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To Sell or Not to Sell? Drivers and Barriers to Direct Data Monetization in Incumbents

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Abstract

The rapid expansion of data along with the growing significance of analytics across various fields has led to direct data monetization, where data and data-driven products are exchanged for monetary value. Although data monetization provides incumbents with significant opportunities for new revenue streams, they move slowly in monetizing data. This study aims to identify the drivers and barriers to selling data in incumbents. Through a field study, we establish two comprehensive typologies of drivers and barriers. Our results show that endogenous factors, such as strategy and resource access, have a stronger impact on data monetization in incumbents than exogenous factors. Conversely, exogenous barriers, such as lack of demand and market immaturity, negatively affect data monetization more significantly than endogenous barriers. This study provides a deeper understanding of direct data monetization. It helps practitioners see different motivations and barriers related to data monetization, aiding them in scoping their data initiatives.

Keywords: Data Monetization, Selling Data, Incumbents

1. Introduction

Today, more and more industries and sectors are undergoing digital transformation, leading to increased data generation as more processes and activities become digitized. Consequently, another valuable byproduct is being generated: data. Meanwhile, recent advances in cloud computing and blockchain technologies make data exchange feasible among different firms (Firouzi et al., 2022). Thus, a new role of data is emerging: a primary asset that companies can productize and sell (Buff et al., 2015).

This phenomenon, in which data in some form is exchanged for monetary value, is one of the viable ways for companies to monetize data (hereafter referred to as direct data monetization) (Wixom et al., 2023). Direct data monetization is highly relevant for

incumbents since they typically generate large amounts of valuable data during their business operations and transactions that could be leveraged to generate new revenue streams (Mirbagherimarvili et al., 2022). This encompasses various types of data, such as purchase data, location data, equipment performance data, production data as well as customer activity data, and personal data (but they need to be aggregated and anonymized)(Glennon et al., 2022). While there are some successful examples of incumbents capitalizing on this opportunity (Lewis & McKone, 2016) –UnitedHealth’s resale of its data, for instance, generated significantly higher profit margins and growth rates compared to its core business – too few companies are fully taking advantage of it. Yet, to date, academia has predominantly focused on studying internal value creation from data, while research on capturing value from data by selling data remains in its infancy. The studies addressing the issue (Baecker et al., 2020; Hartmann et al., 2016; Najjar & Kettinger, 2013; Thomas & Leiponen, 2016; Wixom & Ross, 2017) have operated at the conceptual or anecdotal case-study level. Empirical investigations on the subject, however, have been conducted in only a limited number of studies (Günther et al., 2022; Parvinen, 2020; Thomas & Leiponen, 2016). They suggest that deriving value from data requires not only “high quality” data sources (Grover et al., 2018; Wixom & Ross, 2017) but also investment in various capabilities (Mirbagherimarvili et al., 2024). The literature, thus, partially explains why organizations wish to monetize data or fail to do so. Moreover, to our knowledge, drivers and barriers have not been identified or conceptualized as such. Understanding these factors is crucial as they influence and explain the process of data-based innovation and its results (Horváth & Szabó, 2019). Established organizations play a crucial role in the supply side of data markets and a thriving data ecosystem relies on their participation and data. To encourage their involvement in the emerging data economy, scholars in the field need to examine the motivations and barriers that affect their contribution. Therefore, this study answer

the following research question:

What are the drivers and barriers to direct data monetization within established organizations?

To gain such an understanding, we will build on previous literature mobilizing the driver and barrier approach (Dubouloz et al., 2021; Justy et al., 2023; Robert et al., 2024; Volkmar et al., 2022). This approach investigates the nature of drivers and perceived benefits and explores barriers that complicate or block the process of adopting technological innovations (Justy et al., 2023). We applied a qualitative methodology consisting of 11 interviews with data experts from various fields. We, then, analyzed the data to find incumbents' drivers and hindrances toward selling data and to categorize them following our study's theoretical framework. Our results show that internal drivers, particularly enhancing the core business outweigh external drivers. We also show that external barriers related to market immaturity influence direct data monetization more than internal barriers.

2. Theoretical Background

2.1. Approaches to monetizing data

Data monetization refers to capturing the value of data (Yang et al., 2021). Companies can derive value from data either internally, by improving existing processes and products (indirect data monetization), or externally, by developing new data-based offerings (direct data monetization) (Wixom & Ross, 2017). Numerous studies have explored how firms can derive value from data internally by enhancing business processes and decision-making (Chen et al., 2015; Lau et al., 2012; Teece & Linden, 2017; Van Rijmenam et al., 2019). More recently, scholars have begun investigating how organizations can leverage data to generate new revenue streams (Baecker et al., 2020; Davenport & Kudyba, 2016; Parvinen, 2020). Emerging insights suggest different approaches to direct data monetization. The most straightforward way to monetize a company's data is to sell it directly to another party, granting its ownership to the buyer so they can reuse it for their specific purposes (Baecker et al., 2020; Parvinen, 2020). Another approach includes selling data-based analyses but restricting the buyers' access to the original data (Thomas & Leiponen, 2016; Wiener et al., 2020). As a benefit compared to selling raw data, this approach better protects data's privacy and security as the data's owner does not change. Finally, organizations can use data to offer data-based services (Spijker, 2014; Thomas & Leiponen, 2016). Günther et al. (2022) for instance, studied how a postal service company used

their "mail order data" in a new service to identify relevant consumers for their business customers. What these different approaches have in common is that they focus on generating revenue through the sale of data offerings itself, rather than leveraging data to enhance internal processes and outcomes.

2.2. Driver and barrier approach applied to data monetization in incumbents.

Past research has suggested several major drivers and barriers to direct data monetization within incumbents (see Table 1). From a theoretical perspective, studying direct data monetization in incumbents is important since they have different characteristics compared to startups. Incumbents differentiate themselves in the way they develop new capabilities or reconfigure their current resources for advancing data monetization (Mirbagherimarvili et al., 2024). Furthermore, whereas start-ups have "the advantage of starting from a blank page" (Hartmann et al., 2016, p 1383), established firms are constrained by their existing organizational culture and structure (Mirbagherimarvili et al., 2022). These influence drivers and barriers to direct data monetization. Hence, studying data monetization in incumbents from a driver and barrier approach seems both relevant and timely. This approach helps to identify the drivers and barriers to innovation and understand their nature, significance, and impact (Lange et al., 2021). This approach has previously been adopted in research on the adoption of technological innovations (Cho et al., 2023; Raj et al., 2020; Robert et al., 2024; Volkmar et al., 2022). Thus, we believe this approach is also appropriate for studying direct data monetization in incumbents. A driver is defined as "an organizational state that activates the implementation of a strategy to achieve a goal" (Justy et al., 2023, page 3). A barrier, on the other hand, is an issue that complicates or blocks the innovation process, potentially causing significant delays or disruptions (Justy et al., 2023; Raj et al., 2020; Sahu et al., 2022). Understanding the factors that drive or hinder organizations from adopting technological innovations is crucial, as these factors can affect both the adoption process and its results (Battistoni et al., 2023; Cho et al., 2023). Thus, it is important to identify and describe the internal and external factors affecting direct data monetization.

3. Methodology

This study aims to enrich the literature on direct data monetization in incumbents by mobilizing a driver and barrier approach. Considering the novelty

Table 1: Identified drivers and barriers to direct data monetization in incumbents.

Drivers	Literature
Strategic alignment	Spijker (2014), Fadler et al. (2021), Mirbagherimarvili et al. (2024)
Revenue enhancement	Gebauer et al. (2020), Davenport and Kudyba (2016)
Moving into new industry contexts	Günther et al. (2017), Woerner and Wixom (2015), Parvinen (2020)
Enhancing customer experience	Davenport and Kudyba (2016), Gebauer et al. (2020), Günther et al. (2017), Alfaro et al. (2019), Ritala et al. (2024)
Ensuring high-quality data	Fadler et al. (2021)
Access to valuable data	Grover et al. (2018), Sterk et al. (2022), Fadler et al. (2021), Buff et al. (2015), Glennon et al. (2022), Lange et al. (2021), Günther et al. (2022), Schroeder (2016), Wixom & Ross (2017), Ritala et al. (2024)
Strong customer relationship	Buff et al. (2015), Mirbagherimarvili et al. (2024), Buff et al. (2015)
Enhanced IT infrastructure and analytic capabilities	Grover et al. (2018), Mirbagherimarvili et al. (2024)
Shifts in IT attitudes	Buff et al. (2015)
Being masters of the business processes that their offerings inform	Buff et al. (2015)
Clear use cases	Lange et al. (2021)
Environmental scanning activities	Buff et al. (2015), Mirbagherimarvili et al. (2024)
Competitive threats in the market	Parvinen (2020)
Evolving regulatory frameworks	Parvinen (2020), Mirbagherimarvili et al. (2024)
Barriers	
Conflicts between the core and the new data business	Lange et al. (2021), Mirbagherimarvili et al. (2022), Najjar and Kettinger (2013), Parvinen (2020), Wiener et al. (2020), Woerner and Wixom (2015)
Unclear use cases	Buff et al. (2015), Davenport and Kudyba (2016), Günther et al. (2017), Thomas and Leiponen (2016), Wiener et al. (2020), Wixom and Farrel (2019)
Security and privacy issues	Grover et al. (2018), Hanafizadeh and Harati Nik (2020), Mirbagherimarvili et al. (2022), Najjar and Kettinger (2013), Parvinen (2020), Schäfer et al. (2023), Schroeder (2016)
Data quality issues	Lange et al. (2021), Wiener et al. (2020)
Organizational culture	Grover et al. (2018), Lange et al. (2021), Mirbagherimarvili et al. (2022)
Lack of technical and analytical capabilities	Buff et al. (2015), Fruhwirth et al. (2018), Grover et al. (2018), Najjar and Kettinger (2013), Wixom et al. (2023)
Regulatory complexity	Fruhwirth et al. (2018), Mirbagherimarvili et al. (2022), Thomas and Leiponen (2016)

of the phenomenon, we adopt an exploratory qualitative research approach which is accepted in information systems research to answer "what" or "how" research questions (Edmondson & McManus, 2007), as is the case here. To collect data, we conducted eleven semi-structured narrative interviews (Eriksson & Kovalainen, 2015). We implemented a purposive research strategy (Frankel & Devers, 2000); thus, through desk searches and authors' networks, we searched for experienced professionals involved in direct data monetization initiatives. The experts were selected from incumbents from various industries interested in or engaged in direct data monetization initiatives. Table 1 provides an overview of all the interviewed experts. The interview guide was organized around theoretical themes from the literature and included a set of questions about the current situation of data business at the company, the various motivations behind direct data monetization, and the barriers to generating revenue from data. The

interview questions were designed to be open-ended and encouraged the participants to express their perspectives and thoughts freely. We collected all data between September 2022 and August 2023. The 11 interviews lasted from 45 to 90 minutes, were conducted online, and were recorded and transcribed.

Table 1: Interviewed experts

ID	Role	Industry	Experience
I1	Head of eCommerce Data and Analytics	Retail	9 years
I2	Division Manager	Retail	12 years
I3	Director, Loyalty Concept and Communications (2 interviews)	Retail	14 years
I4	Head of Data & AI Business (2 interviews)	Telecommunication	9 years

I5	Head of Data & Digital Marketing	Postal Service	7 years
I6	Product owner	Postal Service	5 years
I7	Product Manager	Postal Service	7 years
I8	Manager, Product and Services	Information Service	7 years
I9	Chief Information Officer	Manufacturing	14 years

We analyzed the collected data through the systematic and iterative process of open and selective coding (Corbin & Strauss, 2008) to categorize the empirical data into theoretical categories. We started by reading the manuscript for each interview, line by line, and conducting open coding, to create initial categories of drivers and barriers. Next, by seeking similarities and relationships between these open codes, they were sorted into axial codes (i.e., more general theoretical categories of driving and barrier factors). Finally, the last step of analysis consists of selective coding to aggregate the second-order categories into two general theoretical categories of drivers (endogenous and exogenous) and barriers (endogenous, exogenous, and Big Data attributes). The aggregated categories are grounded in the driver and barrier approach and are either directly or indirectly inspired by the typologies presented by Justy et al. (2023). Figure 1 and Figure 2 show the results of the data analysis process.

4. Results

4.1. The drivers to direct data monetization in incumbents

We identified endogenous drivers among incumbents related to strategy and organizational capabilities/resources, alongside exogenous drivers related to market and industry contexts (Figure 1).

4.1.1. Identification of endogenous drivers

Our results show that strategic drivers to enhance the core business, have primarily fueled new data initiatives in established companies rather than a distinct data monetization strategy. Several interviewees refer to this as their firms' primary driver of data monetization. As one interviewee said: *“The only guideline that we have from the strategic point of view is to find data solutions that enhance and boost the basic business of D. We don’t have a separate monetization strategy just because it is possible or*

cool. We want to find things that enhance the overall business of D”. –I5

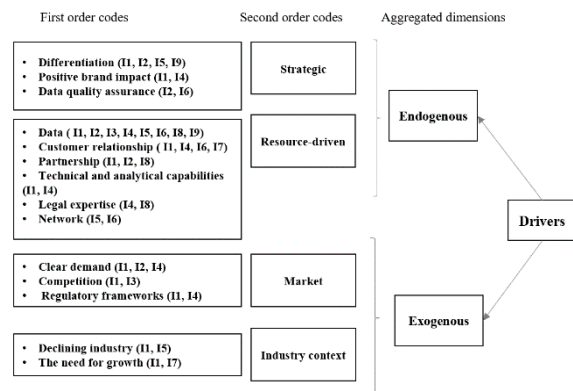


Figure 1: direct data monetization drivers in incumbents

Direct data monetization could support the main business in various ways. By offering innovative data-based services, companies can complement their traditional products and enrich the user experience. This leads to differentiation and customer loyalty, which in turn encourages companies to develop new data solutions. The following statement from one informant exemplifies this: *“That (differentiation) has always been and will be our interest to invest in this area. We are not the cheapest manufacturer; we don’t want to be and can’t ever be. But we want to provide the best value-added (data-based) services”.* – I9

Data monetization, thus, is gradually occurring in the manufacturing sector, typically achieved by enhancing physical products with data-based services (often referred to as servitization). In more advanced cases, customers integrate their systems with the manufacturing company which not only increases customers’ engagement but also provides the company with valuable data that could be used to extend the service even better for the customers. The company brand is another important area that could be positively impacted by developing new and innovative data solutions, as implied by one interviewee: *“These new (data) offerings will have an overall positive brand impact and that brand impact would also affect the B2C part of the business. So, although private customers are not buying our IOT services or crowd insight, if we have these and if we are being seen as innovative, it may help us to be selected by customers compared to our competitors”.* – I4

Advancing data monetization has the potential to benefit the main business through data quality assurance as according to interviewees, internal data hiccups and quality errors have a similar impact on the internal organization as they would on external parties.

Furthermore, interviewees referred to the existing organizational competencies as an evident factor that drives direct data monetization in their organizations. Concerning data as a key resource of any data monetization endeavor, incumbents in busy spots of the data value chain are in strategic positions to take advantage of the data they have access to. According to our results, access to certain types of data is the first stimulus to direct data monetization. Several interviewees pointed out that data monetization was a clear opportunity since they had a “rather unique data asset” – I8. Besides, companies with large data assets have more opportunities to monetize their data since they can offer a wider range of insights, services, and products to potential customers. Moreover, established companies, with well-known brands enjoy the benefits of having a very wide customer base. Having this customer base enables incumbents to both get ideas and requirements (for developing new and innovative data offerings) directly from customers and offer and advertise data products to them as an additional sale. Likewise, incumbents have an advantage in establishing the required partnerships to develop data offerings. Furthermore, companies could leverage their technical and analytical capabilities, developed over the years for acquiring and processing data for internal usage, in their external data monetization endeavors. Given the sensitive nature of data and various concerns about data privacy and security, having a big legal department was identified as another driver of data monetization in established firms. Interestingly, one of the interviewees highlighted the importance of maintaining longstanding connections with governmental institutions as a key factor that derived data monetization in their company.

4.1.2. Identification of exogenous drivers

Based on our results, the market can encourage direct data monetization, depending on factors such as customer demand and competition. A robust demand for specific types of data drives companies to sell it. One respondent described how the firm developed its data-based offering as a direct response to customer needs: *“It (data product) came naturally from the needs of our business customers.”* – I4

Likewise, firms could more easily start selling data to markets that have clear target groups and are already utilizing some forms of data in their operations rather than venturing into entirely new use cases or needs. Competition is another significant exogenous driver. When competitors in the same industry or market are capitalizing on emerging market trends or technological advancements by monetizing their data,

it signals to other organizations that similar opportunities exist. This will prompt them to assess their data assets for monetization potential. Fear of falling behind or losing market share motivates companies to explore data monetization opportunities, as one interviewee mentioned: *“If a competitor can respond to customer needs [through data offerings] that we haven’t, then we also should respond to the need.”* – I1

The industry context of incumbents also plays a crucial role in shaping their direct data monetization strategies and success. Industries facing decline explore possibilities for creating new data-based value propositions as a survival strategy. According to one interviewee: *“The traditional Telco businesses are gradually declining. There is heavy competition, and the market is saturated ... so, when the company wants to grow, it needs to find new business opportunities that are close to the core business.”* - I4

4.2. The barriers to direct data monetization in incumbents

Our results show that incumbents face endogenous barriers such as strategic, financial, cultural, and skills, exogenous barriers related to lack of demand and market immaturity, as well as data challenges in their path toward direct data monetization (Figure 2).

4.2.1. Identification of endogenous barriers

Our results show that incumbents face strategic, financial, cultural, and skills barriers in their path toward direct data monetization. Strategic misalignment between the data monetization strategy and the firms’ strategy negatively affects the development of data monetization. Sharing data with third parties, for instance, eliminates the competitive aspect of information and undermines the firms’ strategy. Additionally, our results show that data monetization initiatives are often deprioritized in strategic planning because the core business operations are considered more important. As one interviewee mentioned: *“The value and potential [of data monetization] are not seen as huge, and as a result, sometimes it is left aside..., also in the salespeople’s effort, and also in strategical development.”* - I2

The financial barrier is another significant endogenous barrier. Developing data initiatives requires significant investment in technology infrastructure and data governance. However, firms are often reluctant to invest heavily in data because of uncertain return on investment. As one informant said:

“Data quality is not a very hot topic or anything that any senior vice president would like to invest millions and millions because it sounds like you don't get anything out of it”. - I2

Established organizations face the challenge of adapting their long-standing organizational culture, which has evolved over the years to support the traditional business and may not align well with the goals of direct data monetization. Established organizations from traditional industries often lack knowledge and experience of data and data-based businesses. Aside from technical and analytical capabilities, roles related to sales and business development are essential to sell and advertise data offerings.

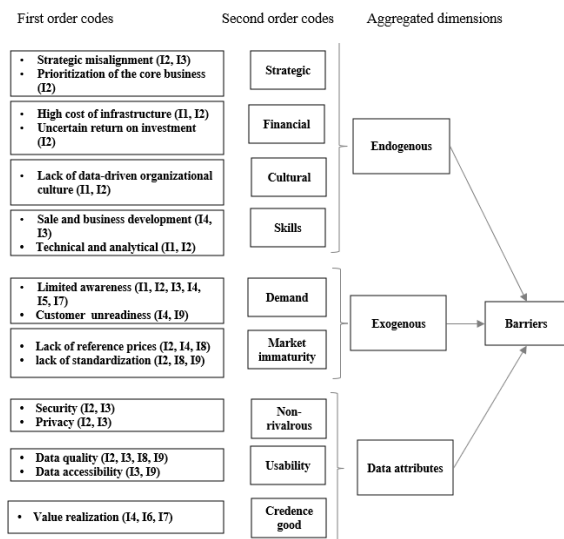


Figure 2: direct data monetization barriers in incumbents

4.2.2. Identification of exogenous barriers

We identified exogenous barriers related to demand, market immaturity, and data attributes. As the market for data and data-related services is still in its early stages of development, issues such as limited awareness, customer unreadiness, lack of reference prices, and lack of standards delay data monetization. Many potential data buyers and sellers are not fully aware of the value and potential applications of data. One respondent, for instance, said: “I don't know who would be the other parties that might be interested in buying the data we have.” - I2

Several other interviewees admitted that their company could not generate the expected revenue from data offerings when they were launched because they had overestimated the value for the customers. Indeed, it is not sufficient for data solutions to create added value; customers must also be ready to utilize

them. According to the interviewees, most of the potential data buyers do not have processes and capabilities in place to use the data meaningfully. Most of the technologies of the potential customers, for instance, are defined for the old data sources and they are not ready to develop API connections. We also found that companies have challenging discussions with clients because they don't understand the regulations and limitations so well. So, they need to educate them on what can and cannot be done.

Our empirical results show that market immaturity coincides with a lack of industry standards. If companies are to get money from external data users, they would expect a certain degree of data quality. However, “the first question is what the good enough level is.” - I2

Finally, the characteristics of data as an asset represent a barrier to direct data monetization. Data privacy poses a significant obstacle to monetizing personal data. As one informant said: “You can only use data for the purpose that you are collecting it. You need to explicitly ask for permission if you want to use it for other purposes ... and quite often companies, such as us, are not willing to ask for too many permissions because then the customers would not be willing to give them consent at all, or they will choose other players. Especially in Europe compared to the US people are much more concerned about how much data is ok to be collected from them.” - I6

Data quality is another major barrier to data monetization in incumbents, stemming from inconsistencies in the formatting of different datasets and because of generally bad practices in the way that data are collected and stored. For instance, one informant said: “Data quality is an issue for us, and I imagine it might be so for many retailers since we have thousands of suppliers and vendors” - I3

Another related issue is that of data accessibility. Data that is siloed in legacy systems and is inaccessible cannot be monetized. Incumbents also struggle to communicate the real value of data to potential buyers and if potential customers cannot perceive the direct benefits of the data, it will be challenging to sell it.

5. Discussion

Our study contributes to the IS literature by proposing new typologies of factors influencing direct data monetization among incumbents. We employ an original driver and barrier approach that provides an alternative to conventional theoretical frameworks on technological innovation. Figure 3 shows our proposed framework of the drivers and barriers to data monetization in incumbents. Following Justy et al.

(2023) we identified endogenous drivers among established firms related to strategy and organizational capabilities/resources and exogenous drivers related to market conditions and industry context. The literature suggests that the drivers for the internal use of data are

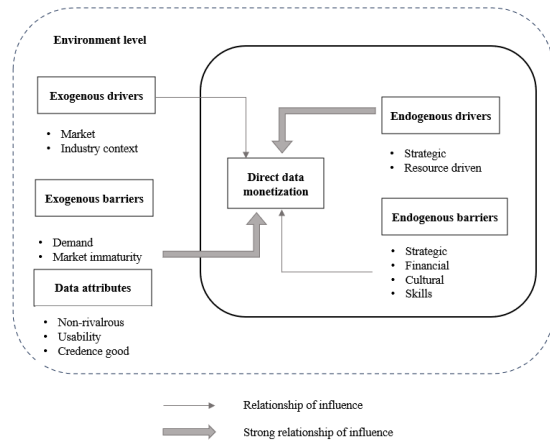


Figure 3: The drivers and barriers to data monetization in incumbents.

mainly endogenous (Rialti et al., 2019). Our findings similarly indicate that the drivers for direct data monetization are predominantly endogenous. Almost all interviewees refer to strategic and resource-based drivers as evident factors that prompt data monetization in their companies. In contrast, only interviewees from telecommunication and retail companies acknowledged that external factors, particularly a clear demand and competition have led them to advance data monetization in their firms.

While developing new data products could lead to new revenue streams, our results show that thus far, the primary driver of direct data monetization in traditional industries has been enhancing the core business. This aligns with the findings of Najjar and Kettinger (2013) who noted that companies are more likely to achieve foreseeable and quicker results by using data to improve internal processes and existing products rather than by developing new data offerings. Furthermore, since firms are uncertain about the payoff of data investment, data initiatives leveraging the existing organizational capabilities and resources are more likely to succeed. Considering that the value of data monetization primarily depends on a firm's data assets, the specific attributes of the available data drive data monetization in incumbents. According to Thomas et al. (2023) data quality is less about aligning with the consumer's personal preferences and more about aligning with the user's requirements in terms of data structure, format, coverage, and accuracy. Our results also indicate that access to such data gives

incumbents the stimulus to monetize data. Regarding coverage, for instance, larger companies have more opportunities to monetize data since they have the potential to leverage a vast amount of valuable data. Apart from internal factors, incumbents are externally driven by market conditions and the industry context. Our results show that companies are increasingly motivated to sell data that is already being utilized in some markets. This is because direct data monetization is an emerging part of the data market (Glennon et al., 2022) characterized by shifts in consumer behavior and rapid development. Thus, firms find it easier to begin selling data to markets that have clear target groups rather than venturing into new use cases. Regarding competition, our results indicate that incumbents are mostly driven to directly monetize data through imitation. Incumbents consistently monitor not only their competitors but also other global companies that are leveraging data in their industry to benchmark their strategies. Bresman (2013) refers to this approach as "vicarious learning" and notes that it is utilized by firms aiming for innovation. Conversely, developing data offerings out of fear of falling behind was mentioned only by one informant from the telecommunication industry. This stems from changing industry dynamics: while traditional telecommunication services are declining, data monetization offers new opportunities for revenue growth. Telecommunication companies may fear missing out on these opportunities and losing relevance in an evolving market landscape. In this regard, our findings complement the work of Maroufkhani et al. (2020) and Justy et al. (2023) by providing an analysis of the role of competition in data innovation adoption. Our findings emphasize the industry context as a significant factor influencing direct data monetization in incumbents. Data monetization is particularly important in declining industries, where companies seek alternative revenue streams to offset declining sales or market share. As traditional products face decreasing demand, companies need to innovate to survive. By integrating data-based services, traditional companies create value for their customers, differentiate themselves from competitors, and open up new revenue streams, ultimately driving innovation and growth.

Secondly, building on Justy et al. (2023), and complementing the research of Mirbagherimarvili et al. (2022) this research identifies endogenous, exogenous, and inherent barriers to data monetization in incumbents. Justy et al. (2023) suggest that endogenous barriers outweigh exogenous barriers in indirect data monetization. In contrast, our results show that external barriers, particularly market immaturity, have a greater impact than internal

barriers when it comes to direct data monetization. All the interviewees acknowledged that demand and market immaturity pose significant obstacles to direct data monetization in their industry. However, only three of them identified internal barriers as a challenge. In response to customers' unreadiness, companies are gradually changing their approach to data monetization by systematically mapping the customer journey. Indeed, it is important to identify the use case and the value of the data for potential customers before developing any data solutions. This way, companies could avoid the risk of developing data offerings that won't appeal to potential customers and as a result don't pay off.

Incumbents are internally hindered by strategic, financial, cultural, and skill barriers. Strategic misalignment, as well as the cannibalization effect (Gebauer et al., 2020), were identified as the most significant endogenous barriers toward direct data monetization in incumbents. As Najjar and Kettinger (2013) put it, companies could more easily achieve foreseeable and quicker outcomes by improving internal processes and current products rather than creating new data offerings. So, the lack of data business priority slows down data-related investments. This is in line with the literature on barriers to business model innovation (Chesbrough, 2010). The argument is that to maximize efficiency, companies need to specialize in one single business and cannot run two business models at the same time since they cannot reconfigure their existing resources to support the new business. Companies, thus, need to develop an approach to manage the possible conflicts. To achieve this, firms could take advantage of ambidexterity within their portfolio, implying a duality of change (Gebauer et al., 2020). Furthermore, the interviewees indicated that their companies did not see technical capabilities as issues, instead, they emphasized that transitioning from technical capability to commercializing the service and going to market represents a significant challenge. Regulation has been recognized as an obstacle to direct data monetization (Günther et al., 2022; Lange et al., 2021; Parvinen, 2020). On the contrary, our results show that regulations no longer pose a significant barrier to data monetization for incumbents; instead, new regulatory frameworks such as GDPR can serve as an opportunity for achieving a competitive advantage (Schäfer et al., 2023). Large companies often have extensive legal departments and significant legal expertise, enabling them to comply fostering trust and facilitating data-driven innovations. Finally, the characteristics of data as an asset pose a significant challenge to data monetization. Data is non-rivalrous (Romer, 1994); it can be used simultaneously by more than one party

and its value doesn't decrease with consumption. The non-rivalrous nature of data leads to simultaneous use, unlimited sharing, and ambiguous ownership (Pantelis & Aija, 2013); and increases the risk of unauthorized access, making robust security and privacy measures essential yet difficult to implement. Additionally, siloed and inaccurate data complicate the process of data monetization in incumbents. Furthermore, data tends to be an experience or even credence good. While the quality of an experience good is not observable before consumption, the value of a credence good (here data) is difficult to evaluate even after consumption. Thus, communicating the true value of data to potential buyers is a complex task (Spiekermann, 2019). Our study also suggests that there may be interactions between endogenous and exogenous factors within drivers and barriers. Our results show that endogenous drivers such as strategic significance or organizational resources could trigger the emergence of endogenous drivers such as demand. Incumbents, for instance, leverage their endogenous driver of strong customer relationships to educate potential customers about the benefits of data-driven offerings, encourage adoption, and build the market. Additionally, established companies can shape the market through their strong industry knowledge and relationships, brand recognition, and broad customer base. By actively listening to customer feedback and incorporating it into their data strategies, incumbents can not only meet customer needs but also stay ahead of market trends and influence the data landscape.

6. Implications, limitations, and avenues for future research

Our study has several implications for IS research and practice. Through an empirical investigation, we propose a new typology of factors that influence the sale and monetization of data in incumbents. By this, we answer the call for research to further explore companies' aspirations and impediments toward selling and monetizing data (Hasan & Legner, 2023; Parvinen, 2020). By adopting a driver and barrier approach, we contribute to the theory and enhance our understanding of the nature of these factors within incumbents. From a managerial perspective, we conclude that the success of direct data monetization in incumbents is influenced by various endogenous and exogenous factors. This helps managers better understand their organizations, identify critical success factors, align data monetization strategies with business strategies, and avoid costly failures in advancing direct data monetization.

As with any study, this study is not without limitations. One limitation of this research is the

limited number of interviewees. While the interviewees were carefully selected based on their expertise and relevance to the research topic, future studies with a broader range of interviewees from diverse settings will offer deeper insights. Future research with further interviewees from different divisions such as sales and marketing will provide more insight since data monetization is a complex process and involves different employees from various departments. In addition, our results mainly apply to companies that operate in the EU and operate under GDPR. It would have been insightful to interview experts from other countries than the EU to study whether the factors differ in different countries with different socio-economic conditions. Finally, future research could provide more insight by adopting a more dynamic view of the factors influencing direct data monetization in incumbents.

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