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Seizing the Business Opportunities of the MyData Service Delivery Network: Transforming the Business Models of Health Insurance Companies

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Abstract

Purpose: This paper discusses how personal data-driven service delivery networks based on MyData phenomenon may impact and transform the business models and offer new kinds of business opportunities especially for health insurance business

Design/Methodology/Approach: This research is a case study / empirical

Findings: This study demonstrates how health insurance organizations are heading towards acting as active members of human centric, collaborative service delivery networks. The biggest opportunity transformation from transaction based to service-based businesss

Research limitations/implications: As the use of personal data is still a paradigm in Europe, the results of this study address the potential use and implications and cannot be validated through large-scale empirical studies.

Practical Implications: This research highlights how companies should build adaptable service architecture that are easily connected or disconnected from the other organizations in their business ecosystems in order to allow smooth data usage and sharing. The service delivery network approach may offer insurance companies the needed structure and role in the emerging MyData business.

Originality/value: This study contributes to the discussion of data-driven business models via an emergent phenomenon. Especially in occupational healthcare sector, use of personal data can open up new kinds of business opportunities with networked or ecosystemic business models.

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Introduction

Increasing healthcare costs have become a global challenge which has led countries and healthcare providers to the point where healthcare systems and the underlying business logic of actors providing healthcare services must be reinvented. At the same time, technological development has created new ways to monitor health and wellbeing and has provided the means to focus healthcare on a more personalized and preventive direction (Hood & Galas, 2008). Consequently, the use of data in the healthcare sector has become increasingly important, and "discovering a game-changing relationship previously hidden in the data" (Redman, 2015) is seen to lead to data-driven innovations. People are embracing a future healthcare system that allows them to control and share their personal health information for receiving improved personalized care (Hood & Galas, 2008). The adoption of cloud technologies and mobile devices, for instance, enable novel ways to generate, access, and manage personal health data (Wang et al., 2016). People voluntarily agree to vast amounts of personal data being stored and utilized by companies in exchange of services. For the use of personal health data, the MyData paradigm has therefore emerged to address and strengthen digital human rights. Simultaneously, MyData is also opening new network-based opportunities for businesses for developing personal data-driven services.

These novel service delivery networks based on sharing an individual's data for better, tailored healthcare services, require new kinds of networked business models because collaboration is not only seen as a way to differentiate from the competition but also to ensure better services for customers. Network-based business models have been researched in recent studies looking at the perspective of the business model evolution (Lund & Nielsen, 2014), partnering portfolios (Rindova et al., 2012), and interdependent innovation (Kleinbaum & Tushman, 2007). While the open innovation literature has been focusing on the use of organizational models and resource combinations (Chesbrough, 2003a, 2003b), there is still a lack of understanding of the influence of data on networked business models. New kinds of service networks sharing individual's data between actors are crucial, especially in preventive healthcare services (Pikkarainen et al., 2018). Yet there are still only a few available research studies on

the context of human-centered personal data management (see, e.g., Kemppainen et al., 2019; Huhtala, 2018; Pikkarainen et al., 2018; Koivumäki et al., 2017).

Service delivery networks include a group of actors that do not necessarily have natural boundaries but who have a target to create a connected, overall service adopting a customer-centric approach. In the service delivery network, a customer assembles the relevant set of actors. In the service delivery network, "the customer acts as the ''hub'' or focal node and the network includes as nodes the set of actors (service providers) who directly touch the customer in his particular service journey, with the customer's encounters represented by ties between the customer and the providers" (Tax et al., 2013). The MyData scenario of a personal data network is based on a transition from an organization-centered model towards human-centered personal data management and towards a service delivery network in which the individual is in the position of being his or her own data controller (see, e.g., Gnesi et al., 2014; Papadopoulou et al., 2015). In other words, MyData refers to an approach that seeks to transform the current organization-centric system to a human centric-system to use personal data as a resource that individuals themselves can access, control, and share based on mutual trust (Koivumäki et al., 2017). In the MyData model, the importance of personal data ownership is highlighted as a potential channel for the increase in individual health data (Häkkilä et al., 2016). In the healthcare sector, this transformation means that the focus shifts from reactive disease treatment to proactive wellness maintenance, emphasizing an individual instead of population-based disease diagnosis (Hood, 2013).

Scrutinizing the emerging MyData-based healthcare services from the service delivery network perspective enables the investigation of relationships, interactions, and interdependencies between actors, and the examination of how these actors adapt to and evolve due to environmental changes (Frow et al., 2016). The MyData phenomenon is highly focused on service delivery networks, as it both enables and requires active collaboration among healthcare businesses for fulfilling the human-centric service perspective through technological solutions. A shared MyData infrastructure enables decentralized management of personal data, improves

interoperability, makes it easier to comply with tightening data protection regulations, and allows individuals to change service providers without proprietary data lock-ins (Poikola et al., 2014).

Data processing technology has grown since the 1960s. Data privacy rules and regulations have been evolving together with an increasing organizational capability to collect, process, and interlink data in an expanded way. Many players have already started to use the data for the development of personalized services and marketing (Tikkinen-Piri et al., 2018). Increased customer-centricity and efficiency can also be seen as a competitive advantage for companies (Brownlow et al., 2015). In the changed situation, it is important to (1) understand the value of the novel personal data driven ecosystem, (2) explore roles in the value network, and (3) stress the importance of collaboration, regulations, and institutional ecosystem practices between ecosystem players (Huhtala, 2018).

For insurance companies in Europe, personalized data can be seen both as a risk and an opportunity. In many countries, lack of trust among individuals has been showering down related to the development and innovative use of new technologies (Reding, 2010) and related to the management of personal data (Tikkinen-Piri et al., 2018). People are often afraid that health insurance companies will start to use personal data strategically for profit maximization, for instance by excluding risk patients. As a part of the data misuse against them, people are often worried about the level of data security through the whole service continuum. It is no longer enough that data management is only done by one network partner. Standardization of data protection requires a different level of collaboration between different network players (Huhtala, 2018). The sharing and use of data between health professionals—including insurance companies—could contribute, however, to increased health and wellbeing through preventive healthcare and result in lowered insurance costs, bringing positive added value as well to the individual client. In this situation, it is important to increase understanding of how organizations, such as insurance players and other network players, are adapting to the changes in personal data usage and are addressing the related risks (Tikkinen-Piri et al., 2018).

Therefore, how MyData eventually impacts insurance companies in service delivery networks and how the potential change in insurance business is going to influence other players' business models in the same network are very topical and relevant questions. Therefore, the aim of this study is to increase knowledge about how MyData influences business models in the field of occupational healthcare, in the case of health insurance companies and their service delivery network. The primary unit of analysis in this study is the service delivery network, which we are looking at from the perspective of European insurance players. In our analysis, we are focusing specifically on the MyData phenomenon and the influence of MyData on the business models of insurance players. Building on the business model literature, the primary research question of this study asks: *How is MyData transforming health insurance companies' business models in service delivery networks?*

In order to answer the research question, this paper first discusses the theoretical foundations of business models in data-driven business. It then dives deeper into MyData as a human-centric approach to healthcare. Research methodology and the empirical case are described next. The study ends with a discussion of research results, findings, and conclusions.

Data-Driven Business Models

One of the buzzwords of contemporary business is the concept of the business model (Zott et al., 2011; Onetti et al., 2010). Previous literature has described and defined business models in various ways, such as a structure, an architecture, or a business frame: a representation of a firm's relevant interactions and activities (Wirtz et al., 2016). Although scholars are debating over a unanimous definition of the concept, the common view is that business models act as pathways to fulfill unmet needs, profitability, and the promise of service (Wirtz et al., 2016) that will lead to competitive advantage (Zott et al., 2011; Teece, 2010). Thus, business models are to "create and capture value in an inimitable way and through rare and valuable resources that are utilized efficiently" (Ahokangas et al., 2014). This means that a business model is a system of specific activities conducted to satisfy the perceived needs of the market, as well as specifying who does what (whether it is the firm or its partners), and how these

activities are linked to each other. From a collaboration perspective, a business model also acts as a system of interconnected activities that determine the way a company does business with its customers, partners, and vendors (Zott & Amit, 2010).

Business models are often imposed by technological innovation that creates the need to bring discoveries to market, and the opportunity to respond to unmet customer needs (Teece, 2010). From this background, the concept of the data-driven business model has emerged to address connectivity issues, the Internet of Things, and Big Data (Pujol et al., 2016). Hartmann et al. (2014) define data-driven business models as business models that rely on data as a key resource. According to Hartmann et al. (2014), the source for this data can be either internal or external, the offering can consist of the data itself, information, or a non-data product or service. *Data* may be packaged, retrieved, or sold (Sorescu, 2017). Revenues can consist of sales, licensing, or subscriptions, but their definition does not consider data-sharing and re-use (Pujol et al., 2016), as implied in the MyData paradigm. According to research conducted by Pujol et al. (2016), data sharing is still uncommon in current data-driven business, to which this research contributes from the business model perspective.

Using data has become a necessity for many organizations in order to remain competitive or survive in their field (Brownlow et al., 2015). In healthcare, the most successful services should place the sensing and supporting technologies around the needs of individuals in a manner that is highly personalized and makes the person a driver of his own health and wellbeing. The key challenges of integrating personal data are both data availability from different silos and consumer protection laws that currently hinder data usage especially in the health sector. Recently, open source solutions around modern Web interfaces or database solutions have started to break the data silos in different sectors. This has resulted in the "API economy" (Anuff, 2016), which means that companies separately create revenues through application programming interfaces (APIs)—either licensing, use-for-fee, or other monetization models—very much on personal data sets. On the other hand, an aggregator model emphasizes the controlling role of a central organization. In an open business environment, a shared MyData infrastructure enables decentralized management of personal data, makes it easier for companies to comply with tightening data protection regulations, and allows individuals to change service providers without proprietary data lock-ins (Poikola et al., 2014). MyData model means that organizations are moving from traditional, technology, and aggregator models towards a human-centric data management approach (Figure 1.)

In the traditional "structureless" API economy, there is no clear infrastructure or platform in place for controlling and organizing the use of data in a logical manner. Organizations do not systematically collaborate, and the ecosystem is governed by closed business models. Aggregating data control would make life easier for organizations and individuals, but different aggregators do not have a built-in incentive to develop interoperability between them. In this model, there is an ecosystem in place, however it is a closed system, dominated by large corporations. Compared to the aggregation model, MyData is a resilient model because it does not depend on a single organization but works as a shared open infrastructure (Poikola et al., 2014). MyData can been seen as a way to convert data from

Figure 1: MyData model (adapted from Poikola et al., 2014).

closed silos into an important, reusable resource. It can be used to create new services that help individuals to manage their lives. The providers of human-centric services can therefore create new data sharing based service ecosystems and new business models, leading to economic growth in whole society (Poikola et al., 2014).

Data-driven business models in a networked environment

There has been much research during the past decade from different perspectives on company networks (see, e.g., Rindova et al., 2012; Hallen, 2008; Zott & Huy, 2007). Moving from the above-defined service delivery network and the defined roles of business models, it is also necessary to define and describe the actors involved (Mettler & Eurich, 2012). However, the roles are highly dynamic, flexible, and service-context specific, as noted by Möller and Svahn (2009); and the identification of the core actors, their roles, and corresponding relationships is a challenging task, especially in the case of emerging human-centric MyData service delivery networks. To tackle this challenge, we must first identify the focal firm in the service network and take the underlying flows in the network as the starting point of the analysis. In MyData networks, there are three types of flows (Poikola et al., 2014): (1) consent flows between the MyData operator, data sources, and data using services, which specify the flows of data from their sources to the services using the data, (2) actual data flows between the sources and the services, and (3) monetary flows between different network actors. The actors involved in each flow depend on their roles. These flows are the underlying drivers of the interactions and transactions between the focal firm and the other actors, which in turn are at the core of business models.

Thus, business models can be seen as the focal firm's boundary-spanning transactions with external parties (Zott et al., 2011). Indeed, collaboration of the focal firm with its network can be considered as one of the main functions of the business model. This approach is well-captured in the MyData paradigm, yet it brings a lot of challenges for organizations to realign their current strategies and business models for a human-centric approach. As Ahokangas and Myllykoski (2014) state, the transformation of an existing business brings special challenges for business models. Business model transformation is about transforming an existing organization through repositioning the core business and adapting the current business model into the altered market place (Ahokangas et al., 2014; Ahokangas & Myllykoski, 2014). The emergence of data sharing and the control of individuals over their health data will transform healthcare business. This means shifting away from the transactional fee-for-service model towards strategic value-based care (Kaiser et al., 2015). Yet, academic research has not widely addressed issues related to business model transformation in spite the business model being an actionable concept that includes an underlying assumption of a process (Ahokangas & Myllykoski, 2014; Juntunen, 2017). Here, applying value-based care provides an opportunity to "better understand their true customer, the patient-consumer; tailor products to meet their needs; and to capture a high share of distinct customer subsets who will pay for and be loyal to their brand" (Numerof, 2015). Of course, transforming the whole logic of value creation is not painless. Transforming an organization requires a lot of commitment from the management, as the old ways of doing things may become a challenge (Giannopoulou et al., 2011). The activities and logic related to the new business model may be incompatible with the status quo (Chesbrough, 2010). Therefore, business models should always be assessed and attuned against the business context so that an optimal fit with the environment can be found (Teece, 2010).

Often, the traditional approach for business model research is to focus on the supply side, not the demand side, of value co-creation (Massa et al., 2017). However, working together as a business ecosystem, the service delivery network players are provided with better possibilities to create value that none of the players in the ecosystem can create alone. The ecosystemic business model, as a type of networked business model, uses the ideology of open innovation supporting complementarity and coopetition. The business model wheel is a tool to understand ecosystemic and networked business opportunities and future contexts (see, e.g., Ahokangas et al., 2014, Ahokangas et al. 2019). In this model, the business opportunity is at the heart of business model. The wheel includes relevant elements of WHAT? (customers are offering, value proposition, and differentiation), HOW? (to sell the solution to the market, delivery, key operations, and basis of advantage), WHY? (basis of pricing, way of charging, cost drivers,

and cost elements), and WHERE? (to do business—internal or external local firms) (Figure 2) (Ahokangas et al., 2019).

In today's turbulent business environment, companies are challenged in how to alter their business models and service development (Palo & Tähtinen, 2013). It is therefore important to acknowledge that a firm does not have to bind itself to a single business model but should experiment with several simultaneously (Trimi & Berbegal-Mirabent, 2012). In fact, testing and validating a new business model often requires a period of co-existence with the current and new model(s) (Chesbrough, 2010). It is not clear what the new business model will be like, but by experimenting, the data needed to justify the transformation can be gained. Business models become fully comprehensible for firms only through action in the business context in which they emerge (Ahokangas & Myllykoski, 2014). According to Numerof (2015), the main actionable strategies driving the transformation of health insurance companies start with (1) developing partnerships with the right parties, moving away from volume towards limited partnerships, and innovative treatment pathways. (2) Predictive care paths, when correctly executed, are the true offerings for future hospitals and physicians. Insurance businesses can play a key role in building such collaborations that have the power to achieve measurably better health outcomes at lower overall costs. In the (3) systematic transformation, payers will have a
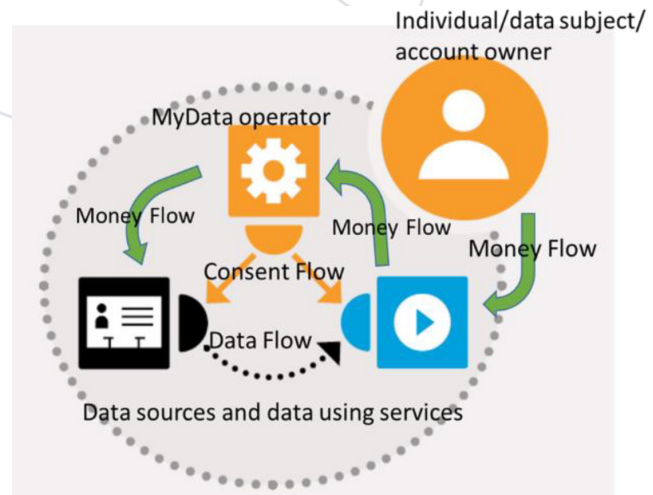

Figure 3: MyData network roles (Adapted from Poikola et al., 2014)

significant role to play in bridging the divide between providers and patients (Numerof, 2015).

MyData and networked business environments

Poikola et al. (2014) defined four roles that are inherent in MyData delivery networks. These roles include (1) the individual, i.e., a person who is the creator and owner of a data account which is used in the MyData-based services and who authorizes the use of the account; (2) MyData operators, who orchestrate the MyData-based service provision by data account provision, consent management, and authorization; (3) data sources, who provide data about the individuals to the service; and (4) the actual services using data in service personalization. The network is depicted in Figure 3.

Methodology, Data Collection, and Analysis

As this study seeks to gain an in-depth understanding of the mechanisms of change in an organizational setting, an action-based research methodology was applied for data collection (Ballantyne, 2004). Daniel et al. (2003) suggest that action research is a valuable method to study dynamic and turbulent environments. As the MyData paradigm shift is still evolving, the method enables researchers to get close to the current business reality. Thus, it fosters the development of deep and rich insights into the complexities within (data-driven) decision-making (Carson et al., 2001) in the context of MyData. The data utilized in this study is
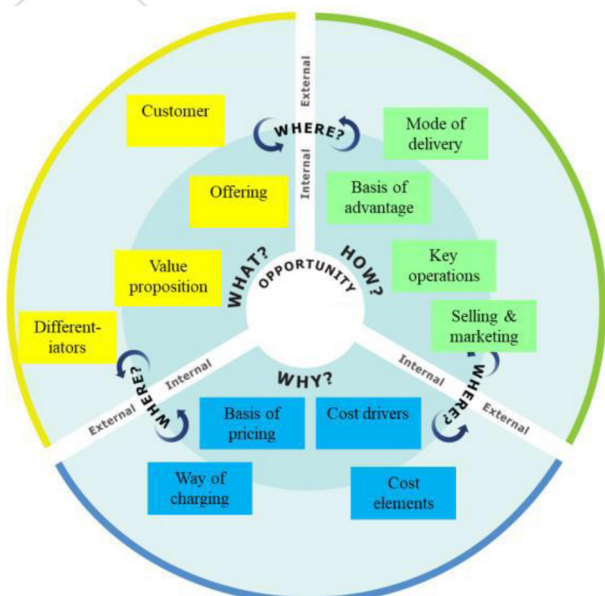

Figure 2: Business model wheel (Ahokangas et al., 2019).

COMPANY	KEY BUSINESS DOMAIN	INTERVIEWEE	DURATION (Min)
SME	Technology provider	CEO	106
Health provider	Healthcare	Development Director	45
Insurance player	Banking, finance, healthcare	Chief actuary	60
SME	Wellness training and coaching	CEO and Director of International Growth	75
SME	Wellness training and coaching	Personal trainers	45
Insurance player	Insurance	Business developer	35
Insurance player	Insurance	Manager	45
Large company	Mobile network operator	Innovation Manager	45
Large company	Technology provider	Head of Research	73
SME	Technology provider	CEO	56

Table 1: Data collection of the study.

part of a wider European research project on healthcare service ecosystems, Digital Health Revolution DHR2.

The action research approach was applied based on abductive reasoning, which can be characterized as an iterative and recursive loop between empirical and theoretical insights. Dubois and Gadde (2002) refer to this approach as "systematic combining," where the theoretical framework, empirical fieldwork, and data analysis are evolving at the same time. The primary data was collected from ten semi-structured in-depth interviews with insurance company representatives and stakeholders related to the insurance business during 2016 (Table 1). The 10 actors included in the sample were initially brought together in the DHR2 research project. We intentionally selected both insurance players and their stakeholders in order to understand the business of insurance companies from different perspectives. Before the data collection, the MyData approach was introduced to all network players. In this presentation and discussion, the MyData model was explained in detail and how it differs from the aggregation model. In early 2017, the data collected from the interviews was further elaborated during a joint 3-hour workshop with insurance companies and their stakeholder ecosystems to validate the potential impact of MyData on business models.

In the data analysis, statements were identified, sorted, and structured to identify the impacts of MyData on healthcare insurance companies and their service delivery network actors. The business model wheel (Ahokangas et al., 2014) was used as a tool to analyze the derived data in order to thematically identify the potential impact and use of the MyData model on healthcare insurance business within service delivery networks, as this business model tool helps to identify the points of action and network collaboration in a simplistic manner. The template addresses the following elements: (1) what–comprising offering, value proposition, customer segments, and differentiation; (2) how–covering key operations, basis of advantage, mode of delivery, and sales and marketing; (3) why–describing the pricing basis, method of charging, cost elements, and cost drivers; and (4) where– all these items are located, internally or externally to the firm, as each part of the business model can be executed through collaborating with outside partners (Ahokangas et al., 2014) .

The data analysis was based on the thematic analysis approach (Guest, 2012). First, the interview transcripts were analyzed and categorized and coded by two researchers using NVivo and the business model wheel framework. Secondly, all the findings from both researchers were combined together and further analyzed a second time to discover commonalities and patterns in order to identify new contextually specific themes and categories.

Findings

In exploring how MyData will potentially impact the business models of health insurance companies and
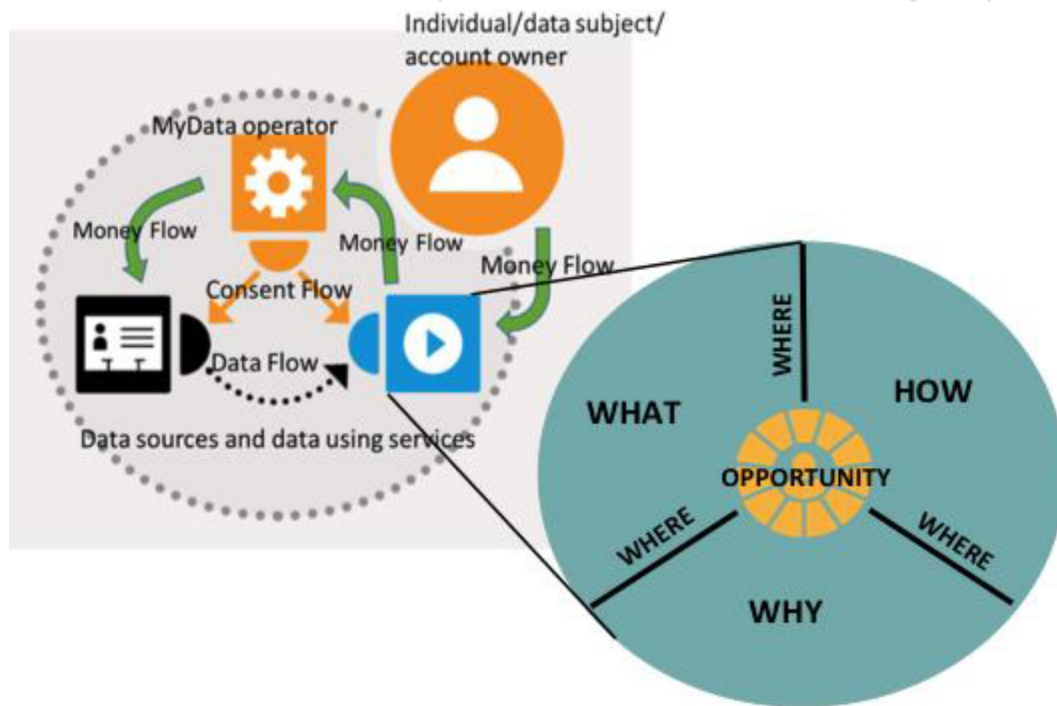
Figure 4: MyData service delivery network and the health insurance service business model.

the related network players, we thematically categorized our interview findings and mapped them together with the themes discussed in the joint workshop. The results are summarized in Figure 3 and discussed in more detail below through business model elements, where collaboration is addressed in all components.

Business Opportunities of MyData

A new type of access to human-centric data provides a novel possibility for insurance companies to take a bigger role in the preventive healthcare field. In this service delivery network, the aim for insurance companies is to help their end-customers live a more healthy and safe life, which will also support the insurance business by decreasing compensation costs related to chronic disease and accidents. In this new field, insurance companies see that:

"Our role is not anymore just to buy compensation, it is more to help to make sure that everything is fine with the individual."

At a concrete level, insurance companies consider that

"The MyData approach will offer us new opportunities to give better and updated information, for example, about the value of their property or risks for future accidents and the like."

But, MyData is seen as also enabling a more general approach to wellbeing:

"As soon as end users buy from us, we can start to offer the services that help them to improve their health and life style."

This is based on some initial work that insurance companies have conducted in the field:

"We have noticed in our research that it is important to offer a bonus or some price for people when they are changing their lifestyle" ... *"smoking is a good example, if you get 3,000 to stop it, perhaps people will do it."*

This indicates that in the future system, the insurance companies can be characterized more as a service provider than as a player that buys compensation for general risks or issues that have already occurred.

Value and Competitive Advantage of MyData for Insurance Business

What. MyData was seen as enabling extended and novel offerings based on the collaborative use of data: *"the data sharing would make it possible that both insurance company and doctor sees the same information, and we could better serve individuals."*

From the medical doctor perspective, people are already now coming to see them with data about themselves, e.g., the data they have been collecting using mobile applications or different tracking devices. Data management services through MyData operators would allow them to

"enter pre-information, e.g., about the insurance coverage before the appointment, which would save everyone's time." Director at a health service provider.

New players will also emerge to collect and analyze data. First, insurance companies aim to use data to achieve close to real-time customer insights to better align themselves with customers for better services. Value could be captured especially in situations when a person has been using one service provider for 10 years and then decides to change.

"that could be the case in which the end user could make some effort to be able to transfer information easily."

Secondly, insurance companies could base the costs of insurance on real, not estimated, situations. This means that people with a high-risk profile will have higher costs, whereas those who are living a healthy life could get some compensation. Costs would be based on a person's lifestyle and activity level, which is not currently possible due to legal regulations. Thirdly, with MyData, insurance companies could offer a feeling of safety, such as using data from sensors and devices to detect the likelihood for potential accidents.

Additionally, early risk detection services can be an opportunity for the insurance business.

"... if we could use the sensor and personal data with the permission of the end-user to check if something is wrong with the car tire and it is better to fix it before a long journey."

Insurance services can also be customized based on the data. For example, in many cases the insurance companies are supporting groups in employee organizations. *"The use of the MyData approach will especially change the role of employer organizations in the occupational health business sector during the next 10 years."*

Indeed, employer organizations were seen as a core player that would benefit the most from the transformation to MyData-enabled healthcare:

"In the new MyData-based model, employee organizations should be able to better take into account the coping, energy level, wellbeing, and health of their own employees."

Other important players in this new business model could be banks, food stores, aviation industry, utilities, and housing companies.

How. Utilizing collaborative service networks were identified as the key strategic approach in MyData, as it is not possible to build open access to data open business or innovation models.

"We have opened the interfaces and helped developers to build interfaces and open data sources." "We have organized hackathons targeted to give developers a possibility to use their data as a basis for new application development."

However, insurance companies also highlighted the importance of a MyData operator in the service network. They mentioned that there is a key player missing in this field—an operator who could be responsibile for data sharing and offer needed collaboration interfaces. Supporting customers in deciding what data to share is important in the MyData transformation. Without an operator in place, it might be difficult for insurance companies to get access to the personal data without legal problems. Insurance companies have an interest in leading this, but their challenge is that citizens could see it as scary.

Hence, in the current business environment, they felt that they cannot take the role of the MyData operator in the service network. Insurance companies aim to develop rapid data usage as a source of competitive advantage:

"the faster we can use the data, either as a service or information or to do better pricing, the better we can manage in the business compared to our competitors." Combining personal data with environmental data such as for cars or housing, insurance players could maximize the probability of customers finding products they

want to buy. It was also mentioned in the interviews that data usage is not only a competitive advantage but a must-have for insurance players in the future if they want to survive:

"The basic model in which we just send bills and compensation does not work anymore in the current digital world. If we cannot use the data, we will stay behind in the insurance market."

Why. From the revenue perspective, the individual was highlighted as the most important player in the future MyData-driven business. In the new insurance business model, individuals can get discounts for their insurance if they are improving their lifestyle. At the same time the assumption was that the insurance companies should pay less compensation for chronic diseases and accidents. However, insurance companies do not yet have evidence that costs actually decrease if data is better used. One approach could be reciprocal data sharing within the service network that also includes the end-customer:

"I think some players are also ready to buy the data from individuals." Equally, *"You need to buy if you want to get valuable services based on your data."*

Help is needed from other players such as individuals, developer organizations, and data operators. A key issue is who owns the data and who has the right to use or sell the data within MyData–based collaborative networks. It was mentioned in the interviews that *"consumers need someone who can take responsibility for their wellbeing during their whole life."*

However, the manager of an insurance company noted that "the insurance companies cannot take this role because people are so suspicious of insurance players." … *"They think that we just want to decrease our own costs."* This will leave room for private or public healthcare providers to create revenue through the new services that can be created through the MyData approach. It was evaluated that the key players who will buy new MyData-based services are individuals and employee organizations who will clearly benefit financially from new data-driven services.
Insurance players and health service providers can achieve the MyData transformation by opening the

interfaces and organizing hackathons to help developers build solutions. This means that in order to attract and retain customers, insurance companies can offer lowered prices for those who voluntarily share their health data. This results in lowered income in the form of insurance payments (the higher the risk indicators, the more one has to pay), but equally lowers the compensation paid to individuals. Thus in general, both losses and profits will decrease.

Discussion and Conclusions

Individuals cannot see or control the recorded data because of the outmoded business model that supports the current relationship between doctors and patients (Nash, 2018). A change is also happening through legislative changes, for example, the European data protection regulations called GDPR (https://eugdpr.org/). In fact, it is predicted that in the future, individuals or patients should no longer deny access to their own data because it will help them make better choices about their lives, get better decisions about their treatment, or in the preventive domain, about their health-related actions (Nash, 2018). The central goal of this article is to understand the business of insurance companies with a broader network view that emerges when the individuals' providers and data management approach of related services are taken into account.

Tax et al. (2013) note that gaining individuals' trust and confidence may be dependent on the firm's coordination and a harmonized approach to operate its network. This is in line with our study, which showed that the emergence and actors of the MyData operator and healthcare service providers direct affect the opportunity of insurance players to operate in its network where the MyData approach is used. MyData as a way to utilize data from individual organizational silos into an important, reusable, and shared resource was also acknowledged by insurance companies in order to build better, preventive healthcare services (Hood & Galas, 2008). *The* providers of human-centric services are thereby able to develop their service delivery networks even further into a sustainable sharing-based service network, which eventually leads to economic growth in the society as a whole (Poikola et al., 2014), but especially leading to improved and personalized health in all of us.

Implications

The results of the study thus indicate that the use of personal data and the coming of MyData may dramatically transform the business models of health insurance companies from a transaction-based to a service-based business. This will also influence business models of the other actors such as employee organizations, healthcare, service data and platform operators that are working in the same service delivery network. Thus, this study contributes to the business model transformation literature and practice by highlighting how insurance businesses are able to explore alternative business models by operating in service delivery networks.

On a practical level, our research shows that business model changes are difficult to conduct, especially in the health insurance market. Although the interviewed insurance players and their service delivery network actors could clearly see that the transformation towards MyData approach would clearly benefit individuals, allowing them better preventive support with a more coherent service offering, it was impossible for the interviewed insurance players to change the business model because of people's concerns and lack of trust related to data misuse as well as the lack of platform operator players in their network. This is the case, although data misuse is illegal for insurance players in many countries. Therefore, the only way insurance players have progressed with personal data use is through small test pilots in which people have collected personal data and given their permission for its use as well as organizing hackathons allowing app developers to build their solutions using health insurance data. Besides insurance players, it has been revealed in previous studies that it is also equally important also for the other players in the service delivery network or ecosystem that data protection issues are strongly communicated to the stakeholders so that people and professionals could really trust the handling of their personal data. Thus, similar concerns related to regulations and practices in the use of data applies to all stakeholders also in different contexts (Huhtala, 2018). As Ahokangas & Myllykoski (2014) noted, it is not clear how the eventual business model will turn out, but by experimenting, the data needed to justify the transformation into a service business can be gained. In our analysis, we went beyond the basic conceptual categorization of the business model and focused on a future approach of business models networked or in an ecosystemic context that targets operation in the commercial market as a way to achieve social goals to support healthcare for individuals. This is a research area that has only recently begun in the business model domain (see, e.g., Francis Gomes et al., 2017; 2018). In this context, the business model design is made using resources from different network actors (Zott & Amit, 2010), and the individual can be seen as a central resource provider of his own personal data.

According to Tax et al. (2013), the main reason for the importance of adopting a service network perspective is that individuals encounter many providers in pursuit of achieving their service goals. In our study, the service delivery network and customer-journey thinking helped participating players in the service delivery network to understand the potential opportunities as well as the risks in the MyData approach. To deliver a better customer experience, firms need to understand the entire constellation of service providers and their activities that help customers achieve their goals (Tax et al., 2013). In the MyData service networks, insurance companies could take a leading role. But in that role, they might have a competitive advantage in securing a customer's trust and confidence. Our findings show that while MyData offers insurance players many new opportunities to gain more information from individuals and create new type of services, it is also driving insurance companies to work more closely with MyData operators, data provider, organizations and healthcare providers in their networks. From a broader perspective, in the EU area, GDPR has already identified specific conditions for personal data processing and consent that is making the MyData approach possible. According to this new law, organizations can already use personal data (1) if they have the proven consent for the potential data usage, and (2) if they take care of proper data portability and properly maintain the data (Tikkinen-Piri et al., 2018).

Because the MyData approach mixes players from the public and private sectors, there are important policy implications for data regulation and legislation, as consent and control in the use of personal data is a central

aspect of MyData in its use by for-profit companies for business gains. By addressing an emergent phenomenon, this study contributes to the business model literature, especially on data sharing within data-driven business models. Thus, this study also contributes to data-based aspects of the sharing economy discussion as well.

Limitations and Future Research

The main limitations relate to empirical validity. As MyData is a still a paradigm, the results of this study still address the potential use and implications and cannot be validated through large-scale empirical studies. Similarly, as the project took place in the occupational healthcare sector, the implications for revenue models and competitive advantages for organizations also involve public institutions and healthcare providers. Hence, larger-scale future scenario work would be useful to validate the business potential of MyData, especially from the regulation and legislation points of view. The role of data protection laws are relevant, as they directly impact how companies may utilize private and sensitive data. Who eventually controls the use of and access to data?

It seems that data-driven business models will be mandatory in future insurance business. They will open new opportunities for new services and therefore help insurance players to remain a significant player in the preventive healthcare business. As Palo and Tähtinen (2013) noted, companies are challenged in how to adjust their business models and service development to the ever-changing business environment. In order to survive the upcoming change, the companies need to build a service architecture and platforms that are adaptable and easily connected or disconnected from the other organizations in their business ecosystems in order to allow smooth data usage and sharing. The Service delivery network approach may offer insurance companies the needed structure and role in the emerging MyData business. We have yet to see whether the findings of this study will soon become a reality in the health insurance business. In the meantime, further research in the design and orchestration of networks around MyData would be extremely valuable, especially from the point of view of the MyData operator business. Moreover, the voice of individual consumers from a user-driven innovation perspective could contribute to human-centric data management. Thus, more research is needed to understand what kind of role the individuals will play in MyData-based service networks.

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