Freman, 2017; Upward and Jones, 2015) Thirdly, the interests of the stakeholders are aligned and the social, ecological, and economic value they receive is integrated (Freeman, 2010; Hörisch, Freeman and Schaltegger 2014). And finally, the value creation with and for stakeholders embodies and integrated perspective of ethical and business considerations (Freudenreich et al., 2020). Each of these propositions allows for evaluation of business models in terms of their capacity to perform in line with the business models for sustainability. While further contemplations on the topic of sustainable value creation through business models can be also found in several other outlets (e.g., Upward and Jones, 2015; Schneider and Clauß, 2019; Lüdeke-Freund, Rauter, Pedersen and Nielsen, 2020), commercialization of technological innovations while aspiring to create sustainable value with and for stakeholders entails a number of barriers. For instance, besides appropriability regime, complementary assets, discursive ambiguity, directional risks, methodological constraints or issues with double externality, the list also includes unsustainable dominant designs which can be changed only by radical innovation and interventions of system-level scale (Teece, 1986; Boons, Montalvo, Quist and Wagner, 2013; Lüdeke-Freund, 2020).

As Lüdeke-Freund (2020) argues, the knowledge about what prevents sustainable value creation is "extensive but not yet conlusive" and requires further insight. For instance, Brem and Puente-Díaz (2020) highlight that "[the] social dimension of sustainability has not received the same amount of attention as environmental or economic sustainability. Hence, the construct of social sustainability lacks conceptual and operational clarity (p. 4)." While the field is still in its nascent stage, the body of literature on socially sustainable business is growing and offers a "huge scope and impetus for future scholarly works" (Soni, Mangla, Singh, Dey and Dora, 2021). At the same time, however, it is crucial to point out that although business model literature acknowledges the importance of the social side of sustainability, it basically overlooks that in the interconnected world which essentially relies on flows of data and information, one simply cannot discuss sustainability without involving privacy as well as its protection. The following sections hence introduce privacy as a major social issue within the stream of sustainability focused business model research and suggest how to tackle it.

The Role of Privacy in Business Development

Establishing the interdisciplinarity between the domains of business model and sustainability allows to shift focus to a gently smouldering platform that is about to burst into flames—a highly interrelated and far-reaching issue of privacy.

The quest for discovering how to jointly propose, create, deliver, and capture value while protecting privacy have not only had a prominent spot in the research agendas of scholars running the academic gamut from engineering to philosophy. It has also been raison d'être for some of the key public, private and non-profit institutions. According to the OECD Digital Economy Outlook 2020 report (2020), the absolute majority of OECD member countries consider the main challenge to their privacy and data protection regulatory frameworks to be catching up with the technological developments and business models of online platforms. What is more, in order to

prevent their value creation from being hampered, the digital platforms have been even encouraged to self-regulate (Cusumano, Gawer and Yoffie, 2021). Ultimately, more than 80 percent of the countries consider artificial intelligence (AI) and big data to pose the main challenge for privacy and personal data protection. These findings are also very much in line with further global projections, which consider privacy to be one of the great tensions of the coming years (Reinsel, Rydning and Gantz, 2020).

To explain the reasons behind such an upset, in the words of Montes and Goertzel, AI space is essentially "dominated by an oligopoly of centralized megacorporations (2019, p. 354)" that expand into an increasing number of verticals. Such actors seemingly enhance privacy at the cost of creating bottlenecks, raise barriers to entry, and strengthen their position as ecosystem orchestrators controlling majority of the core society-wide operations. Looking under the proverbial hood of these hyperscalers, it can be seen that compared to the traditional operating models that rely predominantly on the processing power of employees, the value creation capacity of enterprises centring their business models around AI becomes far superior. In this environment, differentiation takes place through finding a right position within particular ecosystems and integrating algorithms into the very core of value creation processes. As Iansiti and Lakhani (2020a) point out, due to the push for constant innovation and improvement, we witness that companies holistically embracing the potential of algorithms can be scaled up at a faster pace, allowing for much broader scope and create unprecedented learning opportunities. Although having more data and information does not necessarily equal higher competitive advantage, through a thorough consideration and careful cultural alignment, companies can create network effects that enable almost exponential and long-lasting value creation without diminishing returns (Hagiu and Wright, 2020).

These disruptive changes are naturally followed by consequences of the same magnitude. Besides other factors, the performance of AI depends extensively on the nature, type and volume of data and associated information – including the circumstances and conditions under which they were collected. The consent-based rules of the game are notoriously ill-suited to tackle the social challenges, as they only nurture trading data and information for a particular outcome in a quid pro quo fashion, or in other words, in the vein of the so called "privacy paradox," i.e., the flawed logic of a phenomenon where people say they highly value privacy, and subsequently decide not to protect it, or even voluntarily exchange it for goods and services of inadequate value (Solove, 2020; Berinato, 2018). The concern of people over exploitation of their personal data generally differs (e.g., Cecere, Le Guel and Soulié, 2015) and, to cite Acquisti et al., "consumers' ability to make informed decisions about their privacy is severely hindered because consumers are often in a position of imperfect or asymmetric information regarding when their data is collected, for what purposes, and with what consequences" (2016, p. 442). Thus, in digital economies where data and information are aggregated, combined, and distributed across ecosystems, informing individuals and empowering them with higher control while calling for firms to be transparent about their practices not only does not result in privacy being protected – in a number of cases, it can also backfire (Acquisti, Brandimarte and Loewenstein, 2015).

As can be summarized by using citation from a recent World Health Organization report reflecting on the sustainability of AI in healthcare "[the] pursuit of data, whether by government or companies, could undermine privacy and autonomy at the service of government or private surveillance or commercial profit. (p. 2, 2021)". While the regulators have been indefatigably attempting to curb the power of the key industry-shaping players, their efforts have not been particularly effective (e.g., Jacobides, Bruncko and Langen, 2020). To cite Véliz, "digital technologies can only constitute progress if they serve the well-being of citizens and the flourishing of democracy" (2021, p. 11). Many have discussed that a threat to privacy means a direct threat to democratic principles (e.g., Gavison, 1980; Simitis, 1987; Regan, 1995; Reiman, 1995; Roessler, 2005; Lever, 2006; Goold, 2009; Hughes, 2015; Richards, 2015); however, nowadays, individuals as well as organizations have basically two options – get locked-in into the prevalent

business models or reconcile with their demise as a functioning part of the society. Based on the ongoing developments, it is reasonable to assume that until creating superior value requires exploitation of personal information, doing so will remain to be a justifiable modus operandi. At the same time, as long as protecting privacy remains understood as contradicting the idea of creating value through leveraging network effects, modularity and complementarity, it will remain a niche endeavour of seemingly utopistic enthusiasts struggling to scale their ventures to the level of economically self-sufficient business cases.

Understanding Privacy as a Social Value

In 1945, after the end of World War II, the United Nations was founded. Three years later, its General Assembly set forth the Universal Declaration of Human Rights as a "common standard of achievements for all peoples and all nations." In Article 12, the Declaration recognized that "no one shall be subjected to arbitrary interference with [her] privacy, family, home or correspondence, nor to attacks upon [her] honour and reputation" and that "everyone has the right to the protection of the law against such interference or attacks." Privacy thus became one of the fundamental human rights (United Nations, 1945, 1948). Although the core focus of this paper does not allow for discussing the full background of the originally predominant liberal perception of privacy rooted in Warren and Brandeis (1890), shaped by Prosser (1960), Westin (1967), or Roessler (2005), it is critical to mention that the perception on privacy has always reflected the major societal changes (Keulen and Kroeze, 2018). Notably, to illustrate, the diminution of printing regulations in 18th-century England resulted in the upheaval of newspapers and the rise of the first indications of celebrity culture. Trading private life as a public commodity has led to further efforts to separate private and public personae, establishing the archetypal link between privacy and technology (Fawcett, 2016).

According to Margulis (2003), the understanding of privacy has been significantly influenced by the work of Altman. Defining privacy as "the selective control of access to the self" (1975, p. 24), Altman proposes that privacy has five properties. First, privacy is a temporal dynamic process of controlling the interpersonal boundaries, regulating interaction with others through determining how open or closed a person is in response to changes in their internal states and external conditions. Second, there is a difference between the desired and actual levels of privacy. Third, privacy is non-monotonic, meaning that the optimal level of privacy is achieved when the actual level of privacy corresponds to the desired, creating the possibility of too much privacy in cases when the actual level of privacy is higher than desired (e.g., social isolation) and the possibility of too little privacy in cases when the actual level of privacy is lower that desired (e.g., crowds). Fourth, the nature of privacy is bi-directional and entail inputs from others (e.g., noise) and outputs to others (e.g., oral communication). Finally, there are two levels of analysis at which privacy applies, i.e., individual level as well as group level.

Altman's contribution rooted in projecting privacy as an inherently social process has challenged the liberal view on privacy revolving around autonomy as social detachment. As argued by Mokrosinska (2018), "saying that privacy protects autonomy is to say that privacy also protects the practices in which the agent exercises her autonomy" (p. 123); therefore, one cannot discuss the privacy of an individual, without the privacy of her social relations. In addition, building on the relational perspective maintained by Fried (1968) and Rachels (1975), Roessler and Mokrosinska (2013) further argue that privacy not only regulates and facilitates the "social conditions of the meaningful exercise of autonomy" (p. 779) but that it also constitutes the social relations as a condition of autonomy. This, in essence, means that a threat to privacy is a threat to society as such.

The focus on autonomy, control, and right of an individual has notably shifted toward a broader social value, not coincidentally in parallel with the development of some pivotal technologies, including the invention and commercial application of microprocessors in 1971 (Intel, 2020), transition of the ARPANET host protocol from NCP to TCP/IP (i.e., birth of Internet) in 1983 (Leiner, Cerf, Clark, Kahn,

Kleinrock, Lynch, Postel, Roberts and Wolff, 1997), and the launch of the World Wide Web in 1993 (CERN, 2020). Scholars, including Friedrich (1971), Simmel (1971), Thomson (1975), Scanlon (1975) and Rachels (1975), started to recognize the social value of privacy and, to cite Simitis (1987), who reviewed the concept of privacy in in the context of information society, it was necessary to move away from discussing privacy as a "tolerated contradiction" of the right to be let alone and the need to be informed, toward understanding it as a "constitutive element of a democratic society" (p. 732).

Along these lines, arguing that privacy is not only of value to individuals but to society in general as well, Regan (1995) proposed three bases for the social importance of privacy. First, on the basis of Mill (1863), Gavison (1980), and data-evidenced public opinion, Regan (1995) proposes that privacy is a common value as it is valued by all individuals and all individuals share some perceptions about it. Second, reflecting on the importance of privacy to the democratic political process (e.g., targeting political messages through the exploitation of personal information), Regan defines privacy as a public value. And third, considering that market forces and technology make it hard for an individual to have privacy without all individuals having similar minimum level of privacy, she regards privacy as a collective value. Furthermore, drawing on Coase's paper "The Lighthouse in Economics" (1974), Regan presents three key reasons why privacy can virtually be considered a "collective or public good" (Regan, 2018, p. 59). Firstly, due to the non-voluntary nature of record-keeping in various relationships, one cannot simply acquire or establish privacy to the level that is desired. The cost of unwillingness to take part in essential relationships (e.g., healthcare, education, or banking) for the sake of protecting privacy would lead to serious issues on the individual as well as societal level. Secondly, market is an inefficient mechanism for supplying an optimal supply of privacy. Regan states that privacy choices are often hidden transaction costs and considers privacy invasions to be the result of market failures. Furthermore, she argues that in this matter, privacy is in fact similar to clean air or national defence. Thirdly, the interrelatedness and complexity of the communication infrastructures increases the difficulty of dividing privacy. In other words, the design of the technology that enables the communication to take place determines the level of privacy possible to be achieved. As Regan concludes, "if we did recognize the collective or public-good value of privacy, as well as the common and public value of privacy, those advocating privacy protections would have a stronger basis upon which to argue for its protection" (Regan, 1995, p. 231).

A related issue of fundamental importance is discussed by Solove, who denies the possibility of articulating the meaning privacy at all, calling it a "concept of disarray" that among other things encompasses "freedom of thought, control over one's body, solitude in one's home, control over personal information, freedom from surveillance, protection of one's reputation, and protection from searches and interrogations" (Solove, 2008, p. 1). Asserting that privacy "consists of many different yet related things" (Solove, 2008, p. 9), he suggests that the traditional way of conceptualizing privacy should be abandoned for an approach based on Wittgenstein's philosophical idea of family resemblance, i.e., concepts drawing from a common pool of similar elements rather than having a single common characteristic. Solove argues that the nature of privacy and its social value is pluralistic and highly dependent on its context (2015) and further points out a key discourse concerning the trade-off between privacy and security where "privacy often loses to security where it shouldn't" (2011, p. 2). He proposes that people are encouraged to accept that in order to be more secure, they need to sacrifice their privacy. This presumption is also widely present in management literature. For instance, Casadesus-Masanell and Hervas-Drane emphasize that trading off privacy for use of various "information-sensitive" services are "defining business models and the role of privacy in online marketplaces" (2015, p. 229). Building on this article, the authors recently developed a framework that helps firms that accumulate and exploit personal information to manage privacy, i.e., delivering the benefits while mitigating the threats (Casadesus-Masanell and Hervas-Drane, 2020). This firm-centric roadmap divides privacy landscape into four domains and corresponding external players: government (political environment); hackers (security environment); third parties (market environment);

and peers (social environment). They argue that on the one hand, disclosure allows companies to tap into new revenue streams and can be profitable and desirable when generating positive impact to consumers. On the other, it can be also harmful as it "generates distraction, distress, or detrimental consequences (such as higher prices)" (p. 8). The authors suggest that this "conflict of interest" can be resolved by compensating consumers for disclosure, limiting disclosure and sacrifice revenues, or in the worst case ceasing the disclosure altogether (p. 8).

In this article, however, such logic is challenged. Approaches built on refining the mechanisms of control and access only feed the faulty perception that giving up privacy is necessary (and sometimes even reasonable) if the consumers "name the price" for such a practice. Not only that individuals assign markedly different values to the privacy of their data, their assumptions are also based on different factors, and the market to trade data in a fair way does not exist (Acquisti, John and Loewenstein, 2013). The rationale upon which such imbalanced deliberations stand is per se based on misleading views about the understanding of privacy protection, its costs, and benefits, which resultingly lead to unfair, inadequate, and unnecessarily skewed compromises at the expense social well-being (Solove, 2011; Acquisti et al., 2016). Building our digital future on a principle that wrongdoing can be justified by a certain amount of money sets a dangerous precedent that one can buy a privilege to exploit others, hence undermines the very core idea of egalitarianism. People cannot avoid sharing data and information, the question is how to do that in a way that is sustainable for everyone – individual, society, as well as companies.

Privacy and Contextual Integrity

Protecting personal data against sharing can have both positive and negative effects on societal and individual welfare (Acquisti et al., 2016). According to the highly influential and thoroughly developed theory of contextual integrity by Nissenbaum (2010), protecting privacy is not about restricting the flow of information or ensuring the right to control it. Opposing the ineffective procedural approaches (e.g., informed consent practice) rooted in the five fair information practice principles coined by US Secretary's Advisory Committee on Automated Personal Data Systems (U.S. Department of Health, 1973), Nissenbaum (2011) argues that "notice-and-consent, however refined, will [not] result in better privacy online as long as it remains a procedural mechanism divorced from the particularities of relevant online activity" (p. 35). She suggests that the pivotal rationale lies in making the flow of the personal information appropriate. The appropriate flow of information is, in essence, defined by its conformity with entrenched social norms that meet the context-relative expectations. Therefore, when the flow of information conforms with the norms, it can be considered appropriate, hence privacy can be deemed preserved. In short, the information norms are constructed by three independent parameters whose value must be specified in order to allow for determining whether an information flow is appropriate, i.e., conforming the context-specific social domain. These parameters are actors (i.e., subject, sender, recipient), attributes (i.e., information types), and transmission principles. When identifying actors, it is necessary to identify their contextual roles "to the extent possible," i.e., "capacities in which each are acting" (Nissenbaum, 2010, p. 141). Followingly, attributes describe the nature of information in question, i.e., "kind and degree of knowledge" (Rachels, 1975, p. 71). Finally, the parameter of transmission principle is embodied in particular terms and conditions under which the transfer of information should or should not happen (e.g., confidentiality). In order to operationalize the descriptive framework, Nissenbaum further also offer a nine-step augmented contextual integrity decision heuristic adapted for situations where nonconforming practices outperform the entrenched norms (Nissenbaum, 2010, pp. 181–182):

1. *Describe the new practice in terms of information flows.*
2. *Identify the prevailing context. Establish context at a familiar level of generality (e.g., "healthcare") and identify potential impacts from contexts nested within it, such as "teaching hospital."*
3. *Identify information subjects, senders, and recipients.*
4. *Identify transmission principles.*

5. *Locate applicable entrenched informational norms and identify significant points of departure.*
6. *Prima facie assessment*
7. *Evaluation I …*
8. *Evaluation II …*
9. *On the basis of these findings, contextual integrity recommends in favor of or against systems or practices under study.*

The suitedness of this theory for the digital economy as well as its potential to guide further regulatory steps is often emphasized. This can be for instance evidenced by its influence on the Privacy Bill of Rights presented by the Obama administration (The White House, 2012), which recognized "Respect for Context," as consumers' "right to expect that companies will collect, use, and disclose personal data in ways that are consistent with the context in which consumers provide the data." Such a contested definition, however, opened door for various biased interpretations that could be misused for the benefit of the affected incumbents. In her response, Nissenbaum (2015) argued that one of the key issues emerged from the related discourse is understanding context as business model. Asserting that it "offers no prospect of advancement beyond the present state-of-affairs" as "its proponents seem to expect individuals and regulators to sign a blank check to businesses, in collection, use, and disclosure of information based on exigencies of individual businesses," she suggests that respecting context as social domain equals "to respect contextual integrity, and, in turn, to respect information norms that promote general ethical and political values, as well as context specific ends, purposes, and values" (p. 848).

Although this argument is very much in line with the theories that focus on sustainability research, this article argues that for the contextual integrity to be suitable for viable and feasible application in a social domain where a transmission of data and information plays any role in the process of value proposition, creation, delivery, and capture, one necessarily needs to consider the use of the data and calibrate it with respect to the social domain as well. As previously mentioned, nowadays, we witness self-interested companies with varying degrees of multilateral non-generic complementarities being interdependently embedded in non-hierarchical structures and jointly creating value through redefined business models adapted for exponential data-driven growth (Jacobides et al., 2018; Bogers, Sims and West, 2019; Iansiti and Lakhani, 2020b). Therefore, in the environment that consists of ecosystems, the assumption that the contextual role of an actor is bounded, defined, and fixed is no longer valid. An actor can have multiple roles in multiple contexts and can use the data and information in multiple, non-contextual ways. Even data aggregates can ultimately result in far-reaching impacts on individuals as well as society. Moreover, when actors A and B both individually transmit data and information in conformity with contextual integrity, the conformity cannot be guaranteed if these actors combine and/or accumulate the data and information, for instance for the purposes of value proposition, creation, delivery, and capture. Based on that, it is necessary to argue that a business model which is based on transmission of data and information cannot be considered sustainable if it does not function in compliance with contextual integrity, while contextual integrity cannot be considered applicable in business environment unless the use of data is considered. This proposition is hence elaborated in the following section.

Mutual Embeddedness of Contextual Integrity and Business Models for Sustainability

As manifested by the stream coined business models for sustainability (Schaltegger et al., 2016), the relation between business models and sustainability has received an increasing amount of scholarly attention. With the almost exponential rise of information technologies, we have been experiencing since the 1970s, the issue of protecting privacy as a social value has increased in importance and popularity, especially in the areas of technology and philosophy. Considering the current state of global affairs, the most suited approach to privacy protection can be considered the theory of contextual integrity (Nissenbaum, 2010). Synthesizing the two so far siloed but mutually relevant theories, this article posits

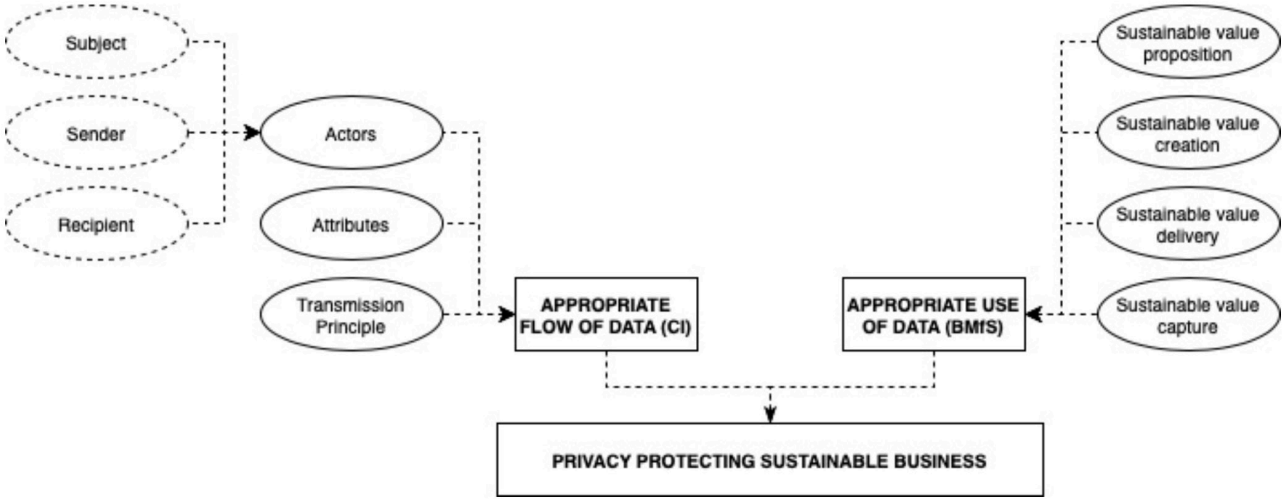

Figure 1: Business models for sustainability and contextual integrity – schema of synthesis

that businesses which protect privacy in a sustainable way have to treat privacy as a social value constituted by two key elements, i.e., appropriate flow of data and information and appropriate use of data and information. While appropriate flow of data and information is rigorously addressed by the theory of contextual integrity, the appropriate use of data and information by businesses can be addressed by the theory of business models for sustainability. The suggested synthesis is schematically demonstrated in Figure 1.

Based on this assumption, there needs to be a close, proactive interplay between the prescriptive elements of the theories mentioned above. Therefore, on the basis of the augmented contextual integrity decision heuristic and the business models for sustainability assessment questions stemming from the stakeholder value creation framework, a heuristic framework for privacy and sustainability in business models has been developed. This framework consists of a foundational dimension that facilitates mapping of the necessary indicators of privacy in business models for sustainability, followed by an assessment dimension comprising evaluation principles lined up in a continuum. The core purpose of this theoretical framework is to suggest a system of key considerations that needs to be in place when assessing whether a particular business practice sustainably protect privacy. The framework is illustrated in Figure 2 and the considerations further elaborated in the following sections.

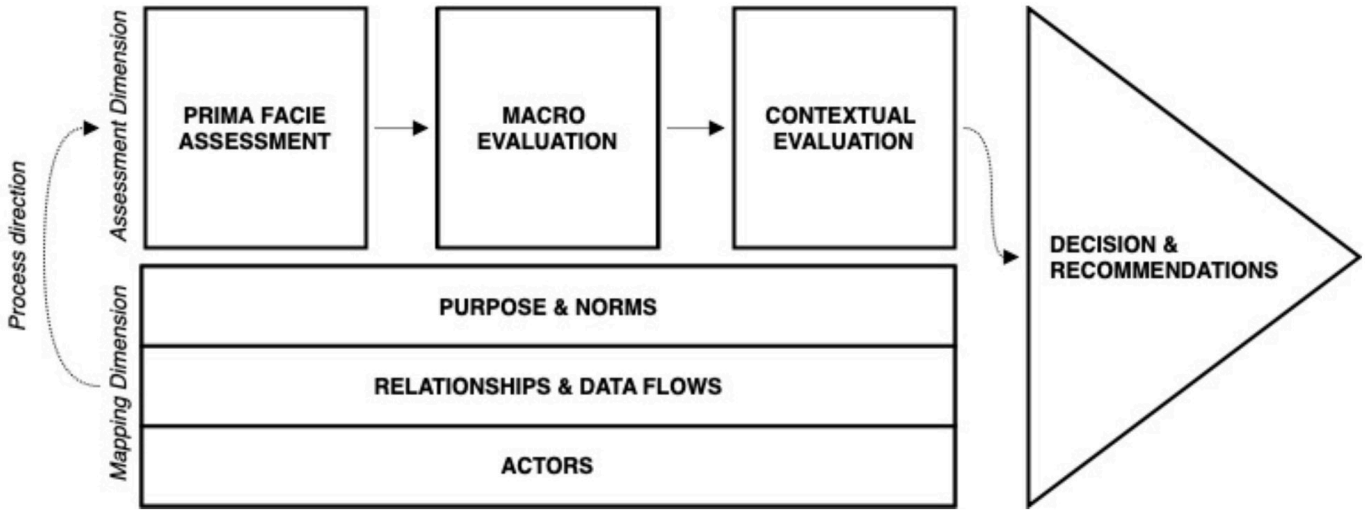

Figure 2: Heuristic framework for privacy and sustainability in business models

Mapping Dimension Components

Actors

In exploring the area of actors, first, there is a need to determine the boundaries of the context in question. Furthermore, it is also important to explore its sub-contexts and their potential impacts on that very context (Nissenbaum, 2010). Companies operating in different contexts interact with a number of distinct stakeholders that play particular roles in value creation as well as in the transmission of data and information for doing so (Adner, 2017; Jacobides et al., 2018; Bogers et al., 2019; Iansiti and Lakhani, 2020b). For that reason, it is not only necessary to distinguish between employees, customers, business partners, financial stakeholders, and societal stakeholders (and possibly also other relevant stakeholders) (Stubbs and Cocklin, 2008; Aagaard and Ritzén, 2020; Freudenreich et al., 2020). It is equally important to determine what is the nature of the information in transmission (Rachels, 1975) who is sending the data and information, who is the subject, and who is the recipient of the data and information (Nissenbaum, 2010). Most probably, the interests and expectations of these stakeholders might differ (Freeman, Pierce and Dodd, 2000). Thus, it is crucial to determine to what extent their interests are in collision or alignment and what the resulting implications or risks for the overall outcome could be (Freeman, 2010; Hörisch et al., 2014; Patala, Jalkala, Keränen, Väisänen, Tuominen and Soukka, 2016).

Relationships and Data Flows

Besides identifying the key actors, it is equally important to specify the flows of data and information that take place between them as the business model is being operationalized (Nissenbaum, 2010). These flows should be in line with the core principles of the business models for sustainability, i.e., adjusted in a way that pro-actively contributes creating to social, economic, and potentially also ecological value (Schaltegger et al., 2016). It is also required to determine the interests and vulnerabilities of the particular entities, who co-creates what value with whom, and who the recipient of the particular value is (Freudenreich et al., 2020). Furthermore, it is important to carefully consider the terms and conditions under which the transmission of data and information ought (and ought not) to happen (Nissenbaum, 2010). This principle must be in line with the contextual norms of the particular social domain and clearly understood by all the stakeholders. It is necessary to understand that in order to protect privacy in a sustainable way, the business model must be by design compliant with contextual integrity. Therefore, even if a person gives an explicit permission to the business to sell her data and information to a third party, if a social domain is not respected, the business should be considered neither sustainable nor protecting privacy.

Purpose and Norms

In order to be able to see whether a business model is protecting privacy, it is necessary to identify the entrenched norms of the particular social domain (Nissenbaum, 2010). Besides that, it must be explored whether the business model of interest provides sufficient foundations for the stakeholders to co-create value without violating these norms. Since the value operations are being carried out in an interrelated manner, it is pivotal to determine the joint purpose of all the involved actors and whether the purpose is directed toward creating a sustainable value (Bocken et al., 2014; Lüdeke-Freund and Dembek 2017; Schaltegger et al., 2017; Upward and Jones, 2015). Importantly, the focus should be on the actual actions and real contributions toward sustainability. Ultimately, it is necessary to explicitly specify what the joint purpose is and how it helps to achieve a particular sustainable development goal in a contextually appropriate way (Nissenbaum, 2010, Stubbs and Cocklin 2008).

Assessment Dimension Components

Prima Facie Assessment

After identifying the key components of the framework, it is necessary to evaluate the dynamic aspects of the business model, i.e., the operationalization of value-related activities in relation to the identified entrenched norms and joint purpose. The goal of the prima facie assessment is to determine whether the business model in question involves major discrepancies that would reveal its insufficiency straight away. This step involves making sure that all of the components are mapped to the fullest extent possible and determining whether they raise any issues by themselves. Are the data and information flows

used for operationalization of the business model in line with entrenched norms? If not, does the business model have an innovation potential which could result in a significant sustainable improvement of the status quo? Does the business model have the capacity to facilitate the relationships that jointly create value in line with sustainability principles? Are the relationships ethical, respectful, and fair? If the business model is found to be in contradiction with the basic principles of the framework, it can be deemed unsatisfactory to comply with the idea of sustainable privacy protection in business as such. Finally, it is also crucial to consider that business models designed or innovated to exploit a new technology, i.e., AI, might operate in an environment where no norms have been established yet. In such cases, the business model cannot be rejected prima facie, and can, therefore, be subjected to the next step of evaluation.

Macro Evaluation

The second step of the assessment part is evaluation of social, economic, and environmental macro factors affected by the business model. Besides considering whether the business model could harm autonomy and freedom (i.e., what is its effect on power structures within society, what are its implications for social hierarchy, justice, fairness, democracy, equality, and other factors pointed out by the theory of contextual integrity itself), there is also a need to consider whether the actors can actually ethically exploit the appropriate flows of data and information to propose, create, deliver, and capture value with and for stakeholders while being economically prosperous without harming the environment (or even pro-actively contribute to its recovery).

Contextual Evaluation

After determining how the business model impacts the environment from the higher perspective, its concrete impacts on the particular context within which it operates should be further determined. Furthermore, as the types of value that need to be proposed vary across the spectrum of stakeholders within the context, it is important to find out whether the proposition reflects the diversity of stakeholders sufficiently. Essentially, this phase of evaluation is set to ascertain whether the business model exploits data flows in a way that impacts the ecosystem of actors in a way that threatens the sustainability of the context per se.

Decision and Recommendation

When approaching the final phase of this high-perspective heuristic framework, it should be possible to carry out a fair judgement as of whether a particular business model protects privacy while operating in line with the core principles of sustainable value proposition, creation, delivery, and capture. If the business model is not found suitable, it is important to implement changes and iterate until appropriate flow and use of data and information is achieved.

Conclusion and Discussion

This article posits that in order to operate sustainably, businesses playing any role in proposing, creating, delivering, or capturing value through transmission of data and information must approach privacy as a social value. Furthermore, they also need to protect it by ensuring that the flow and use of data and information across their ecosystems is appropriate. This means that the flow of data and information must be in line with the theory of contextual integrity (Nissenbaum, 2010), while the use of data and information must be in line with the theory of business models for sustainability (Schaltegger et al., 2016). While synthesizing these two rigorously developed streams of research, this article proposes a heuristic framework for privacy and sustainability in business models, which prescriptively operationalizes the theories in line with the augmented contextual integrity decision heuristic (Nissenbaum, 2010) and the stakeholder value creation framework (Freudenreich et al., 2020).

Firstly, this article unfolds the relevance of privacy protection for the stream of business model research directed toward sustainable development in a way that is theoretically rigorous, complementary with the stakeholder theory, and reflecting the impact of technology on business. This contributes especially to addressing the need for further research on specific sustainable value creation barriers identified by

Lüdeke-Freund (2020), as well as extends the theory of business models for sustainability (Schaltegger et al., 2016; Freudenreich et al., 2020). Secondly, the synthesis contributes to the contemporary debate on privacy as a social value, mainly through identifying theoretically thorough avenue for adapting the theory of contextual integrity (Nissenbaum, 2010) to a social domain where value proposition, creation, delivery, and capture with and for multilaterally interdependent stakeholders involves transmission of data and information.

Considering the foresight of increasing dependency on data processing, the success of cultivating the underlying fabric of our society is directly related to the effectivity of privacy protection mechanisms. Hence, from the perspective of future research, the developed framework can be especially useful for constructing narratives of how the inevitable technological progress can be leveraged in ensuring ultimate equity and inclusivity in the digitalized world. This article ultimately posits that the future of democracy in digital society leans upon the efforts to move beyond the implicit tolerance of the chokehold imposed by the omnipresent centralization (cf. Hensmans, 2021). And despite the obvious drawback residing in the lack of empirical perspective, it may be suggested that the presented contributions can be also reflected in managerial practice. First of all, based on its prescriptive nature, it shall be implied that professionals can use the heuristic framework for privacy and sustainability in business models to evaluate what elements in their business model portfolios have to be amended in order for their company to sustainably protect privacy. This proposition differs from the standalone theories especially by the fact that it postulates the mutual relationship between privacy protection and sustainability. In practice, this means that a business model that involves transmission of data and information cannot be considered sustainable unless it protects privacy.

Besides creating a stepping-stone for addressing the issue of sustainable privacy protection holistically, this synthesis also entails a number of implications. From a theoretical angle, this contribution proposes a revision of the theory of contextual integrity by considering not only the flow of the data and information but also their use. This article addresses the use by considering how value is proposed, created, delivered, and captured by an organization and its stakeholders. However, the unprecedented data-processing operations are not detectable only in cases when actors are involved in business activities. For that reason, it should be explored how the use of data and information can be addressed in cases of various backgrounds. Finally, this synthesis introduces the privacy research stream to the stream of business model literature and argues that under current circumstances escalated by the COVID-19 pandemic, there is a need for a genuine interdisciplinarity – one that builds on stable theoretical foundations rooted in diverse research domains.

This contribution is to be considered offering a vision delineating and emphasizing the privacy protection aspect for future sustainable transitions. And although this meta-perspective suffices the needs of an architect drawing up a blueprint (as mentioned in the Research Design section), it does not allow for diving deep into the particularities of the constituent fragments and implications. For that reason, the synthesis should not be challenged only theoretically but also through further empirical research, possibly investigating how businesses actually attempt to sustainably protect privacy, how privacy-centric focus impacts the business model development of companies in different ecosystems, and what role privacy plays in the business models of incumbents. Furthermore, there is a vast research potential in exploring how can companies in diverse ecosystems co-create and co-capture value through sharing data and information without compromising human-centricity. Similarly, from a different angle, a promising research avenue emerges within the realm of start-ups and entrepreneurs that put privacy protection and social values as a keystone of their existence. Based on the proposition that privacy can be only protected when a business model is economically feasible, it is important to explore how can such entities become financially stable. What are the drivers and challenges of their efforts? What are the characteristics of their ecosystems and their relationship with the previously illustrated "oligopolies"? How do they interact with incumbents when entering established ecosystems? These questions

need to be explored particularly in industries where privacy protection is outweighed by a higher cause goal of immediate importance and effect, such as healthcare (e.g., Grundy, Chiu, Held, Continella, Bero and Holz, 2019; Panch, Mattie and Celi, 2019; Sharma and Bashir, 2020; Rezaei, Jafari-Sadeghi, Cao and Mahdiraji, 2021). When conducted comprehensively, by understanding the social domain as a context, these studies may have an immensely informative effect on regulations – because improving the state of society by regulating AI-based ecosystem actors using rules and sanctions that require them to revise their consent has no chance to succeed.

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In-House Coworking Space as a New Initiative Towards Businnes Model Innovation in Incumbent Firms – A Case Study on Motivation, Knowledge Sharing and Collaboration

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ABSTRACT

Purpose: A new collaboration form between incumbent firms and startups has emerged, with incumbents hosting coworking spaces in-house to innovate their business models. This paper aims to investigate what motivates the startups to participate in the coworking space, how knowledge transfer and collaboration take place and how the role of the incumbent was perceived.

Design: A case study was performed in an in-house coworking space based on 17 semi-structured interviews with the startups.

Findings: Findings uncovered that physical, social and professional conditions were important for the startups. Generally, there was a good physical framework. Being a part of a larger community with "colleagues" and the possibility of participating in professional activities were beneficial. This promoted knowledge sharing, sparring and collaboration between the startups. Ongoing activities to support this were requested. The majority of the startups expressed interest in collaboration with the incumbent, but only few had currently established it.

Value: It was perceived, that both the startups and the incumbent possessed knowledge and resources which could be valuable for both parts. However, it was not experienced that the incumbent clarified how the startups could fit into their business. Thus, an untapped potential for collaboration seemed to be present. Ideally, the present constellation represents an engagement form with both economic, social, professional and cultural capitals. It could be a promising solution, if the incumbent is ready for radical business model innovation.

Keywords: Open business model innovation, coworking spaces, incumbent and startup firms, motivation, knowledge sharing, collaboration

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Introduction

While coworking spaces (CWS), in the last decade, have become more widespread, a new constellation between incumbent firms and startups has emerged, where incumbent firms host startups within their own in-house CWSs (Orel, Dvouletý and Ratten, 2021; Heinzel, Georgiades and Engstler, 2021). This new form of collaboration can help incumbent firms to get closer to the entrepreneurial environment and to get inspiration and knowledge from the startups who can help the them to innovate and maybe even reveal new business models (Reuschl and Bouncken, 2018). In this paper, incumbent firms are defined as mature firms that are already in a strong position in the market. They often face the unique situation of having to balance the exploration of new business models with the exploitation of existing ones (Bogers, Sund, and Villarroel, 2015; Egfjord and Sund, 2020; Frankenberger, Weiblen, Csik, and Gassmann, 2013; Jensen and Sund, 2017; Sosna, Trevinyo-Rodríguez and Velamuri, 2010; Teece, 2018). In a world characterized by rapid changes and complexity, many incumbent firms today face the challenge that more of their existing business models are being threatened and replaced by new technologies and new business models (Sund, Bogers and Sahramaa, 2021; Taran, Boer and Lindgren, 2015). In this context, capabilities of the incumbent firm to work with business model innovation (BMI) are seen as an effective way to achieve sustainable competitive advantage (Mitchell and Coles, 2003; Wirtz, Gottel and Daiser, 2016). The ability of the firm to gain new knowledge plays a crucial role in succeeding with innovation and often it is necessary to seek knowledge and explore new ideas outside their own framework (Chesbrough, 2003; von Hippel, 2005; Kohler, 2016: Taran, Boer and Nielsen, 2022).

Adopting the basic principle of open innovation that firms should combine the use of external and internal ideas, incumbent firms are increasingly building programs to engage with startups (Chesbrough, 2003; Horn and Keyzer, 2014, Kohler, 2016; Von Hippel, 2005). Through collaborations, incumbent firms and startups can bring each other several advantages, which can create unique opportunities for both parts (Bagnoli, Massaro, Ruzza and Toniolo, 2020). Startups can be a valuable source of innovation and can bring entrepreneurial spirit, fresh talents and new ideas that can help to rejuvenate the corporate culture (Heinzel et al., 2021). By working with startups, the incumbent firm can develop and test new technologies and service solutions with lower cost and less risk to their core business. Conversely, incumbent firms have a large number of advantages for startups in terms of experience and knowledge about the market, economies of scale, well-established networks and brand power. Thus, due to the complementary nature, both parts can benefit from collaboration (Orel et al., 2021; Weiblen and Chesbrough, 2015).

The phenomenon of coworking emerged shortly after the turn of the century and has been in explosive growth since its emergence. According to a forecast by Small Business Labs, a US business portal, and the organization The Global Coworking Unconference Conference (GCUC), it is a growing trend. In their 2017 forecast (2018-2022), the number of CWSs in the world (almost 15.000) was estimated to increase with an average annual growth rate of 16.1% and the number of users (1.74 million) even faster, with an average annual growth rate of 24.2%. Within the past years, a tendency has also been observed towards the incumbent firms being interested in taking part of coworking environment, either by establishing their own CWSs or by placing departments or groups of employees in the external cowork environments (Smallbizlabs, 2017; GCUC, 2017).

It is known that the various forms of collaboration between incumbent firms and startups can be fruitful for both parts (Kohler, 2016). However, in many cases it is not successful and does not live up to expectations (Weiblen and Chesbrough, 2015). The emergence of the new engagement form of in-house CWSs illustrates a new and different way of working with BMI which is relatively new and has not yet been studied extensively. There is not yet much literature on this specific type of collaboration and neither on the preferences of CWS users in general (Heinzel et al., 2021; Weijs-Perrée, van de Koevering and Arentze, 2019). Thus, the aim of this paper is to investigate an example of an in-house CWS, at a leading corporate player, to study what motivates

the startups to participate in the CWS, how knowledge transfer and collaboration take place and how the role of the incumbent firm is perceived by the startups.

Business Model Innovation in Incumbent Firms And Coworking

Incumbent firms and BMI

The notion of business models has existed for several decades but still the definition of the concept remains fuzzy and a variety of definitions are found in the academic literature (Taran et al., 2022). In this paper, a business model is broadly defined as how value is created, captured and appropriated by the organization (Amit and Zott, 2001; Egfjord and Sund, 2020; Foss and Saebi, 2017; Teece, 2010; Zott, Amit and Massa, 2011). Similar to the definition of a business model, many different views on BMI exists. However, they all overall point towards doing something new and regardless of the different opinions, there is an agreement on its importance (Taran et al., 2022). Therefore, in extension BMI can be described as doing things differently and as changing the game, slightly or radically, to take advantage of opportunities to better create or capture value. Both the concept of business model and BMI have been growing topics for discussion and have gained an increasing amount of attention from both academics and practitioners over the last decades. However, while much of the existing research literature on business models focuses on startups and their creation of new business models, a much smaller part pays attention to incumbent firms and their decisions to add new business models that might be disruptive (Bogers et al., 2015; Egfjord and Sund, 2020; Kim and Min, 2015; Sosna et al., 2010).

The context of BMI in incumbent firms is exceptional as they, opposite to startups, already has pre-established structures, resources, relationships and existing business models. Incumbent firms must at the same time operate with routines for "doing what we do better" and routines for "doing differently" (Boer and Bessant, 2004; Tushman and O'Reilly, 1997; Taran et al., 2022; Wirtz, Pistoia, Ullrich and Göttel, 2016). However, while experimentation and development related to BMI is wanted, it can meet several barriers, especially when it comes to more radical BMI (Egfjord and Sund, 2020; Snihur and Tarzijan, 2018; Sund, Bogers, Villarroel and Foss, 2016). In incumbent firms, managers and employees might feel sceptic to innovation activities and tend to resist new initiatives, if they believe that it threatens the existing business. If a new business model does not immediately fit the "dominant logic" of the core business, there is a risk that new ideas will be discarded (Kim and Min, 2015; Snihur and Tarzijan, 2018; Sund et al., 2016) Therefore, often incremental innovation tend to be preferred over more radical innovation, which may be perceived to be associated with greater risk and uncertainty (Chesbrough, 2010).

Continuous innovation processes can be demanding for incumbent firms and challenging to manage (Gryszkiewicz, Lykourentzou and Toivonen, 2016a). In attempts to break out of the stalled patterns of thinking and the dominant logic of the firm, many firms use new working methods and workspaces to achieve innovation, by combining multiple competences, ideas and talents in a collaborative working community, for example a CWS (Christensen and Raynor 2003; Gryszkiewicz, Lykourentzou and Toivonen, 2016b; Orel and Dvouletý 2020; Viki 2017;). In recent decades, there has been a fundamental shift in the way firms develop and bring new ideas to market, from following the model of closed innovation to a new model of open innovation (Chesbrough, 2003). Today, many firms follow strategies of open innovation which embraces that valuable ideas could now come from inside as well as outside the firm. This implies considerations on how internal competencies can give rise to new businesses outside the organization and the exploration of new opportunities outside the organization that can contribute to the existing business in order to generate value for the organization (Chesbrough, 2003). The incumbent firms are increasingly trying to engage in initiatives based on collaborations with startups to use them as a driving force for BMI, rather than solely seeing them as disruptive players in the market (Orel et al., 2021; Weiblen and Chesbrough, 2015).

Across industries, more incumbent firms have begun to experiment with the possibilities of coworking. It

could be perceived that large firms want to be related to the trendiness that is associated with coworking. However, a study reveals that corporate employees seek similar benefits as startups and freelancers, in being part of a CWS. This includes faster learning, networking and inspiration (Nagy and Lindsay, 2018). The incumbent firms can get involved in coworking in various ways (Heinzel et al., 2021). For example, they can open their own CWS. This can be an internal or external space, which can be open to everyone or to selected members (Nagy and Lindsay, 2018). Despite that collaborations between incumbent firms and startups with its complimentary abilities may seem like the perfect match, it can be difficult to achieve and unfortunately it is not always easy to exploit to its full potential. Several previous attempts to establish successful collaborations bear witness to disappointments and to having been abandoned (Chesbrough and Chen, 2013; Weiblen and Chesbrough, 2015). When the two worlds become united, it can create real challenges. Startups may worry that their ideas can be stolen or that it could take forever to make critical decisions that are necessary for the startup to succeed. Moreover, differences in the organizational clock speed and cultural differences can lead to misunderstandings. Also, it can be difficult for the incumbent firm to measure the real effect or return on investment. Corporate CWSs require an investment and it is not always an easy job for the incumbent firm to decide whether it is worth it or not (Nagy and Lindsay, 2018; Weiblen and Chesbrough, 2015). The field of corporate CWSs is fairly new within the coworking research literature and so far, only a few scientifical contributions exist (Heinzel et al., 2021). The intention of the present study is thus to contribute to a better understanding of this emerging field.

The coworking phenomenon

Through the ages, radical changes have taken place in the nature of the work that characterizes the corporation and its employees. The sale of know-how and service has become more and more widespread. Knowledge, service and administration have increasingly replaced the traditional company, where the machine was in centre. At the same time, the labour market has become more individualized and non-standardized forms of employment, such as freelancers or project based employment, have become more common. Furthermore, the growth of Internet communication technologies has made the workers more mobile and independent of geography. As a result, it is much easier for the knowledge workers to do their job from more or less everywhere. Still, it can be a struggle for independent and remote workers to find the right working space. In this context, the use of CWSs has boomed (Gandini, 2015; Spreitzer, Garrett and Bacevice, 2015). Computer engineer Brad Neuberg has been credited to be the first one to use the concept of "coworking" (Golonka, 2021). He was the founder of the CWS "Hat Factory" which was established in San Francisco in 2005. He used the term to describe a place and a way of working, a so called third way of working, when he tried to solve the dilemma of workers, who generally were forced either to work alone at home or in an office of a business. In the first case, they would attain autonomy and independency, but with the risk of isolation and loneliness. Whereas in the second case, they could enjoy being a part of a community and organizational structure but suffer from the loss of flexibility and freedom. Thus, the third way of working should offer a balance between autonomy and community and coworking could be an alternative work environment for the remote workers within the knowledge industry (Fuzi, Clifton and Loudon, 2014; Gandini, 2015; Jones, Sundsted and Bacigalupo, 2009; Parrino, 2013; Reuschel and Bouncken, 2018; Spreitzer et al., 2015).

Coworking is a broad term that has been characterized in many different ways (Gandini, 2015; Parrino, 2013; Spinuzzi, 2012). CWSs roughly refer to shared, collaborative workspaces, where people gather to work individually. Initially, users typically consisted of self-employed, freelancers, digital nomads, entrepreneurs, startups, and microbusiness, but today also larger firms choose to take advantage of the opportunities. The locations may vary a lot in size, equipment, services and other offerings but basically a CWS offers an individual office space along with a number of common facilities such as shared reception area, Wi-Fi and office equipment, open workplace, lounge, conference rooms and shard kitchen facilities. Other offers may include activities

that can promote idea development, knowledge sharing and collaboration. Among essential reasons to become part of a CWS, the desire to belong to a community and to interact with other people is described, along with the possibility to get feedback, as well as overcoming isolation and loneliness and get the experience work life. Moreover, networking activities, knowledge sharing and the random opportunities and discoveries that may arise in that connection are mentioned along with the potential for new business partnerships (Gandini, 2015; Spinuzzi, 2012; Spreitzer et al., 2015). Ideally, the core values of coworking can be related to openness and the willingness to share, collaborate, support and help each other in a community where the environment is characterized by trust. It should be accessible in terms of being financial affordable and geographical well located and finally it should be sustainable (Bednár, Mariotti, Rossi and Danko, 2021; Nagy and Johnson, 2016; Reed, 2007).

Since its origin, the idea of coworking has spread far and wide and has become a buzzword and a trendy concept that is associated with high expectations. CWSs e.g. is described to represent "hubs of innovation" and linked to creativity and "coolness" (Capdevila, 2013; Gandini, 2015). Despite an increasing amount of literature, from the perspectives of both academic and practitioners, most contributions in the literature assume that coworking represents an inevitably positive innovation. Only few are based on empirical findings and rarely offering a critical understanding (Gandini, 2015; Heinzel et al., 2021). Important factors of the motivation to become a part of a CWS, and factors which enhance knowledge sharing in a such environment have been studied (Weijs-Perrée et al., 2019). However, knowledge is still missing about the value of the in-house CWS constellation as a part of an incumbent firm, to innovate and explore new business models.

This paper explores the motivations, the pros and cons, of startups operating from a corporate in-house CWS, in the following called The CoWorking Space of the Actual study (CWSA), as perceived by the startup companies. To gain a deeper understanding of the phenomenon and arrive at an answer to this research question the aim in this paper is to examine: (1) What motivates startup firms to be a part of a CWS such as CWSA, (2) To what extent and how does knowledge transfer and collaboration take place between the actors in CWSA and (3) How is the role of the incumbent firm perceived in CWSA?

Case and Method

A case study setting was applied to investigate the in-house CWS at the Incumbent Case Firm (ICF). The case study method is a useful approach to answer the research question as it allows researchers to focus on and observe a phenomenon in a specific context in depth. The method has an advantage in exploring and illuminating complexities which occur in the social world by producing rich accounts for explanations and for advancing theory (Flyvbjerg, 2006; Yin; 2018). "The advantage of the case study is that it can "close in" on real-life situations and test views directly in relation to phenomena as they unfold in practice." (Flyvbjerg, 2006: 235). Moreover, a theoretical sample was used for this study, searching for an incumbent firm engaging in BMI and the emerging phenomenon of the in-house CWS.

Case

The selected case firm is an experienced corporate player in the Nordic financial sector, which has around 4000 employees, and 4 million customers in Scandinavia. In order to keep up with competitors and be a leading player within the industry the ICF, like many other firms, started to pay increased attention to innovation. In recent years, they have changed their whole approach and created a new organization and strategy that aims to focus more on innovation. At the same time, they have launched a lot of different initiatives to innovation. To mention some, a new dedicated innovation team was established to focus on new business in the firm. Their main purpose is to create innovative solutions for the ICF and ICFs customers. This includes the development of new business models and business cases for projects, incremental as well as radical. Moreover, the ICF have made investments to be a part of a European accelerator program, to get inspiration from across Europe. In October 2016 the ICF opened an in-house CWS at their headquarters in collaboration with one

of Europe´s leading facilitators of entrepreneurship, to support a more innovative culture. The CWSA has been assigned its own building of 4500 m^2, with room for 300 entrepreneurs. In 2018 CWSA was moved to the ground floor of another building at the headquarters with an area of 8500 m^2 with around 230 office spaces. At the time of the study, CWSA consisted of 33 companies beside the ICF. The majority of these were "micro companies", either entrepreneurial startups of one-man companies or companies with few employees (less than 10). Moreover, there were few" small-sized" companies, with 10-50 employees, and one "medium-sized" company with around 70 employees. Furthermore, not all desks where filled out. In the present study, the focus was on the micro companies, which were considered to constitute the actual startup entrepreneurs. CWSA provides workstations with own desk – either in shared space or in team rooms. Also, basic needs such as meeting facilities, Wi-Fi, free printing, tea and coffee, diverse lunch options and free unlimited parking are offered. Moreover, the members of CWSA can get access to fitness and sport facilities. Furthermore, they get access to CWSAs network and the opportunity to join its different events like workshops, visiting speakers and social events such as Friday chill. The interior furnishing is kept in Scandinavian bright design, and CWSA functions as an independent young and exciting department in the middle of the large ICF. CWSA wants to attract entrepreneurs that on one hand are tech-driven and on the other hand develop products and services within areas and industries, which lies within the interest of the ICF. As a part of the initiative, the ICF seeks for entrepreneurs, that could contribute with new perspectives and extra creativity, which can help them to prepare for a future where new business models can challenge its core business.

As a concept based on the idea that a collaboration must be built between the entrepreneurs and the ICF, according to the facilitator, it is essential that the entrepreneurs who are taken in do not only create value for themselves but also have the potential to create value for ICF. Therefore, it is crucial for the success of CWSA that a bridge is being built between two worlds. To enhance the creation of new knowledge and growth for both parts, the entrepreneurs are placed among employees from the ICF, as inspired by e.g. Google. The ICF therefore moved a group of employees engaged in innovation and business development into CWSA, where they have permanent office space to boost the synergy effects between the two worlds. The ambition for CWSA is to act as a link between the ICF and the bubbling entrepreneurial scene. As ICF stated in a press release, CWSA must be an attractive CWS in itself. However, what they really are interested in is the dialogue and cooperation with the companies that move in. The ICF has an ambition to do pilot projects and partner collaborations with the startups in CWSA. Also, the perception of the aim with establishing CWSA has been confirmed during informal conversations with employees from ICF.

Method

A qualitative method with an inductive research strategy was used to gain in depth insights of CWSA and a deeper understanding of the mechanisms of this new type of business constellation. The empirical data for this study was collected in CWSA from May to June 2019.

During the above-mentioned period, seventeen semi-structured interviews, representing the same number of startups, were conducted (see Table 1). The interviews lasted about an hour per participant and resulted in more than seventeen hours of material, which was subsequently transcribed to approx. 200.000 words.

For the interviews with the startups in CWSA, a semi-structured interview guide was prepared, which was formed to answer the above mentioned research questions. Both thematic and dynamic questions were used for the interviews. The thematic questions were included in order to contribute to knowledge. The dynamic questions were included to promote a positive interaction, keep the conversation going and motivate the participants to talk about their experiences (Kvale, 2003). Initially, also, questions about the background of the participants where asked. Prior to the interviews, pilot interviews were conducted with colleagues to test and discuss

Table 1.

Respondent No.	Membership of CWSA (months of duration)	Awareness of CWSA through	Length of Interview (minutes)	Word Count
1	13-18	family/friends/network	53.24	9581
2	13-18	marketing / research	64.02	13516
3	13-18	marketing / research	61.32	14700
4	7-12	family/friends/network	62.03	9838
5	0-6	marketing / research	58.20	11880
6	7-12	incumbent	51.19	9365
7	7-12	family/friends/network	70.58	12535
8	13-18	marketing / research	62.08	10733
9	24 <	incumbent	50.43	10886
10	13-18	marketing / research	53.53	12807
11	0-6	family/friends/network	58.57	12593
12	7-12	family/friends/network	65.41	13736
13	7-12	family/friends/network	48.43	7266
14	0-6	marketing / research	57.51	11458
15	24 <	marketing / research	75.22	13352
16	24 <	family/friends/network	67.07	9876
17	7-12	marketing / research	66.06	14498

Table 1: List of respondents in the actual coworking space (CWSA)

the content. Following feedback from the test persons, the design was re-evaluated, and some adjustments were made. The interviews took place in CWSA, based on the participants choices, either in private meeting rooms or in the office of the participant. Interviews were recorded, anonymised and transcribed. After transcription, the interviews were analysed with the use of a thematic analytical approach. This method helped to provide a nuanced and more focused processing of the material and to form an overview of the content of the meaning. Such a theme-centred coding approach makes it possible to focus on different themes in the data material and make comparison of information about the given themes from all the informants (Thagaard, 2004). In the analysis, a semi-quantitative terminology has been used to describe and categorize the answers of the participants (see Table 2).

Table 2.

Number of respondents	Terminology
1	One / a single
2-4	Few
5-7	Several
8-9	Half
10-12	Many
13-16	Most
17	All

Table 2: Semi-quantitative terminology used to describe and categorize the answers of the respondents

Findings

In this section, the results are presented according to the aim of the study.

Motivation to participate in coworking space

In the interviews, the startups were asked questions on: Why they had chosen to become part of a CWS and what they wanted to achieve in this connection? What benefits they associated with being a part of a CWS in general? And what they personally experienced as most motivating by being part of the CWSA? Overall, the study showed a good agreement between the initial expectations of the startups to become part of a CWS, their perceived general benefits of coworking and their experience of what motivated them most by being part of the CWSA. An overview of the motivation factors is shown in figure 1.

The conditions described by the startups in relation to motivation, could be categorized into social, professional and physical factors.

Social benefits

Many of the respondents described that social conditions played a role in their choice of becoming a part of a CWS. It was about being part of something bigger - a community with "colleagues". The social aspect of having people around and not sitting alone at home was important to the respondents. Several added that it could be difficult to sit at home and work and that they need a routine and some dynamic. The respondents described advantages such as being able to talk to like-minded people and someone you were "in the same boat" with. In addition, several came up with examples of backing each other up mentally, both if you have a "down" day and when something is to be celebrated. The respondents also described many different social activities as benefits, e.g. getting to know each other, having breakfast or lunch together, having someone to run with and events like Friday bar, as well as Easter and Christmas lunches. For example, respondent #7 described:

"For me, in the beginning, it is very much the soft things. And that ... has something to do with becoming a small family. So, we hold Easter lunch and have held Christmas lunches ourselves, e.g. the small

	Benefits	Disadvantages
Social	• Being part of a community with "colleagues" • Having people around - not sitting alone at home • Need for routine and dynamic – creates professionalism, seriousness and commitment • Good and inspiring atmosphere - creates drive, efficiency and productivity • Opportunity to talk to like-minded that are "in the same boat" • Mental backup - down days or celebration • Social activities - breakfast, lunch, Friday bar, Easter and Christmas lunches	• Risk of mismatch between companies • Risk of sitting alone in the office when many small or one-man businesses are sitting together – empty seats • Risk of adapting to a limiting monoculture • Risk of groupings or cliques - slightly harsh tone or bullying • Lack of participation in the community from other companies
Professional	• Possibility of sparring, feedback and knowledge sharing • Opportunity for professional collaborations and the potential to do business with each other • The facilitator can act as a sparring partner and help to promote cross-disciplinary collaborations • Networking and the professional events - external speakers, joint meetings and morning meetings etc.	• Risk of lack of confidentiality - no declaration of confidentiality • Risk of competing companies in the CWS • Risk of "stealing" each other's employees
Physical	• Easy concept - to have a place to sit where you can get started quickly • Rent at a fair price • Necessary office furniture, Internet and printer, security and alarm, reception, meeting rooms, canteen and catering with coffee machines, toilets, cleaning, service, maintenance, parking and goods such as fitness with changing facilities incl. bath • Good physical environment - green and bright and nice to be in • Location that suits well - good transport options	• Too long transport time to the CWS • Lack of opportunity to give own stamp and identity e.g. how to decorate the office • Risk of being moved around • Problems with finding vacant meeting rooms • Risk of noise nuisance, disturbances and distracting activities

Figure 1: Motivation factors of the startups to participate in coworking space

businesses ... you get some social work relationships, and you just should not underestimate that, because it means a lot." (Respondent #7)

Half of the respondents explained that the most motivating part of being a member of CWSA was the collegial and social community among the startups. It was described as "good chemistry", unity and the feeling of being a part of a community, which created seriousness and commitment - to feel like part of a family package. One also described that being part of CWSA created some kind of affiliation with a well-established firm (referred to ICF). The mood in the environment was described by half of the respondents as a significant factor for motivation – an atmosphere that was inspiring. It provided a good dynamic and energy, which for several of the respondents created drive, efficiency and productivity.

Professional benefits

Many of the respondents found that a general advantage of CWSs was the opportunity for professional collaborations and the potential to do business with each other. It was emphasized that it was an advantage to have someone to talk to when it came to knowledge sharing and sparring. In this connection respondent #2 described:

"There are companies at different levels and their different life cycles also do that ... well some of the challenges that we have, this (other) company maybe had 2 years ago. And those that have just started, the challenges that they have. Well those are the ones that we had 2 years ago. So, if we can help each other, then I think it's incredibly strong." (Respondent #2)

Several of the respondents pointed out that it was one of the most important factors of being a part of CWSA - it was about sparring with "colleagues" with completely different areas of work, who could provide new input. For example, respondent #10 explained:

"Well we ... well yes, it can because we are so many different industries ... it's a mashup and it makes it exciting. You will be allowed to hear about some worlds that you have not heard of before. My God, it was so interesting and such things, I think it might make it exciting that you get to expand your horizons, a bit old-fashioned meant, but you get some input that you would not be able to get from elsewhere." (Respondent #10)

Furthermore, several described that this played a role in the choice to become part of a CWS - an environment that can provide inspiration and dynamic. Half of the respondents saw an advantage in the network and the professional events that may be associated with a CWS. It could be in the form of events, external speakers, joint and morning meetings etc. This could contribute to inspiration and the opportunity to make contacts. Few mentioned joint events as some of the most motivating part of being part of CWSA as it contributed to the opportunity to get closer to the entrepreneurial environment and allowed for networking. In addition, it was mentioned as an advantage that the facilitator could act as a sparring partner and also help to mediate and promote cross-disciplinary collaborations.

Physical benefits

About half of the respondents reported that practical matters around the physical framework were important. These factors included the importance of the concept being easy and to have a place to sit where you can get started quickly. Several expressed satisfactions with the offered office furniture, Internet, Wi-Fi and printer, security and alarm, as well as facilities such as reception, meeting rooms, toilets, canteen, kiosk and catering with coffee machines. There were good opportunities to invite in customers and partners to visit and for meetings. In addition, there was cleaning, service and maintenance, which made it all easy. Furthermore, parking and goods such as fitness with changing facilities and bath were mentioned. Several said that the location suited them well and that it was easy for them according to transport options. Several of the respondents believed that it was important for their motivation to have a good physical environment in CWSA, which was described as green and bright and nice to be in. Finally, several described the physical setting as one of the factors, that they were most satisfied with. Everything was included at a reasonable price, which provided a good basis for getting started.

In the interviews, the startups were then asked questions on possible disadvantages associated with a CWS in general, and if they experienced any

demotivating factors in relation to being part of CWSA, see Figure 1.

Possible disadvantages in coworking space

Of general disadvantages, several of the respondents described the risk of noise nuisance, especially in the open office environments. Here there was both a risk that you may be disturbed by noise from others, but conversely, you must also be careful not to disturb your "colleagues". Several respondents also mentioned that was is a risk of interruptions and that you may be disturbed in your work and lose concentration. It could e.g. be about distractions from "colleagues" or distracting activities in the community, such as table tennis and Friday bar. Furthermore, one of the respondents also mentioned that there could be a danger that you may become too involved in other activities so that you do not reach your main goals.

Several of the respondents also pointed to the disadvantage of risk of lack of confidentiality. This could be a problem in relation to confidential conversations about the company's business and trade secrets, but also internal matters in the company, which one does not necessarily want to deal with in an open forum. Respondent #1 explained:

"Then there is one thing that may have surprised me a little. It is that there is no declaration of confidentiality in the lease. Yes, because we sit and listen to what each other is talking about here and it is unrealistic, like imagining that every time you have to say something that must not come out, you have to run into another place. So, I had ... and I have often thought that in principle there should be, in the lease itself, a declaration of confidentiality that what you hear here, you must not pass on." (Respondent #1)

Few respondents pointed out that it could be a disadvantage that you cannot, to the same extent, give your own stamp and identity (e.g. how to decorate the office) when you are part of a community and that there is a risk that you adapt to a limiting monoculture. Few others pointed to other possible disadvantages, such as the risk of sitting alone in the office when many small or one-man businesses are sitting together. Few described that there could be a risk of ending up in a CWS with competing companies but did not feel that this was a current problem in CWSA. Furthermore, there might be a risk of "stealing" each other's employees. Few pointed out that it could be a disadvantage if the transport time to the CWS was too long. It could also be a disadvantage if, in addition to office facilities, you need other facilities such as larger storage space.

Disadvantages and pitfalls in CWSA

When the respondents were asked if they perceived anything as demotivating about being part of CWSA, most answered that they did not find anything directly demotivating. However, some respondents mentioned conditions that they experienced as negative. In this connection, conditions as being moved around and risk of sitting alone because there was no one in the office were described. In addition, it could be problematic if you were matched incorrectly with those you sit with, e.g. in connection with disturbances and noise levels. One respondent described that there was always a risk that there would be someone you were not tuned on the same wavelength with. Another described the perception that there might be groupings or cliques. Respondent #7 explained:

"So, it's still an adult workplace and unlike many other places there are a lot of independent people ... and that means that there are many opinions and I think that if you are a little younger, you could get in trouble on it. ... Yes. So, I do not want to say adult bullying, but there may be a slightly harsh tone, and there are some who are out and some who are in. " (Respondent #7)

A few others reported perceptions of negative conditions such as expensive canteen service and the experience that more people thought that the facilitator's "tone of voice" could be a little too "popped", and that the flexibility in the work space could previously be limited, as the furniture had to be in a certain way - there was like a design police.

When respondents were asked what they were generally least satisfied with, many reported that there was nothing major, which they were dissatisfied with. However, half of the respondents supplemented with diverse inputs. Factors such as irritation about being

moved around, mess (moving clutter) that could take a long time to be cleaned up, problems with finding vacant meeting rooms, and financial conditions such as a slightly expensive canteen service and a slightly high rental price in relation to needs were mentioned here. One respondent mentioned that it could sometimes take a long time to fill the desks (empty seats). One described that there could be more participation in the community from other companies in CWSA, both in relation to general openness and participation in joint events. One respondent explained about the experience of an untapped potential in relation to possible collaboration with ICF.

Suggestions for improvements in CWSA

When the respondents were asked if they have suggestions for improvements, there was an immediate response from half. The proposals were partly about improving the physical practical framework. Mention was made here of better administration of the meeting rooms in connection with the experience of meeting rooms which have been booked but were not used. In addition, suggestions were made for improving the design and atmosphere of the meeting rooms, which were perceived as sterile and boring. This could have an impact when customers are invited to CWSA. It was pointed out that the internal communication app was simple and boring and should be improved. In addition, there was a proposal to set up telephone boxes for use in private and confidential conversations. In addition, one respondent suggested an improved level of service regarding the handling of necessary practical matters.

Other proposals revolved around social and professional conditions. Here a proposal was made for a common place where the companies in CWSA could have lunch together. Also, a desire was expressed for activities that could link the companies in CWSA closer together, e.g. more frequent common breakfast. In addition, a suggestion was put out about a small team that could give advises on basic issues, e.g. legal assistance, as well as a desire for more internal network groups between the startups with e.g. same customer segment.

Few respondents pointed to suggestions for improvement that relate to the role of the facilitator. In this connection, it was suggested that the facilitator was properly familiar with all the startup companies in CWSA and their individual competencies, so that their know-how could be used and applied, e.g. in connection with various events. This respondent felt rejected by an offer of assistance and generally believed that the internal resources could be better utilized. Another respondent found that the facilitators' attitude, as well as dialogue and handling of human relationships, could be perceived as dismissive, which was unfortunate. The respondent believed that it might be due to stress or lack of experience. One respondent experienced that the facilitator's behaviour might seem to be too "popped" (smart) and as being a little too much on "the big innovation trend", which resulted in that the behaviour could be perceived as less credible or as acting. The respondent suggested that one focused more on getting the internal companies to tell more to each other, instead of it being constantly external speakers that were invited in. That would create a greater cohesion.

Knowledge sharing and innovation in CWSA

In the interviews, questions were asked related to the respondents' experience of knowledge sharing, sparring and collaboration in CWSA. Several of the respondents told that they have established collaboration with other companies in CSWA. Business collaborations between groups of two to three startup companies were described. Some collaborated on specific projects and others on sharing customer base. Such collaborations must be presumed to involve knowledge sharing and sparring. Few respondents have a direct collaboration with ICF, which they have had already in connection with becoming part of CWSA. In addition, several respondents explained about sparring with the other members and facilitator about specific issues, and about the purchase and sale of products and services between the companies in CWSA. When it came to sparring, it was again assumed, as with collaboration, that it also includes knowledge sharing. Several of the other respondents said that they shared knowledge with the other companies in CWSA. Often it occurred randomly and was of an informal nature, e.g. at events and morning meetings. Few respondents stated that they did not yet experienced so much but were

interested. In general, all respondents reported an experience that they share knowledge, or would be open to do it when an opportunity arise.

Activities

On the question of whether there were specific initiatives and activities that could promote knowledge sharing and professional collaboration, many of the respondents mentioned events where external speakers came in. Some used these events a lot and described them as inspiring and with a good opportunity to ask questions and network. Others did not often participate in these activities and believed that it was not necessarily something you could actually use for anything. Many of the respondents also reported about joint breakfast meetings and other weekly meetings. These activities were popular, with large attendance. These kinds of meetings had elements of a professional nature but also provided an opportunity for informal social dialogue, which many of the respondents were happy about. Several respondents mentioned social activities such as summer party, Christmas lunch, Friday bar as well as yoga and meditation. And some of the respondents stressed that the social activities mattered the most.

Lunch meetings or business lunches where the startups could meet and explain to each other what they were doing and receive input from each other, were activities that few of the respondents explained has existed in the past. However, one of them told that it unfortunately died out, due to lack of support from the companies in CWSA, probably due to the meeting time. Other respondents talked about similar networking activities that they had not used enough. Few described an app used for internal communication as a way to get in touch. Also, facilitator had arranged workshops on various processes around starting a business. Furthermore, there had previously been an overview board with pictures of the members of CWSA and a note where you could write down "what I want to know and what I can share". None of these had been maintained. However, one of the respondents described that it would be a good idea to resume and improve the initiative with the overview of members in order to create more contact. One respondent emphasized the importance of having ongoing activities to keep up the spirit.

Contact surfaces in CWSA

All respondents described that they, to a greater or lesser degree, have contact of a professional and social nature with other companies in CWSA. Most of the respondents had some contact with the facilitator as well. This usually took place in relation to practical matters or networking. Networking at the request of the facilitator had in several cases resulted in contact with ICFs innovation department, which as earlier mentioned is placed in CWSA. However, the respondents generally reported that this contact with the innovation department had so far not been followed up or did not have a major impact on their business. Many reported no contact with ICFs innovation department and some even had the impression that the innovation department was a closed department or was not interested in the rest of CWSA. Few others described the contact as superficial, or that they had no knowledge of the department or even know where they were sitting. Finally, few respondents reported that they had contacts with employees from other departments in ICF. The contact was described by many as informal, which often took place randomly, sometimes through social activities. Few of the respondents explained that it was a mixture between formal and informal contact. Several of the respondents said that the facilitator has tried to establish contacts for the startups. Few explained about contact that had been important to them while others mentioned that they did not had success with the experience, or that they had not achieved much with it.

Suggestions for how to promote knowledge sharing and cooperation in CWSA

Many respondents described proposals, which should increase awareness of the individual startup companies' competencies and activities. Some suggested activities that continuously support opportunities to tell each other about their company and projects. Several believed that the breakfast meetings would suit well for that purpose, as many members of CWSA participated in this activity. Among other things, it was proposed that e.g. 5 companies got "2 minutes of fame" at each meeting, and 5 minutes for pitch speeches by occasion. Other respondents suggested activities with fewer participants at a time, e.g. workshops or network

meetings with up to 10 participants, where companies could present a topic, their project or about their company and subsequently spar and create dialogue with inputs and questions. In addition, there were suggestions to place an overview board in the entrance area or by the coffee machines with information, such as the logo of the companies and where in the building the companies were located. The respondent believed, that if you know what others are doing, then you are more likely to turn to them. Thus, the opportunity for collaboration can grow. Another respondent suggested similar overviews in the form of a catalogue. A further proposal mentioned that the tv screens in the common areas could be used to show short videos about the companies including information about their competencies and activities. This could possibly also be used to offer knowledge sharing, and the respondent would personally like to offer a seminar in the area of own competencies. Few also pointed to the possibility of informing about themselves on the facilitator's official website. It was important to be able to share competencies in a large community. In connection with the mentioned proposals, some respondents expressed the desire to brand their company - partly for knowledge sharing and collaborations, but also in order to do business as well internally in CWSA as externally.

In addition to the proposals, a single respondent believed that one should be aware of the size of the companies sitting in CSWA. The respondent experienced that while you feel the interdisciplinary knowledge and competencies among the smaller companies, the few large companies in the CWSA isolated themselves and run their own show. There was no interaction with them. According to another respondent, the same view applied in relation to ICF. An overview of activities which can promote knowledge sharing, sparring and collaboration in coworking space is shown in figure 2.

Figure 2. Activities which can promote knowledge sharing, sparring and collaboration in coworking space

The role of the ICF in relation to CWSA

When the respondents were questioned why the ICF had chosen to invest in CWSA, most of them had a perception that on a broad scale matched ICFs official stated intentions, as mentioned in the case description. At the same time, several of the respondents believed that the reason for the investment was to rent out vacant business premises. Few described other reasons, such as that the establishment of CWSA contributed to the ICFs prestige and brand value, in-house resources, as well as insight into the startup culture. In addition, one of the respondents believed that the main purpose was to support the startup environment.

When asked whether ICF had an impact on the decision to become a part of CWSA, many of the respondents explained, that the fact that CWSA was located at the head office of a well-established company provided a form of security and safety in their tenancies. In this connection, several of the respondents also pointed at the good physical environment, where some, in this connection, expressed their gratitude for ICF having invested in and contributed to the financing of CWSA, which provided a reasonable rent for the startups. Furthermore, one of the respondents pointed out that the ability to draw on the resources of the ICF could play a role, and however stressed, that the interaction with the well-established firm, in order to be complete, requires planning and effort from both parts. Few of the respondents explained that they had become part of CWSA due to an existing collaboration with ICF. Also, some of the respondents did not believe that ICF had any influence on their choice to become part of CWSA.

As earlier mentioned, three of the respondents reported about a specific collaboration with ICF. In relation to which role ICF played for the respondents individual startup, several of the respondents highlighted that they were a customer of ICF. Few underlined that the relationship was based on the fact that ICF was their landlord, while others emphasized the benefits of the practical and physical conditions in CWSA. Few of the respondents described that they felt as a part of something bigger and pointed to the possibility of potential collaboration with an experienced incumbent firm, with a large interface in the society. In general, most expressed that they could be interested in collaborating with ICF.

Potential business model innovation

Beside the three respondents who already collaborated with ICF, many respondents described that they, to some extent, have had ICF in mind in relation to potential collaboration. However, it had not yet resulted in any actual collaborations. When the respondents were asked if ICF had made it clear how they could fit into their business, most thought that this was not the case. They described that no inquiries were received and that nothing proactive had been done by ICF. As described previously, several of the respondents reported about situations where the facilitator had mediated information to ICF, which had resulted in meetings. Here, the respondents did not experience any clear feedback. Some considered whether it was because ICF was not interested. Only one reported about being outreaching with positive results. Several of the respondents were convinced that ICF possesses knowledge and resources that could fit into their business. One commented, that a large company could contribute with e.g. financial capital, staff and knowledge. Half assumed that this was the case while few explained that they unfortunately did not know the ICF so well. Conversely, most of the respondents believed that they possessed knowledge and resources that could fit into ICFs business. Many stated this with a great conviction. Three of them were already collaborating with ICF, as previously mentioned. Several of the respondents were of the opinion that their knowledge and resources constituted an unused potential for ICF. Respondent #3 underlined:

"There is a gigantic potential and I simply don´t understand that you don´t make better use of that potential. I simply don´t get it." (Respondent #3)

Suggestions for the ICF to improve knowledge sharing, learning and collaboration

Generally, the respondents described conditions regarding lack of visibility and contact from ICFs side, which resulted in untapped potentials for collaborations. Many respondents came up with

suggestions, which they believed could improve this relationship. Some respondents pointed out that the contact and thus the strength lies in the random situations that arise from the constellation. In this connection, it was proposed that the monthly breakfast meetings should be held more frequently. To increase contact and the link to ICF, an "ICF Hour" could be arranged, e.g. in continuation of the breakfast meetings. At a fixed place and time, an ICF employee should be available to answer ICF-related questions concerning e.g. practical matters, establishing contact in ICF regarding ideas and products or possible job opportunities. Another respondent explained about an earlier experience and appreciation of a visible contact person from ICF and expressed that this was now a shortcoming. Moreover, one respondent pointed out that the internal communication channel used in CWSA could be used to make ICF more visible. One respondent explained that by offering job opportunities to the startups in CWSA, ICF could show a helping, paternal role. Another suggested that, as owner of an innovation environment like CWSA, it could be "a strong card in hand" to be able to say that you can help startups with funding. An "introductory package" with benefits, similar to those of the employees of ICF, had also been proposed. This could contribute to the feeling of being like a "real ICF employee" and to have sympathy for the firm. One respondent commented that there was a need for ongoing contact with some employees from ICF. They should signal that they have the will to look for opportunities. In this connection, other respondents suggested that employees from ICF could give presentations, e.g. about their products, solutions, projects or operational challenges and needs. This could give the startups in CWSA opportunities to react and contribute. Other respondents came up with similar proposals that ICF should more proactively open up for dialogue on collaborative development activities. It could e.g. be in form of weekly or monthly sessions or network meetings with specific themes, possibly related to development or optimization within ICF, and with the possibility of knowledge sharing and sparring. One respondent added to have experience of such collaboration with ICF and told that it had benefits for both parts.

Furthermore, one respondent suggested a more radical solution. Instead of placing one group of employees from ICF in CWSA, they could be divided into three or four groups. Then establish rotation offices where the employees from ICF were put together with startup companies in CWSA to make a kind of "forced rotation", e.g. every third month. The respondent explained that just sitting together could bring value. The respondent had experienced something similar before where the employees were against it from the beginning but loved it afterwards.

Finally, one respondent was of the opinion that when it was decided to establish an in-house CWS within an incumbent firm, action is needed for the investment to yield a return and it requires a change in culture - you cannot just copy a product without knowing the function. It was pointed out, that apparently a link is missing between the management's decision and the startups in CWSA. Thus, the respondent proposed that a steering group should be established in ICF, to manage and utilize the potentials and the gains, when an incumbent firm is part of a CWS. The property and facilities itself are not the way to the goal. The incumbent firm is the strong part that can afford to facilitate and take profits home.

Based on the findings, strategies for an incumbent to promote collaboration and BMI in CWS are suggested in figure 3.

Discussion

The present case study approach makes it possible to recognize snapshots of an in-house CWS as a new business constellation. While in general the case study does not bring generalizable facts, the results can be transferred as empirical insights contributing to an enhanced understanding of detailed aspects of the phenomenon of an in-house CWS as a new initiative to BMI. The study contributes to a deeper understanding of how the startups perceive to be a part of this setup for potential collaboration with an incumbent host firm. In addition, the study can help to identify, benefits and barriers for the parts involved.

Good framework	• Rent out vacant business premises at a reasonable rent • Good physical office environment which offer security and safety in tenancies • Benefits similar to the employees of the incumbent e.g. introductory package to feel like a part of incumbent • Give feeling of being part of something bigger • Incumbent can have a helping, paternal role e.g. by offering job opportunities and funding
Ongoing Visibility and Contact	• Contribute to brand value and prestige for all parts • Visibility through internal communication channel • Visible contact person from the incumbent on a fixed date and time to answer questions, increase contact and link • Involvement in professional and social activities e.g. breakfast meetings. Strength lie in the random situations that arise from the constellation • Bring incumbent employees and startups closer together e.g. office space with forced rotation
Knowledge sharing	• Signal the will to look for opportunities – e.g. presentations on incumbent's products, solutions, projects, challenges and needs to give opportunity to react an contribute • Opportunities to learn from each other e.g. insight to startup culture, increased in-house resources, experience from incumbent with a large interface in society • Proactively open up for dialogue and collaborative development activities e.g. sessions or network meetings with possibility for sparring and knowledge sharing
Explore and exploit potentials	• Opportunity of customer relationships • Requires planning and effort from both parts • Incumbent steering group to manage and utilize potentials and gains

Figure 3: Strategies for an incumbent to promote collaboration and business model innovation in CWS

It is demonstrated that conditions which motivate the startups can be categorized in to social, professional and physical factors, as shown in Figure 1. Similar factors were previously shown to be important for the motivation of users of CWSs in general (Weijs-Perrée et al., 2019). This implies that the motivation factors for the startups in the present case seem to be independent of the participation of an incumbent firm.

Overall there is good agreement between the startups initial expectations, the perceived general

benefits of a CWS and their experience of what motivates them most by being part of CWSA. This indicates that ICF, to a great extent, has created good framework and foundation for their in-house CWS. The mentioned social and professional factors also function as a mechanism for knowledge sharing and sparring. As the companies in CWSA are at different stages in the life cycle of their business, there is a good breeding ground for the companies to share experiences and help each other (Greiner, 1972). This is supported by the ongoing need for activities, which has been emphasized by the startups. The sense of community and the "collegial" cooperation is however not directly written down in any kind of contract, but rather a consequence of the culture and the constellation. Despite the generally positive motivation to be a part of CWSA, possible disadvantages were pointed out, see figure 1. The presence of ICF may imply a dominant corporate culture with the risk of affecting the environment. Such strong corporate culture of an incumbent firm could tend to be perceived as bureaucratic and be inhibitory to the more agile culture of the startups. This can lead to an unwanted unification of the culture in the CWS. In addition, one must also be aware of the individual needs for confidentiality and the risk of competitive disadvantages between the members of the CWS.

At the time of the study, the interviews indicate that most startups have competencies that could fit into the business of the ICF. Contrarily, most of the startups think that the ICF possesses valuable knowledge and resources that can fit into their business. This results in the perception of an untapped potential for collaboration. In connection with the application process to become part of CWSA, some startups had the impression that the companies were screened to become members of CWSA. It may therefore be, that some of them feel, that they have been selected. Thus, some may experience disappointment and lack of interest in their potential collaboration, and therefore feel, that the role of the ICF seems to be superficial. It could indicate, that a passive behaviour from the incumbent firm can result in demotivation regarding the lack of collaboration. Hence, communication and alignment of expectations between the companies in CWSA and ICF should be improved. If missing communication is based on the risk and fear of loss of intellectual property rights, it should be considered how it could be handled.

The current form of engagement represents a model of open innovation, as a part of the innovation strategy of an incumbent firm, which has both advantages and disadvantages. At the time of the investigation, the study demonstrates an established collaboration between few startups and the ICF. Such collaborations can be considered to be beneficial to the incumbent firm as it can be a quick and cost-effective way to solve problems. Also, it is pointed out that renting out vacant business premises could be a contributing motive for the investment of the ICF. Working with startups can contribute to prestige and brand value of the incumbent firm. Thus, it can have a positive effect on the perception of the corporate brand among the external customers, partners and future employees. Furthermore, implementing an in-house CWS can have a refreshing effect on the corporate culture. The incumbent firm can be inspired by the entrepreneurial mindset which can help to get awareness of future trends and the potential of new technologies.

Earlier studies had discussed different forms of engagements between startups and incumbent firms (Weiblen and Chesbrough, 2015). In the current constellation, unlike other engagement forms, there is not a direct commitment to a concrete business relationship. The collaboration is rather based on more or less random coincidences and therefore requires an ongoing effort to succeed. Thus, there is not necessarily a direct return, in the same way as it is seen in other types of engagement. This is supported in the present study, as the contact in the CWSA often occurs randomly and is often of an informal nature. Therefore, it is suggested, that in order to provide value for both parts, an ongoing effort and investment from the incumbent firm is required and should be a standing point on the agenda. If the goal is to create innovation and new business models to secure the future of the incumbent firm, it demands that the organization is open to exploring new opportunities – including radical innovations rather than incremental changes.

Another challenge with the model is that it can be complex to operationalize, and it has to adapt to the specific requirements of the initiative (Wirtz and Daiser, 2018). On one hand, it requires many man-hours, planning and possibly also a radical change in the mindset of the incumbent firm, which can be resisted. On the other hand, a strong corporate culture with certain resistance to external ideas that are different, can create tension and resistance. Thus, there is a risk of a cultural clash between the startup- and corporate culture.

On the basis of the investigation, doubts may arise as to whether ICF actually, at the present time, wishes to cooperate with the startups in CWSA, as there seem to appear a detachment between the startups and ICF. It may be considered whether this could it be due to a bad match between the current companies in CWSA and ICF. Based on the interviews, it is indicated that several of the startups are of the opinion that ICF is only interested in a collaboration if it is directly related to the core business of ICF. The question is whether this is correct or whether the ICF could in fact reap the benefits of various initiatives, that could contribute to their overall portfolio. If so, it is important that the ICF signals and communicates it. If ICF, to a greater extent, wishes to include CWSA in their business, they should reconsider the desired strategic return and make a clear placement of responsibility for the realization of the project. To avoid that it will not become a "castle in the air", it requires both economic and mental resources which probably also require a cultural change. Formation of a steering group, which can design specific initiatives, could be considered, including increased initiatives for ICFs visibility and dialogue with the startups. Furthermore, ICF could continuously perform a systematic follow-up by adding CWSA as a fixed item on the agenda.

Overall, engaging with startups can have several benefits for incumbent firms. It can create the foundation to increase innovation in the organization and enable it to move faster, more flexibly and to promote radical innovation. Different forms of engagement can support different key goals of the incumbent firm. Thus, it is important that the incumbent firm is clear about the desired outcome and that the collaboration is linked to the strategic goals of the organization (Weiblen and Chesbrough, 2015).

Conclusion

The present case study investigates the constellation of an in-house coworking space, a recently emerged engagement form between an incumbent firm and startups, which relies on the principles of open innovation. The study revealed physical, social and professional conditions as important motivation factors and general benefits for the startups to participate in the CWSA. Furthermore, good agreement was found between their initial expectations and the reported experience. Generally, there is a good physical framework, which contributes to a positive atmosphere. The feeling of being a part of a larger community with "colleagues" and the possibility of participating in professional activities seems to promote knowledge sharing, sparring and collaboration between the startups. The contact in CWSA often occur randomly, with an informal nature. The above mention conditions can however possess downsides and barriers. There are risks of distracting activities, unfortunate matches or groupings between the members and social and professional inactivity. Nevertheless, the startups express wishes of more ongoing activities to elucidate increased knowledge of their individual competencies to better use their know-how.

Most of the startups were aware of the intention of ICFs establishment of CWSA. At the same time, the rental of vacant premises, prestige and brand value for the ICF were perceived as contributing factors for the investment. The presence of the incumbent firm provides a form of security and safety for the startups. Most of the startups expressed, that they could be interested in collaborating with ICF. At the time of the study, only few had an active collaboration with ICF, while others primarily were customers or perceive themselves as tenants. Several meant that the ICF possesses knowledge and resources that could fit into their business, and many were convinced that the opposite is the case, as well. Most of the startups, however, did not experience that ICF clarify how they can fit into their business. Thus, CWSA is perceived to constitute an untapped potential for ICF.

The study indicates, that if ICF wants a greater return of their investment, they should improve visibility and communication and to a greater extent signal the willingness to look for opportunities for collaborations. We do not know the exact reason for the perceived lack of activity. This could be due to several reasons, as for example a mismatch between the incumbent firm and the startups, concerns about intellectual property rights or cultural clashes and resistance to accepting external opinions and ideas. And essentially, the question could be asked if the incumbent firm is ready for radical business model innovation?

In conclusion, the present constellation seems to represent an ideal investment with both economic, social, professional and cultural capitals – and, in the future, seems to be a promising contribution to innovation in incumbent firms with an open mind.

Limitations and future research

The study was primely performed to investigate the motivation to be a part of a CWS like CWSA, how knowledge transfer and collaboration between the actors take place and the role of the incumbent firm in this specific constellation, all perceived by the startup companies. Based on official statements from the ICF, we know their motivation to establish CWSA and the official goal with the project, as a part of their BMI. This was moreover supported by informal conversations with employees from the innovation department. However, formal interviews with employees from ICF have not been conducted. This would have made it possible to find similarities, difference, and major gaps between the startups and the ICF. Despite that the single case study does not provide generalizable facts, it nevertheless has generated an in depth understanding of the complexities which occur in the social world in relation to the constellation of an in-house CWS and have provided results that can inform the existing theory in the field. Furthermore, the present case study illustrates a snap shot of the ongoing process and the current study does not deliver follow-up results, which possibly could be done in the future.

In the future, more studies are needed to evaluate the value of in-house CWSs for BMI in incumbent firms. Especially, what is needed to optimize the model and the yield, for the incumbent firm as well as the startup companies? Existing literature underlines that the question on how to achieve BMI has been largely neglected (Taran et al., 2022). Thus, future studies could be done to evaluate the proposed strategies for an incumbent to promote collaboration and BMI in CWS, which were suggested based on the results of the study.

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Emerging Market Firms and Dual Business Models: An Indian Perspective

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Abstract

Managers in organizations face severe challenges and conflicts that arise from pursuing dual business models. Documented studies are available on how Western Multinationals operate in emerging markets, however, little evidence is available about how home-grown emerging market firms pursue this challenge in their home markets. With an ambidexterity perspective and activity systems approach, this study aims to offer novel insights into how Indian firms carry out organizational integration and separation—they focus on domains of expertise in organizational activities such as sales and marketing rather than on business units—as they pursue the challenges of dual business models, in contrast to the multinational corporation (MNC) approach.

Introduction

Because of the institutional, infrastructure, and resource constraints in many emerging markets, firms must create uniqueness for example through newer business models to meet the price-performance requirements of customers at the lower end of the pyramid (Luo and Child, 2015). Thus, launching products and services targeted at the broad middle to the lower end of the market is often the prerogative of firms if they have to successfully cater to emerging markets (Luo, 2016). As a large part of the customers in many emerging markets are quite sensitive to price-performance requirements across product categories, it is observed that a 50% solution at a 30–40% price of the high-end offering is often a preferred option (Immelt, et al., 2009). Existing business models in emerging markets often attempt to address the needs of the top of the pyramid but fail to satisfy the needs of low-end customers (Seelos and Mair, 2007; George et al., 2012). Many multinational corporations (MNCs) have addressed this challenge

Keywords: dual business models; ambidexterity; domain separation; emerging markets; activity systems.

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by implementing business models catering to customers at the lower end alongside the existing business model of serving premium customers. The aspect of catering to customers on a differentiation plank in one business model (high-end customers) and another business model on a low-cost proposition (low-end customers) raise conflicts in many organizations regarding what they stand for or signal to customers (Markides and Charitou, 2004). Thus, the challenge of operating two different business models within a common product category raises conflicts in terms of how to handle the tensions of exploiting the current business model and attempting to explore the new business model. The tensions and conflicts can arise because (Markides and Charitou,2004) (a) the two business models and their underlying value chains can conflict with one another, thereby alienating distributors, customers, and other stakeholders; (b) companies that have often positioned themselves on the differentiation plank through a culture of innovation and differentiation and thereafter make a foray into lower category products can damage their existing brands and find themselves diluting their culture for innovation, and (c) companies can face the risk of signaling to the market what they stand for, that is signaling that accrues to their reputation. Documented studies suggest that firms attempting new business models need to deploy them in separate organizational units (Markides and Charitou, 2004). The current study attempts to find how firms from emerging markets manage aspects of integrating or separating new business models from the existing business model (such as high-end versus low-cost) by following an ambidexterity activity systems perspective, which requires different sets of capabilities to compete in each market (Kachaner et al., 2011; Markides, 2013). Unlike typical studies that focus on MNCs operating in emerging markets, the current study looks at how home-grown players manage dual business models in their home markets in India.

Conceptual Anchor

A set of business model innovation studies have focused on the phenomenon of working around with dualities of business models (Markides and Charitou, 2004; Markides, 2013; Winterhalter et al., 2015), value creation (Amit and Zott, 2012) as well as sustainable value creation (Lüdeke-Freund, et al., 2020). Although researchers have studied dual business models in terms of technological innovations like e-commerce and bricks-and-mortar models (Amit and Zott, 2001), here *dual business models* refer to newer low-cost business models that accompany existing high-end business models or vice versa (Winterhalter et al., 2015). As new markets present different sets of key success factors, they require different combinations of value chain activities, internal processes, structures, and cultures fine-tuned and tailored to the respective unit or division of the firm. Thus many organizations can assume a hybrid form of organizing activities, structures, processes, and meanings by which it can make sense of and combine aspects of multiple organizational forms (Earle et al., 2019). Thus, if the goal is to manage the conflicts, then key questions facing firms in adopting dual business models are, "Can we manage conflicts and how?" and "Which activities should we separate and when?" (Markides and Charitou, 2004.) With the above perspective, Markides (2013) called for adopting the ambidexterity lens that could provide explanations of how dual business models can be visualized and implemented. Thus firms can frame the challenge of managing two different and conflicting business models simultaneously as an ambidexterity challenge.

Organizational ambidexterity is a well-researched stream in the field of strategic management; less researched is how firms manage the dualities of exploitation and exploration from an ambidexterity perspective. Broadly, developments in the field of ambidexterity have identified at least three primary ways by which firms attempt to balance exploration and exploitation:

- structural mechanisms (Tushman and O'Reilly, 1996);
- temporal (Nickerson and Zenger, 2002);
- contextual arrangements (Gibson and Birkinshaw, 2004).

More recent research uncovered other solutions that could promote ambidexterity. Extant work also suggests that ambidexterity is the capability of a firm to

operate both in mature and emerging markets, where experimentation, speed, and flexibility are critical for success (He and Wong, 2004).

Recently, academic literature on ambidexterity has started to focus on the dynamics of ambidexterity that managers can exercise in discrete fields of organizational activity called *domains* such as production and sourcing, research and development (R&D), marketing, sales, and branding (Lavie et.al., 2011). Accordingly, through domain separation, firms attempt to separate exploration and exploitation along the value chain—by exploring in one domain (e.g., in production and sourcing) while exploiting in another domain (e.g., R&D) (Winterhalter et al., 2015). We can visualize our notion of organizational ambidexterity as a tension between differing and conflicting business models.

Ambidexterity literature on domain function separation offers an appropriate lens to bridge this gap (Lavie et al., 2011; Winterhalter et al., 2015). Thus, with a value chain ambidexterity perspective, the current study aims to understand how firms attempt to address the dualities in business models through the following research questions:

1. How do emerging market players handle conflicts that arise by pursuing dual business models?
2. How do the firms in question manage to separate the two business models?
3. What is the sequence firms use to separate or integrate value chain functions?
4. How do firms reconcile to strategic similarities in the markets catered to as well as the conflicts of pursuing dual business models?

Methodology

The study focuses on 12 manufacturing firms representing different product categories. We sought to understand the complete value chain activities of these manufacturing firms. We selected our 12 firms based on their recent launch of distinct low-cost versions of their mid-to-high-end offerings in the Indian market in similar product categories. We used a qualitative methodology (Eisenhardt, 1989), specifically a multiple case study approach with a cross-case comparison to understand the similarities and differences among firms in terms of markets and the degree of conflict between the two business models. We adopted an activity system perspective of business models to demarcate the findings on how the firms integrated or separated their new low-cost business model from their premium business model in terms of value chain activities (Zott et al., 2011). Refer to Table 1 for brief details of the twelve product industries.

All the different product industries were studied concerning the differences or similarities of the value chain for both the business models. Data was collected from a combination of various sources (case studies, media reports, websites of companies, product details, etc., to understand the granular aspects of the value chain, and a cross-case comparison was used. The available data were analyzed to understand how the activity systems approach for the dual business models catered to were different. The dimensions used for the studies were the degree of conflicts between the business models and the strategic similarities of the markets catered to. For conflicts between the business models, typical conflicts (Nine dimensions mentioned in Markides and Charitou (2004)) were used to demarcate between the activity systems. If more than five dimensions were reported, then the degree of conflict was reported to be high otherwise low.

For strategic relatedness between the markets catered to, three dimensions broadly grouped under customer assets, channel assets, and process assets were measured through five questions. Responses that showed positivity in more than three questions were considered high for strategic relatedness between markets, otherwise low. Thereafter plotting of the two dimensions was made (refer to Table III), and generalizations based on the insights provided were made.

Table 1.

Manufacturing Firm	Industry	Products
MF-1	Farm Equipment	Tractors for small farmers
MF-2	Watches	Low-end watches
MF-3	Consumer electronics	Low-end Television sets
MF-4	Water purification systems	Low-end water purification systems
MF-5	Cement	Low-end wall putty
MF-6	Branded luggage	Travel bags
MF-7	Optical Storage devices	Low-end floppy discs
MF-8	Health diagnostic equipment	Cheaper pulse oximeters
MF-9	Furniture	Mid- high-end furniture
MF-10	Hydrocarbons	Low-end polymer
MF-11	Cosmetics	Cheaper deodorants
MF-12	Branded Footwear	Cheaper sport shoes

Table 1: Brief details of the 12 product industries

Key Insights

Tensions and conflicts can arise in firms because of the simultaneous pursuit of two different business models. It was observed from the study samples (MF-4 and MF-12) that the underlying value chains conflicted with one another and had the potential to alienate distributors, customers, and other interested parties, as the similarities between the targeted markets were very low. So, the firms (MF-4 and MF-12) chose to separate the sourcing and production in both models to address the conflicts between the two models. The firms under study resorted to managing the conflicts by demarcating aspects of the value chain that were similar and dissimilar.

Also, conflicts arose in companies that had started on the differentiation plank through a culture of innovation and differentiation and then made a foray into lower category products. The positioning of the two different business models had the potential to damage and dilute its existing brands. As an example, the firms (MF-2 and MF-6) resorted to separate branding and marketing & sales from the value chains of the two business models and both the firms did not use their umbrella brand while promoting their low-cost brand. However, as the markets were quite different, MF-2 separated the sourcing and production activity (dissimilar markets), while MF-6 integrated the production of both the business models (similar markets). This aspect enabled both firms to exercise their choices in managing the conflicts.

Firms largely resorted to implementing dual business models by domain separation across value chain activities to handle tensions between exploitation and exploration. Through domain separation along the value chain, the firms under study helped them get into new customer segments while leveraging existing knowledge and know-how. Firms separated individual value chain activities to explore a new business model (e.g., a new low-cost business model) but kept other activities in the value chain integrated with the high-end business model to exploit synergies.

Findings suggest that the firms decided what to separate or integrate based on (a) strategic similarities of the two markets served and (b) degree of organizational conflict between the two business models in terms of differences or similarities along the value chain while straddling two different value propositions like differentiation and low cost. All the firms in the current study chose to separate the branding of their low-cost business model from that of the high-end business model. At the same time, all firms integrated their R&D at the domain level. None of the 12 firms fully integrated its premium business model with its low-cost model across all domains of the value chain. Please, see Table 2 for details.

Similarly, none of the firms fully separated their dual models across the value chain, unlike many multinationals operating in emerging markets (Winterhalter et al., 2015). Major findings of the study reveal the following:

1. all the emerging market firms under study were found to have an integrated R&D for both their premium and low-cost models which is in contrast to multinational firms operating in emerging environments, where R&D is separated ;
2. the branding activity of the low-cost models is separated from the premium models in all the organizations under study;
3. only in the sourcing and production and the sales and marketing domains did all the firms separate exploration and exploitation activities to differentiate between their business models;
4. irrespective of conflicts in the business models, if the strategic relatedness(fulfilling different needs, differences in per capita consumption, etc.) in terms of similarities in the two markets catered to was low, then firms tended to keep sourcing and production separate;
5. irrespective of conflicts in the business models, if the strategic relatedness of the markets between both the models was high, firms tended to integrate sourcing and production;
6. in terms of the differences between the firms studied, all firms either separated the sourcing and production or the sales and marketing domains;

Table 2.

Firm	Research and development efforts	Sourcing and production approach	Sales and marketing approach	Branding	Degree of conflict between business models	Similarities between the two target markets
MF-1	Integrated	Integrated	Separated	Separated	High conflicts in the business model as a low-cost offering of smaller capacity posed challenges of cannibalization of the mid to high-end offerings. The trade-off was achieved through smaller size for the low-end with basic features only.	High similarities between the markets catered to as in both the models the targeted, the customer was the farmer.
MF-2	Integrated	Separated	Separated	Separated	High conflicts in pursuing a differentiated brand and making a foray into a low-cost brand. The low-cost brand was branded without the umbrella brand	Lower levels of similarities between customers of the differentiated brand and the value for money brand.
MF-3	Integrated	Integrated	Integrated	Separated	Lower levels of conflict as the low-end version was a stripped-down version of a high-end model with a separate brand	The similarities of the customers seeking entertainment were broadly the same.
MF-4	Integrated	Separated	Integrated	Separated	Very low degree of conflict between the business models, the trade-off was achieved by separating production and sourcing-, and branding.	Targeted customers were different in different segment
MF-5	Integrated	Integrated	Integrated	Separated	The Lower level of conflict between the business models as products were dissimilar and substitutable, yet catered to similar needs of the customers	High level of overlaps between targeted customers

Table 2: Integration and Separation Approaches of Low Cost and Premium Business Models

Table 2.

Firm	Research and development efforts	Sourcing and production approach	Sales and marketing approach	Branding	Degree of conflict between business models	Similarities between the two target markets
MF-6	Integrated	Integrated	Separated	Separated	As the products were differentiated with features only, a high degree of conflict was common. The umbrella brand was not put in the low-cost brand	The requirements of both the markets were relatively similar
MF-7	Integrated	Integrated	Separated	Separated	As requirements in both the markets catered to were the same, high degree of conflict separating the two models. Arose. The trade-off was achieved through differentiated features and the quality of components.	The Requirements of both the markets were similar
MF-8	Integrated	Integrated	Integrated	Separated	The Degree of conflict was low as differentiation between the business models was ensured by stripping down additional features in the low-cost segment	Very high similarities in both the segments in terms of the need to be fulfilled
MF-9	Integrated	Integrated	Integrated	Separated	Low conflicts were ensured through price point differentiation	High similarity with both markets
MF-10	Integrated	Integrated	Integrated	Separated	A very low level of conflict between the business models was ensured through different levels of quality of polymers	High familiarity with both the markets in terms of the need to be catered to.
MF-11	Integrated	Integrated	Separated	Separated	High conflicts resulted because of catering to differences between high-end and low-end customers.	High familiarity in terms of the markets catering to
MF-12	Integrated	Separated	Separated	Separated	High conflict because the company after making a mark through differentiation forayed into cheaper sports shoes	Lower levels of similarity between the markets catered to

Table 2: Integration and Separation Approaches of Low Cost and Premium Business Models *(Cont.)*

Strategic relatedness of markets served	High	*Separate* Branding	*Separate* Sales & Marketing Branding
		Integrate R&D Sourcing & Production Sales & Marketing	*Integrate* R&D Sourcing & Production
	Low	*Separate* Sourcing &Production Branding	*Separate* Sourcing & production, Sales & Marketing Branding
		Integrate R&D Sales & Marketing	*Integrate* R&D
		Low	High
		Degree of conflicts between business models	

Table 3: Strategic Similarities between Markets vs. Conflicts in Business Models

Discussion And Conclusions

Successful emerging market firms follow a path different from that of MNCs in pursuing dual business models in their home markets. Thus, traversing the path of MNCs in emerging markets may not be a preferable solution nor a guarantee for success. Conflicts are inevitable in pursuing dual business models. Conflicts arise at every level of the hierarchy, from cannibalizing existing offerings at the business level to alienating existing customers at functional levels. Examples of conflicts could be that the two dual business models stand for different value propositions, giving confusing signals to customers or the new business model offer a better price-performance ratio with improved utility functions which can alienate another set of customers catering to the earlier business model.

All of these pose some form of risk to the management of companies and often lead to tensions about the company's way forward. However, domain separation of the value chain offers a novel way of either integrating or separating these functions to align with the functioning of the dual business models. Thus, firms in emerging markets decide whether to integrate or separate a function based on the strategic similarities of the markets served by both models and on the degree of conflict between the two business models (for a detailed understanding of conflicts that typically arises in business models, Markides and Charitou (2004) offer a good perspective). However, what distinguishes successful home-grown players is their decision-making and action-taking around what to separate and when pursuing newer business models.

If the strategic similarities of both the markets are greater, irrespective of the degree of conflicts in the business models, then firms integrate sourcing and production in the value chain. The observed pattern suggested that the degree of similarities in the different targeted markets was the deciding factor in separating or integrating value chain activities of production and sourcing. Higher market homogeneity in the sample aligned a firm to have integrated sourcing and production and vice versa. If the degree of conflict between the business models was higher, firms tended to separate sales and marketing and vice versa.

Thus, this observation suggests higher conflicts in business models are handled by separating the sales and marketing domains of the value chain. The probable reason for integrating R&D in all the sample firms under study was to share and spread the development costs across variants offered at different price points. It was also observed that the majority of the firms in the sample were in the developmental stage of coming up with new variants of offerings targeted at the lower end at incremental price increases to offer better features or performance of products. This ploy could further skim the market on one hand and further narrow the perceived differences between the variants on the other. Though there are risks of cannibalization of the existing product offerings, attempts to manage the dualities better and reduce market heterogeneity over the foreseeable future are likely. However, in emerging markets, the issue of catering to customers at the low end of the pyramid is going to be a sustainable issue in the foreseeable future. Thus the processes followed in managing business models in firms need to be highly resilient and adaptable to suit the changing dynamic contexts (Montemari and Gatti, 2022). Future research projects may test whether these tendencies apply outside manufacturing, in service firms, and other contexts.

Through the path of domain separation, many firms help themselves address new customers while leveraging existing knowledge. But does domain separation differ between emerging market firms and MNCs operating in emerging markets? Yes, in terms of the sequence. MNCs operating in emerging markets tend to start by separating sourcing and production from their premium business model by transferring this domain into low-cost environments. This separation potentially allows MNCs to tap customers with products of lower cost than the ones produced in relatively costlier manufacturing sites in developed markets (Winterhalter et al., 2015). Next, MNCs tend to separate R&D, and then sales and marketing. In contrast, emerging market firms separate domains in no particular sequence. A nice parallel can be drawn from the example of GE Healthcare's foray into the medical diagnostic space in India with the introduction of low-end electrocardiogram (ECG) machines.

GE Healthcare operates in India through a joint venture with a leading industrial house, Wipro. The bottom of the pyramid (BOP) offering of Wipro GE Healthcare is not about developing high-end technological products, but about making the technology affordable and accessible to more people (Dutta & Snehvrat, 2019). GE recognized that its bulky and expensive ECG devices were unaffordable for physicians in emerging markets like India, China, and Africa. The company also realized that these devices were impractical in these markets, as doctors could not carry them on their motorbikes or bicycles when visiting patients in far-flung villages. Also, villages often did not have electricity to power these ECG devices. Recognizing the problem and aware of the need for this device in rural areas, GE's researchers in India invented in 2008 the MAC-400, a portable ECG device that cost one-tenth and weighed one-fifth of its current equivalent in western markets (Dutta & Snehvrat, 2019). The compact MAC-400 priced at $1000 boasted of super-long battery life and used several off-the-shelf components. As a result, MAC-400 was easy to use and maintain in dusty rural environments and delivered more value at a lower cost. The entire value chain of this low-end offering developed in India was separate from the value chain of the high-end model.

GE India attempted to develop products and services with a frugal mindset in an emerging market to focus on products that were affordable and accessible. In terms of the ownership pattern of MNCs vis-à-vis the domestic players operating in emerging markets, the MNCs tend to have a separate unit

built from scratch for addressing BOP markets to separate the mid- high-end models. As the market stabilizes in terms of the adoption of both models, firms look at ways of integrating some aspects of both models. A contrasting viewpoint is provided by many of the emerging market players which tend to operate both models in parallel with some aspects only of the value chain either separated or integrated. The multinationals tend to go for JVs typically in emerging markets while for domestic players, it is largely wholly owned subsidiaries. As a broad way to understand the different patterns followed in developed markets and emerging markets, refer to Table 4 for details.

Future studies can look to reaffirm or contradict these findings from studies in different emerging markets. Accordingly, we can state the proposition as:

The higher the strategic similarities between the premium and low costs markets served by the business models, the lesser the amount of domain separation that emerging market firms seek to reach out to low-cost customers.

Thus, in response to the oft-repeated question, "Should we integrate or separate our business models?" companies have the option of separating domains rather than establishing separate business units. The current study provides evidence that the business model can serve as a valuable construct for firms to overcome the tensions of dualities if pursued through the ambidexterity lens by separating domains in the value chain.

Table 4.

Type of players	Developed Markets	Emerging Markets
MNEs	Create a separate division for catering to BOP products and resort to importing from low-cost countries. Separate division/hiving off strategy	Create different value chains through collaborations that bear no similarity with each other. Joint venture strategy
Domestic players	Built the BOP product with added features to suit the advanced requirements of developed markets but at a lower price Import from low-cost countries strategy	Separating and integrating some aspects of the value chain Wholly owned subsidiary strategy

BOP = bottom of the pyramid

Table 4: Ownership patterns and modes of operation

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Using Business Models in Hindsight

Helen Kavvadia[1]

Abstract

Purpose: Develop a method for an extended "fore-and-aft" use of business models. The method will turn them also into potent business history tools, in addition to being valuable forward planning instruments.

Approach: Business models can be used to understand organizations by studying them as "snapshots" at any given time or accounting for their evolution by comparing their past successive forms on a temporal axis. The paper proposes a method of evolutionary analysis, which, by following a historical institutionalism approach, identifies "critical junctures", organizational change and business model revisions. The evolution of organisations can be deciphered by comparing the business models at these "critical junctures".

Findings: The method has been tested in two international financial institutions.

Value: There is no similar approach and use of business models. The method can serve scholarly purposes and business applications.

Keywords: business model, business history, multilateral banks, non-profit-making organizations, organizational studies, historical institutionalism.

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Introduction

Business models describe the way organizations create and deliver value necessary for their existence and development. Stemming from organizational theory, they have been increasingly deployed for the reification or re-orientation of a wide variety of companies. A number of archetypes have been proposed by scholars and practitioners alike, predominantly in the "dot.com" era (Foss & Saebi, 2017), for aligning shareholders and financiers in new entrepreneurial concepts. Their popularity trivialized them to a certain extent and turned them into a sort of topical "buzzword" used by some "professionals," mainly in the consultancy field, adroitly filling-up archetypes for establishing new business ventures.

Arguably, their potency lies in their potential to depict complex organizational systems concisely and comprehensively in simple diagrams. This is the role of any model. Nonetheless, conceptually, business models are more than mere background canvases to be filled with business details. As blueprints do for engineers, business models enable, through their visual representational simplicity, understanding and clarity for consensus-building on the nature, identity, structure, and operation of new or existing organizations within a certain contextual setting. By describing how action occurs or should occur within organized systems, business models can also guide the "engineering" of new or revised realities, reflecting or even being constitutive parts of change. Focusing on the present, they have therefore been equally well applied as effectual tools for analyzing or evaluating organizations, in light of eventual changes, in a sense mapping the actual and, subsequently, the desired situation.

As organizational changes are transcribed onto business models, the models show a co-evolutionary path (Cantwell, Dunning and Lundan, , 2010). Reflecting organizational evolution, business models also follow a complete life-cycle, from creation to extension or revision to complete termination (Morris, Schindehutte and Allen, 2005; Calvante, Kesting and Ulhoi., 2011). Hence, by assessing business models at different points in time one can understand the organizational changes they represent. Why, however, should such tools be exclusively forward-looking, as applied to date? This paper claims that, by altering the direction of their perspective, business models can go beyond their presumed use as a means of planning and serve as equally potent organizational history tools. By studying these organizational "snapshots" in hindsight, one can follow and understand the business history and evolution, similar to the way in which people become more aware of changes by going through old photo albums. By comparing snapshots over time, business models turn from static to dynamic revelations, illuminating trends. In an equivalent fashion, previous balance sheets are used in financial analysis, whereby date-specific financial "pictures" are compared over a period of time to identify tendencies. The difference is that, unlike balance sheets, business models are not readily available, first because their deployment started in the mid-1990s, and second, even if they do exist, they cannot usually be found in the public domain for confidentiality reasons.

Accordingly, this paper proposes a method for using business models in hindsight, starting with a technique for crafting past business models externally based on publicly available organizational information, including statutes, annual reports, and policy papers. The technique consists of first extracting and subsequently analyzing, categorizing, and transcribing information into a business model archetype. The archetype used here is a "hybrid" model developed based on existing proposals (Shafer, Smith and Linder, 2005; Wirtz, Pistoia, Ullrich and Göttel, 2016), allowing for generalized applicability to all types of organizations, including for-profit as well as not-for-profit organizations (Kavvadia, 2021a). It frames organizational reality within four basic elements, which, through their interrelationship, create and deliver value: strategic choices, value capture, value creation, and value network. As business models remain unchanged for long periods before a minor or major change occurs, the method proposes to retrospectively craft only business models corresponding to "critical juncture" points, where organizational change also triggers a change in the business model. These points are identified by studying the organization's past evolution from a historical institutionalism perspective.

The suggested method is developed in the form of analytic eclecticism, drawing from business and organizational studies as well as political science. It adds to existing scholarly work by demonstrating empirically that business models have multiple functions. First, they can be used as lynchpins to understand organizations in depth, recounting the organizational structure and activity, accounting for their evolution analytically and, by corollary, going beyond simply chronicling a sequence of events. Second, they constitute an outstanding vanguard point for viewing organizations holistically and avoiding a pars pro toto restricted understanding. Third, they can be tested and verified through triangulation with business metrics and other data. Fourth, when performed on peer organizations they enable easier comparisons. Finally, they allow hermeneutics from different perspectives, possibly in combination with a wide range of political science theoretical approaches, depending on the focal point of the research.

Grounded on existing scholarly sources, the method has been instantiated through its application to two international not-for-profit organizations, the European Investment Bank (EIB) and the Asian Infrastructure Investment Bank (AIIB) (Kavvadia, 2021b). The EIB is one of the oldest multilateral banks, commencing operations in 1958, and thus provides considerable historic depth for performing a historical analysis of its business model. The AIIB, however, is one of the newest of its type, established in 2015. Hence, its business model has been used in a comparative analysis with the EIB to test the comparative use of the method as well. For its empirical part, the paper used both primary and secondary sources in the form of organizational documentation and scholarly literature, respectively.

The dual contribution of this research article to existing literature is the development of a new approach to business history, synthesizing elements of business and historical traditions and the use of business models in retrospect for studying, instead of planning organizations. The remainder of the paper is structured as follows: Section 2 reflects on the theoretical background of the method, while Section 3 describes the method in a procedural manner. Section 4 presents some aspects of the empirical testing. Finally, major takeaways are summarized in Section 5, which concludes the paper.

Theoretical underpinnings

Along with the increasingly prominent role of economic entities in the contemporary world, academic disciplines arose focused on them. Business history is a case in point (Friedenson, 2007). Although human economic activity has been examined since its early days in ancient civilizations (Moore & Reid, 2011), business history emerged with N. S. B. Gras at Harvard Business School in 1927. Following the prevailing Harvard tradition of using case studies as an investigation method, business history evolved quickly, mainly as company historiography, driven by generous private sector sponsorship, until Alfred Chandler Jr. pioneered theorization on the discipline in the early 1960s (Chandler, 1962). Endeavoring to connect the past with the present, Chandler gained renown by developing frameworks relevant to the (at the time) thriving corporate economy, linking history with business, organizational, and economic studies. Chandler discovered tangencies and overlaps in these fields, opening the way for a multidisciplinary approach to business history, and historians followed by increasingly focusing on epistemological and ontological questions (Appleby, Appleby, Covington, Hoyt, Latham and Sneider, , 1996; Rowlinson, 2001; Amatori & Jones, 2003; Zeitlin, 2007; Anteby & Molnár, 2012). Organizational specialists followed the "use of the past approach," a term coined by Clark and Rowlinson (2004), seeking to use the past as a resource to improve organizational understanding and development in areas such as strategy, identity, and culture (Zald, 1990; Kieser, 1994; Gioia, Schultz and Corley, 2000; Booth & Rowlinson, 2006; Brunninge, 2009; Coraiola, Foster and Suddaby, 2015).

The "rapprochement" of the two disciplines had been sought by both historians and organizational specialists, resulting in a converging approach and a search for empirical evidence to ground their results in the corporate reality, often by exploiting the past to serve the present and future needs of business as an academic field and real economy alike (Üsdiken &

Kieser, 2004; Kobrak & Schneider, 2011; Durepos & Mills, 2012). Following this "integrationist" position as labelled by Üsdiken and Kieser (2004), business historians aim to separate their discipline from ossification and scholasticism by deploying new theories and methodologies to answer questions regarding where history and organizational studies intersect and interact (Leblebici & Shah, 2004). This is consistent with the widely accepted view that history concerns "knowledge that is collected and meaningfully interpreted about what happened in the past" (Foster, Coraiola, Suddaby, Kroezen and Chandler, 2017, p. 3). Tellingly, this disciplinary confluence engendered heterogeneity in the business history field (Bucheli & Wadhwani, 2014) as well as an increasing tendency to eschew chronicling and focus instead on the analysis and interpretation of historical elements, acknowledging that they "continue to shape [our] experiences in the present and [our] expectations for the future" (Mordhorst & Schwarzkopf, 2017, p. 1165). This led to the emergence of "historical cognizance" (Kipping & Üsdiken, 2014, p. 562), referring to a theorized understanding of history from a contextual perspective. Yet, despite stressing the importance of a holistic approach, analysis often remained fragmented, focusing "on one element of the corporation not on an institution as an integrated whole. [...] Business institutions remain largely 'black boxes' [...]. Few studies can or want to delve into how and why corporate decisions are made and implemented. [...] how the institution works and interacts with its environment [...]. How a company integrates inputs and disposes of outputs is not independent of its environment" (Kobrak & Schneider, 2011, p. 409). Nonetheless, this approach was exemplified by Chandler, who is widely recognized as the most influential business historian of the twentieth century, in his seminal work on strategy and structure (Chandler, 1962) as well as his work on scale and scope (Chandler, 1990).

In an antipodal manner, organizational scholars have indulged in the holistic study of organizations, both at theoretical and practical levels, particularly those with an interest in strategy. Theorizing on strategy and related issues, such as change (Leavitt, 1965) and future development (Porter, 1985), has also led to their operationalization through corollary application tools, mainly in the form of models of reality, which, through simplification, facilitate the understanding about organizations and consensus building among stakeholders, especially in view of future changes. Prime examples of such endeavors are business models, which came to center stage in the mid-1990s in the run-up to the "dot-com" era (Foss & Saebi, 2017), when large numbers of new ventures were seeking to engage stakeholders.

As abstractions describing organizations at a conceptual level (Osterwalder, Pigneur and Tucci, 2005), business models allow the articulation and instantiation of the interdependent activities that enable organizations to create value and also to appropriate a share of that value, transcending their boundaries. Viewing organizations as open entities in interaction with their stakeholders, business models reflect the ways organizations interlock with their contextual environment. As business models are relatively new as a concept, there is little consensus as to their definition, constituents, trajectory, and use, as evidenced by a content analysis of keywords in thirty definitions (Morris et al., 2005). Morris et al. (2005) classified divergent definitions into three categories: economic, operational, and strategic, depending on the unique set of decision variables used by each business model definition. This highlights the wide cross-theoretical differences in the value creation perspectives guiding the futures of organizations. The reason for these differences is that the business model concept has been developed from different starting points by management scientists (Amit & Zott, 2012; Cavalcante et al., 2011; Johnson, Christensen and Kagermann, 2008; Mäkinen & Seppänen, 2007; McGrath, 2010; Moingeon & Lehmann-Ortega, 2010; Osterwalder, 2004) and organizational sociologists (Perkmann & Spicer, 2010). Nevertheless, having been accepted as holding "promise as a unifying unit of analysis that can facilitate theory development in entrepreneurship" (Morris et al., 2005, p. 726), business models have been widely used as planning tools for the reification or re-orientation of organizations considering change. Consequently, well integrated in the corporate reality, business models, as defined in the extant literature, are aimed at profit-making organizations.

As they are equally useful for the establishment, evolution, and analysis of non-profit organizations, this paper uses a definition and archetype that allows more generalized use (Kavvadia, 2021a), which has been developed as a "hybrid" from existing proposals (Shafer et al., 2005; Wirtz et al., 2016). It consists of four primary interlocking elements, which together create and deliver value: strategic choices, value capture, value creation, and value network. As they are reflective and simultaneously constitutive of these organizational fundamentals, recounting structure, and processes, business models can be deployed beyond their currently limited forward planning remit to better understand organizations. In other words, their use as analysis tools can serve both the present and future as well as the past. This extended "fore-and-aft" perspective turns them into potent business history and evolutionary organizational analysis tools. Building on the views of Shafer et al. (2005) concerning the utilization of business models in a backward-looking context for reviewing strategic choices made over time, this paper proffers a method for their application in organizational history. Their added value lies in their ability to go beyond narratives due to their graphic representational description of organizational fundamentals, which provides an easy overview of organizations—a snapshot—at any given point in time. Seen in isolation, business models allow topical analysis, whereas, when compared with previous or subsequent snapshots, they enable the temporal analysis of organizations; if contrasted with the models of similar organizations, they even support comparative peer analyses. This is the basis of the argument of this paper, which has been elaborated in a procedural stepwise fashion.

The method

To achieve the epistemic goal of this paper, and following the Chandlerian paradigm, the paper operationalizes its main argument by developing a method for using business models in hindsight. Arguably, business models, as multi-tier conceptual maps of actors, actions, interactions, and outcomes, are a powerful tool for studying organizations, even though they have not been used in this way previously. Considering this novelty, their incorporation in a method for historical analysis had to overcome a number of challenges.

First, business models are mainly used internally by organizations, either for their establishment or for guiding them through their evolution, providing "a powerful way for executives to analyze and communicate their strategic choices" (Shafer et al., 2005, p. 207). Thus, in most cases business models are not publicly disclosed, either because they do not even exist—given that they are a fairly new instrument developed after the mid-1990s—or, when they do exist, they are usually not publicized for reasons of confidentiality. To overcome this hurdle, a technique has been devised whereby organizational information is extracted from official organizational primary sources, including statutes, annual reports, and policy papers. Such documents are mostly available for private and public organizations alike, predominantly as part of applicable institutional dispositions, such as company registration, credit rating requirements, stock exchange listing, or parliamentary oversight. The information extracted is then analyzed and, depending on its relevance, categorized into the four elements of the business model archetype suggested above. The level of detail of the organizational information extracted has to be matched consistently with the chosen level of detail of the business model and the research purposes. Business models can articulate organizational features at different levels of detail following a "loop" approach, from the abstract strategic to a more detailed operational level and on to a tactical level (Morris et al., 2005). Although the level of detail can be chosen to match the research needs, for most business history questions, which tend to focus on strategy issues, the general strategic level can be deemed appropriate. Yet, the recourse to publicly available information, albeit helpful, cannot provide sensitive internal organizational information. Business models developed externally are conspicuously limited in their inability to include some important but sensitive organizational operational aspects, such as pricing, staffing, and other areas bound to strict confidentiality. However, this limitation has not proven to be prohibitive for studying organizations at a strategic level, especially non-profit entities, such as those empirically analyzed using this method.

Second, the crafting of business models often faces flawed assumptions and misunderstandings concerning organizational fundamentals (Shafer et al., 2005). These difficulties are mostly linked to the prospective use of business models, the role of cognition, and the interpretation of events (Cavalcante et al., 2011). The same challenge can affect the retrospective use of business models for historical analysis purposes, through cognitive interpretational filtering. However, as the suggested method is based primarily on primary official and publicly available documentation rather than personal narratives, this issue is minimized. Naturally, if needed or desired—and if possible—archival information can be supplemented with such additional insights through interviews, which, used as control elements of the documentation-based results, can verify the understandings or correct misconceptions, reducing the potential for bias.

Third, the method is based on the comparison of business models at different points in time. To improve the efficiency of the analysis, as business models are mostly unavailable in the public domain, the method proposes to retrospectively craft only those that correspond to inflection points of historic organizational change. Change, seen as a resource-allocative process (Cantwell et. al., 2010) for an isomorphic adjustment to the environment and driven by factors that are exogenous or endogenous to the organization (or even a combination of the two), can be detected through the combined historic study of the organization and its environment. Yet, this is not sufficient. Certainly, the thesis of some co-evolutionary organizational theorists that organizational and contextual changes occur quasi simultaneously and influence one another in a retrofit process (Lewin & Volberda, 1999) reflects some cases of business model change. Nonetheless, it is not always synchronized with organizational change. Every organizational change is not immediately translated into a business model change because business models tend to change less frequently than organizations. When they do change, business models move along a life cycle, from specification to refinement and adaptation and ultimately to revision and reformulation (Morris et al., 2005). Nonetheless, the change process does not necessarily follows this order, however, because the models are "never complete as the process of making strategic choices and testing business models should be ongoing and iterative" (Shafer et al., 2005, p. 207). Despite the lack of consensus among scholars concerning the business model life cycle, their disagreement is a matter of form—numbers and names of phases—rather than substance. While labels of life cycle phases differ, there is agreement that all business models go through creation, extension, revision, and even termination (Calvacante et al., 2011). Given that change in organizations is quasi-ubiquitous, while business models only pick up and reflect important organizational changes, particularly when organizations alter their core components (Calvacante et al., 2011), the phase in the life cycle to which the changed models correspond, is determined by criteria concerning the extent of change in content, structure, and governance (Amit & Zott, 2012). To identify the "strategic inflection historic points" for which business models must be retroactively fashioned, the present method suggests a combined historical analysis of both the organization and the environment in which it is embedded. The points of interest are those where important changes co-occur.

Fourth, once the organizational changes of interest are identified, they must be analyzed to provide meaningful insights regarding not only what happened and when but also why it happened and who initiated the change. For this purpose, one has to go beyond the principal reasons for business model reshaping provided in the business model literature, which are mainly related to purely business-related issues, such as new market creation or the exploitation of new opportunities in existing markets (Amit & Zott, 2012). To understand organizations, the analysis of change has to integrate a wide variety of explanatory factors, of which the social ones are of particular interest. They include exogenous as well as endogenous reasons for both micro-and macro-level choices for coping with the uncertainties of a dynamic physical, technological, and human environment, thus leading to change, underpinned by culture, norms, beliefs, and mores. This relates to the ways in which history relates to the social scientific slant, which has come to characterize organizational analysis. This slant was pioneered by Hidy (1970) and is exemplified by increasingly voiced

calls to enrich historical analysis through the use of multivariant social sciences parameters (Teichova, 1986; Scott, 2001; Wilson & Toms, 2011). Due to similar concerns from the organizational side from scholars eager to add a historical perspective (Zald, 1990; Leblebici & Shah, 2004; Lippmann & Aldrich Howard, 2014; Rowlinson & Hassard, 2014; de Jong, Higgins and van Driel, 2015), a fused approach has been shaped. Originating from neo-institutionalism and evolutionary attitudes on organizational analysis as well as political science, this approach has been labelled integrationism by Üsdiken and Kieser (2004). Focusing on the cumulative process by which organizations function within their boundaries in interaction with their larger social, political, and economic contexts, the integrationist approach fits into historical institutionalism. As a conceptual framework, historical institutionalism studies the historical evolution of organizations to understand their actions and actors, based on multiple perspectives, such as realist and constructivist perspectives (Nichols, 1998; Munslow, 2006).

In the context of the proposed method, historical institutionalism serves the epistemic goal of the paper, supporting the understanding of organizational evolution by acknowledging the interactive nature of organizations with their internal and external environments. Moreover, acknowledging the multiplicity of actors and actions, historical institutionalism accommodates a number of explicative perspectives. Addressing these issues fundamentally involves "recognising that more recent organisational forms and arrangements have been shaped by past events and that their course of development has been influenced by the broader context. In terms of more specific concerns, it implies turning to processes of organisational change, development of organisational forms and variations across societal settings, path dependencies and continuities in organisational ideas and practices" (Üsdiken & Kieser, 2004, p. 323). Path dependency, which is one of the central concepts of historical institutionalism, holds that past decisions define the path ahead, constraining the possible objectives of or tools available to an institution (Hall & Taylor, 1996). In other words, organizations are established to serve a specific purpose, and their very creation coupled with their functioning push history along a determined path (Pierson, 1996). Despite the ubiquitous change within the organizational context, the path tends to remain unchanged. Organizations are rather stable actors, and the reshaping of preferences, interests, structures, or frameworks happen as "paradigm shifts" at specific "critical junctures," characterizing the distinct points in time of significant change or "cleavages which present new paths or opportunities for change" (Hall & Taylor, 1996, p. 18) and new legacies. Hence, the new legacy becomes the new antecedent condition, which determines future changes at subsequent critical junctures, while, in the meantime, organizations remain path dependent and constrained by their previous changes. This stepwise historical evolution, centered at given points in time when major organizational changes happen, fits with the pattern of business model evolution. Through their successive "snapshot" alterations, in connection with significant organizational changes, the evolution of business models trace the trajectory of an organization in a clearly and illustratively marked path-dependent way. This notion is at the heart of the proposed method.

Conflating historical institutionalism with business models as analytical frameworks, the paper presents a novel method for understanding the evolution of organizations. Understanding a method as a particular procedure for accomplishing or approaching something in a systematic manner, this paper proposes an analytic method consisting of eight steps, some of which can be performed reiteratively in loops: i) preliminary study of the organization to understand its nature; ii) selection of an appropriate business model archetype suitable for the specific organization. The present method suggests the use of the archetype developed for generalized use by both for-profit and not-for-profit organizations mentioned earlier, which has four interrelated basic elements modeling the way organizations create and deliver value: strategic choices, value capture, value creation, and value network; iii) archival research to locate primary organizational sources matching the point in time or the time period of research interest; iv) retrospectively crafting the business model at the moment of interest or at the starting or end point of the research period, by analyzing and categorizing the relevant information under the constituent

elements of the business model archetype and "flicking the canvas." The canvas has a level of detail, which can be refined quasi at infimum, but for a general historical analysis the most abstract level is appropriate because it provides a strategic overview. This step can be repeated as often as necessary to frame the period under investigation in an iterative feedback loop including also the next two steps; v) historical analysis of the organization and its environment throughout the time span of research interest to identify critical junctures, eventually implying a business model transformation. This is followed by a validity check of the crafted business model at each of these critical juncture points, benchmarking it against the relevant organizational information regarding governance and operations. Subsequently, a new business model is recrafted (in case of invalidity, proceeding as for step iv); vi) evaluation of the degree of the business model change based on the business model life cycle; in other words, classifying the change as one of the life-cycle categories: creation, extension, revision, or termination. By juxtaposing the newest one on the previous one, changes can be clearly and illustratively marked as additions, omissions, or alternations; vii) analysis of the business model (shaped under step iv) to understand the organization as a functioning whole, in interaction with its context, at the specific points in time corresponding to the crafted business models. In other words, what were the primary objectives and resources, and how have they been used to achieve the organizational objectives and assess the degree to and ways in which the objectives have been achieved? Further, who were the primary actors and stakeholders, and what was their role? What was the interaction with the organization with its context, and how did the context shape organizational agency? In the event that the research question concerns a specific organizational activity, the business model can alternatively allow the focus to be on the relevant aspects of the particular organizational activity through refinement to increase the level of detail to the desired level, matching the research needs. The level of detail remains, nonetheless, constrained by limited access or a complete dearth of information on several issues, which are not in the public domain; viii) comparison of the molded business models corresponding to all points at the time of interest. In this way, business models reveal organizational "footprints," which when studied can demonstrate evolutionary paths and explain tendencies that shape the trajectory of organizations in the period under investigation (Kantrow, 1986).

Empirical Illustrations

Calls for multidisciplinary research have often been coupled with calls for intensified empirical research to test hypotheses and construct broad generalizations (Friedman & Jones, 2011; de Jong & van Driel, 2015). However, this paper has empirically applied the propounded method simply to test its validity in the first place. The method was used with two international not-for-profit organizations, which served as case studies: the EIB, the primary financial arm of the European Union (EU), and the AIIB, the newest China-promoted multilateral bank, which aims to become Asia's largest infrastructure financier. The two organizations have been selected based on well-established criteria for case studies, particularly general validity and replicability. Both organizations satisfy the criteria, as they constitute valid examples of not-for-profit organizations, and as such, are good precedents for the replication of the method to peers and other similar organizations once the applicability of the method is demonstrated. Additionally and importantly, they both fulfill a principal prerequisite for the application of the method. That is, notwithstanding the unavailability of their business models in the public sphere, both organizations disclose their basic documents and main activity and financial reports for reasons of accountability and transparency.

Founded in 1958, the EIB has noticeable historical depth and adequate research material to investigate. Consequently, the proposed method has been applied to study the bank's evolution in the sixty-year period 1958–2018. In this period, the EIB has grown to become one of the world's largest multilateral banks, with its activity stretching progressively across the world, against a background of changing circumstances. Albeit still scant, academic interest in the EIB has been growing, with researchers predominantly looking at the bank's activity from political science, economic, legal, technical, and historical perspectives. However,

works on the history of the EIB have reviewed and analyzed its evolution (Bussière et al., 2008, Coppolaro, 2010), without considering its organizational functioning. Applying the proposed method could thus contribute to existing academic work by identifying the "critical junctures" in EIB's business model development, analyzing the reasons for change, and elucidating the inferred modifications in its modus operandi (Kavvadia, 2022). The method was successfully and seamlessly applied through all seven steps of its procedural approach. It revealed that EIB's incipient business model, due to its inherent flexibility, allowed the bank to traverse critical contextual periods, such as the collapse of the Bretton Woods system, the oil crises, and multiple extensions of activity, even beyond the EU borders, without a major revision of the bank's business fundamentals. Despite business cycle variations, the EIB kept enjoying steady organic and inorganic growth. The forty years of business model fixity have been interrupted twice, with a ten-year interval, at two "critical junctures" in 1999 and 2010, in response to the watershed challenges of the run-up to the euro epoch and the global financial crisis. In both business model revisions, the EIB opted for increased risk-taking and entrance into new financial market segments, such as risk-sharing and advisory operations built with careful and stepwise incremental changes.

Conversely, for the AIIB, a new organization established in 2015, the method could not be used to pursue a historical scope. Instead, it was used in a comparative approach. For this purpose, only the first four steps, corresponding to the back-casting of its business model, were applied. Yet, the method was able to build further on available scholarly research, as it examined the AIIB as a functioning organizational entity, unlike existing works, which have mainly concentrated on international relations, governance, and legal perspectives, with historical studies being obviously absent, given the bank's recent establishment. By contrasting the AIIB, a new institution, with the EIB, one of the first multilateral banks, the method allowed assessing whether the AIIB shows path dependency from Bretton Woods traditions (as all multilateral banks do) or whether it constitutes a paradigm shift, as claimed by several scholars and the AIIB itself (Kavvadia, 2021b). In this comparative analysis, the method was applied within an economic sociology framework, in particular the theory of fields (Fligstein & McAdam, 2012), in order to analyze the role of the two banks and their interrelationship within the sector. The application of the present method on the AIIB demonstrates not only the validity of the method as such but also its usefulness when combined and supplemented with other analytical frameworks and techniques in a synthetic approach. The method provided insights into AIIB's structure and activity setup, which proved that the bank does not represent a paradigm shift compared to its peers, as claimed. Its business model, while broader than those of a number of its peers, emanates from the World Bank "mold," adjusted to mirror current contextual and organizational developments, thus emulating the EIB's 2010 business model.

In both cases, the answers to the research questions received from the application of the method were triangulated with a business metrics analysis from primary sources (regarding the activity of the organizations) as well as existing scholarly work on the two organizations. All were concurring. In this sense, the method grounded on the use of business models for historical studies not only provided cogent explanations to the research questions but also uncovered additional operational aspects that were ostensibly hidden behind the usual "black-box" approach to organizations. Whether applied autonomously or together with other analytical means, the method proved effective in bringing juncture points, weightier reasons, and the results of major organizational changes to the fore. By considering the business models of the two organizations as concise and illustrative descriptions of their business fundamentals, the study gained insights into their intricate nature and development through successive phases of fixity and change.

Conclusions

Responding to the calls of multidisciplinarity-oriented scholars, the paper proposed a method at the nexus of business history and organizational studies for propping the understanding of past institutional evolution by combining business models and

historical institutionalism. This synthetic method is based on the acknowledgment that business models constitute concise illustrative abstractions of organizational fundamentals, including actors, actions, interactions, and outcomes. Reflecting an analytical eclecticism orientation, the method is novel in both academic disciplines, as it utilizes business models in hindsight for historical analysis going, hence, against the grain of business models' forward-looking and business-oriented traditions. Without being ergodic, the method follows an eight-step procedural track. Whether segueing from the starting step into the last step, or using only part of it in a stepwise manner, the method construes organizational reality in a holistic way and in interaction with its contextual setting at any given point in time. It allows gauging issues of change at important points and unveils the organizational "black box" to understand the modus operandi encapsulated in the business model.

The empirical test of two international organizations provided substantial evidence indicating that the method can be used successfully autonomously or together with other conceptual frameworks, as exemplified by its ability to incorporate the theory of fields to probe deeper into the positioning of organizations and their interactions within the field of their activity. While its soundness has been demonstrated, the method needs to be tested widely in different types of organizations and time frames to discover challenges and issues, which could lead to fine-tuning and ultimately establishing its broader generalizability.

Providing an outstanding vanguard point and allowing hermeneutics as well as triangulation, the suggested method facilitates a deeper and holistic historical reading of organizations over time, by bridging the way historians and organizational researches understand historical reality, and enabling a way for a reflective and informed account of the history of organizations.

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Framing a Maturity Model for Business Model Innovation

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Abstract

Purpose: The aim of this conceptual study is bridging established theory on maturity models and business model innovation. The paper identifies boundary conditions and necessary steps for the design of an integrated maturity model for business model innovation. Thus, this contribution establishes a foundation for assessing, improving and benchmarking corporate business model innovation capabilities.

Design/Methodology/Approach: The paper systematically assesses the extant literature to establish ontological consistency in the bridging attempt and defines the boundary conditions and specific steps for subsequent model development.

Findings: Prior published research only to a limited degree relates maturity models to business model innovation. Our assessment of extant literature reveals how innovation related maturity models exhibit an extensive variety with regard to their application domain, number, and descriptors of dimensions, level of granularity, the design process, as well as empirical validation and the consideration of business model aspects. Based on these insights, the focus, scope, and steps towards a maturity model for business model innovation are defined.

Originality/Value: The results of the research provide an important foundation for further research and development steps towards a maturity model for business model innovation. Furthermore, the detailed analysis of innovation related maturity models has potential to be used as a basis for the development of other maturity models in the innovation domain and as a blueprint for analysing future maturity models in detail.

Keywords: business model innovation, business model, maturity model, innovation management

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Introduction

Business model innovation (BMI) has recently attracted attention as a promising approach for providing a sustainable competitive advantage, particularly in the context of saturated markets, inter-industry competition, and substitutability of product and process innovations (Brasseur, Mladenow and Strauss, 2017; Steinhöfel and Inkinen, 2016; Steinhöfel, Kohl and Orth, 2016). Extant literature highlights how products, services, and processes tend to rapidly become obsolete due to imitation, therefore innovations in these areas depend on BMI to enable competitive advantages beyond the short- to medium-term (Amit and Zott, 2010; Chesbrough, 2010). Thus, the extant literature discusses BMI as a main determinant of competition and simultaneously as the most challenging type of innovation (Brasseur et al.; 2017; Minatogawa, Franco, Pinto and Batocchio, 2018) with a high rate of failure (Christensen, Bartman and van Bever, 2016), particularly due to the lack of the required skills, knowledge, and suitable processes and mechanisms to support BMI (Brasseur et al.; 2017). Any innovation, including BMI, must be ubiquitous, controlled, measurable, and strategically implemented, which is why it must be supported by suitable analytical models, processes, and instruments (De Fazio, 2017).

Based on the assumption that organizational change and development occur in predictable patterns, maturity models (MMs) represent theories about how organizational maturity evolves in a stage-by-stage manner along an anticipated, desired, or logical maturation path (Becker, Knackstedt and Pöppelbuß, 2009; Gottschalk, 2009; Kazanjian and Drazin, 1989; Röglinger and Pöppelbuß, 2011). Accordingly, van Steenbergen, Bos, Brinkkemper, van de Weerd and Bekkers (2010) define MMs as "means to support such [...] development, as they distinguish different maturity levels that an organization successively progresses through. As such they can be used as a guideline for balanced incremental improvement of a functional domain" (van Steenbergen et al.; 2010, p. 317). The MM is thus a helpful tool to assess the competency, capability, level of sophistication, and degree of progress of a selected domain based on a more or less comprehensive set of criteria. (Becker et al.; 2009; de Bruin, Freeze, Kulkarni and Rosemann, 2005; Ofner, Hüner and Otto, 2009; Röglinger and Pöppelbuß; 2011). Despite a large number of different types of MMs in various application domains and different levels of detail, MMs share similar structures: They define a number of discrete stages or maturity levels for one or multiple dimensions, with descriptions of the characteristic performance per level building upon each other (Fraser, Moultrie and Gregory, 2002). The value for organizations applying such models varies according to the application-specific purpose. First, MMs are diagnostic tools that enable organizations to describe maturity in the context of a current assessment. Secondly, a MM provides guidelines on how to reach the next, higher maturity level. Descriptions of higher maturity levels can be regarded as best-practice guidance. Finally, MMs can be used for the purpose of comparison and facilitate, for example, internal and external benchmarking (de Bruin et al.; 2005; Ofner et al.; 2009; Röglinger and Pöppelbuß; 2011).

In spite of the academic interest in MMs (Becker et al.; 2009) and the existence of various maturity models that focus on corporate innovation and support companies in fostering innovation systematically(e.g. Demir, 2018; Enkel, Bell and Hogenkam, 2011; Igartua, Retegi and Ganzarain, 2018), there is, to the best of the authors' knowledge, no holistic MM available focusing on BMI. A study by Rübel, Emrich, Klein and Loos (2018) develops a MM for business model management, which "links existing organizational and operational knowledge [to] new concepts and makes it accessible through a modified business model for Industry 4.0" (Rübel et al.; 2018, p. 2040). Even though the term "new concepts" implies novelty which is a key factor where innovation is concerned, Rübel et al. (2018) mainly focus on the design and further improvement of a specific BM by means of the single building blocks of the Business Model Canvas (see Osterwalder and Pigneur, 2010) in the very specific context of industry 4.0. The business model in its entirety - the combination of the different building blocks - and further important aspects related to its innovation such as required superordinate knowledge, structures, and processes are neglected though.

This study provides a targeted assessment of how

theory on MMs can be fused with theory on BMI. Our aim is to foster holistic conceptual integration between MMs and BMI based on an assessment of extant published research. Thus, providing a foundation for further research as well as for allowing managers to assess their organisations with regard to their current BMI status, identify potential for improvement on this basis, promote BMI through pre-defined measures and benchmark their organisations. Accordingly, this paper contributes to the ongoing discussion by establishing ontological consistency in our bridging attempt, as well as by defining boundary conditions and steps for subsequent model development.

Relevance and Challenges of Business Model Innovation

As outlined above the business model (BM) has recently been established as another promising innovation object in research (Foss and Saebi, 2017; Wirtz, Pistoia, Ullrich and Göttel, 2016). BMs have a much higher complexity than products, services and processes and are thus much more difficult to imitate by competitors (von den Eichen, Matzler, Freiling and Füller, 2014; Wirtz, 2021). In literature various different definitions of the term BM exist (e.g. Baden-Fuller and Morgan, 2010; Casadesus-Masanell and Ricart, 2010; Teece, 2010; Wirtz et al.; 2016; Wirtz; 2021; Zott, Amit and Massa, 2011). In this context, Zott et al. (2011) note that researchers repeatedly adopt idiosyncratic definitions that fit the purpose of their research, but are difficult to reconcile and prevent progress. Based on existing definitions and their underlying differences and commonalities we define BM as follows: A BM summarises the complexity of an organisation by reducing it to its essential components and their interrelations. It describes how an organisation achieves its overall goals by systematically designing and combining the components and thus enables the targeted description, analysis and development of organisations.

Analogous to the diversity of definitions with regard to BM, the concept of BMI is also not uniformly defined and a broad spectrum of synonymously used terms and definitions exists (Achtenhagen, Melin and Naldi, 2013; Andries, Debackere and van Looy, 2013; Charitou and Markides, 2003; Demil and Lecocq, 2010; Doz and Kosonen, 2010; Hamel, 2002; Johnson, Christensen and Kagermann, 2008; Kim and Mauborgne, 1999; Osterwalder and Pigneur, 2010; Reymen, Berends, Oudehand and Stultiëns, 2017; Saebi, Lien and Foss, 2017; Velu, 2017; Wirtz; 2021). Building up on the differences and similarities of existing definition we define BMI as follows: BMI refers to both, the process of consciously and continuously adapting an existing BM and the proactive design of a completely new BM for an organisation. The objective of BMI is to secure the existence of an organisation and to achieve its overriding goals by maintaining or gaining competitive advantages. These are realised by adapting or designing individual or several components of a BM and/or their interrelations.

The relevance of BMI for research and practice is reflected on the one hand in the steadily increasing number of related publications (Steinhöfel, 2022) and on the other hand in its influence on corporate success (Al-Nimer, Abbadi, Al-Omush and Ahmad, 2021; Anwar, 2018; Aspara, Hietanen and Tikkanen, 2010; Bornemann, 2010; Clauss, Abebe, Tangpong and Hock, 2019; Heij, Volberda and van den Bosch, 2014; Lindgardt, Reeves, Stalk and Deimler, 2009; Pohle and Chapman, 2006; Zott and Amit, 2007) as well as the perception of BMI by managers (Becker, 2011; Economist Intelligence Unit, 2005; IBM Institute for Business Value, 2021; Pohle and Chapman; 2006).

However, this is contradicted by the fact that BMI is one of the greatest challenges for today's organisations due to differing reasons, of which a variety are outlined in the following. Accordingly, for companies, especially small and medium sized enterprises, BMI is a challenging, very complex and difficult task to manage, for which time, financial and human resources are scarce (Buliga, 2014; Lindgren, 2012; Rieger, Bodenbenner, Wagner, Tilly, Schoder and Seltitz, 2015). Moreover, BMI in companies is largely reactive, intuitive and unstructured and no uniform, structured approach exists (Buliga; 2014; Halecker, Hölzle and Sittner, 2014; Lindgren; 2012; Marolt, Lenart, Maletič, Borštnar and Pucihar, 2016; Rieger et al.; 2015; Wagner, Tilly, Bodenbenner, Seltitz and Schoder, 2015). In this context, according to Halecker

et al. (2014) the initiation of BMI, which might be triggered through internal and external forces (Becker, Ulrich and Stradtmann, 2018; Pucihar, Lenart, Kljajić Borštnar, Vidmar and Marolt, 2019) and the evaluation as well as implementation of BMI options represent further major challenges. Adding to that, especially small and medium-sized companies are mostly unaware of available methods and tools for BMI (Bouwman, Molina-Castillo and Reuver, 2016; Heikkilä, Bouwman, Heikkilä, Solaimani and Janssen, 2016) and if known they are only used to a limited extent (Marolt et al.; 2016; Wagner et al.; 2015) as they are partly perceived as too academic or complex to go through a full cycle of BMI (Heikkilä, Bouwman, Heikkilä, Haaker, Lopez-Nicolas and Riedl, 2016). An in depth-analysis of well-established methods (Bucherer, 2010; Gassmann, Frankenberger and Choudury, 2021; Osterwalder and Pigneur; 2010; Schallmo, 2018; Wirtz; 2021) identifies further relevant methodological shortcomings (Steinhöfel; 2022). These mainly consist in the lacking consideration of companies' existing resources in the design process and of its systematic documentation, the exclusive focus on a single BM as the design objective instead of the elaboration of a potential development paths for continuous BMI (roadmap) and limitations regarding the consistent allocation of roles and implementation orientation in the course of BMI as well as the systematic application of BM patterns (Steinhöfel; 2022). Furthermore, established companies fail in BMI due to conflicts with existing technologies, which is also due to the lack of clarity regarding BMI itself and the associated inability to innovate BM (Chesbrough; 2010). On top, Managers are also cognitively constrained by path dependencies, which keep them close to what they already know when it comes to BMI (Bohnsack, Pinkse and Kolk, 2014). Another shortcoming persists in the limited involvement of relevant stakeholders in the BMI process, as their involvement represents a decisive success factor (Ibarra, Bigdeli, Igartua and Ganzarain, 2020; Rieger et al.; 2015; Wagner et al.; 2015). While some companies advocate the involvement of heterogeneous teams from all areas of the company others prefer the exclusive involvement of senior management (Wagner et al., 2015). Furthermore, external stakeholders such as customers and partners are, if at all, only involved indirectly in the BMI processes so that their potential insights remain largely untapped (Rieger et al.; 2015).

The broad spectrum of the selected challenges outlined above suggests that enabling companies to innovate their BMs requires considering a number of different structural, process, knowledge and capability-related aspects. Against this backdrop, holistic maturity models, which allow the current BMI status to be recorded along various dimensions, systematically provide targeted measures for further development along these dimensions and thereby ultimately enable companies to reap the benefits of BMI, are a suitable approach. In the following the first steps for developing a suitable MM for BMI are described.

Methodology

This conceptual study builds on Steinhöfel, Hussinki and Breunig's (2020) analysis of existing MMs as a basis for defining boundary conditions and additional steps for the development of a MM for BMI. The study was conducted by applying the framework for MM development created by Röglinger and Pöppelbuß (2011), as well as Knackstedt, Pöppelbuß and Becker's (2009) procedural model for developing MM, which was referred to by Röglinger and Pöppelbuß (2011). The framework was selected from a variety of articles focusing on methodologies for systematically developing MM based on literature research using practical and pragmatic support for MM development as well as the number of citations as selection criteria.

The framework proposed by Röglinger and Pöppelbuß (2011) consists of general design principles (DPs) and several related sub-aspects of DPs that are helpful for designing useful MMs for specific application domains and purposes of use. According to the different application-specific purpose of MMs, the proposed DPs are grouped into (1) basic principles, (2) principles for a descriptive purpose of use, and (3) principles for a prescriptive purpose of use (see Table 2). Röglinger and Pöppelbuß (2011) have deliberately not considered the comparative purpose of use in their framework. In their opinion, DPs for this purpose of

Table 1.

Group		Design Principles
(1) BASIC	1.1	**Basic information** a) Application domain and prerequisites for applicability b) Purpose of use c) Target group d) Class of entities under investigation e) Differentiation from related maturity models f) Design process and extent of empirical validation
	1.2	**Definition of central constructs related to maturity and maturation** a) Maturity and dimensions of maturity b) Maturity levels and maturation paths c) Available levels of granularity of maturation d) Underpinning theoretical foundations with respect to evolution and change
	1.3	**Definition of central constructs related to the application domain**
	1.4	**Target group-oriented documentation**
(2) DESCRIPTIVE	2.1	**Intersubjectively verifiable criteria for each maturity level and level of granularity**
	2.2	**Target group-oriented assessment methodology** a) Procedure model b) Advice on the assessment of criteria c) Advice on the adaptation and configuration of criteria d) Expert knowledge from previous application
(3) PRESCRIPTIVE	3.1	**Improvement measures for each maturity level and level of granularity**
	3.2	**Decision calculus for selecting improvement measures** a) Explication of relevant objectives b) Explication of relevant factors of influence c) Distinction between an external reporting and an internal improvement perspective
	3.3	**Target group-oriented decision methodology** a) Procedure model b) Advice on the assessment of variables c) Advice on the concretization and adaption of the improvement measures d) Advice on the adaptation and configuration of the decision calculus e) Expert knowledge from previous application

Table 1: Framework of General Design Principles for Maturity Models according to Röglinger and Pöppelbuß (2011)

use largely depend on external factors, such as standardised and publicly available specifications, and can therefore only be partially influenced during MM design (Röglinger and Pöppelbuß; 2011).

The relevant MMs for analysis were selected based on a literature review whereas focus was put on maturity models that aim at fostering corporate innovativeness, specifically with focus on BMs (Steinhöfel et al.; 2020) to cover the domain of BMI to the most possible extent. Google Scholar and the metasearch engine Fraunhofer eLib, which covers scientific databases such as ECONIS (ZBW), Scopus and Wiley Online Library, were used for literature search. In accordance with the analysis focus for the search, the following terms and combinations of terms using the operator "AND" were applied: "innovation maturity model", "innovation maturity models", "innovation" AND "maturity model", "innovation management" AND "maturity model", "business model innovation" AND "maturity model", and "business model" AND 'maturity model". After initial search, 26 MMs were discerned. Based on number of citations and year of publication, the six most relevant MMs were considered for in-depth analysis. These collectively comprise the Strategic Management Maturity Model for Innovation (S3M-i) by Demir (2018), the Open Innovation Maturity Framework (OIMF) by Enkel et al. (2011), the Innovation Capability Maturity Model (ICMM) by Essmann and Du Preez (2009), the Business Innovation Maturity Model (BIMM) by Carlson and Gupta (2014), the Innovation Maturity Model (IM2) by Igartua et al. (2018), and the Maturity Model for Business Model Management in Industry 4.0 by Rübel et al. (2018). Thus, five maturity models with focus on corporate innovation and one with focus on BM management built the foundation for the analysis.

Analysis of selected maturity models

We analyse the six selected MMs according to the categories of basic, descriptive, as well as prescriptive DPs and their related sub-aspects proposed by Röglinger and Pöppelbuß (2011) illustrated in Table 2. In the context of basic DPs, emphasis is placed on the design process and the extent of empirical validation (DP1.1f) to gain specific insights into the definition of steps towards a MM for BMI. Moreover, the MMs are analysed regarding the explicit consideration of aspects related to the BM concept in order to gain insights in that regard.

4.1 Basic Design Principles

DP 1.1 Basic information

The analysis regarding the application domain (DP 1.1a) revealed that the major domain of the MMs is innovation management apart from strategic management, with a focus on innovation in terms of products, services, and BMs (Demir; 2018) and BM management regarding Industry 4.0 (Rübel et al.; 2018). In this context, the MMs with the domain of innovation management focus on open innovation (Enkel et al.; 2011), innovation of products, processes and/or strategies (Essmann and Du Preez; 2009), product, service, process, and BMI (Carlson and Gupta; 2014), as well as services, products as well as BMs in the light of innovation (Igartua et al.; 2018).

Regarding the intended purpose of use (DP 1.1b), it was found that most MMs pursue a descriptive, prescriptive, and comparative purpose of use. Exclusively, Demir (2018) and Rübel et al. (2018) do not consider the comparative purpose.

With regards to the target group (DP 1.1c), the analysis revealed that focus is mainly on executives and on decision makers in SMEs (Igartua et al.; 2018), or more broadly practitioners (Rübel et al.; 2018).

The analysis of the MMs regarding the class of entities under investigation (DP 1.1d) demonstrates that the majority of MMs are intended for any type of organisation in any industry (Carlson and Gupta; 2014; Demir; 2018; Enkel et al.; 2011; Essmann and Du Preez; 2009). However, Rübel et al. (2018) refer to organisations which can implement Industry 4.0 components and Igartua et al. (2018) refer to micro-enterprises and small SMEs.

In line with the aforementioned application domains (1.1a), which are often indicated by the name of the respective MM, all MMs elaborate on differences regarding related MMs (DP 1.1e) of the same or similar

domains. A major difference can be observed with regard to the documentation and communication of the design process and extent of the empirical validation (DP 1.1f). Some authors document and communicate the design process in detail (Enkel et al.; 2011; Essmann and Du Preez; 2009; Rübel et al.; 2018), whereas others only touch on the design process briefly (Carlson and Gupta; 2014; Igartua et al.; 2018) or do not elaborate on it at all (Demir; 2018). Empirical validation has so far been provided for 50% of the MMs. This demonstrates that while all authors consider existing MMs and the majority conducts literature research to some degree for developing their MM, the scope of the design process differs greatly, as outlined in the following section.

DP 1.2 Definition of central constructs related to maturity and maturation

The analysis regarding maturity and dimensions of maturity (DP 1.2a) reveals that only one MM is one-dimensional (Carlson and Gupta; 2014), whereas the other MMs are multi-dimensional (Table 2). The multi-dimensional MMs differ greatly in terms of the number of dimensions, which ranges from three to eleven dimensions, as well as in terms of descriptors and the respective descriptions. These differences can be assigned to differences of the MMs with regard to the respective application domain and the purpose of use. In this context, it is noteworthy that it is difficult to determine the number of dimensions for the MM created by Essmann and Du Preez (2009). According to Röglinger and Pöppelbuß (2011), a one-dimensional MM comprises for example process or object maturity (one axis) whereas a multi-dimensional model comprises multiple dimensions for which maturity levels are defined individually (two axes). Thus, each dimension has a different description for each maturity level (own maturity path). The MM by Essmann and Du Preez (2009) does not comply with either of these descriptions, as it combines maturity with an innovation capability construct and an organisational construct (three axes). In this context, both constructs comprise dimensions as determined by Röglinger and Pöppelbuß (2011), which are further broken down in the case of the innovation capability construct, for which maturity levels are defined. Apart from this, the content analysis of the various dimensions of the MMs shows that both internal and external factors are consistently considered and that certain aspects such as processes, knowledge and capabilities as well as leadership are almost consistently taken into account through differently termed dimensions (Table 2).

With regard to maturity levels and maturation paths (DP 1.2b), it can be observed that all MMs end at level five, whereas Demir's (2018) MM can be considered a minor exception as it formally suggests six maturity levels, starting at level 0. With regard to the descriptors and the description of the maturity levels, there are differences depending on the application domain and purpose of use. Therefore, with the exception Demir (2018), the only common feature is that they start at level 1, and end at level 5.

The available levels of granularity of maturation (DP 1.2b) exhibit a high degree variance. Essmann and Du Preez (2009) provide several levels of granularity of maturation and thereby a very high level of detail. As outlined above, the framework comprises three axes whereas the innovation capability construct is further broken down into three capability areas and 11 underlying items, while the organisational construct comprises five items. The MM of Enkel et al. (2011) presents a high level of detail with a detailed matrix, in which a maturity level description is provided for each dimension and the operationalisation of dimensions occurs through underlying sub-elements. Similarly, Rübel et al. (2018) measure maturity through underlying items of the BM building blocks. A lower level of detail can be determined for the MM of Demir (2018) and Carlson and Gupta (2014) as they assess maturity on the dimension level by providing different level descriptions for each dimension. Igartua et al. (2018) provide the lowest level of detail, as maturity levels apply to all dimensions and are only listed in the form of key points.

The analysis regarding the theoretical foundations with respect to evolution and change (DP 1.2d) is complied with by all selected models as they build up on previous work and extant literature from the respective application domain as well as in terms of drivers and barriers of maturation.

Table 2.

		Dimensions of maturity		Maturity levels	
Author/s	Model Name	Dimensions	Descriptors	Levels	Descriptors
Demir (2018)	Strategic Management Maturity Model for Innovation (S3M-i)	7 (Multi-d.)	(1) Leadership (2) Planning & executing (3) Processes & tools (4) Structure & model (5) People & culture (6) Performance management (7) Innovation	6	0: Undefined 1: Initial 2: Planned 3: Performed 4: Optimized 5: Excellent
Enkel et al. (2011)	Open Innovation Maturity Framework (OIMF)	3 (Multi-d.)	(1) Climate for innovation (2) Partnership capacity (3) Internal processes	5	1: Initial/Arbitrary 2: Repeatable 3: Defined 4: Managed 5: Optimizing
Essmann and Du Preez (2009)	Innovation Capability Maturity Model (ICMM)	8 (Multi-d.)	Innovation Capability Construct (1) Innovation process (2) Knowledge and competency (3) Organizational support Organizational Construct (4) Strategy and objectives (5) Functions and processes (6) Organisation and management (7) Data and information (8) Customers and suppliers	5	1: Ad hoc innovation 2: Defined innovation 3: Supported innovation 4: Aligned innovation 5: Synergised innovation
Carlson and Gupta (2014)	Business Innovation Maturity Model (BIMM)	1 (One-d.)	Not explicitly stated	5	1: Sporadic 2: Idea 3: Managed 4: Nurtured 5: Sustained
Igartua et al. (2018)	Innovation Maturity Model (IM2)	11 (Multi-d.)	(1) Strategy (2) Competitiveness (3) Manufacturing excellence (4) Innovation (5) Value propositions and business model (6) Internationalization (7) Advanced management (8) Digitalization (9) Sustainability (10) People (11) Territory	5	1: Unaware 2: Aware 3: Manage 4: Defined 5: Performance
Rübel et al. (2018)	Maturity Model for Business Model Management in Industry 4.0	9 (Multi-d.)	(1) Key partners (2) Key activities (3) Key resources (4) Value Proposition (5) Customer relationship (6) Channels (7) Customer segment (8) Cost structure (9) Source of income	5	1: Implicit 2: Defined 3: Validated/ standardized 4: Analyzed 5: Optimized

Table 2: Dimensions and Maturity Levels of Maturity Models

DP 1.3–1.4 Definition of central constructs & target group-oriented documentation

The definition of central constructs related to the application domain (DP 1.3) is predominantly considered by the different authors. In this context, it demonstrates that the different constructs are not all explicitly defined though. Often constructs are explained and thereby defined to some degree. As outlined by Röglinger and Pöppelbuß (2011), the definition of central constructs secures intelligibility and language adequacy. The analysis regarding target group-oriented documentation (DP 1.4) revealed that for all MMs basic information and central constructs (DP 1.1–1.2) as well as their interrelations are primarily documented in a target group-oriented manner complying with the requirement of communication.

Design Principles for a Descriptive Purpose of Use

DP 2.1 Intersubjectively verifiable criteria for each maturity level and level of granularity

Intersubjectively verifiable criteria are provided to a differing degree. While Carlson and Gupta (2014), Demir (2018) and Enkel et al. (2011) combine maturity levels and dimensions of their models in a matrix and provide a criterion for each cell Igartua et al. (2018) only describe such a combination without providing a matrix with respective criteria. In this context, Enkel et al. (2011) operationalise their three dimensions via 10 elements and 31 associated items with related questions for the assessment, whereas for each item a specific maturity scale is provided.

Rübel et al. (2018) also combine levels and dimensions in a matrix, but only provide examples regarding criteria for maturity levels of one dimension. Additionally, Essmann and Du Preez (2009) combine their organisational construct and innovation capability construct in a matrix and provide 42 requirements and related questions as well as requirement-specific maturity scales for assessing maturity.

DP 2.2 Target group-oriented assessment methodology

The analysis regarding the provision of a procedural model (DP 2.2a) revealed that only Carlson and Gupta (2014) explicitly mention a procedural model, while some studies do not mention such a model at all (Demir; 2018), some touch upon related steps (Enkel et al.; 2011; Rübel et al.; 2018), and some solely describe their model's application in practice (Essmann and Du Preez; 2009) or provide an illustration of the assessment procedure without further elaboration (Igartua et al.; 2018). Similarly, advice on the assessment of criteria and particularly on how to elicit the criteria's values (DP 2.2b) is only provided by Carlson and Gupta (2014) and Enkel et al. (2011). Essmann and Du Preez (2009) also cover this aspect by providing requirement or item specific scales for their respective maturity assessment, whereas only an exemplary scale for one requirement is provided. Advice on the adaptation and configuration of criteria (DP 2.2c) according to different situational characteristics is only touched upon by Enkel et al. (2011) who explicitly elaborate on the modularisation and adaption of their assessment according to organisations' requirements. Among the three models that have been empirically verified, knowledge from previous applications of MMs (DP 2.2d) is explicitly mentioned by two (Enkel et al.; 2011; Essmann and Du Preez; 2009).

Design Principles for a Prescriptive Purpose of Use

DP 3.1 Improvement measures for each maturity level and level of granularity

Specific improvement measures for each maturity level and level of granularity (DP 3.1) are generally not provided. Rather, the models are used to identify areas of improvement and derive related measures based on the respective maturity assessment.

DP 3.2 Decision calculus for selecting improvement measures

A decision calculus for selecting improvement measures is not provided by any model either (DP 3.2). This also applies to the explication of relevant objectives for selecting measures (DP 3.2a). Enkel et al. (2011) exclusively touch upon this aspect by referring to their model as a means to achieve corporate objectives. Factors that influence corporate performance and the effect of measures on such factors (3.2b) are also not considered. In general, the models are focused on the internal improvement perspective and neglect the external reporting perspective (DP 3.2c). Only Carlson and Gupta (2014) hint at this aspect by mentioning that

a first version of their model is targeted towards an internal audience.

DP 3.3 Target group-oriented decision methodology

In accordance with the minor consideration of the decision calculus (DP3.2), aspects of the target group-oriented decision methodology for selecting measures (DP 3.3a–3.3e) are not considered by any MM.

Consideration of business model aspects

The analysis regarding BM aspects determined that four of the six MMs consider BMs to some degree. Demir (2018) considers the BM as an aspect of one of seven dimensions, namely the dimension "structure & model". Here, organisational structure and BM are understood as tools to foster innovation and to support corporate strategies. The maturity levels of this dimension with regard to BM aspects are defined as follows: At level 0 the BM is unknown, at level 2 some of its components are known, at level 3 the BM is not innovative, and strategies are not supported, at level 4 the BM is redesigned to foster innovation and empower strategies, and at level 5 the BM is unique/innovative and fully integrated into strategies.

Rübel et al. (2018) use the building blocks of the Business Model Canvas according to Osterwalder and Pigneur (2010) as the structure for their MM. In this context, maturity of a BM with regard to Industry 4.0 is determined by the degree of process mastery of 28 BM elements underlying the nine building blocks. Each element is assessed using five generic maturity levels defining the overall maturity of the BM in focus. In this context, the five levels range from implicit where an element is simply described to optimized where the optimal state of an element is achieved and related control mechanisms are in place. Thus, the levels relate to how well an element is managed. Igartua et al. (2018) consider the BM through the MM category "Value propositions and business model," which is focused on the definition of the offered products and services as well as the related benefits for customers and differentiation potential. To assess the maturity of each of the total 11 dimensions, five generic maturity levels are defined ranging from unaware where little to no knowledge is available to performance where an open innovation approach is followed. Carlson and Gupta (2014) state that their model aims at innovating products, services, and BMs; additionally, in the frame of the first (lowest) stage's description, it is mentioned that organisations must develop a dynamic portfolio of innovations that includes product, process, services, and BMIs. Furthermore, the description of the fourth stage states that most departments are innovating new solutions on an activity, process, product, or BM level as a lever of that stage. Besides, no specific BM aspects are considered.

Definition of Boundary Conditions and further Steps towards a MM for BMI

The analysis revealed several important insights that can be used to define a first set of boundary conditions and outline potential further steps to design an integrated MM for BMI. In the following section, the structure of design principles for MM according to Röglinger and Pöppelbuß (2011) is employed and the procedural model developed by Knackstedt et al. (2009) is considered. In the context of the latter model, the preceding analysis and the following explanations cover the following steps of MM development: problem definition, comparison of existing MMs, and definition of development strategy.

The application of the envisioned MM focuses on the domain of BMI putting the process of innovating BMs in the foreground (DP 1.1a). The purpose of the model persists in enabling the analysis of organisations or organisations' units' BMI maturity and in providing them with guidance on how to prosper regarding BMI as well as to allow benchmarking (DP 1.1b). The target demographic of such an analysis, derivation of measures and comparisons may comprise executives, managers, business developers, as well as entrepreneurs and researchers (DP 1.1c). In this context, the BMI maturity of organisations regardless of age, size, and industry, ownership, public or private, and units of such organisations are potential entities under investigation (DP 1.1d). Considering that no MM to date holistically focuses on the domain of BMI and following the previously described purpose of use, a clear differentiation from existing MMs is evident and will become even clearer once maturity, respective dimensions, and maturity levels are defined (DP 1.1e).

At this point of the MM conceptualisation, the design process of the MM is not concluded and has so far been documented in detail. The research and development process of the envisioned MM will be guided by the framework developed by Röglinger and Pöppelbuß (2011) and the procedural model to develop MM created by Knackstedt et al. (2009), as well as other approaches to MM development. In this context, the empirical validation is planned as a fundamental step in the sequence to conceptualising an initial version of the envisioned MM for BMI (DP 1.1f).

The conceptualisation of maturity and dimensions of maturity should be extended with different aspects related to the application domain of BMI. On the one hand, the content and architecture of BMs (business model components and interrelations), the process of innovating BMs (e.g., analysis and design), and organisational (e.g., culture, knowledge and leadership) as well as external aspects (e.g., partners and competition) will be considered. For this purpose, the procedure of MM development detailed by Essmann and Du Preez (2009) should be used as a guideline as it combines different approaches to dimension definition and outlines specific steps for an iterative model development in this context. Thus, the application of topic modeling techniques such as latent dirichlet allocation on BMI literature and literature of related fields as well as qualitative, explorative research represent promising approaches. As a multidimensional approach facilitates the definition of assessment criteria for a descriptive purpose of use and the classification of improvement measures for a prescriptive purpose of use according to Röglinger and Pöppelbuß (2011), maturity will be operationalised in a multidimensional manner (DP 1.2a).

Maturity levels should be oriented around existing models for ease of understanding and be complemented by detailed maturation paths for the same purpose (DP 1.2b). As the MM for BMI is intended to support organisations in applying it, the available levels of granularity of maturation should allow a detailed analysis but should not be complicated by unnecessary complexity (DP 1.2c). Throughout this study, the underpinning theoretical foundations with respect to evolution and change (DP 1.2d) are commensurable between the two domains of maturation and BMI, and thus the ambition to fuse the two withheld. Central constructs related to the application domain that will be defined in detail in the course of the conceptualisation comprise the BM construct and the construct of BMI (1.3). In the frame of the conceptualisation, all results will be documented in a target-oriented manner to comply with the requirement of communication (1.4).

In order to comply with the descriptive DPs, according to Röglinger and Pöppelbuß (2011), the operationalisation of MM through specific assessment criteria (DP 2.1) and the target group-oriented assessment (DP 2.2a–2.2d) will be predominantly guided by the MM of Enkel et al. (2011) and Essmann and Du Preez (2009), as well as Carlson and Gupta (2014) in the case of DP 2.2a–2.2b. Complementary to the analysed models' approach of providing the basis for the derivation of company specific improvement measures, the MM for BMI should provide generic measures for each maturity level and available level of granularity (DP 3.1). In addition, a decision calculus for selecting measures and the possibility to be used internally and for external reporting (DP 3.2a–3.2c). Going beyond the analysed models, the model to be developed should also provide a target group-oriented decision methodology for selecting improvement measures.

Conclusion

The objective of this paper was to provide a conceptual integration between MMs and BMI based on an assessment of extant published research. This approach constitutes a first step towards the conceptualization of a MM for BMI and provides some initial valuable insights for how to proceed. For this purpose, the relevance and challenges of BMI were outlined before six relevant MMs were analysed using an established framework for MM development. One fundamentally important finding is that no holistic MM exists to date that is dedicated to BMI. Furthermore, the analysis showed that the majority of MMs considers BMs to some extent and thus confirm their general relevance for corporate innovativeness. In this context, BMs are mainly taken into account rather superficial as one of many determinants in the frame of assessing corporate innovativeness

though. Guidance on how to foster improvements with regard to BMs is so far only provided by one MM focusing on BM management, whereby BMI is essentially neglected here as well. Against this background and in the light of the absence of a holistic MM for BMI this research endeavour is justified. In order to provide the foundation for a holistic MM for BMI we defined fundamental boundary conditions in the form of design principles according Röglinger and Pöppelbuß (2011) and outlined steps in accordance with Knackstedt et al. (2009), which will guide the subsequent development of the model. This study thus contributes an important foundation for subsequent model development for a MM for BMI, which will eventually enable organisations to assess, improve and benchmark their BMI capabilities as a means to ultimately achieve competitive advantages. Furthermore, the detailed analysis of MMs has potential to be used as a basis for the development of other MMs in the innovation domain and as a blueprint for analysing future MMs in detail.

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Teaching the Alignment of Business Model Components: The Use of the Movie *La La Land*

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Abstract

Using cinema in the pedagogy of entrepreneurship can be useful to illustrate the process and dynamics of the Business Model in a limited time. Here, the movie *La La Land* is used as a case study to analyze the links and the alignment between the value proposition and the other components of the BM, particularly the stakeholders.

Keywords: Entrepreneurship education, movie, Business Model, Customer Value Proposition

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Introduction

The Business Model (BM) has become a dedicated tool for designing entrepreneurial projects and supporting entrepreneurs and an integral part of entrepreneurship pedagogy (Massa et al., 2017; Szopinski, 2019). The issue of *Journal of Business Models* dedicated to BM pedagogy (*Journal of Business Models*, 2019) testifies to the diversity of angles taken and practices used to teach the BM, whether it is to examine the tool itself (the artifact) or to study BMs (content framed by the artifact). One of the main difficulties of teaching the BM is thus to combine these two approaches: the container (the artifact with its components) and the content (the concrete cases studied), as the BM should not be presented as a mere juxtaposition of these components.

One way to overcome this difficulty is to work on the dynamic links between the components of the BM, since its relevance lies essentially in its systemic and evolving nature (Massa et al., 2018). In reality, entrepreneurs are confronted with these dynamic links from the outset in the implementation of their projects. This brings us back to Szopinski's (2019, p. 90) statement: *"Teaching BMI should therefore not only convey the business model concept itself, but also how to think and act as an entrepreneur »*.

However, the links between the components of a BM are not easy to grasp. Holm et al. (2019, p.2) highlighted this difficulty when they pointed to one of the key problems in teaching the BM: "*Business-model design often starts with a feasible customer value proposition (CVP) that addresses essential customer problems. Similarly, a firm's resources and value-chain partners need to be aligned in such a way as to create and deliver the CVP as economically as possible*". This alignment questions the evolution of the components and the links between them. Teachers should therefore show their students the dynamic underpinnings of the BM as early as possible (Yrjölä, 2019), before they are fully engaged in setting up their own projects.

To this end, we tried to find a pedagogical form that would shed light on this aspect. Our goal is to evaluate the use of a film in the examination of these connections. Following Verstraete, Krémer and Néraudau (2018), who conducted a pedagogical action research using a film to help students understand why conventions matter when designing a BM, our aim is to use cinema to immerse learners in fiction. By watching films, learners may live an experience within a circumscribed time frame, which compensates for the long periods of time often needed to learn by doing. In learning by doing, project leaders need to combine theoretical knowledge learnt from models and empirical knowledge derived from social situations, thus learning the process by experiencing it (Cope ad Watts, 2000; Neck, Greene and Brush, 2014; Hyams-Ssekasi and Caldwell, 2018). Although it is a very interesting process, one of the drawbacks of this method lies in the time it requires, as it follows the speed of real-life projects. Of course, simulations on fictitious projects can be limited to a few days or even a few hours (with formulas such as "24H to undertake"), but it may be difficult to make people understand the scope of the interaction with the stakeholders and their role in the construction of the project. Our aim was to raise awareness of the role played by stakeholders at an earlier stage, going beyond the mere provision of resources which students often settle for. The use of movies seen through the lens of the BM contributes to this insight.

It is also a way of combining theory and practice, as the chosen film shows the entrepreneurial experience of the protagonists. The film we chose to work with as a case study is *La La Land* (2017). It features entrepreneurs acting in the entertainment industry and tells the story of the two main protagonists as well as the evolving relationship between their professional motivations/ambitions and the realization/evolution of their entrepreneurial project. In doing so, it tackles the dynamics of the BM as the itinerary of the two characters may be used as a springboard for thinking about the components of a BM and their links. In particular, the viewer sees the value proposition of the project carried by the hero evolving according to his interactions with the various stakeholders. The movie was thus presented to reveal the links between this central component of the productive project and the other components of the BM, particularly the stakeholders and the essential place of the entrepreneur.

Methodological Approach

How can cinema be used in the pedagogy of entrepreneurship?

The value of using cinema in management courses (Champoux 1999; Huczinsky and Buchanan, 2004; Mathews, Fornaciari and Rubens, 2012; Rajendran and Andrew, 2014; Ayikoru and Park, 2019) and entrepreneurship courses (Van Gelderen and Verduyn, 2003; Verstraete, Krémer and Néraudau, 2018) has received considerable attention. Table 1 summarizes the main benefits that entrepreneurship teachers can derive from using movies in an educational context. Among the arguments promoting their use, there is the ability to show students the "accelerated" construction of a BM (the movie lasts two hours, whereas the action spreads over several years), in a context full of emotions and interactions with the stakeholders.

Table 1.

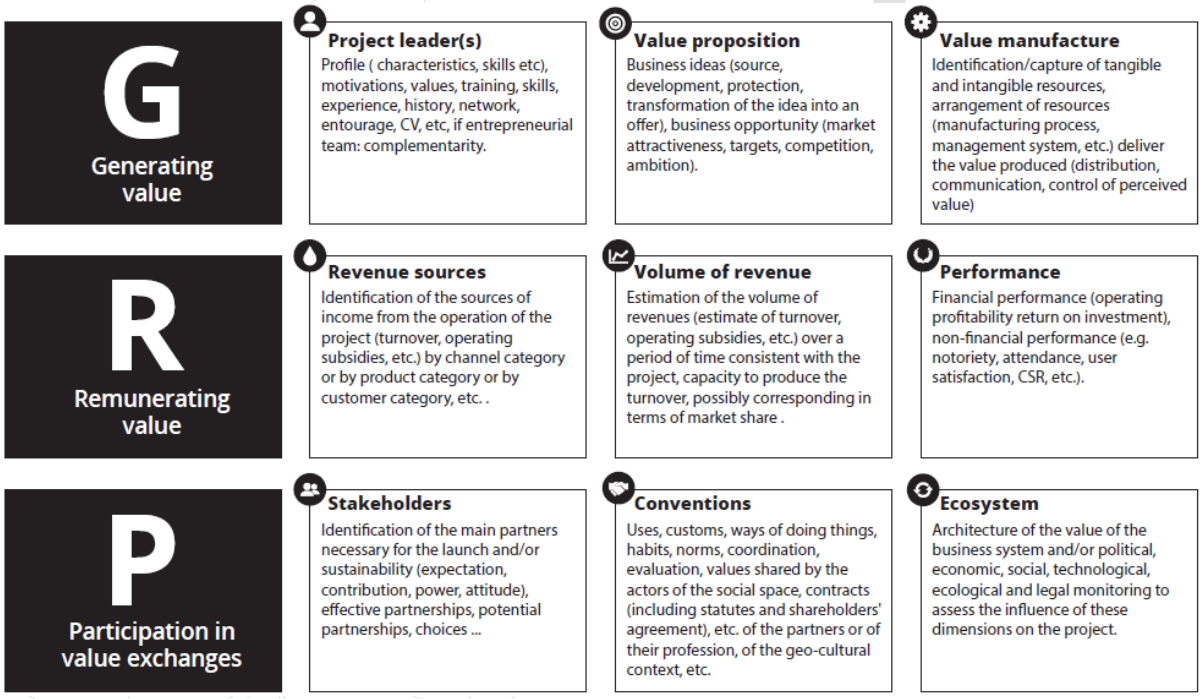
Expected benefits	Authors
Cinema appeals to young people, who are familiar with images. Watching a movie is perceived as entertaining and increases their motivation to learn.	Fontenot and Fontenot (2008), Proserpio and Giaoia (2006), Verstraete et al. (2018)
Watching a film allows for better retention of information. Through its techniques (visual effects, sound effects, special effects, close-ups), cinema is a lively and emotional experience that captures attention in a powerful way. By combining verbal and non-verbal elements, cinema offers learning opportunities while accommodating various learning styles (visual and auditory/verbal).	Mathews et al. (2012), Rajendran and Andrew (2014), Ambrosini et al. (2009), Van Gelderen and Verduyn (2003), Ayikoru and Park (2019)
Cinema makes theories understandable by portraying them in real life. Movies thus encourage students to make connections between theory and practice (even if this practice is fiction). This is particularly interesting for complex or processual theories.	Rajendran and Andrew (2014), Ambrosini et al. (2009), Huczinsky et Buchanan (2004), Verstraete et al. (2018)
A movie contextualizes actions and decisions. Using cinema and fiction thus opens young people up to a world that is potentially different from their own and exposes them to an experience they do not yet have.	Champoux (1999), Rajendran and Andrew (2014), Verstraete et al. (2018)
Movies can trigger debate in the classroom, especially when the main characters face moral dilemmas and experience strong emotions, accentuated by many social interactions. Critical thinking is thus promoted.	Macy and Terry (2008), Champoux, (1999), Huczinsky and Buchanan (2004), Ayikoru and Park (2019), Van Gelderen and Verduyn (2003), Neck et al. (2007)

Table 1: Impact of using movies in pedagogy (management and entrepreneurship education)

About the film and the choice of the *La La Land* case

La La Land was the subject of an instrumental case study. We used it as a medium for discussing a theoretical perspective, although it has its own intrinsic interest and may be studied for its own sake (Stake, 1994). *La La Land* is a movie that has been acclaimed by critics and viewers alike. It received six Oscars, including Best Director for Damien Chazelle. The movie is presented as a romantic musical comedy, paying tribute to the golden age of Hollywood studios and mythical musicals such as *Singin' In The Rain*. It stars a young woman, Mia (Emma Stone), and a young man, Sebastian (Ryan Gosling), both at the dawn of their artistic careers and in search of professional recognition. Mia is a waitress in a Hollywood restaurant but she dreams of becoming an actress. One night, she falls for Sebastian, a pianist with a passion for jazz, in the piano bar where he reluctantly performs, frustrated at not being able to fully express his talent. While the screenplay tells the love story between these two characters against a backdrop of retro melodies and choreography, the film also contains very interesting material on entrepreneurship. Indeed, the two characters share the particularity of fulfilling their dream and living their profession as artists by becoming entrepreneurs: Mia, by creating a one-woman show and Sebastian, by opening his own jazz club. It is on this backdrop that *La La Land* reveals its pedagogical potential in the light it sheds on the contingencies to the value proposition of a BM. In particular, it demonstrates that the value proposition is under the contingency of the other components of the BM, sometimes in an unusual way by taking into account the emotions, motivations and aspirations of the project leaders. Here, our aim was to focus on the role of the entrepreneur and that of the stakeholders in the design of the value proposition. To this end, the case study comprised the following phases:

- concerted choice of a recent film, whose main character(s) has/have entrepreneurial projects, recognized both by the public and the critics;
- choice of the BM as an artifact, or a reading grid for analyzing the entrepreneurial projects undertaken by each of the two characters in the movie. Among the various representations of the BM in terms of components, we chose the GRP BM, which includes a wide range of components such as: the entrepreneur, the ecosystem and the conventions (see Figure 1).



Source: Verstraete and Jouison-Laffitte (2009, 2011a, 2011b)

Figure 1: The GRP BM components as a reading grid for coding

– viewing of the movie by the two researchers separately, with manual coding and breakdown of the sequences according to the components of the GRP BM. This coding is theoretical as the categories are based on a pre-existing theory (Miles and Huberman, 1994). For each BM component, the researchers let the movie speak for itself, thus allowing new sub-categories and links to emerge;
– comparison of the results between the two researchers and highlighting the richness of the movie in order to understand the value proposition and its links with the other components, particularly the entrepreneur and the stakeholders.

Key Insights

The component-based analysis of the GRP BM reveals the importance of the alignment between the value proposition, the expectations of the entrepreneurs and those of the stakeholders. Although the analysis remains focused on this alignment, it inevitably touches on other components, particularly the "ecosystem" component and the "conventions" component.

The film shows several situations that question the adequacy between the value proposition as conceived by the entrepreneur and the expectations of the stakeholders. It warns entrepreneurs against neglecting the expectations of the consumers or, on the contrary, totally complying with them at the risk of forgetting their own desires. However, the final scenes of the movie show that it is possible to align the value proposition with the consumers' demands if the entrepreneur pays attention to the market and to himself. Fundamentally, the trajectory of each character/entrepreneur shows how integrating stakeholders' expectations into the value proposition and into their own evolution regarding their projects ultimately leads to a saving dynamic.

Stakeholders' expectations: a constraint for the value proposition?

Market law seems to be merciless for artists who want to make it in the Hollywood show-business ecosystem. Without an audience, there is no artistic entrepreneurial project. The loneliness of the misunderstood artist who is cut off from his audience (or his target as an entrepreneur) is highlighted by a scene featuring Sebastian. In a piano bar, Sebastian plays his own compositions instead of the Christmas songs that his boss and customers expect him to play. In a dream, he pictures himself on stage in the spotlight. However, no one in the room seems to see or hear him, except Mia. Sebastian is fired for breaking the conventions: those of his contract and of the musical atmosphere in the piano bar at Christmas time. Here, the entrepreneur-artist refuses to understand the context that may or may not be receptive to his creations. In this scene, the rejection by the stakeholders (customers and employer) is total (see Table 2, Time 1). Sebastian has a purist side, by which he excludes the uninitiated. He may even appear contemptuous of the public by making no effort whatsoever to reach out to them. This translates into his intention to call his future jazz club "Chicken On A Stick". This is an allusion to Charlie Parker whose nickname was Bird, a musical reference only the initiated would understand. The protagonist yearns for artistic recognition but he does not want to make concessions on his art by taking into account the public's point of view and expectations, thus neglecting the market orientation (Narver and Slater, 1990). This scene thus illustrates the notion of supply marketing, as the character starts with his or her own needs and only opens up to the market in a second phase, without any iteration with the market or consideration of its needs. The movie shows that this approach can easily seduce entrepreneurs in the creative sector, while also being very risky.

On the other hand, being entirely guided by demand to define one's offer can also lead to entrepreneurial failure, as the market leads the entrepreneur to deny his/her own values. By making extreme concessions to fashionable musical trends, Sebastian abandons jazz for pop-rock music and becomes successful. His new band is served by the intuition of its leader who complies with the expectations of the public and the rules of the ecosystem with a certain level of opportunism: choice of a production company, electro music, revisiting jazz for the general public, winks to his young hysterical fans. The band fills concert halls, goes on tour and knows how to play

Time 1: Lack of alignment between the CVP and the stakeholders

Entrepreneur	Customer Value proposition	Stakeholders (Customers)	Stakeholders (Employer)	Conventions in the sector
X	Christmas carols	Want to hear Christmas carols	Pays a pianist to play Christmas carols	Bars play Christmas carols at Christmas time The employment contract stipulates Christmas carols
Wants to play his own jazz music because to him, jazz overrates any style of music	Unknown jazz music	X	X	X

At first, Sebastian plays Christmas carols but he gets bored. He takes it upon himself to play jazz to align the CVP with his own beliefs, thereby losing alignment with stakeholders' expectations and conventions. As a result, he gets fired.

Time 2: Lack of alignment between the CVP and the entrepreneur's needs and beliefs

Entrepreneur	Customer Value proposition	Stakeholders (Partners)	Stakeholders (Customers)	Stakeholders (Producers)	Conventions in the sector	Ecosystem
Wants to concentrate on good music (elitist jazz), remains discreet	A jazz band	X	X	X	X	X
X	A pop-rock group for teenagers	Want to be successful, famous and rich	Listen to pop music, act like fans	Singers must show up to sell more records	Singers must be fashionable, and imitate successful bands	A lot of competition between bands

Sebastian does not manage to convince the other members of the band to opt for a jazz style. He bends to the codes of teenage bands to satisfy the expectations of all the stakeholders (partners, record company, consumers). The CVP is aligned with the market but by doing so, the entrepreneur denies himself.

Time 3: Alignment between CVP and BM components leads to success

Entrepreneur	Customer Value proposition	Stakeholders (Customers)	Conventions in the sector	Ecosystem
Wants to play his own jazz music Evolution: jazz can be shared with non-experts	A trendy jazz club on a busy street with a name that doesn't exclude the uninitiated	Want to listen to good music in a nice place, and discover jazz	Bars have a cosy and warm atmosphere	Bars are concentrated in busy and trendy streets

Table 2: Aligning the Customer Value Proposition with others BM components

with the sometimes vulgar codes of show business. The photo shoot scene is a good example. In order to please his fans and be a "fashionable singer", Sebastian agrees to pose like a rapper with a ridiculous cap and fake smiles that make him feel totally ill-at-ease. On the surface, he seems to have achieved his goal of being listened to and making a living from his music, but he is recognized neither for what he likes nor for what he is. Here, the movie tackles the issue of inadequacy between the project leader, the value proposition and the balance in value exchanges. The project no longer brings enough value to the leader. Although the pop-rock band brings material comfort and fame, it affects his personal life and contradicts his values. The fact of marketing one's product is represented as a compulsory step to comply with demand, however far off it may be from the personality of the entrepreneur, who sells his soul to the devil (see Table 2, Time 2).

Finding an alignment between the value proposition and the other BM components

The links between the entrepreneur, the value proposition and the target are more optimistic in the second part of the movie. The end of *La La Land* offers a constructive vision of the conciliation between the entrepreneur's value proposition and his encounter with the public.

Five years after his break-up with Mia, Sebastian has opened his dream jazz club on a busy Los Angeles street. The public is there, the club is packed and it is a huge success. Sebastian has made a concession: he has given up the name he originally wanted, "*Chicken On A Stick*", to call his club "*Seb's*" like Mia, a jazz neophyte representative of the majority of potential consumers, had suggested to him. He has also used the logo she had created: a sober and efficient design, which combines his first name and a musical note, expressing his identity and passion in an accessible way for the customers (see Table 2, Time 3).

With an educational aim, this scene echoes the interest of a qualitative study task given to young student-entrepreneurs in training: to think about a logo and a brand name and test its acceptability by a target public, while remaining faithful to its original values. The scene shows that the initial idea needs to be worked on and that it has been improved by submitting it to the opinion of others, in a context of listening, dialogue and iteration with the market. Sebastian has finally found a balance between his passion and the public's expectations. The concessions he previously accepted or had to put up with in the past (playing in a fashionable band in contradiction with his values, losing his girlfriend because of touring) have helped him raise the capital to open his club and learn how to communicate with the public. They were therefore not in vain. This observation underlines the temporal dimension of conciliation between the entrepreneur's value proposition and those for whom it is intended. This conciliation may require a learning phase or sufficient time to gather the appropriate resources.

Conclusion

In order to teach the BM and show the links and alignment between its various components, we suggest using cinema as a teaching medium. A movie is a narrative that tells a story with events that lead to others (Huczynski and Buchanan, 2004). In entrepreneurial pedagogy, movies seem particularly relevant to us to show how the BM (project artifact) is constructed temporally, i.e. the ways in which the project leader learns over time how to gain collective support around him. Cinema thus allows learners to see a fast-paced, process-based experience in a context that includes emotions and social interactions and a time frame that is compatible with the volume of a student course. Indeed, a film offers the advantage of contracting both time and space.

In our opinion, *La La Land* was a relevant choice to teach the dynamic character of the BM, notably through the definition of the value proposition and how it is interwoven with stakeholders' expectations (Holm et al., 2019; Yrjölä, 2019): those of the clients and those of other parties encountered in the film (the production company, the other members of the rock band, the owners of bars and theaters), as well as those of the entrepreneur himself and the ecosystem, while dealing with the conventions of the social environments concerned.

One of the limitations of this article is that we do

not present the results of a pedagogical action research that would show how students react to this case. This analysis could be pursued by discussing the many other aspects of entrepreneurship theory present in *La La Land*, whether they are related to stakeholders (support of the love partner, Pygmalion effect), the entrepreneurial process (career incidents and learning) or to female entrepreneurship. These dimensions are an opportunity for a rich pedagogical case that could be empirically tested with a group trained in entrepreneurship.

This research also contributes to revealing cinematographic works as a pedagogical medium that can be used to facilitate the BM's learning/teaching process. Future research using cinema in BM pedagogy could also lead to practical and pedagogical evolutions, such as the creation of a platform hosting related resources: films or scenes with entrepreneurs acting. It would then be a matter of adding to the database the media identified as relevant or tested pedagogical cases combining entrepreneurship, pedagogy and cinema.

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