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Relational Transformation 4.0

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By Anmar
Kamalaldin, Lina
Linde, David Sjödin,
Vinit Parida &
Pejvak Oghazi

In light of industry 4.0, industrial relationships are increasingly moving away from transactional product-centric models to relational service-oriented engagement enabled by digital technologies. This trend is referred to as “digital servitization”, which requires significant relational transformation that allows both the provider and customer to secure return on their investment.

Digital servitization is a concept that encapsulates the transformation in processes, capabilities, and offerings within industrial firms and their extended ecosystems of partners, in order to progressively create, deliver, and capture higher service value from enabling digital technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI). An example is ABB’s remote optimization service which is offered through its collaborative operations centers for gearless mill drives, capitalizing on the efficiencies of digital technologies.

Typically, providers adopt a digital servitization strategy to create a competitive advantage that differentiates them from competitors and open the door for new revenue streams. This, however, necessitates closer collaborations with their customers, as digital services require providers to undertake larger responsibility for the customer’s core processes. Thus, provider-customer relationships must transform to one that is based on co-creation logic and long-term commitment. However, this is not always easy, and companies may struggle with many relational challenges such as: how to balance risk and reward, how to find the appropriate customization level, how to ensure transparency and data sharing, and how to integrate digital systems.

To address these challenges and understand how providers and customers transform their relationships, we conducted in-depth qualitative study of multiple industrial relationships in various industries in Sweden. By applying the perspective of the relational view, which emphasizes the importance of joint inputs of partners, we identified four relational components that enable providers and customers to profit from digital servitization. These are: *complementary digitalization capabilities, relation-specific digital assets, digitally enabled knowledge-sharing routines, and partnership governance*.

We summarize our insights in this article and present a *relational transformation framework for digital servitization*. The framework is presented in Figure 1 which shows how the four relational components evolve as the relationship progresses across three phases (*foundational, intermediate, and advanced*), where each phase builds on the other. The framework emphasizes that *complementary digitalization capabilities* are the main trigger for initiating and preserving a digital servitization relationship, thus, complementarity is the foundation for partnership. In order to move this partnership forward, partners must continue to invest in *relation-specific digital assets*, and *enhance digitally enabled knowledge-sharing routines*, in order to maximize the potential of their relationship. What is more, *partnership governance* must be gradually transformed to a relational trust-based approach to fully leverage digitaliza-

tion potential. Further elaboration is provided below.

Complementary digitalization capabilities

Having specialized expertise and competences is necessary for implementing and profiting from digital technologies. When a company does not have all the required digitalization capabilities (e.g. data analytics), it fills the gap by partnering with other companies. Thus, complementary digitalization capabilities are the trigger for initiating and preserving the relationship.

Therefore, if a digital servitization relationship is to be initiated, partners should evaluate the benefits of combining provider’s digital expertise and customer’s operational business knowledge. Given the rapid development of digital technologies, it is important to continue to monitor the evolution of partner’s capabilities and reassess complementarity throughout the relationship.

An example from our study was of a mining company that complemented its knowledge on mining processes with its provider’s knowledge on digital mining equipment and control systems to improve efficiency through digital services. Besides, this complementarity was reassessed for each new project.

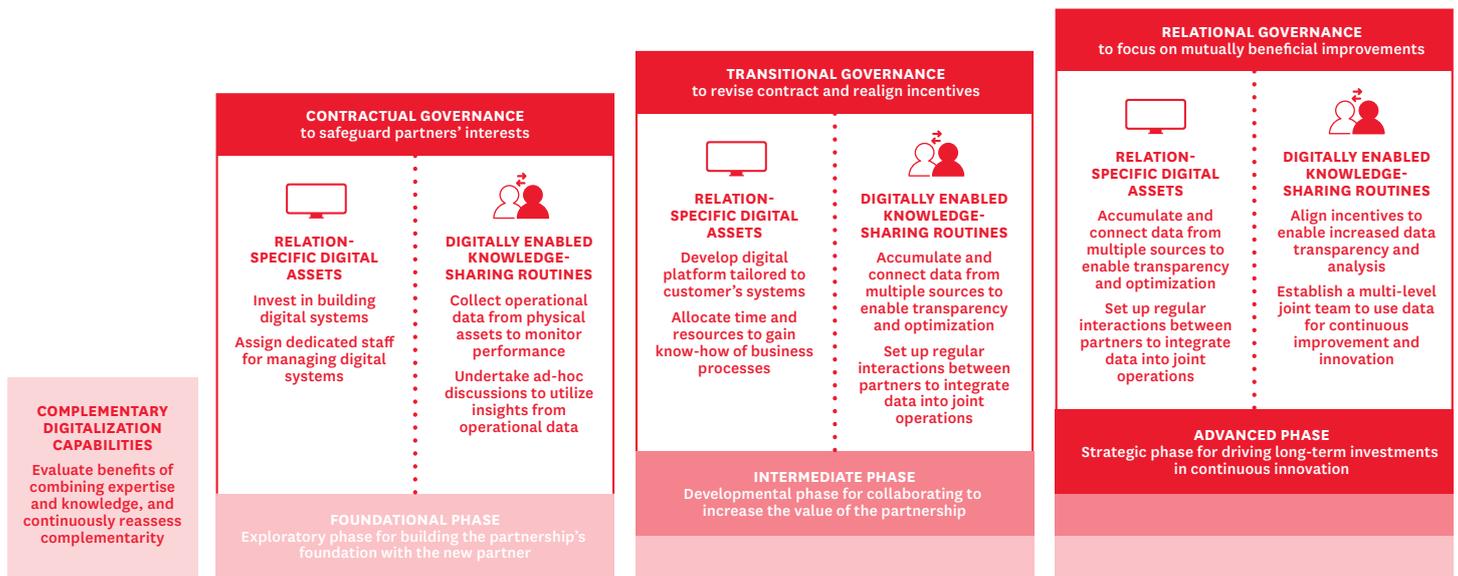
Relation-specific digital assets

When complementarity is present, partners are motivated to invest in relation-specific digital assets. These are specialized assets of strategic importance for the relationship. They include physical assets such as machinery, as well as human assets such as know-how and staff dedicated to drive digitalization within the relationship. In particular, partners gradually invest in aligning digital technologies, but also in developing digital competence throughout the relationship.

At the *foundational phase* of the relationship, partners’ investments in relation-specific digital assets are greatly focused on building the digital systems required for providing the digital services (e.g. installing sensors). To facilitate this, dedicated staff are assigned to manage digital systems and services. When partners enter an *intermediate phase* of the relationship, their focus shifts to developing a tailored digital platform that facilitates the implementation of digital services across functions. Furthermore, they dedicate more resources for improving staff’s know-how of business processes and digital operations, which may open up new opportunities. At an *advanced phase*, the digital platform can become an enabler for further efficiency improvement and offer customization, and a joint analytics team is often established to keep track of key operations.

RECOMMENDED READINGS

- > Dyer, J. H., Singh, H., & Hesterly, W. S. (2018). The relational view revisited: A dynamic perspective on value creation and value capture. *Strategic Management Journal*, 39(12), 3140-3162. <https://doi.org/10.1002/smj.2785>
- > Kamalaldin, A., Linde, L., Sjödin, D., & Parida, V. (2020). Transforming provider-customer relationships in digital servitization: A relational view on digitalization. *Industrial Marketing Management* (in press). <https://doi.org/10.1016/j.indmarman.2020.02.004>
- > Sjödin, D., Parida, V., Kohtamäki, M., & Wincet, J. (2020). An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research*, 112(5), 478-491. <https://doi.org/10.1016/j.jbusres.2020.01.009>



An example was of an energy and utilities company that partnered with a provider of automation technologies. At the *foundational phase* of their relationship, the provider's applications were built on the digital systems of the energy company, and designated engineers were assigned for joint operations. At an *intermediate phase*, a joint digitalization center was established, and a digital platform was developed. This platform was further developed at an *advanced phase* of the relationship to enable identifying operational problems such as water leakage positions. Besides, a joint team was established for developing solutions.

Digitally enabled knowledge-sharing routines

In addition to investing in relation-specific assets, partners should also set-up knowledge-sharing processes and routines. These are purposefully designed processes and interactions that facilitate specialized knowledge exchange between partners. These routines are unsurprisingly digitally enabled and data driven in this type of relationships, as real-time data is automatically generated, collected, analyzed, and transformed into knowledge through smart hardware and analytical software. Needless to say, data has little value if not transformed into valuable insights and actions. Therefore, partners should not only enhance transparency in knowledge-sharing, but also develop processes for utilizing data and knowledge, and these should progressively evolve over time.

At the foundational phase of the relationship, the focus is on collecting data from physical assets to monitor performance in

support of the digital services. Insights from operational data tend to be utilized in an ad-hoc and unstructured way at this phase. However, the *intermediate phase*, partners shift focus from monitoring to optimizing operations through accumulating and connecting data from multiple sources, (e.g. the whole fleet of machines). Also, regular interactions become more structured to better utilize joint operational data. At an advanced phase of the partnership, the focus of knowledge-sharing routines shifts from coordination to integration, as partners' incentives are aligned to permit comprehensive data exchange and analysis for mutual benefits. Partners may establish a joint R&D team to foster continuous innovation and improvement through effective use of data and knowledge.

An example from the forestry industry was of a company that, together with an equipment provider, installed the software and hardware needed for monitoring machines' performance and calibration, which was a basis for knowledge-sharing and ad-hoc discussions of production efficiency. At the intermediate phase of the relationship, data was accumulated from diverse machines of different brands for enabling better site management. Moreover, semi-annual meetings were held between the forestry company's operators and the equipment provider's mechanics in order to discuss performance improvements. At the advanced phase, partners integrated their data to facilitate operator training program and digital service package. A joint team was also formed to discuss further data integration opportunities and explore latest digital innovations in the forestry industry.

Partnership governance

Governance may be considered as the key differentiator in digital servitization relationships, as it is the safeguard for enforcing what partners have agreed on. Governance mechanisms include formal means such as legal contracts and financial penalties, but also informal safeguards like goodwill, trust, and reputation. A central paradox in governing a digitalization partnership is related to balancing between control and flexibility, since the latter is necessary for innovation and exploiting new digital opportunities.

At the *foundational phase* of the relationship, partners are inclined to initiate a highly *contractual governance* approach with high level of control to safeguard their interests. As the relationship develops and reaches an *intermediate phase*, partners may consider adding contractual incentives to enable a transition to a partnership of trust. Thus, they establish a *transitional governance* approach to revise the contract and realign incentives. When the relationship progresses well towards the *advanced phase*, partners set up a *relational governance* approach that is based on trust with no tight control. This enables them to focus on mutually beneficial improvements rather than on monitoring partner's behavior.

We found a good example from the telecom industry that shows how governance approach can develop. At the foundational phase of their relationship, the contract between a telecom equipment provider and a network provider was laid out in meticulous details, including tight boundary conditions and back-stops. At the intermediate phase, they revised the contract to incorporate a 'reward-penalty' mechanism for aligning incentives, and data-driven KPIs formed a basis for contract re-negotiation. At the advanced phase, governance transformed towards an emphasis on relational benefits and maintaining a "win-win" situation in contract implementation.

A relational transformation framework for digital servitization

We hope that our framework and insights can guide companies wanting to develop their business relationships to transform towards digital servitization. The framework highlights what to focus on at different phases of the partnership, hence, it can help managers to prioritize resources and make more informed decisions. It is important to note that focusing on one relational component to the neglect of the other might hinder the generation of the desired value. Thus, it is vital to take all relational components into consideration when discussing and negotiating how to move forward with digital servitization.

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ANMAR KAMALALDIN

anmar.kamalaldin@ltu.se

PhD Candidate, Entrepreneurship & Innovation, Luleå University of Technology. His research focuses on industrial relationships and innovation ecosystems in digital servitization context.



LINA LINDE

lina.linde@ltu.se

PhD Candidate, Entrepreneurship & Innovation, Luleå University of Technology. Her research focuses on business model innovation and innovation ecosystems in digital servitization context.



DAVID SJÖDIN

david.sjodin@ltu.se

Associate Professor, Entrepreneurship & Innovation, Luleå University of Technology. David Sjödin (Ph.D.) is an associate professor of entrepreneurship and innovation at Luleå University of Technology. He researches

questions about how companies can change their business to profit from digitalization through servitization and business model innovation in collaboration with leading Swedish companies and regularly consult the industry.



VINIT PARIDA

vinit.parida@ltu.se

Chaired Professor, Entrepreneurship & Innovation, Luleå University of Technology. Vinit Parida is chaired professor of entrepreneurship and innovation at Luleå University of Technology. His researches subjects

are about how companies can evolve their business to higher profitability with digitalization through servitization and business model innovation in collaboration with leading companies in different industrial sectors.



PEJVAK OGHAZI

pejvak.oghazi@sh.se

Pejvak Oghazi Professor and Head of Department, School of Social Sciences, Södertörn University. His research centers around business model transformation with focus on profitability and sustainability, supply chain

management and omni-sided retail platforms. Professor Oghazi's research activities are industry oriented with a focus on to support and prepare industries with applications to meet the challenges of the future.