# IoT platform stickiness and positioning in the value chain

## considerations for a sub-supplier

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*Published in:*
International Journal Value Chain Management

*DOI:*
10.1504/IJVCM.2023.133077

*Publication date:*
2023

*Document version:*
Accepted manuscript

*Citation for pulished version (APA):*
Ulrich, A. M. D., Hollensen, S., & Eskerod, P. (2023). IoT platform stickiness and positioning in the value chain: considerations for a sub-supplier. *International Journal Value Chain Management*, *14*(3), 309-324. Article 4. https://doi.org/10.1504/IJVCM.2023.133077

**IoT Platform Stickiness and Positioning in the Value Chain:**

**Considerations for a Sub-Supplier**

**Abstract:** This article aimed to investigate strategic options for a sub-suppliers' position in the value chain regarding stickiness on IoT platforms. Findings from a qualitative explorative case study of two embedded cases reveal that IoT platform-based digital servitisation allows business model adaptations in the form of sub-suppliers moving forward in the value chain and getting closer to end customers – a more profitable position as sub-suppliers can add more services to their offerings. Our study describes how a digital servitisation process can involve IoT platforms. It highlights that a sub-supplier is in a trade-off decision, as the aim of getting closer (high stickiness) to end customers and consequently higher profit margins is connected to higher complexity and risks. In this context, selecting an IoT platform is a less risky 'in-between' option than selecting the traditional original equipment manufacturer business model regarding positioning further down the value chain.

**Keywords:** business model; trade-off decision; IoT; platform stickiness; value chain; downstream, digital servitisation; sub-supplier

## 1 Introduction

The possibility of changing and sharing digital data on common platforms, such as the Internet-of-Things (IoT), provides companies new options to create value for customers and maintain relationships in new ways (Kannan and Hongshuang, 2017). Lately, manufacturers, whether original equipment manufacturer (OEMs) or sub-suppliers, have been transforming themselves, from selling products and add-on services to providing integrated service solutions packages, with combinations of products, services, and software. This transformation from a product- to a service-dominant business model (often called SD Logic or SDL; Woodside and Sood, 2017) is called servitisation (Hasselblatt et al., 2018). Research reveals that established manufacturers (e.g. in the energy sector; Park, 2022) are adapting their business models to platform-based servitisation (Tian et al., 2021), with data-driven services driving a transformation that can be termed *digital servitisation* (Kowalkowski et al., 2022). Digital servitisation allows a sub-supplier to move forward in the value chain, thereby getting closer to the end customer and seemingly into a better, more profitable position, because they can build more services that can supplement their pure physical product offerings (Dawar, 2013; Porter, 2001).

Literature has drawn attention to the importance of 'going downstream' to provide highly profitable services, such as user-friendly products and designs, marketing, and branding (Davies, 2003; Wise and Baumgartner, 1999). However, going downstream and gaining more control of downstream value chain activities requires increased investments in branding, as it is connected to higher risks (Kolager et al., 2022). Although there may be multiple implications of moving forward in the value chain, the literature on this matter remains unclear.

To become successful as a sub-supplier in the context of IoT platforms, it is necessary for a company to identify how to add value by not only explicitly choosing among strategic options for its positioning in the value chain (Beverungen et al., 2021) but also taking strategic decisions about its relationships to the various participants on the platform (Hollensen et al., 2020). The latter issue includes choice of platform stickiness – that is, the aim of attracting and maintain new stakeholders on a platform (Hollensen et al., 2020, building on. Laczko et al., 2019).

This research provides empirically grounded knowledge on strategic options for sub-suppliers' positioning and platform stickiness when 'going downstream' in the value chain. The research question we seek to answer is:

When 'going downstream', *what are the strategic options for a sub-supplier's position in the value chain regarding stickiness on IoT platforms?*

We will discuss how a sub-supplier, can deal with a 'trade-off' regarding increased control and profitability versus increased investments and risk in branding and end-customer services.

This research paper fills a gap in the literature about handling this 'trade-off' and determines how an IoT platform and stickiness to different actors can help address this issue for a potential sub-supplier.

We employ qualitative methods to examine strategic options for sub-suppliers' positioning and platform stickiness in the value chain. A single case study with two embedded cases, each having an IoT platform, was selected for analyses. Although many prior studies have been conducted on this topic, research on positioning in the value chain has mainly focussed on the more traditional trade-off decision, without taking the IoT platform and stickiness to other actors into account. This study provides new practical and academic knowledge regarding trade-off decisions for sub-suppliers.

In the next section, we present relevant theories and concepts related to positioning in the value chain, IoT platforms, and IoT platform stickiness. Thereafter, we present the research design applied to undertake an empirical study and describe our results in a section on analysis and findings. This is followed by a discussion section and a conclusion.

## 2 Literature Review

### *2.1 Positioning in the Value Chain and Servitisation*

In addition to the classical Porter (2001) value chain, Stabell and Fjeldstad (1998) introduced two other value configurations: value shop and value network. All three configurations are based on value-creation logic: the value chain is grounded on the transformation of inputs into products and services; the value shop, on solving and resolving customer concerns; and the value network, on linking customers.

In Porter's (2001) value chain, the performance of value chain functions is sequential, but in Stabell and Fjeldstad's (1998), the value chain logic is more cyclic with five stages pertaining to the interaction with the customer: problem-finding, problem-solving, choice, execution, and control and evaluation. Simatupang et al. (2018) also proposed a value chain thinking framework based on usefulness as a business development guideline. This framework can serve as the basis for developing the company's value-creating activities, thereby improving value chain processes.

The greater focus on services has caused the process of value creation to shift from a goods-dominant logic (GDL), focusing on tangible goods, to a service-dominant logic (SDL), where manufacturers actively explore the opportunities of service-focused business models (Hein et al., 2019; Taipale-Erävala et al., 2021). From a servitisation perspective, manufacturers use their product offerings as the base to create new, advanced services (Kapoor et al., 2021).

Industry and company value chains are composed of two halves (Watanabe, 2015; 2017): upstream and downstream. Figure 1 depicts the two ends of a typical B2B value chain from sub-supplier to an end customer. Upstream companies (such as sub-suppliers) are mostly focused towards standardisation and efficiency, because they produce standardised commodity products, where low-cost capability is the key competitive driver. In contrast, downstream companies can create value by turning customers into partners (Kulkov et al., 2021). They can also add value to end customers together with other partners in the value chain by cooperating with distributors and customers on an IoT platform, for example.

Today, manufacturing companies (e.g. sub-suppliers of key components that are sold to the final OEM manufacturers, see Figure 1) face intensified competition, because many upstream activities– such as sourcing, production and logistics – are being commoditised. Upstream advantages are eroding over time, as competitors rapidly catch up on sourcing and production scale. As a result, the centre of gravity regarding creation of competitive advantage has tilted downstream, towards the customers, who may choose one brand over another, thus forming the basis for customer loyalty (Dawar, 2013).

[Insert Figure 1 about here]

There is an increasing consensus in the literature that companies are moving from GDL to SDL. According to the latter, value offered to customers (downstream) is always co-created as a result of interactions between multiple actors in the value chain and determined by the ultimate end customers through value-in-use. Value emerges during the actual usage process and use of a product in combination with service applications, rather than during the exchange process (Hartwig et al., 2021). Based on the positioning in the value chain, the sub-supplier can make a value proposition for a specific part of the final customer solution. Customers further downstream will then have to use the

offerings from the sub-suppliers and integrate them (together with other actors) into an end customer solution that is ready for further value generation through value-in-use. This value co-creation process is increasingly offered by technological IoT platforms and enhanced by digital technologies.

Servitisation is typically described on a continuum ranging from a purely GDL company to a purely service- and customer-focused SDL company (Huikkola et al., 2020). The term has gained increasing academic attention and is acknowledged as a central means to explain how a company can differentiate itself by bundling products, services, and software into an 'offering' that can generate competitive advantage (Vandermerwe and Rada, 1988). In order to effectively execute servitisation strategies, sub-suppliers must move downstream closer to the end customers (Wise and Baumgartner, 1999), as illustrated in Figure 1. It seems that manufacturing companies are increasingly integrating services in their core offerings, because services can generate sizable revenues and have higher margins than do the products themselves (Watanabe, 2015).

Today, the challenge for many sub-suppliers is to assist with building new business models and align with an array of partners to deliver a digital value proposition on an IoT platform. Consequently, if we extend servitisation into the digital world, we approach *digital servitisation*, which can be defined as the utilisation of digital technologies for transformational processes from a product-centric to a service-centric business model (Kowalkowski et al., 2022). When sub-suppliers consider offering digital servitisation on an international market, they may be integrated with their local partners, operating in a stable industry on the home market. Yet, for international markets, new and even non-traditional partnerships may be necessary. The challenge for such sub-suppliers is to reach and support customers globally, for which they will need partnerships to facilitate the sale and delivery of digital service offerings internationally (Kolager et al., 2022).

Findings reveal that many sub-suppliers who want to connect to their downstream customers face difficulties because the latter are not always interested in cooperating with the former with regard to developing new tailor-made customer solutions. It can be hard to demonstrate how sub-suppliers' products and services add value to the final customer solution. This lack of demonstrated perceived value often hinders communication and cooperation between sub-suppliers and their downstream customers (Hillebrand and Biemans, 2011).

Furthermore, a certain degree of control over the service value chain is required if complex services are to be offered successfully to end customers. Providing service solutions requires sub-suppliers to focus on customers' needs. These crucial concerns highlight the relevance of controlling how subsystems are coupled on the final customer platform. Such service solution investments often result in higher investments *and* risks for the sub-supplier (Huikkola et al., 2020).

In addition, the company should consider integrating 'branding' as the process of shaping the offering in the end customers' minds (Wichmann et al., 2022). By this understanding, a brand is a 'promise' to deliver something special and beneficial to the customer. However, as with the services, branding does not come from itself. Branding resources must be invested, which is also connected to higher risks.

### *2.2 IoT Platforms*

Incorporating a platform as a part of the service solution paves the way to new strategic opportunities for value co-creation (Lindhult et al., 2018; Vargo et al., 2015), delivering new outcomes such as data, information flows (Eloranta et al., 2016), and a company's positioning in the value chain (Beverungen et al., 2021). In other words, IoT technology is radically changing the way manufacturers create value for their customers and offer new opportunities for IoT services to form a more substantial part of the company's business model and profits (Hollensen et al., 2020). IoT is

understood as a network of physical objects or 'things' embedded with electronics, software, sensors, and connectivity to enable it to achieve greater value and service by exchanging data with the manufacturer, operator, or other connected devices (Kollolu, 2021). A platform is a fundamental part of the IoT network, delivering the central process and management, offering vertical services to the end-users/customers by providing appropriate tools, and performing computation for device and data lifecycle management (from sensor networks to end users/customers) (Hein et al., 2019).

A platform is defined as a configuration design for products, services, and infrastructure, facilitating stakeholders' interaction (Löfberg and Åkesson, 2018). The platform concept within the business discipline has developed since the 1990s, when the primary focus was on product platforms that describe how companies achieve cost savings and benefit from adopting in-house modular architecture for their product development process (Cusumano, 2010). Later, with advancements in technological competences and the rise of the internet, the concept of 'industry platform' was proposed (Gawer and Cusumano, 2002). Similar to an in-house product platform, an industry platform offers a common base (often technological) that an organisation can reuse in different product variations (Cusumano, 2010). Based on the need for a more holistic view on technological industry platforms, Gawer (2014) distinguishes between three main categories of internal, supply chain, and industry platforms.

To keep up with the rapidly growing number of interlinked 'things' in the IoT, the IoT platform develops and offer various options to connect physical with digital spheres (Leminen et al., 2020). Several definitions with different views have been provided in scientific articles for IoT platforms, each of which focuses on specific aspects. Some view IoT platforms as middleware and infrastructure that provides connectivity between the end user and smart things (Mineraud et al., 2016), while others view them as software that delivers a cloud-based tool with specific IoT applications. Gubbi et al. (2013), Weinberger et al. (2014) and Sruthi and Kavitha (2016) define the IoT platform as a cloud-

based platform that delivers services such as data analysis, business analysis, and declaration management. Nalini and Suvithavani (2017) describe the IoT platform based on the focus of gathering data in the IoT ecosystem.

All platforms share data and other resources that can be used by all stakeholders. In the context of IoT platform technology, business models are concerned with how technological potential can be translated into how organisations create and capture value (Iivari et al., 2016).

### *2.3 Platform Stickiness*

When including an IoT platform in a company's business model, explicit decisions on the company's relationships to the various participants on the platform must be taken (Hollensen et al., 2020). *Platform stickiness*, originally defined as *'[the] central actor's ability to continuously attract new and maintain existing stakeholders within a platform through the effective orchestration of value co-creation'* (Laczko et al., 2019, p. 216), can be a helpful concept to support these decisions.

In line with Hollensen et al. (2020), we replace *ability* with *aim* in this definition; that is, the decisions concern how the focal company, for example a sub-supplier, aims or seeks to relate to the various participants. In other words, it represents how the company aims to add value through its relationships to the other participants positioned in the value chain (Beverungen et al., 2021).

## 3 Research Methodology

### *3.1 Research Approach and Selection of Cases*

The aim of the paper is to discuss and provide theoretical as well as empirically grounded knowledge on strategic options for sub-suppliers' positioning and platform stickiness in the value chain by conducting a qualitative explorative case study (Eisenhardt, 1989; 2021) with two embedded cases (sub-cases within the case company). In line with Eisenhardt (1989; 2021) we conduct within-case and cross-case analyses to develop theory. Figure 2 depicts the research model – comprising the

research design, data collection, and analysis choices – and the means by which we reach a conclusion to present the theoretical and managerial implications.

[Insert Figure 2 about here]

In accordance with Siggelkow (2007) we selected cases that were powerful and rich for analysing the conceptual problem. The selected company LINAK A/S represents a powerful case context to highlight how the complexity on different types of platforms and differences across industries open various strategic options for sub-suppliers' positioning and platform stickiness in the value chain.

LINAK (n.d.) is a Danish sub-supplier of intelligent systems for healthcare applications and office workstations on the business-to-business (B2B) market. Core customers are OEMs of hospital beds and office desks. In recent years, LINAK has positioned itself as a service rather than a product provider. In 2020, it had 2,360 employees, with its total revenue being EUR 564 million and net profits (after tax) being EUR 74 million.

A key challenge for LINAK as sub-supplier of linear actuators is that the starting point is difficult. Fundamentally, LINAK is a sub-supplier positioned in the beginning of the value chain, where the competition is tough (with regard to the supply to key OEMs) and the profit margin is low.

*3.2 Data Collection and Analysis*

In 2020, a sample of two business units within LINAK (Deskline and Medline) were selected for case analysis. The main selection criterion was the implementation of an IoT platform by both business units, which changed their business models and would therefore fit as embedded cases rich in relevant information. The two cases were suitable for sharpening the view and enabling conceptual sensitivity in the analyses. They cases contain collaboration with more partners – an indicator for more

complexity and platform coordination (Hollensen et al., 2020) – and were concerned with two different industries.

Primary and secondary data were collected for the investigation. The secondary data consisted of different online sources, internal strategic presentations, and descriptions of the two relevant divisions. Regarding the sampling, group and semi-structured qualitative interviews were conducted between 2020 and 2021 through face-to-face or telephonic interviews with key actors from the company. We selected managers with special knowledge about IoT platforms and high influence in decision making. The interviewees included the following formal positions involved in strategic decision making: international director, head of the Medline division, and head of the Deskline division. In total, five interviews each lasting 1.5–2 hours were conducted. The authors also participated in two group meetings/presentations (each lasting 4 hours) focusing on the strategic development of the two divisions. Semi-structured interview guides were employed. An interview protocol that facilitated similar procedures was followed (Yin, 2017). All interviews were recorded, transcribed, coded, and analysed. Interview transcriptions and field notes were produced. To ensure validity of data, face-to-face interviews and secondary data were compared. In line with Myers (2020), a hierarchical codebook was used in the coding and interpreting process, organised in two steps (King et al., 2018). With descriptive coding, text passages were broken down into information according to platform stickiness and positioning in the value chain. Subsequently, interpretive coding was used to obtain information related to complexity, risk, data/information, and business model (Bizzi and Langley, 2012). This process reduced data misunderstanding, increased the validity of the findings, and validated the information received from various sources. A follow-up dialogue to discuss preliminary findings was then carried out. In the embedded cases, different choices of positioning in the value chain and platform stickiness were identified.

## 4 Description of the Two Cases

### *4.1 LINAK case 1: Medline*

The first LINAK case is based on LINAK's Medline division, which sells actuators, such as hospital beds, to the hospital sector. Here, LINAK is moving forward in the value chain by adding and offering an IoT-based cloud platform for data exchange with OEMs (e.g. hospital bed producers) and third parties. This can be done by installing different sensors in the hospital bed (see Figure 3).

[Insert Figure 3 about here]

The sensors can measure different health data of the patient who then can get a better diagnosis by third parties. In this way, LINAK can increase stickiness to its key OEM customers – the hospital bed manufacturer. LINAK does not pursue contact with the end customers (hospitals) or the end users (hospital patients). Instead, it offers an IoT cloud platform, where health data can be exchanged by other parties. As an interviewee stated: *'So what we have focused on is providing solutions and a platform on which our OEMs can enter the market with the solutions they find are right for them and their business'* (Medline interviewee 1).

By paying a subscription fee, OEMs can use and exchange data on this IoT platform. This has resulted in increasing interdependence and 'stickiness' between LINAK and the OEMs that use the IoT platform.

It was explained as follows: 'W*hat we want to achieve with our digital services … is that we want to build a closer bond with our customers, to protect our core business …it will not be for free, but it will not be a new profit centre, at least not from the beginning'* (Medline interviewee 2).

*4.2 LINAK case 2: Deskline*

The second LINAK case is based on LINAK's Deskline division, which sells linear actuators to OEMs that manufacture desks for offices. The purpose of the actuator is to lift the desk, so that its height fits the user's ergonomic needs. Compared to the Medline case, LINAK is getting closer to the end customers in this case by co-owning an IoT-based desk booking platform, together with the Dutch company GoBright (n.d.) (see Figure 4), which has formed an alliance with not only LINAK but also other companies that are connected to desk booking and office building management.

[Insert Figure 4 about here]

These companies collaborate to offer a total office booking system that is integrated with the overall building management system. Consequently, through this alliance, LINAK is moving further 'downstream' towards the end customers, that is office building owners or schools, where the administration primarily functions as buyers (end customers) of office desks, while the employees in these offices function as end consumers/end users. LINAK and its partners have to consider the building owners' needs in the design of the specific office and desk booking system. LINAK is also expanding its role as sub-supplier, from being a manufacturer of the original linear actuator to providing a service solution related to desk and office booking for the building owners. As an interviewee stated: '*The larger perspective is that we [will get] control over [i.e. contact with] the part of the end customer base that demands a booking-service system, which we do not have today'* (Deskline interviewee 1).

This has increased LINAK's 'stickiness' with end customers. This shift of role from product manufacturer to service provider while moving forward in the value chain has also necessitated a deeper understanding of the end customers' needs and requirements.

## 5 Main Findings

Increasing competition in offering standard components such as LINAK linear actuators to OEMs (manufacturers of hospital beds and office desks) motivates LINAK to move into servitisation, where it (as the sub-supplier) moves forward in the value chain, utilising servitisation with the aim of achieving a higher degree of stickiness to the end customer (see Table 1).

[Insert Table 1 about here]

Our findings reveal that the further LINAK moves towards increasing stickiness in end customers' relationships, the greater are the complexity and risks involved.

Table 1 depicts LINAK's minimal movement towards the end customers in the Medline case, although LINAK's cooperation with GoBright in the Deskline case has resulted in a larger movement towards the end customers. This larger movement has consequently resulted in greater stickiness to end customers and thereby lower stickiness with OEMs. However, this larger movement (right column) has also resulted in higher complexity and risks, as LINAK is highly dependent on GoBright's ability to sell desk booking systems to building/office owners.

In the Medline case, the IoT platform provides the possibility of data exchange with the end-customer (hospitals). The reason LINAK has chosen minimal movement (and not pursue the highest possible profit margins) is that the hospital sector represents a much higher liability risk if relevant data for medical issues are lost or wrongly interpreted. Consequently, LINAK avoids this higher risk by not exchanging relevant medical data and only providing service-related data of hospital beds. As the manager of the Medline division explains: *'We [LINAK] are not interested in placing medical data in the cloud because if someone uses or misinterprets these data, we can be held responsible for that and it is too risky'* (Medline interviewee 2).

## 6 Conclusion

In addressing the research question (*What are the strategic options for a sub-supplier's position in the value chain regarding stickiness on IOT platforms?*), we conclude that in a servitisation process involving IoT platforms, a sub-supplier is in a trade-off decision, where the aim of getting closer (high stickiness) to its end customers and consequently to higher profit margins is connected to higher complexity and risks. Achieving 'high stickiness' further down in the value chain to the end customers has a 'price' – more complexity and risks. The strategic choice of being involved on an IoT platform represents an 'in-between' way to get a closer contact (high stickiness) to the immediate customer – the OEM.

Furthermore, the IoT platform partners' service contributions may help the sub-supplier upgrade the general service level towards the end customers, consequently lowering the risks of increasing downstream investments in branding and services. In this way, the traditional 'trade-off' problem for the sub-supplier (when 'going downstream') is partly solved by co-creating value on the IoT platform together with a pool of B2B solution providers.

This reflects the main managerial implication of our research. Further managerial implications for the sub-supplier are provided in section 6.2.

### *6.1 Theoretical implications*

Digitalising IoT platforms has led many sub-suppliers to move down the value chain, from product- to service-centric offerings. This trend has been described as servitisation. Following the 'value chain thinking' about value creation and capture for stakeholders (Simatupang et al., 2017; 2018), our findings demonstrate the need for sub-suppliers to develop capabilities to offer downstream digital

solutions to the end customers (digital servitisation), together with partners on an IoT platform. By being close to the end customers, the sub-suppliers can increase the stickiness to their partners on the IoT platform, consequently revealing to the end customers how they can contribute value to the final customer solution. A clear and differentiated contribution will make it harder for partners and end customers to substitute the sub-supplier with another one. This distinct sub-supplier contribution and the wish to take control requires heavy investments in configuring services and in the branding process, thereby imparting a more distinct profile of the sub-supplier not only on the IoT platform but also to the end customers. However, these initiatives may increase the sub-supplier's risks of moving downstream in the servitisation direction. Our findings reveal that the supplier's risk perception may vary from one industry to another. The LINAK case shows that the risk of moving downstream is different in the office equipment industry compared with the hospital sector. The different risk perception may also be dependent on the varying levels of digital service contribution of partners on IoT platforms in different industries (Kolagar et al., 2022). If IoT platform partners' digital service contribution is high, the sub-supplier may feel that the partners can help upgrade the service level of the sub-supplier, which consequently lowers the risk perception.

### *6.2 Managerial implications*

Our research highlights issues related to how a specific stakeholder, the sub-supplier (in our case, LINAK Deskline), can move forward in the value chain, by co-creating value on a platform together with a pool of B2B solution providers.

Our conceptualisation thereby expands the theory of business platform models by applying it to a sub-supplier context. The B2B customer may source value from a pool of offerings that are available on the business platform. These offerings are then combined into the platform owner brand (in this

case, GoBright), and the question in this connection is whether the sub-supplier's brand (in this case LINAK) will consequently lose brand power. There is no doubt that the trend of 'platformisation' (Wichmann et al., 2022) with intensified competition has exerted additional pressure on the traditional product brand, thereby diminishing the role of the traditional brand (Gielens and Steenkamp, 2019). However, in line with Wichmann et al. (2022), our analysis shows that the sub-supplier's brand value, perceived by the business customers (in the LINAK Deskline case) is retained and extended, not diminished. In the LINAK Deskline case, GoBright is dependent on LINAK's brand power. It is decisive to GoBright that LINAK is part of the total service solution, due to technical requirements, which are illustrated by this quote: *'Our advantage is that GoBright's systems only work with LINAK's systems, so we are also making sure that if there are inquiries from a second channel to GoBright ... then GoBright will ask us [LINAK]... otherwise, they cannot solve it for customers'* (Deskline Manager 1).

This quote also reveals that LINAK is aware of the risk of having very high stickiness to GoBright and, in this way, be locked in a position where they are completely dependent on GoBright.

A step further regarding extension of the sub-supplier's brand (in this case, LINAK) could be to launch a brand platform that is owned by the brand manufacturer itself (in this case, LINAK) and built around a product-based business case. For LINAK, it means gradually expanding brand offerings by integrating an increasing number of service elements from other partners into its own sub-supplier (LINAK) platform with total service solutions for key customers and other stakeholders.

However, time, resources, and investments are needed to build the required infrastructure and capabilities on the platform, while bearing the risk of competitors occupying larger market shares in the meantime.

Clearly, this illustrates the ‘trade-off’ that ambitious sub-supplier brands face. If they are risk averse, they should choose the ‘safe’ strategy and implement the LINAK Medline platform solution.

### *6.3 Limitations and future research*

A key limitation of the research is that the findings are based on a single case study, which does not represent all types of OEMs on the B2B market. Moreover, it was not possible to interview other stakeholders than OEMs. The research, therefore, do not include the end customer’s perspective.

Further research could shed light on the sub-supplier’s trade-off issue by ‘going downstream’ by describing the benefits of a better branding profile and stickiness to the end customers, compared with increased investments and risk perception. A question to be explored is: To what degree can the development of stickiness on the IoT platform help with compensating for the increased investments in building relationships with the end customers?

This question can be analysed across different industries and IoT platforms, as different levels of platform stickiness, branding power, complexity of customer solutions, etc. are expected influence the pros and cons of ‘going downstream’ in an IoT platform context.

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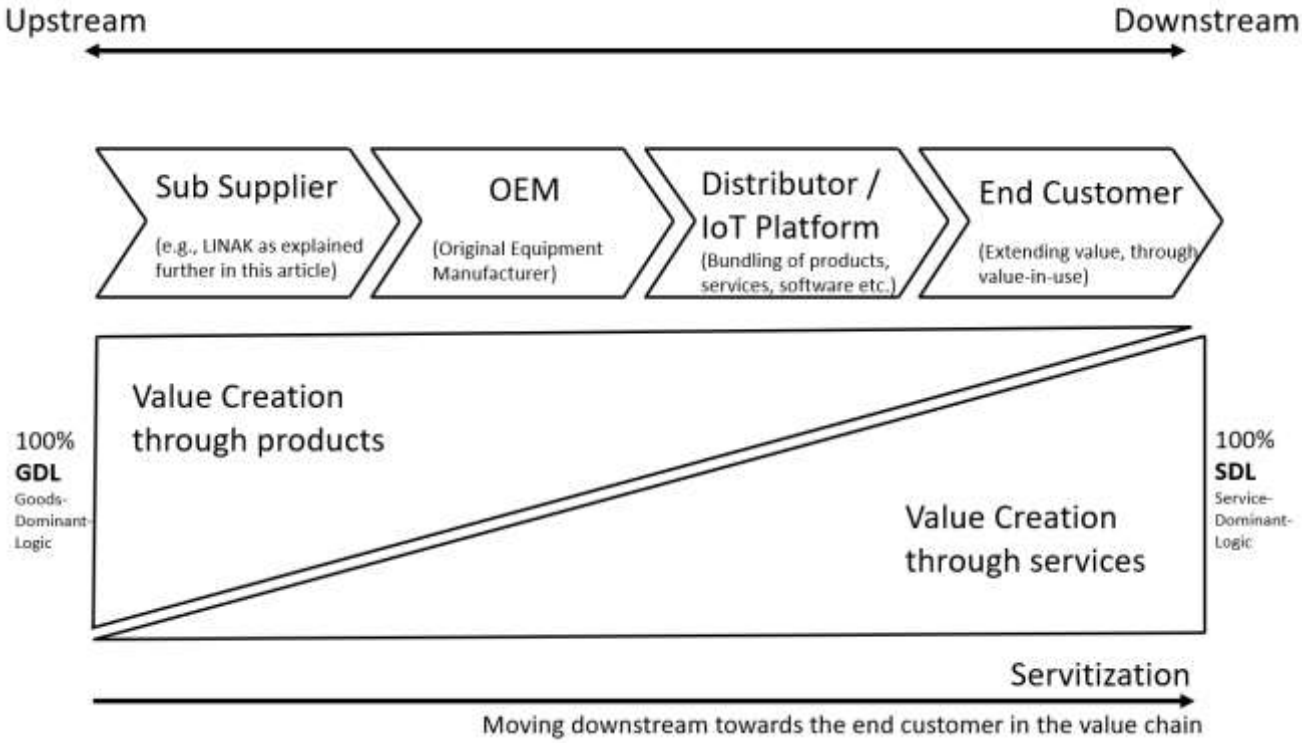
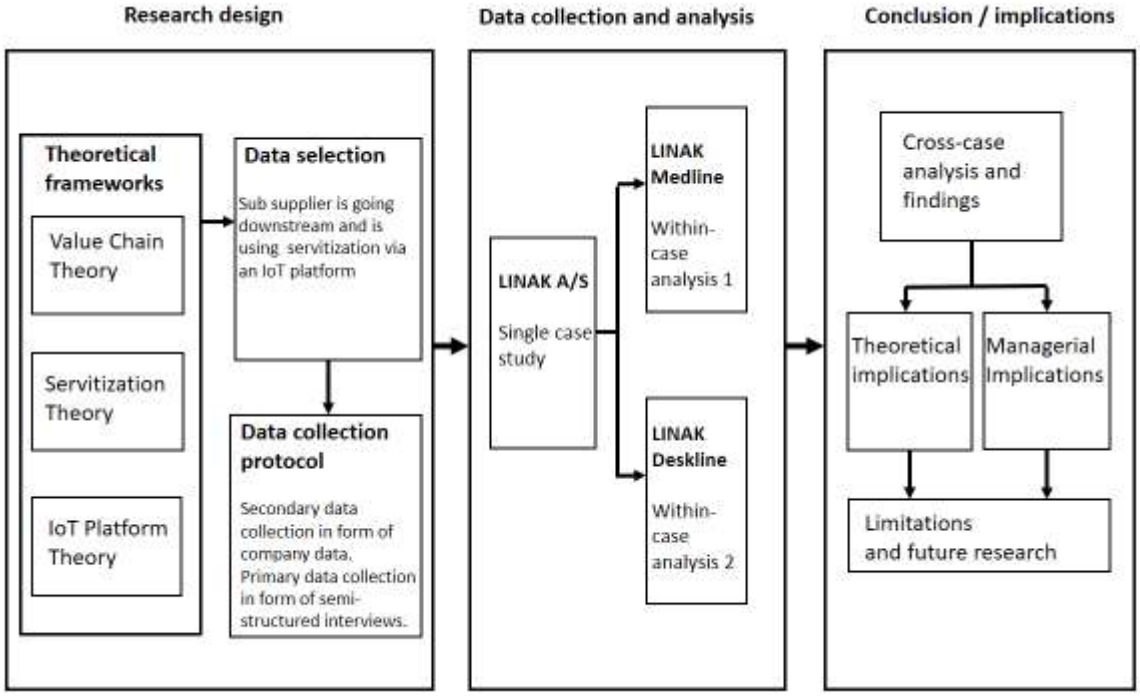
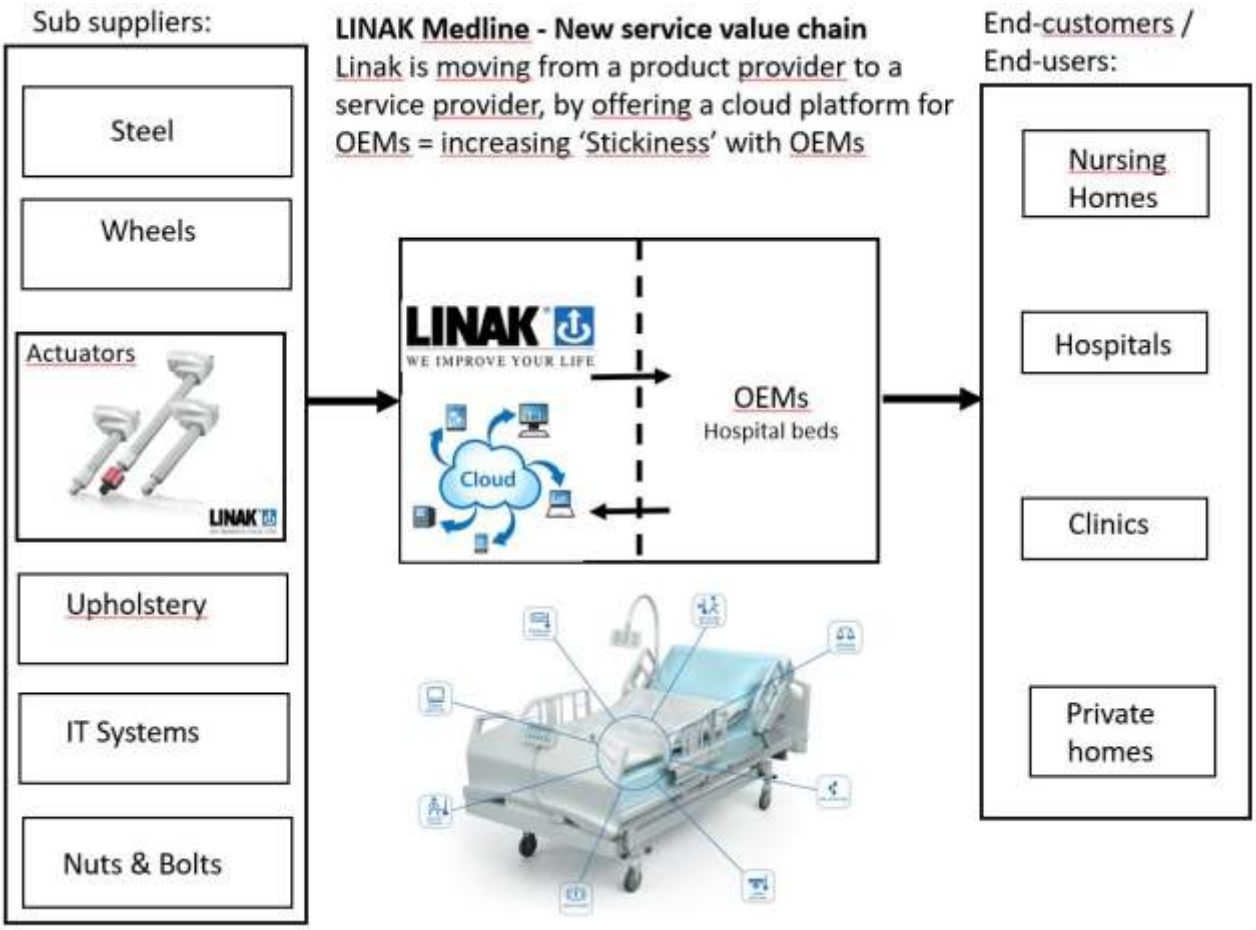
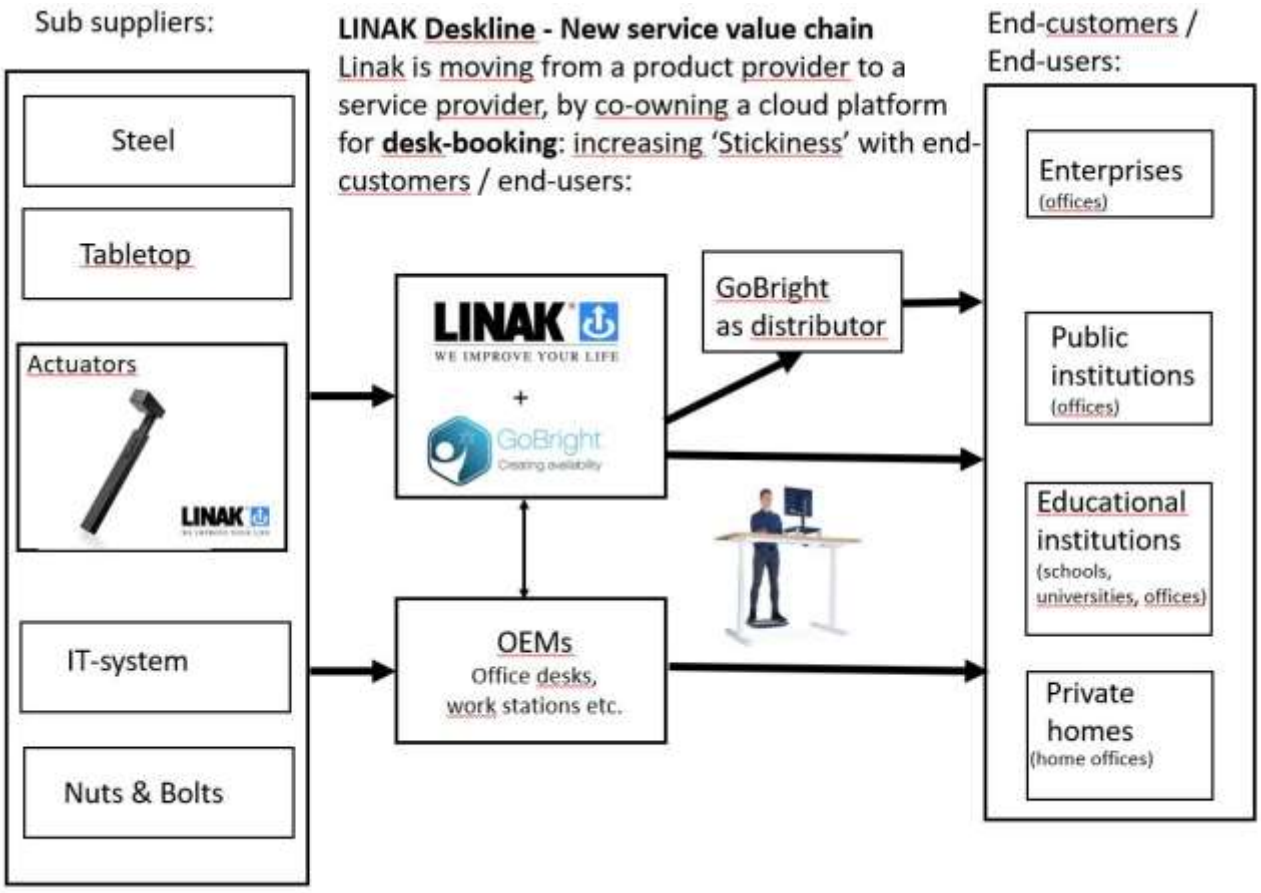
**Table 1** Positioning and stickiness on IoT platforms

| | LINAK Medline | LINAK Deskline |
|---|---|---|
| LINAK's position & movement in the value chain | **Platform role:** Selling data to OEMs, with minimal movement to the end-customer | **Platform role:** Together with GoBright - LINAK is selling a combination of products and services, moving much closer to the end-customer |
| Platform stickiness with OEMs | **High** | **Low** |
| Platform stickiness with end-customers | **Low** | **High** |
| Complexity and risk | **Low** (the new extra income stream is not influencing LINAK's role as a sub supplier) | **High** (highly dependent on GoBright's ability to sell desk booking systems to building / office owners) |


Upstream
Downstream
Sub Supplier
(e.g., LINAK as explained further in this article)
OEM
(Original Equipment Manufacturer)
Distributor / IoT Platform
(Bundling of products, services, software etc.)
End Customer
(Extending value, through value-in-use)
Value Creation through products
Value Creation through services
100%
GDL
Goods-Dominant-Logic
100%
SDL
Service-Dominant-Logic
Servitization
Moving downstream towards the end customer in the value chain


Research design
Data collection and analysis
Conclusion / implications
Theoretical frameworks
Value Chain Theory
Servitization Theory
IoT Platform Theory
Data selection
Sub supplier is going downstream and is using servitization via an IoT platform
Data collection protocol
Secondary data collection in form of company data. Primary data collection in form of semi-structured interviews.
LINAK A/S
Single case study
LINAK Medline
Within-case analysis 1
LINAK Deskline
Within-case analysis 2
Cross-case analysis and findings
Theoretical implications
Managerial Implications
Limitations and future research


Sub suppliers:
Steel
Wheels
Actuators
Upholstery
IT Systems
Nuts & Bolts
LINAK Medline - New service value chain
Linak is moving from a product provider to a service provider, by offering a cloud platform for OEMs = increasing 'Stickiness' with OEMs
LINAK
WE IMPROVE YOUR LIFE
Cloud
OEMs
Hospital beds
End-customers / End-users:
Nursing Homes
Hospitals
Clinics
Private homes


Sub suppliers:
Steel
Tabletop
Actuators
LINAK
IT-system
Nuts & Bolts
LINAK Deskline - New service value chain
Linak is moving from a product provider to a service provider, by co-owning a cloud platform for desk-booking: increasing 'Stickiness' with end-customers / end-users:
LINAK
WE IMPROVE YOUR LIFE
+
GoBright
GoBright as distributor
OEMs
Office desks, work stations etc.
End-customers / End-users:
Enterprises (offices)
Public institutions (offices)
Educational institutions (schools, universities, offices)
Private homes (home offices)