

The Human Side of Service Engineering



AHFE 2025 International Conference

July 26-30, 2025 - Orlando, Florida



Data Analytics/Submissions:



Data Analytics /Global Participation:



12th International Conference on The Human Side of Service Engineering

Shaping Digital Transformation beyond Circularity



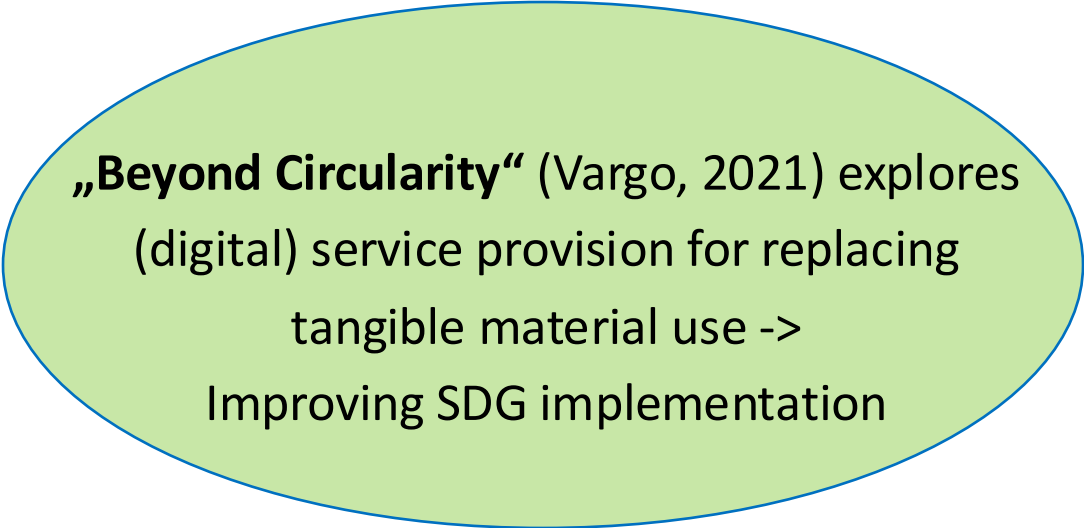
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Institut für Service Design, Hamburg

Challenge, Inspiration & Research Question

Challenge „Digital Transformation“

“**Digital Transformation**” is defined "as a process where digital technologies create ... new value creation paths" (Vial, 2019).

Inspiration „Beyond Circularity“

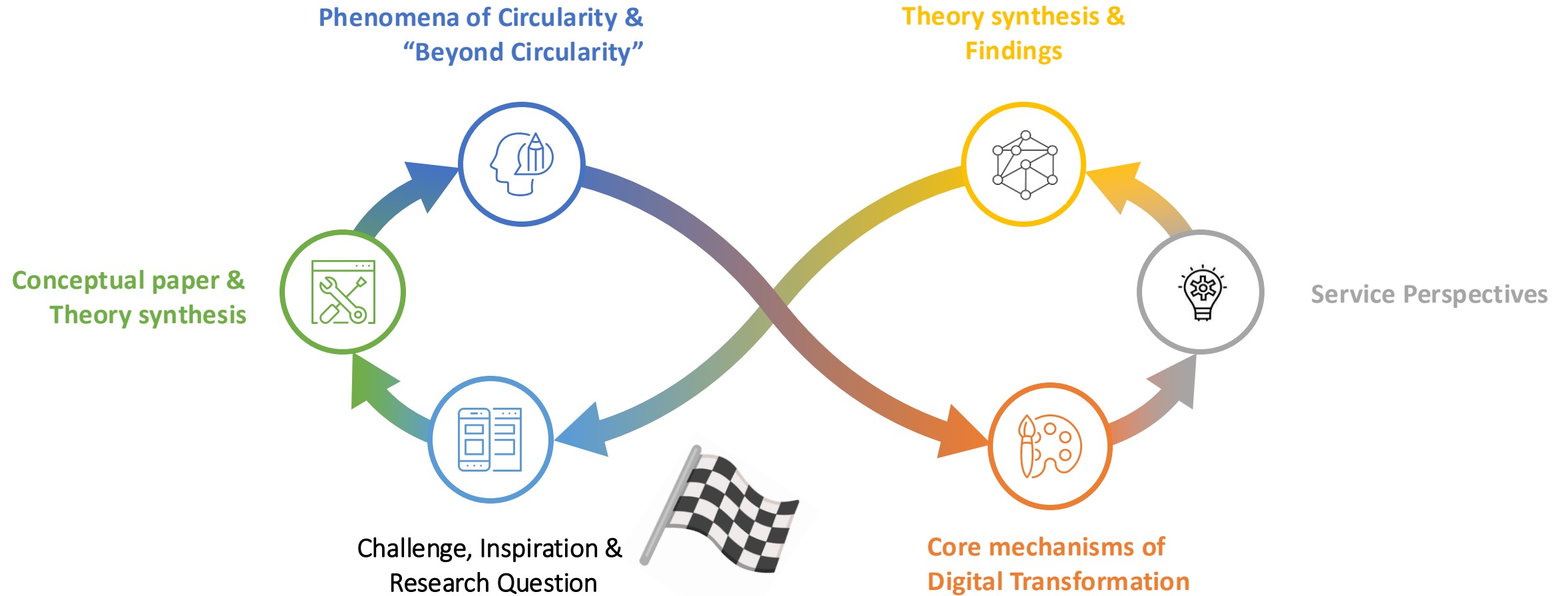


„**Beyond Circularity**“ (Vargo, 2021) explores (digital) service provision for replacing tangible material use -> Improving SDG implementation

Research Question:

How to shape Digital Transformation beyond Circularity?

Agenda: Shaping Digital Transformation beyond Circularity



01 Methodology

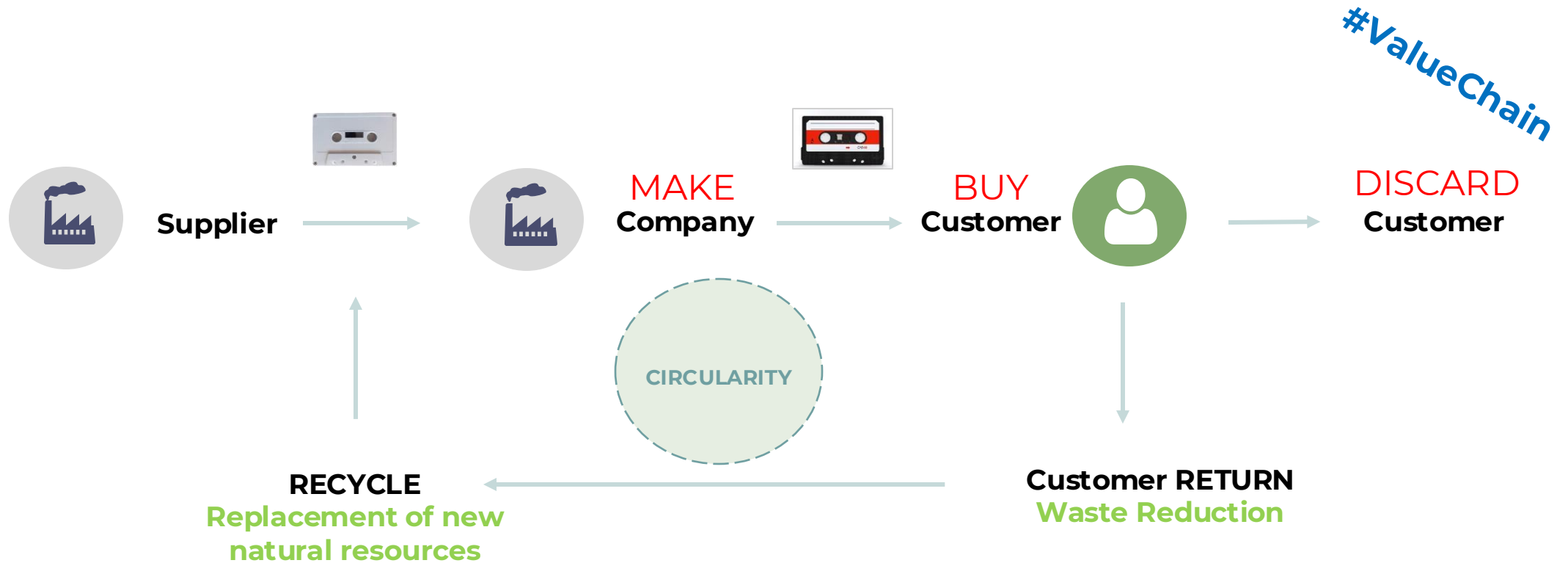
Conceptual paper

- A **conceptual paper** with **theory synthesis as research design** is picked to achieve conceptual integration across multiple theories and concepts.
- To outline, structure and understand the fragmented field of **digital transformation**, its nature, mechanism and its effects, **literature reviews** are applied as domain theory: Vial (Vial, 2019), Nadkarni (Nadkarni & Prügl, 2021), and Hanelt (Hanelt et al., 2021).
- For carving out the key dimensions and value constellations of **service, service provision**, value cocreation and service innovations **Service-Dominant Logic, Service Science and Service Dominant Architecture** are chosen as method theories.
- Through **theory synthesis as conceptual integration** of the different perspectives, theoretical **knowledge and implications for the practical implementation of "shaping the digital transformation beyond circularity"** should be built up.

02 Phenomenon of “Circularity”

Circularity as a consequence of a Goods-Dominant Mindset:

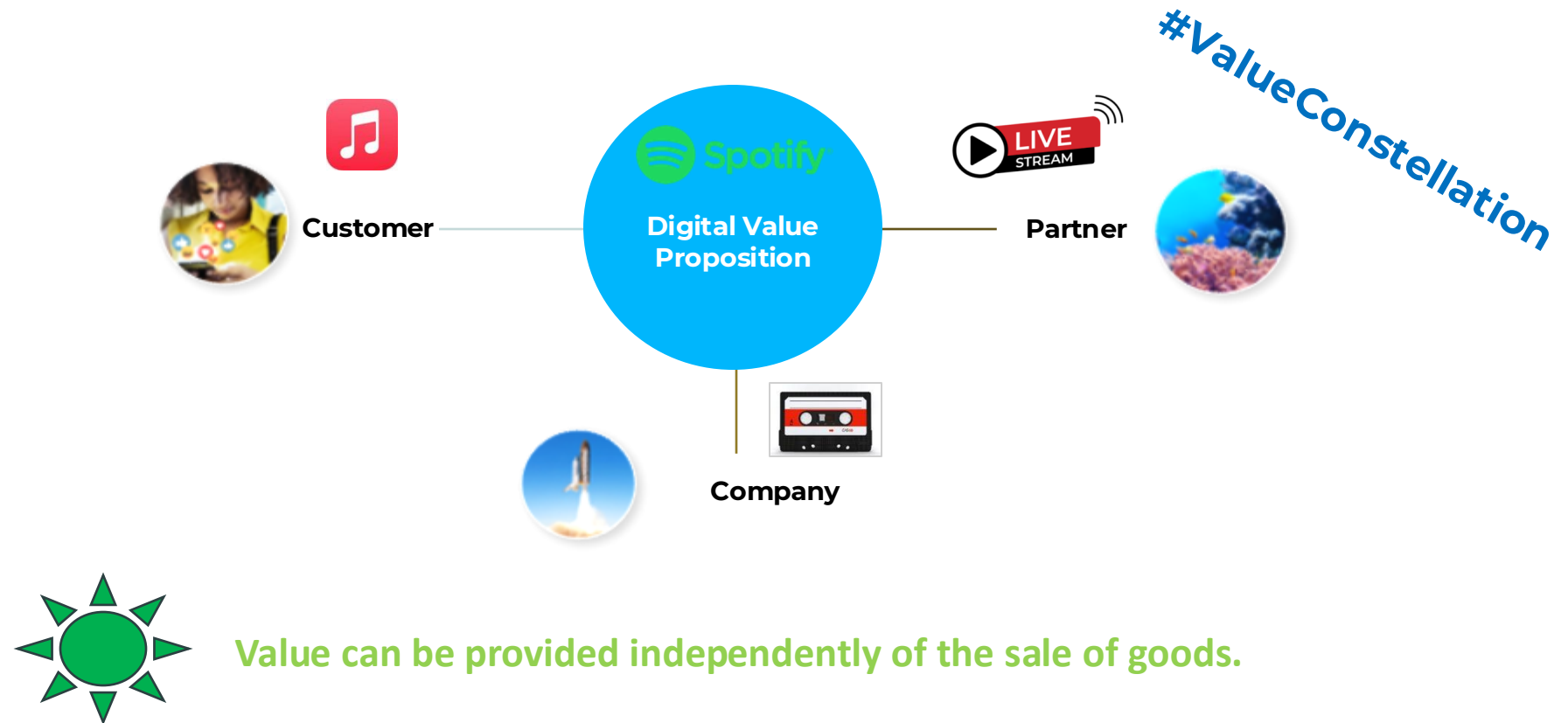
Value is generated by the producer and embedded in tangible products.



Inspite of the intuitive appeal of circularity, it perpetuates the goods-dominant model which is at the root of unsustainability.

02 Phenomenon of “Beyond Circularity”

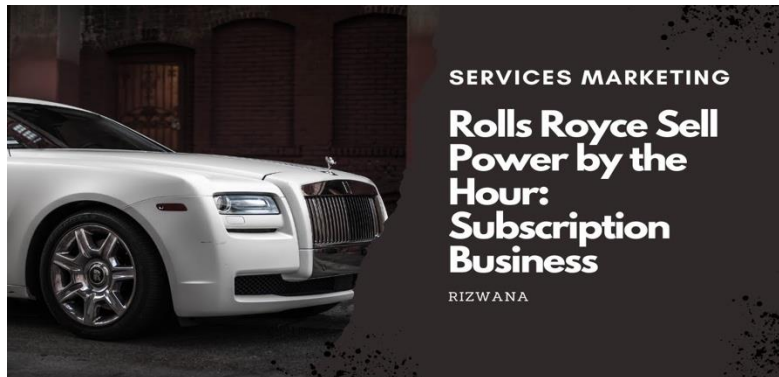
Beyond Circularity is about digital service provision instead of embedding it into material resources. Characterized by a Service-Dominant Mindset.



03 Phenomenon of “Beyond Circularity”

Digitization fosters the transformation from G-D to S-D business models.

#serviceprovision



Rolls Royce offers maintenance and spare parts on subscription

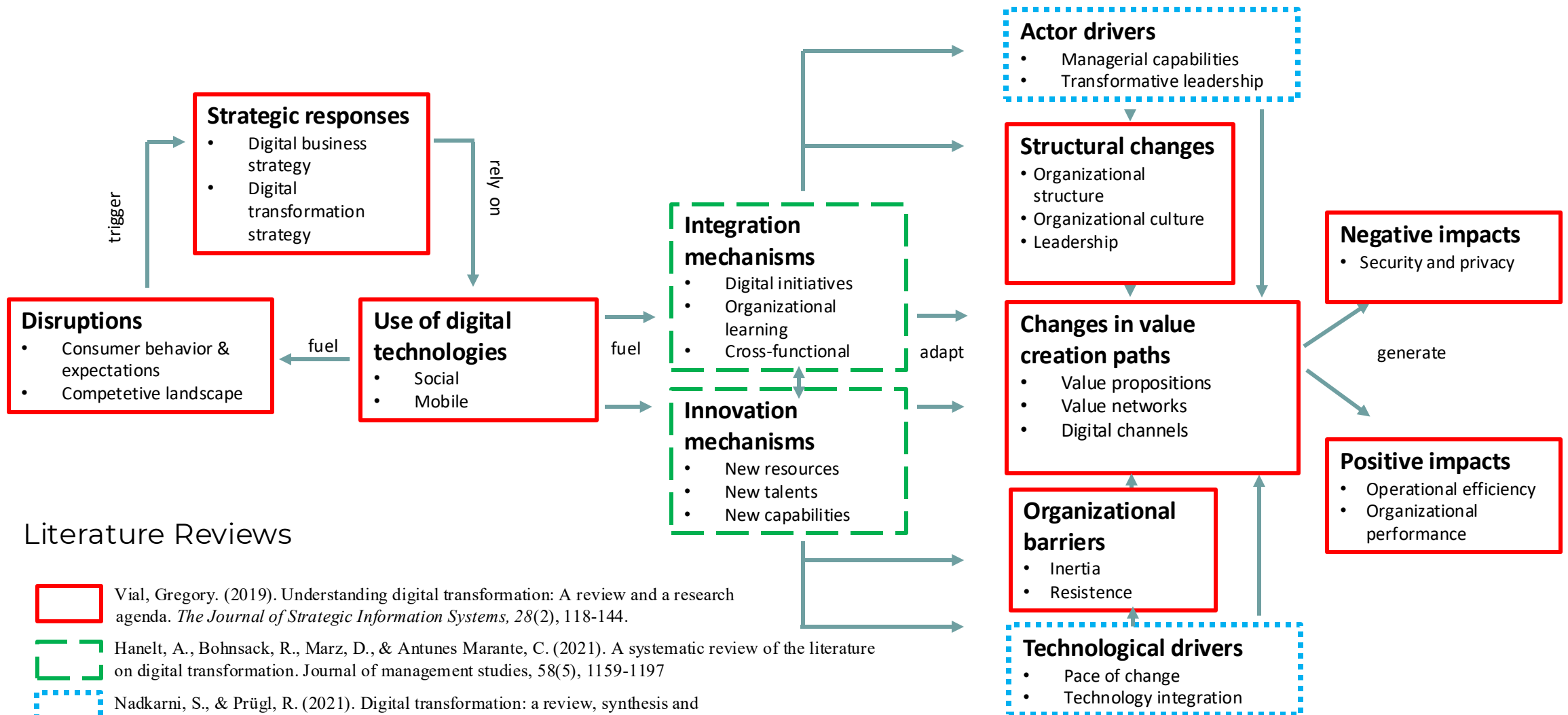


Miele takes over the complete operation of the laundry room



relayr offers subscription based equipment as a service models

04 Core Mechanisms of Digital Transformation

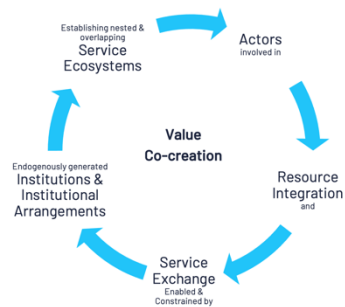


05 Service Perspectives

SERVICE-DOMINANT LOGIC

PROCESS

	Goods-Dominant	Service-Dominant
Value Proposition	Exchange Value	Value in use Value in context
Unit of Exchange	Product	Capabilities, Services Knowledge, Data, Products..
Role of Customer	Consumer	Co-Creator Interactive
Definition of Value	Producer Production Costs	Customer Value in use, Value in context



Better mental-models in people to improve interactions (logic)

SERVICE SCIENCE

STRUCTURE

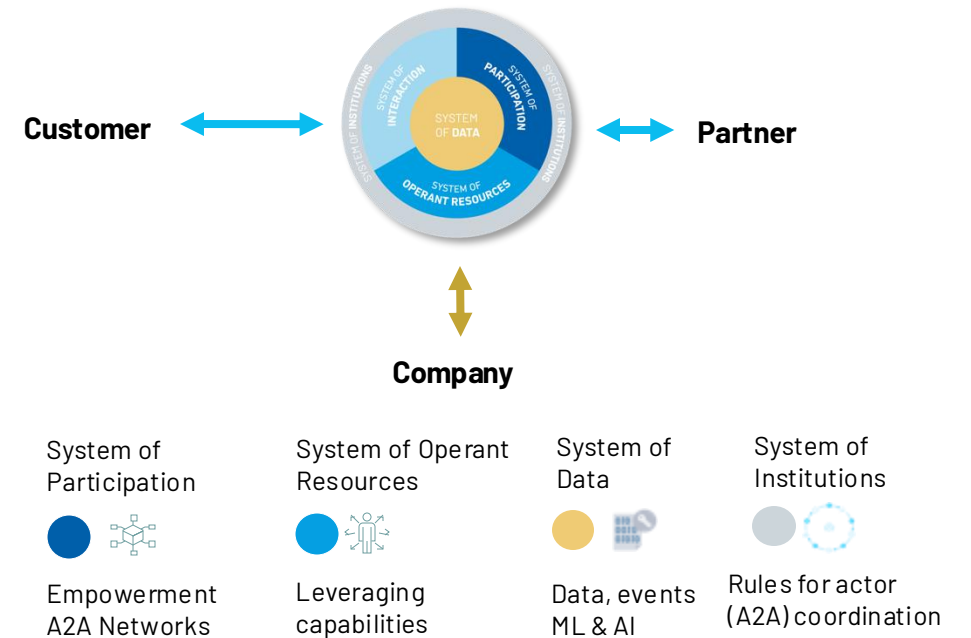
Service Systems are the key construct of Service Science: A service system is a configuration of resources, like people, technology, information that are connected to other systems by defined value propositions.



Better models of the world both complex natural and social systems (science)

SERVICE DOMINANT ARCHITECTURE (SDA)

PROCESS & STRUCTURE

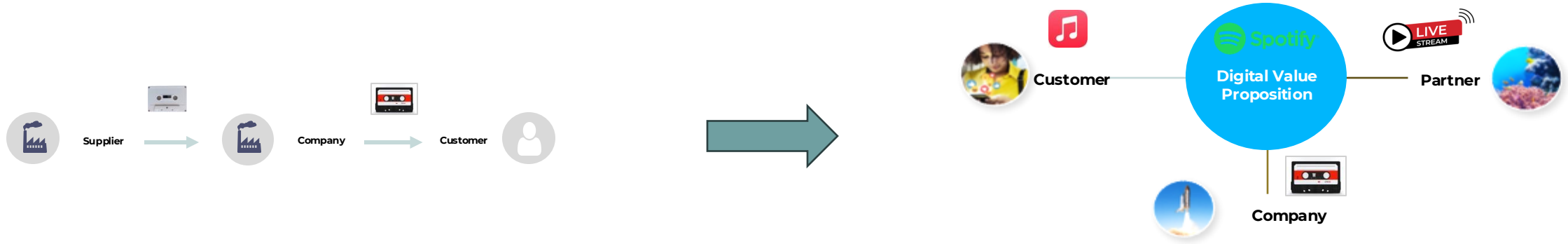


Better cultural and structural models of organizations to improve change (architecture)

06 Theory Synthesis: how to shape Digital Transformation beyond Circularity

	Literature Review Digital Transformation	Service Lens Digital Transformation	Theory Synthesis Shaping Digital Transformation beyond Circularity
Technology	Product -> output	Product renders services -> input	Technology as „carrier for services“ and input value cocreation
Relationship of actors	Value chain, transactional, linear	Value constellation, relational, actor as service provider and consumer	Relational actor constellations. Human- and technical actors connected by shared institutional arrangements and mutual value creation through service exchange.
Venue of value creation	Producer of technology/exchange value/firm	Beneficiary/value in use of technology	Value is cocreated by many actors always including the beneficiary (Axiom 2: S-D Logic)
Approach for societal wellbeing	Circularity/ reusing discarded products	Beyond Circularity/digital service provision instead of embedding services in products	Digital transformation to "as a service" models and thus continuously reducing material goods. Circularity where material goods are still indispensable.

07 Findings for „Shaping Digital Transformations beyond Circularity“



- Mindset & architecture matters. Shifting from “value chains” towards “value constellations” requires organizations with a Service-Dominant mindsets and Service Dominant Architectures.
- Digital Transformation “beyond Circularity” is not about translating existing processes to new technologies on a one-to-one basis. Technology is “input”, carrier of services and facilitator of new value constellations.
- Organizations need to “unlearn” existing behaviour patterns and to “learn” how customers and co-producers can be mobilized to engage in service exchange.

THEORETISCHE GRUNDLAGEN / REFERENCES

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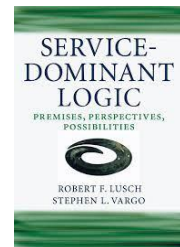
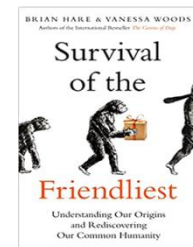
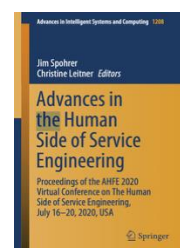
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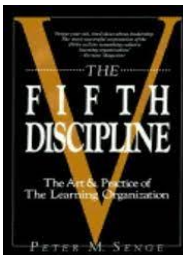
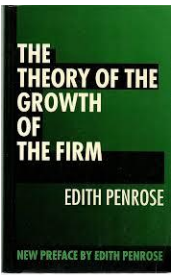
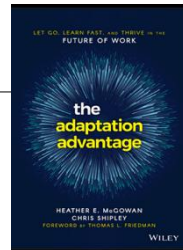
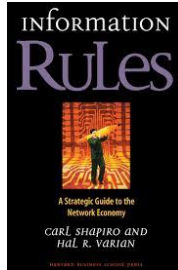
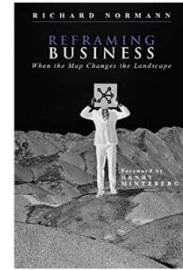
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