

DIGITAL BUSINESS MODEL INNOVATION IN THE SWEDISH INDUSTRIAL ECOSYSTEM

OPPORTUNITIES, CHALLENGES AND LESSON LEARNED

Vinit Parida and David Sjödin

Entrepreneurship and Innovation, Luleå University of Technology

AGENDA

- About us and our research team
- 3 digitalization traps
- 3 lessons for digital business model innovation
- 3 scenarios for future business models innovation
- 4 academic frameworks for profiting from digitalization
- Key takeaways

ABOUT US



Vinit Parida
Professor

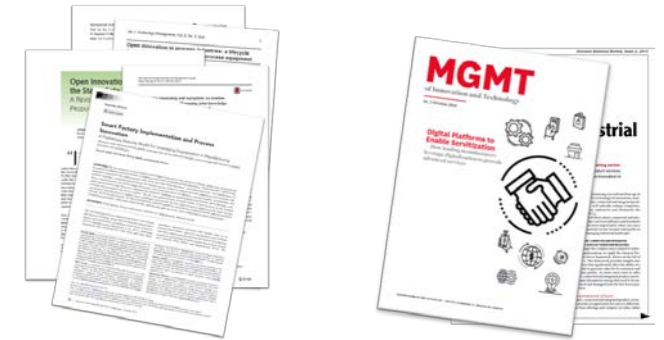


David Sjödén
Associate Professor

Research Interests

- Servitization and advanced service innovation
- Business model innovation
- Digitalization of industrial ecosystems
- Open innovation and managing collaborative innovation projects
- Circular economy and sustainable industry

Research Outputs



200~ Academic Publications 30~ Industry Publications



News and blogs

Research Funding

Vinnova, Formas, Kampard Family Foundation, Ragnar Söderbergs foundation, EU Commission, Handelsbanken foundation, Norwegian Research Council, Tekes

ABOUT OUR RESEARCH TEAM

Javier Cenamor, Post-Doc
Servitization and Digital Platforms



Lina Sundén, PhD Candidate
*Digital Business Model Innovation
and Industrial Ecosystem*



Marko Kohtamäki
Professor, University of Vaasa
*Servitization and Inter-
Organizational Networks*



Ivanka Visnjic
Associate Professor, ESADE
*Digital Servitization and Business
model Innovation*



Marin Jovanović
Assistant Professor, CBS
Outcome-Based contracts and
Digitalization



Wiebke Reim, Post-Doc
*Business Models Innovation and Product
Service System*



Sambit Lenka, Post-Doc
*Global Servitization, Organizational
transformation and Digitalization
capabilities*



Anmar Kamaladin, PhD Candidate
*Advanced Service Procurement and
Relational Contracting*



Dusana Hullova
Senior Lecturer, University
of Roehampton
Circular Economy and
Sustainability Industry

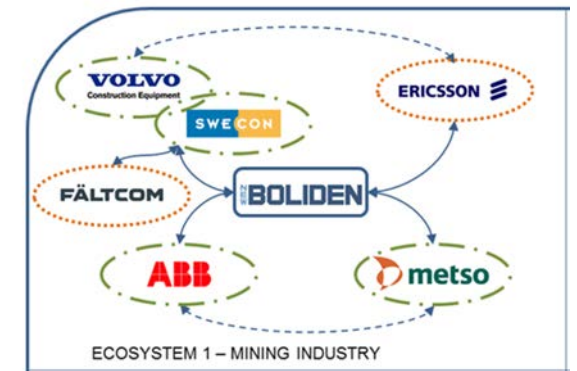


RESEARCH BACKGROUND

- 200 plus interviews during last 3 years on the topic of digital business model innovation in B2B setting (Sweden and globally)
- Leading a research team through multi-years industry research projects in Sweden I
 - Involving numerous companies from mining, forestry, construction, manufacturing, telecom, transportation, and maritime industrial ecosystems



Industrial ecosystem

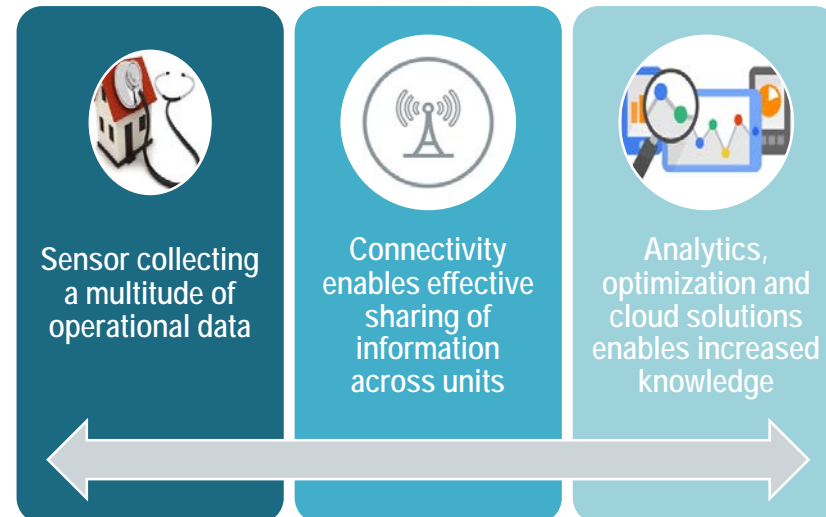


WHAT IS DIGITALIZATION?



Enabling digital technologies

- Internet of things
- Automation
- Remote monitoring
- Predictive maintenance
- Artificiell intelligens
- Smart contracts
- Big Data
- Cloud analytics
- Digitala avancerade tjänster



A digital transformation

*“The use of digital technologies to change a **business model** and provide new revenue and value-producing opportunities in industrial ecosystem”*

(Gartner report 2015; Parida, Sjödin and Reim, 2019)

- ... Parida, V.; Sjödin, D.; Reim, W. Reviewing Literature on Digitalization, Business Model Innovation, and Sustainable Industry: Past Achievements and Future Promises. Sustainability 2019, 11, 391.



WHAT ARE THE KEY BUSINESS CHALLENGES WITH DIGITALIZATION IN YOUR MIND?

Discuss with each other 2 minutes

The background of the slide is a light blue, stylized map pattern. It features a grid of streets and various geometric shapes representing buildings and parks, all rendered in a thin, light blue line art style. The pattern is slightly faded and serves as a decorative backdrop for the text.

3 DIGITALIZATION TRAPS

1. TOO SLOW DIGITAL TRANSFORMATION

The largest risk with digitalization is to do nothing...



Concrete actions are needed....
"It's like we are waiting for someone to take the baton and come up with a holistic solution"

72% of global CEOs believe the next 3 years will be more critical for their industry than the last 50 years

2. DEVELOPMENT OF DIGITAL SOLUTIONS WITHOUT UNDERSTANDING CUSTOMER VALUE

Too much technology, too little business...

- Developers (in engineering companies) are often too enthusiastic in solving technological problems
- Challenge to **understand** the specific customer or end-users needs
- Often lacking in ability to **critically evaluate** what customer is willing to pay for.



*"..I am sure that their system is highly advanced with a lot of functionalities. But what I want to see is **how does these functionalities apply to our business and how will it make it more profitable...** and that they have not been able to achieve." (Dissatisfied customer)*

3. SELLING DIGITAL SOLUTIONS WITHOUT UNDERSTANDING BUSINESS MODEL CONSEQUENCES

Companies often fail to fully consider the business model implications of digital customer opportunities.

Hidden and unexpected costs :

Changed customer behaviors?

New (costly) delivery processes?

Operation and maintenance over multiple years?

Cannibalization of existing business model?





DIGITAL BUSINESS MODEL INNOVATION

NEW LOGIC FOR DIGITAL BUSINESS MODEL

Digitalization
as Enabler



Business Model Innovation



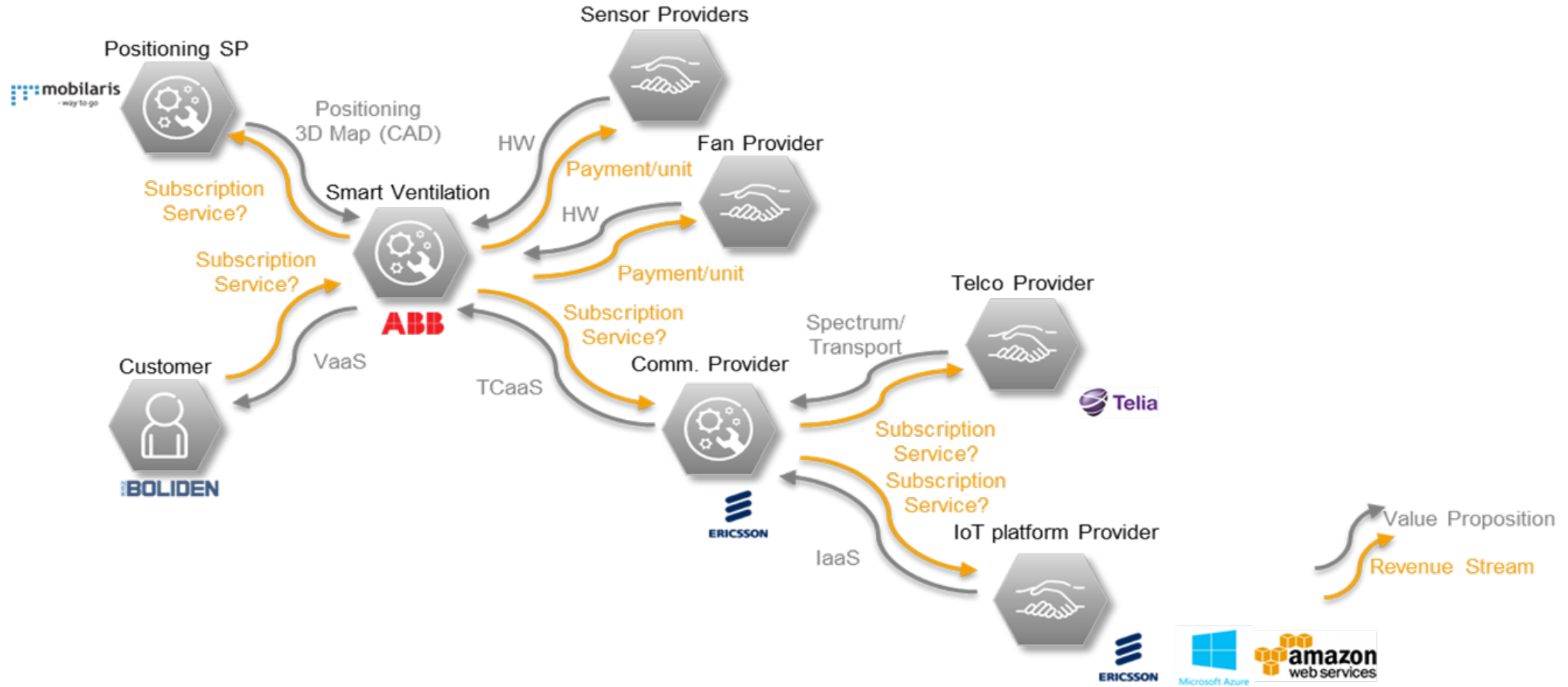
Sustainable Industry



Industrial Ecosystem



HYPOTHETICAL CASE FOR ECOSYSTEM BUSINESS MODELLING

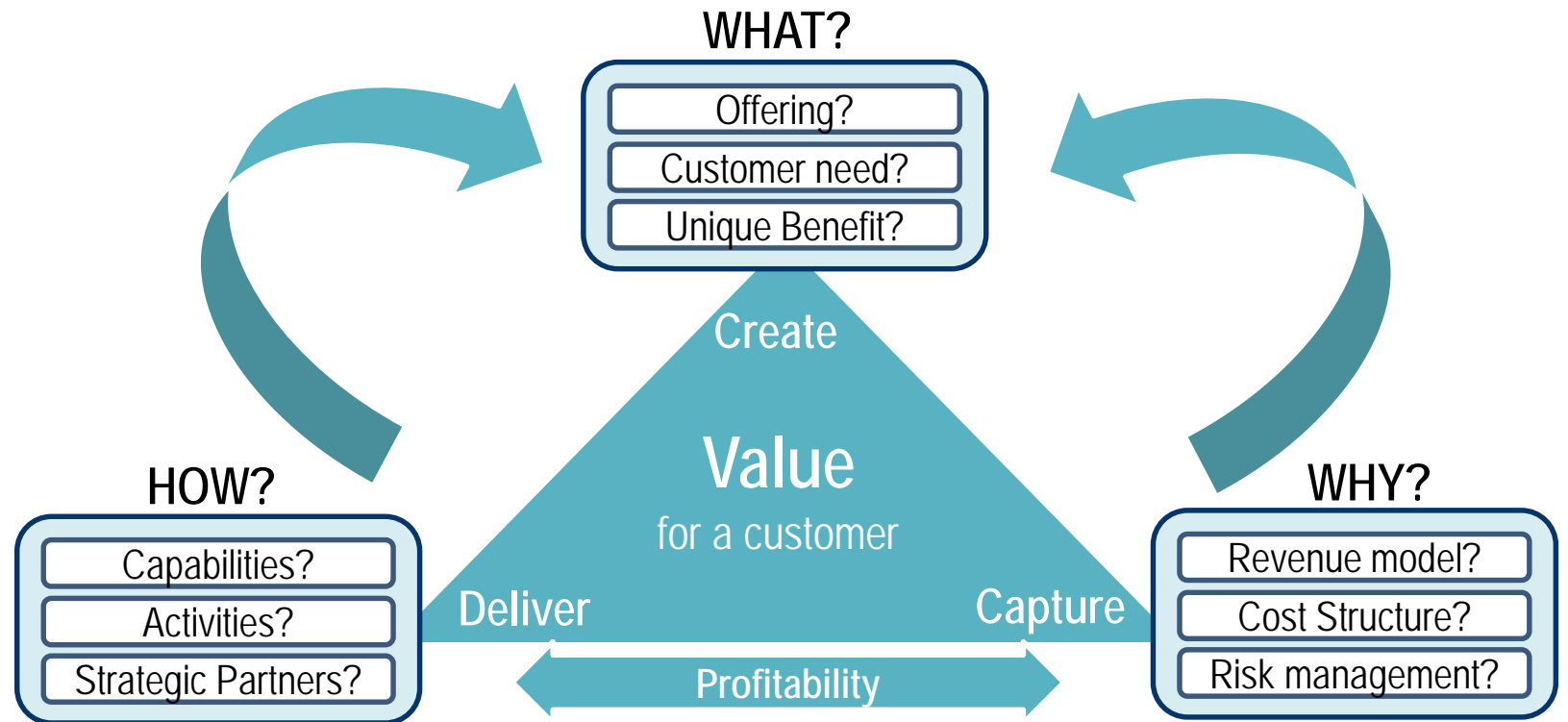


WHAT IS A BUSINESS MODEL?



A business model define the ways an organization creates, delivers and captures value

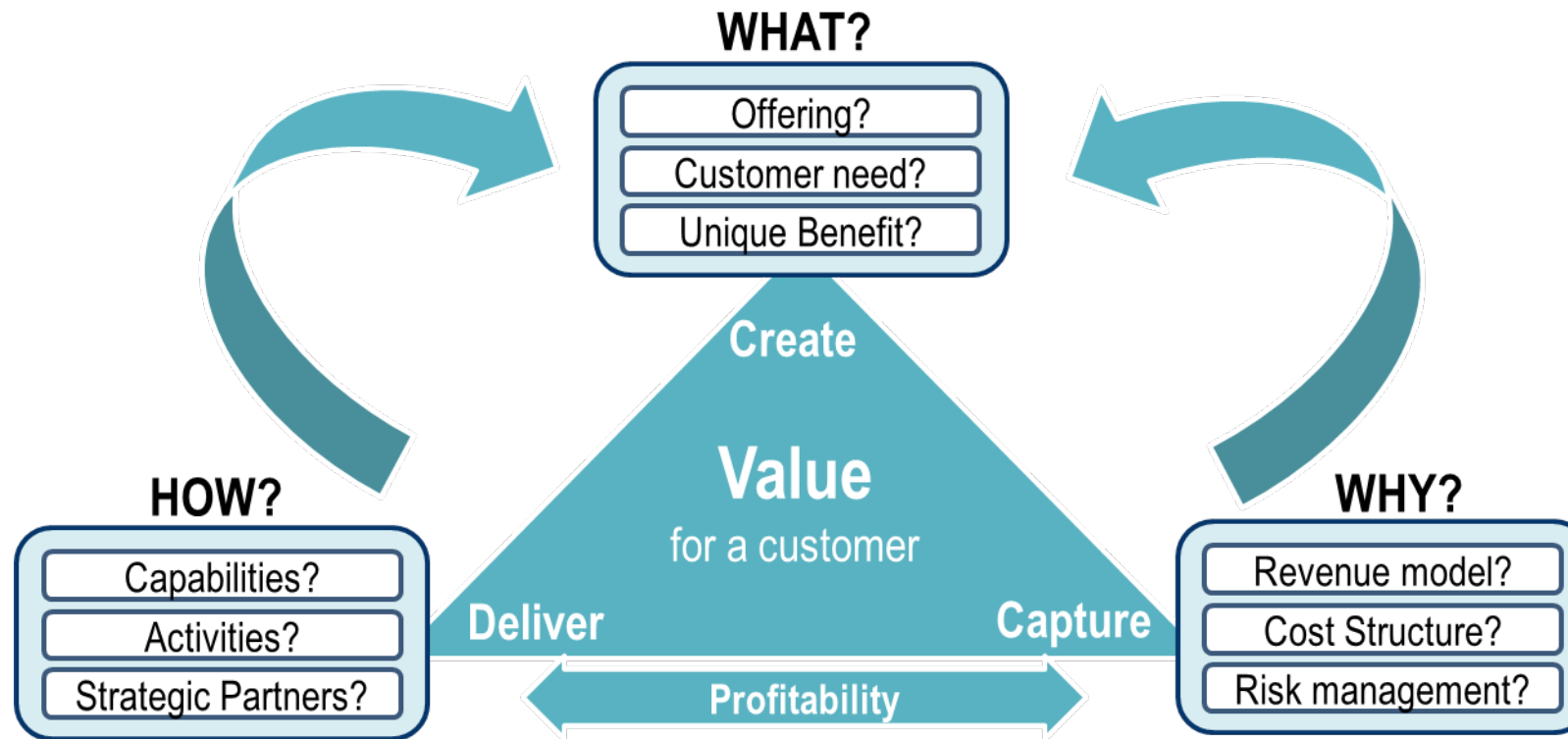
Osterwalder and Pigneur (2010)



A powerful business model ensures that all elements work together



WHAT ARE THE MOST CHALLENGING ISSUES FOR PROFITING FROM DIGITALIZATION?



- Discuss with each other 2 minutes

DIGITAL BUSINESS MODEL- VALUE CREATION CHALLENGE

Value creation challenge

A TYPICAL QUARRY..... 1000'S OF SITES



Fleet/site management contracts

How to leverage digital technologies to enable higher value creation for customers?

MICRO SERVICES

A STEPWISE APPROACH TOWARDS DIGITAL SERVICE

1. Identify main dilemmas

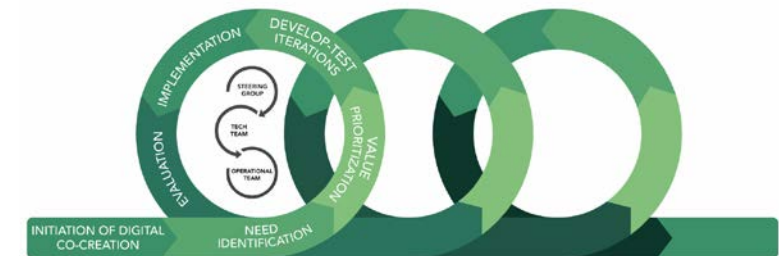
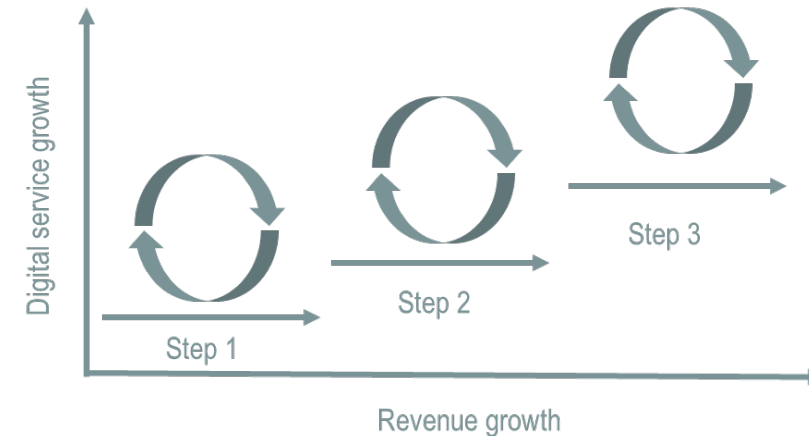
- Inadequate weight at loading (+/- 10%)
- Inadequate CO2 reporting
- Avoid traffic issues at loading site
- Optimal pace at loading
- Lacking information on daily disturbances on machine/truck/dumper
- Inadequate data quality from the loaders/transporters
- Lacking traceability on unloaded material

2. Selecting dilemmas

- High business communication possibility
- Quick turnaround time with solution and effect
- Building on internal competences (predominantly)

3. Developing and implementing the solution

4. Next rounds of identifying main dilemmas and co-development (aiming for a more complex problem)



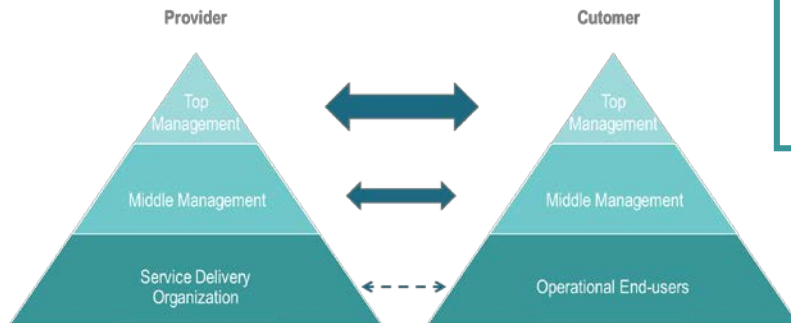
DIGITAL BUSINESS MODEL- VALUE DELIVERY CHALLENGES

Value delivery challenge

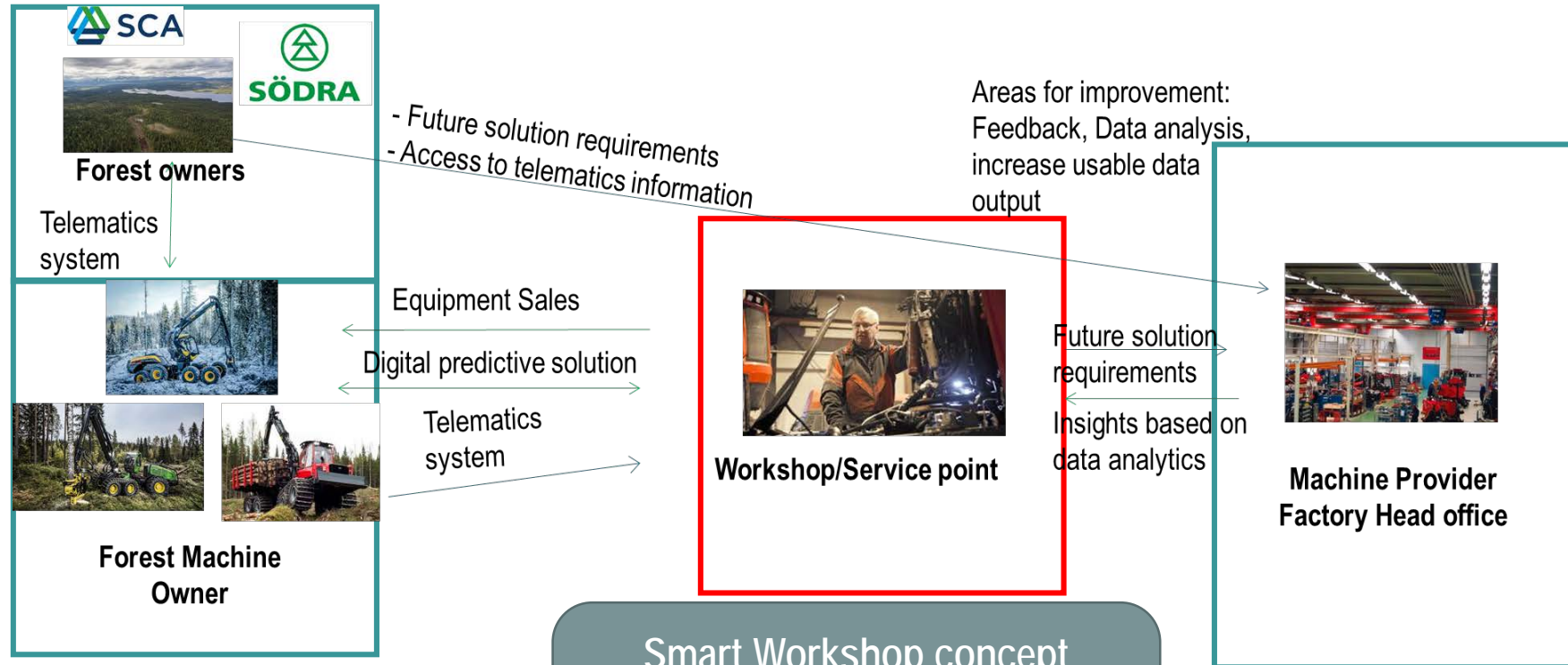


Digital predictive forestry solutions

How can we build digital capabilities to support increased efficiency throughout the delivery value chain?



SMART WORKSHOP



Smart Workshop concept
 "increasing capabilities of delivery organization to offer digital solutions"

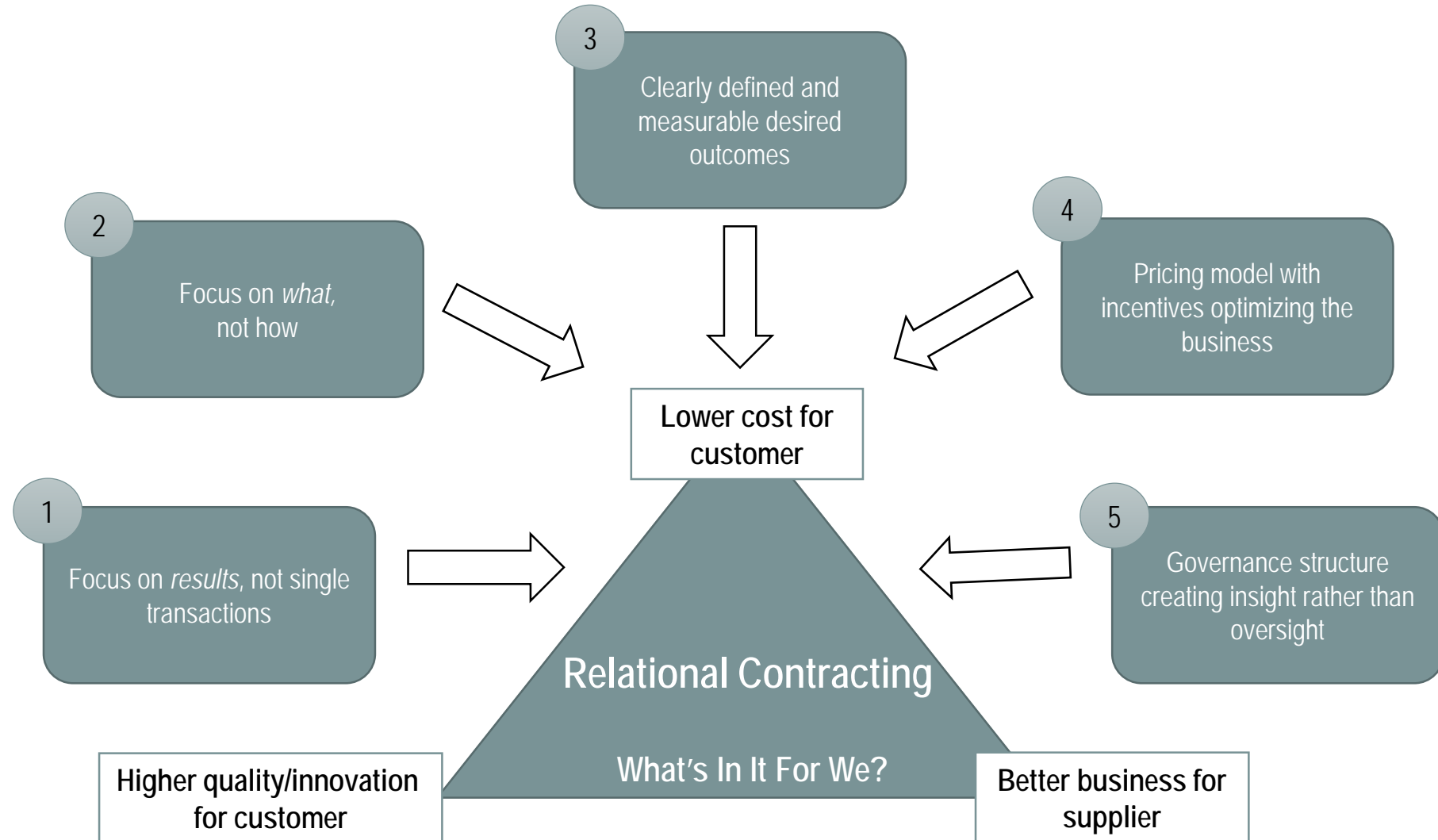
DIGITAL BUSINESS MODEL- VALUE CAPTURE CHALLENGES


Value capture challenge



Digital optimization solutions

How to ensure fair distribution of financial returns from digital solutions over time?

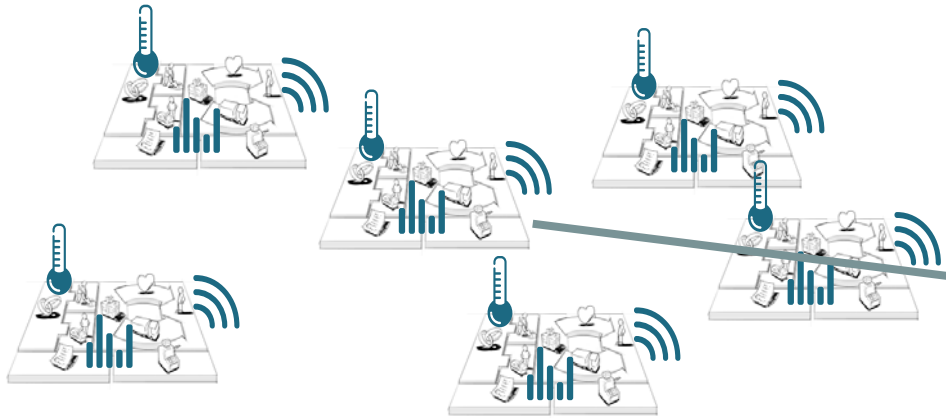




3 SCENARIOS FOR FUTURE DIGITAL BUSINESS MODEL INNOVATION

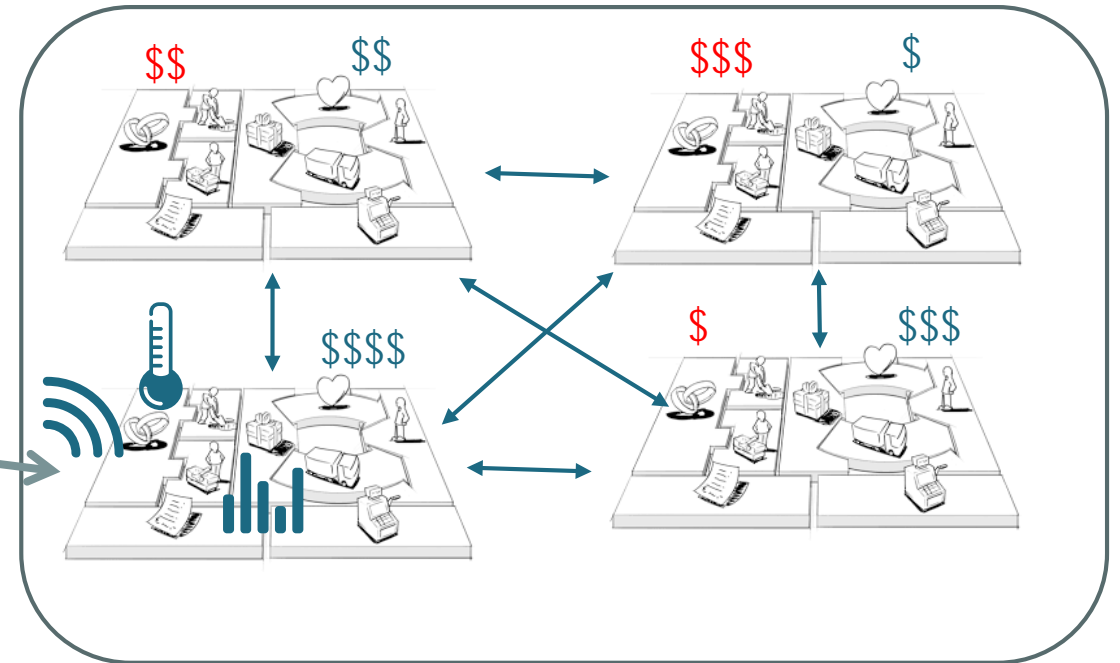
Opportunity or threats

FUTURE DIGITAL BUSINESS MODEL INNOVATION: OPPORTUNITIES OR THREATS



How to select digital business model innovation opportunities?

How to develop and commercialize digital business model innovation?



How to manage multiple business models internally and externally?

Business model cannibalization?

FUTURE DIGITAL BUSINESS MODEL INNOVATION: OPPORTUNITIES OR THREATS

Trends for
competitiveness

Product Innovation

Service Innovation or Servitization

Smart Products = PI + SI + Digitalization

Technological
Shifts

Electrification

Autonomous

Connected

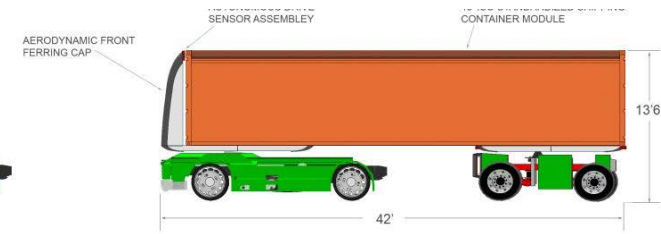
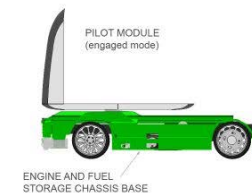


20% value creation/value
capture from Cabin

40% value creation/value
capture from power train and
engine

How do companies cope with the threat
of missing 60% of value creation and
value capturing mechanisms?

(ROAD TRAIN)



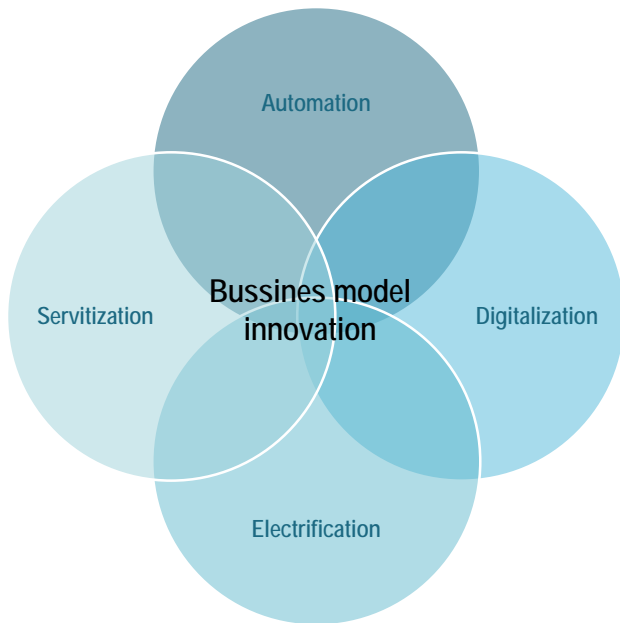
ROAD TRAIN (up to 4 40' containerized trailers stacked in one train)

The background of the slide is a light blue, stylized map of a city grid. A prominent diagonal road or path runs from the top-left towards the bottom-right. The grid lines are thin and light blue, creating a subtle pattern across the entire page.

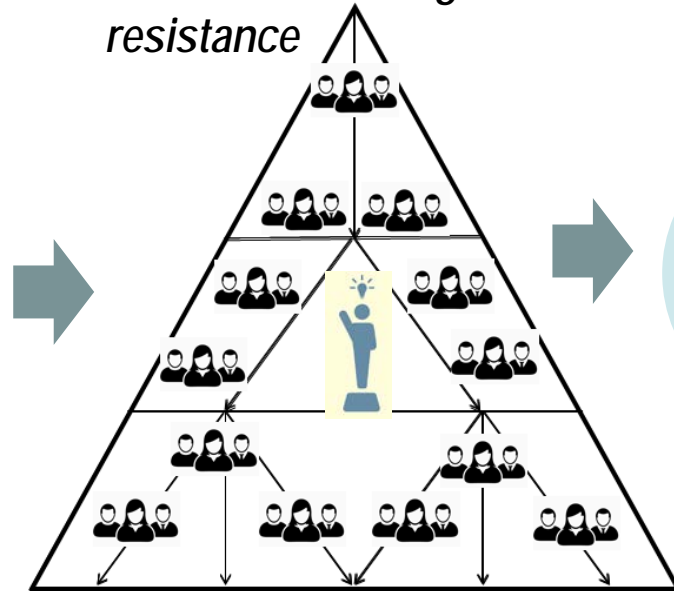
ACADEMIC FRAMEWORKS FOR PROFITING FROM DIGITALIZATION

PEOPLE AND MANAGING ORGANIZATIONAL RESISTANCE

Technological + Business Shifts



Creating opportunities for innovation and *organizational resistance*



Leveraging – Capitalizing on existing resources

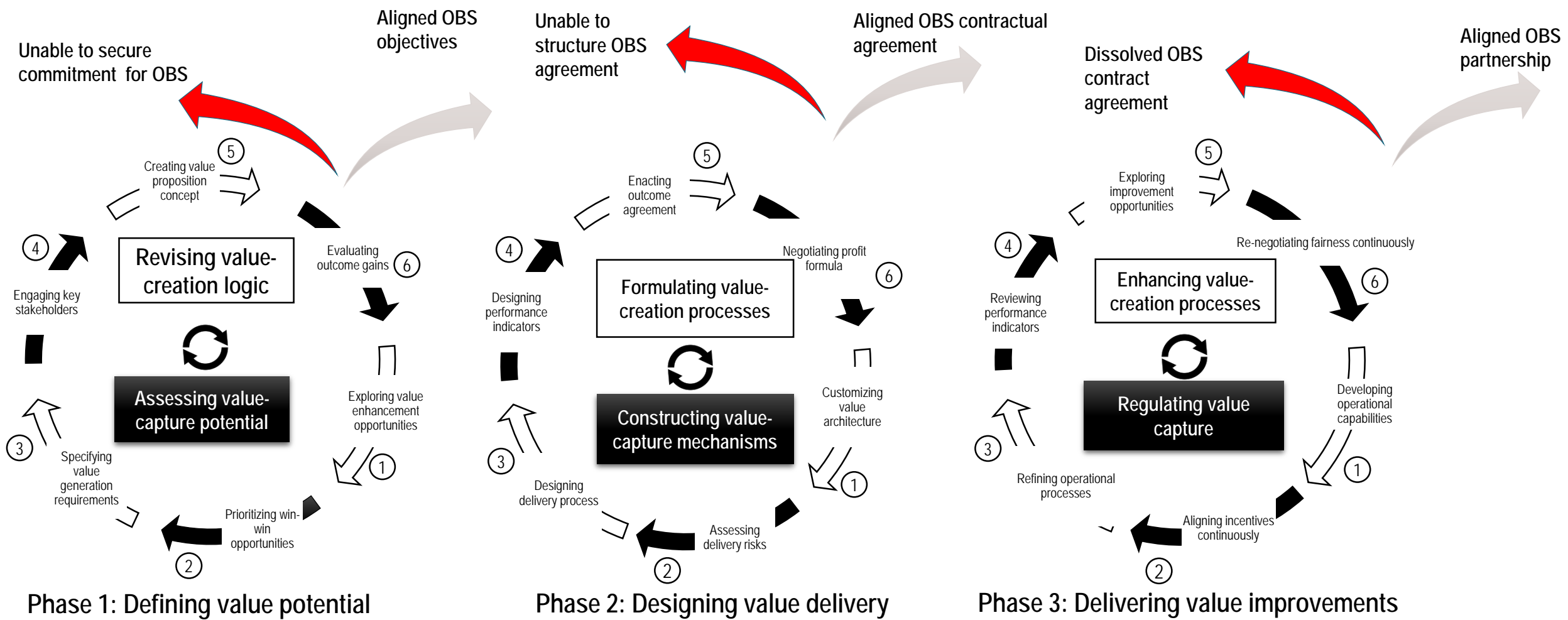
How to does individuals cope with organizational resistance?

Evangelizing – Preaching awareness and convincing others

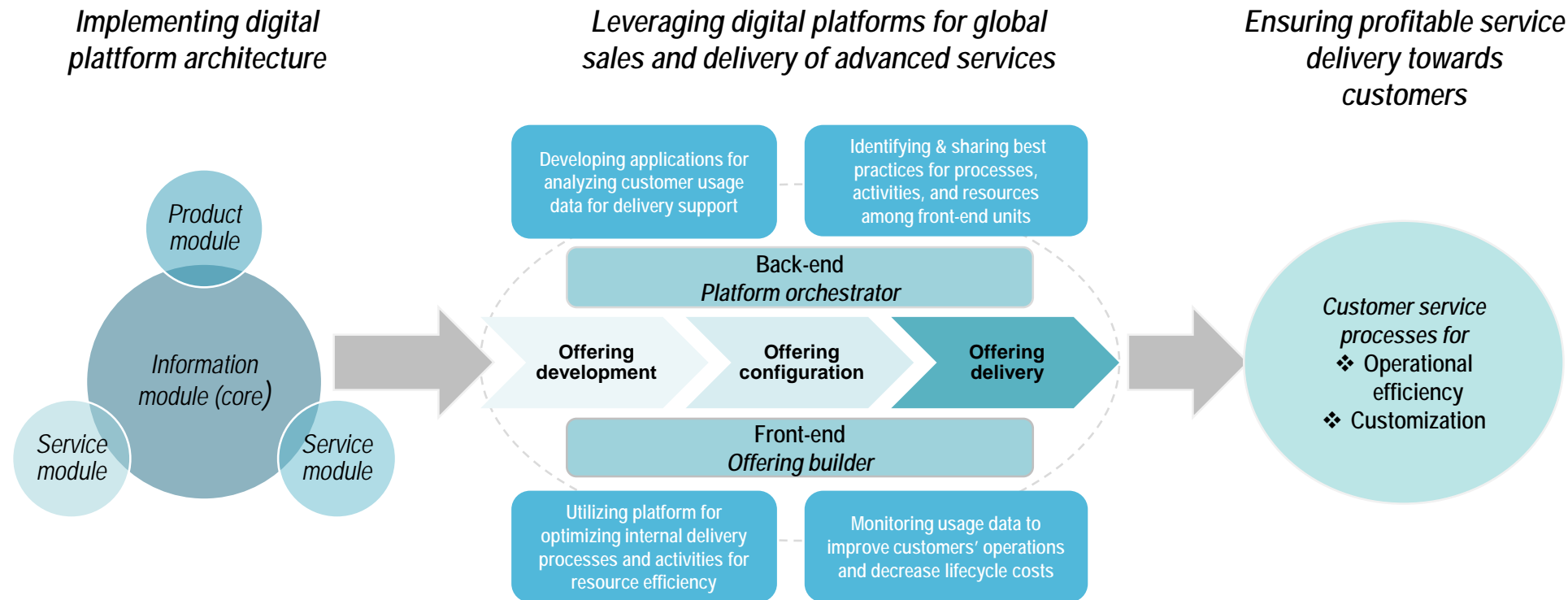
Bootlegging - Working covertly and without authorization

Collaborating - Using collegial or legal authority to overcome obstacles

ALIGNING VALUE CREATION AND VALUE CAPTURE PROCESSES WITH PARTNERS

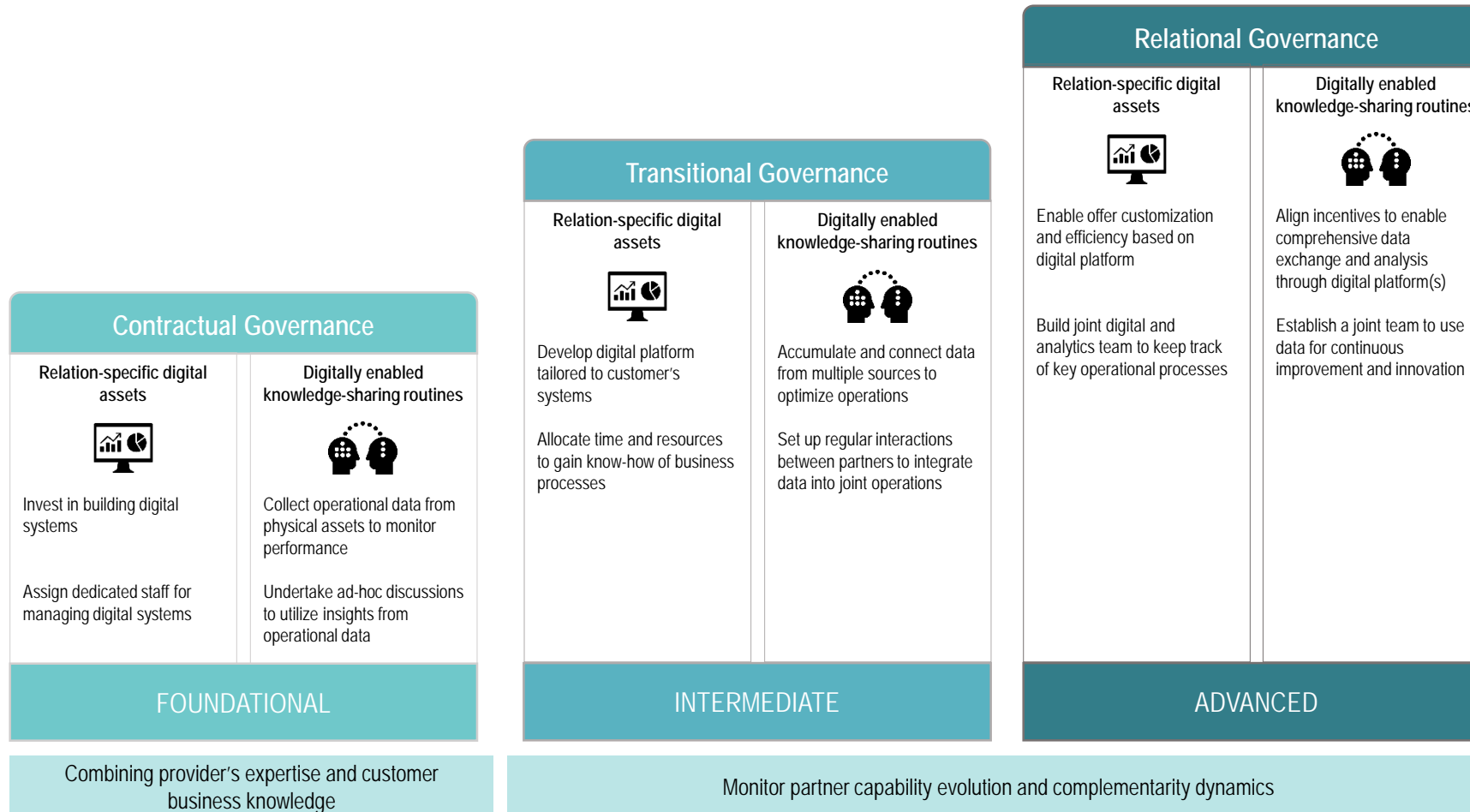


DIGITAL PLATFORM APPROACH TO GLOBAL VALUE DELIVERY



A RELATIONAL GOVERNANCE FRAMEWORK FOR DIGITAL SERVICITIZATION

Level of Value Creating Potential



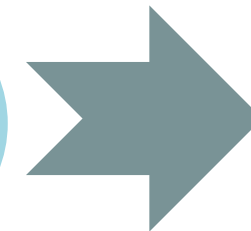
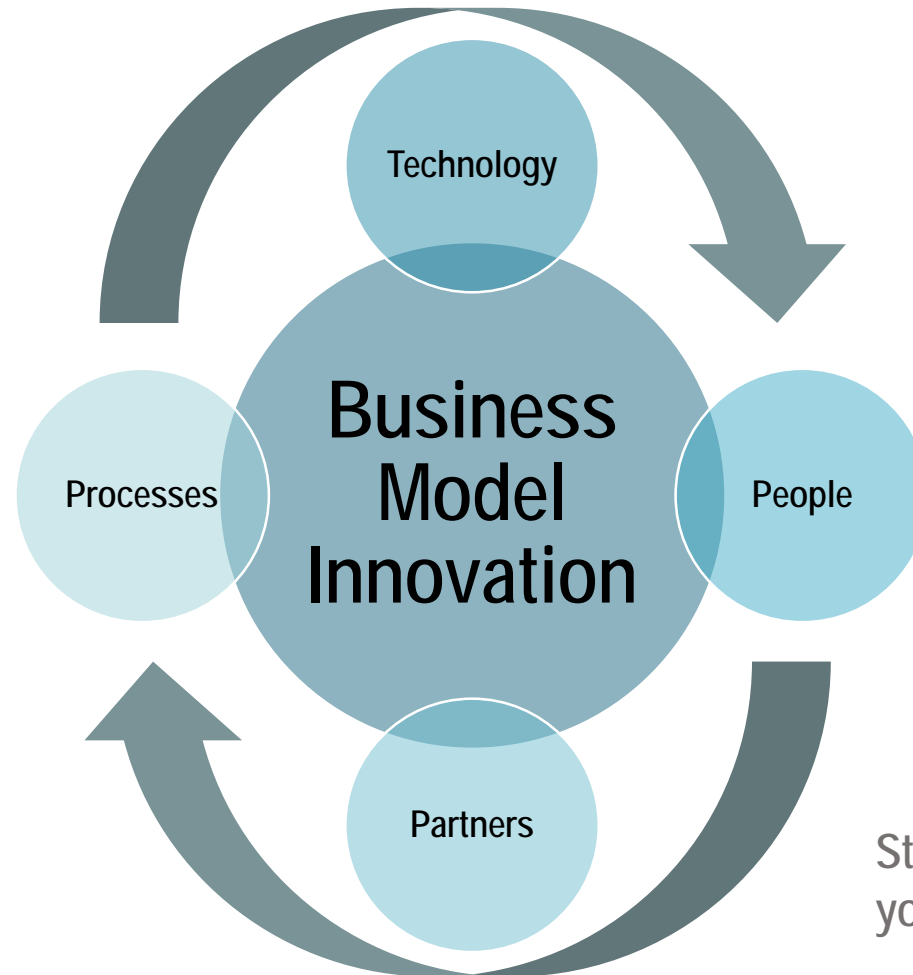
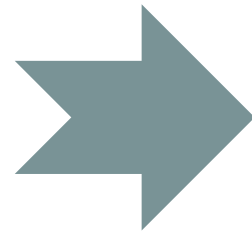
Maturity Level of the Relationship

Kamaldin, A., Sundén, L., Sjödin, D. and Parida, V (2019) Governing provider-customer relationships in digital servitization: A relational view on digitalization, *In review with academic journal*

KEY TAKEAWAY

Successful digitization is more complex than developing new technology. A successful implementation requires interaction and change between technology, processes, people and business models both within the company and externally in the ecosystem.

Digitalization opportunities



Successful digitization

- Increased value creation
- New revenue streams
- Efficient processes
- Profitable relationships
- Sustainable benefits
- Societal benefits

Start looking for opportunities and involve your ecosystem partners.....

THANK YOU!

For more information contact:

Vinit Parida; David Sjödin

vinit.parida@ltu.se; +46735435074; david.sjodin@ltu.se; +46730463206