



# REAL ESTATE DEVELOPERS AS **CIRCULAR SERVICE PROVIDERS**

# COLOFON

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# CONTENT

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An abstract graphic consisting of several concentric circular arcs of varying thicknesses. The arcs are colored in shades of blue, teal, and grey, and are arranged in a way that suggests a circular path or a stylized letter 'C'.

# INTRODUCTION



# TOWN HALL BRUMMEN



Source: [www.iau.eu](http://www.iau.eu)



# ALLIANDER DUIVEN



Source: [www.Alliander.com](http://www.Alliander.com)



# CIRCL

Circular pavilion ABN AMRO



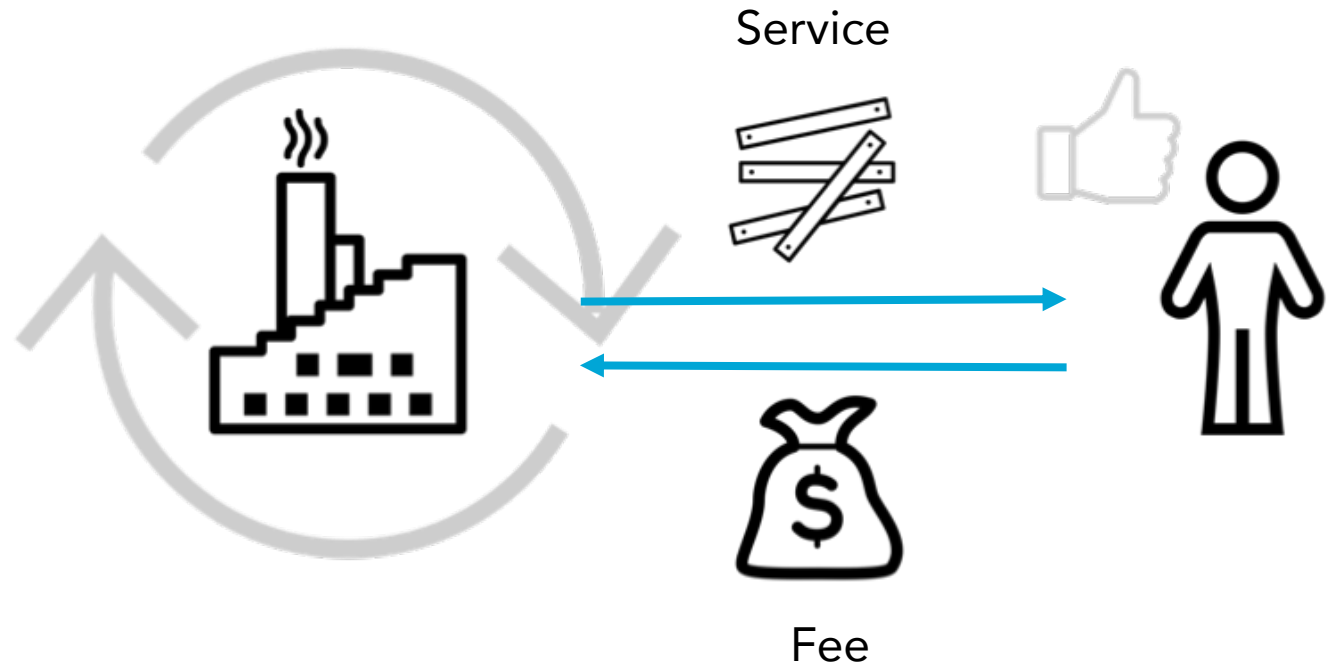
***“Dit zijn op zijn best gebouwen die ontworpen zijn om uit  
elkaar gehaald te worden. [...]  
Of iemand dat daadwerkelijk gaat doen hangt af van wie het  
tegen die tijd is en wie daarvoor verantwoordelijk is”***

Matthijs Bierman – Managing director Triodos Bank The Netherlands

(Personal communication, October 05, 2017)

# PRODUCT-SERVICE-SYSTEMS

- Services are integrated with products
- Fulfil needs of customers
- Are performance-based
- Apply to different scale levels





# PHILIPS

## Lighting as a Service

- Performance management
- Maintenance & optimization
- Pay per use
- Financing
- Product take-back



Source: [www.Philips.com](http://www.Philips.com)



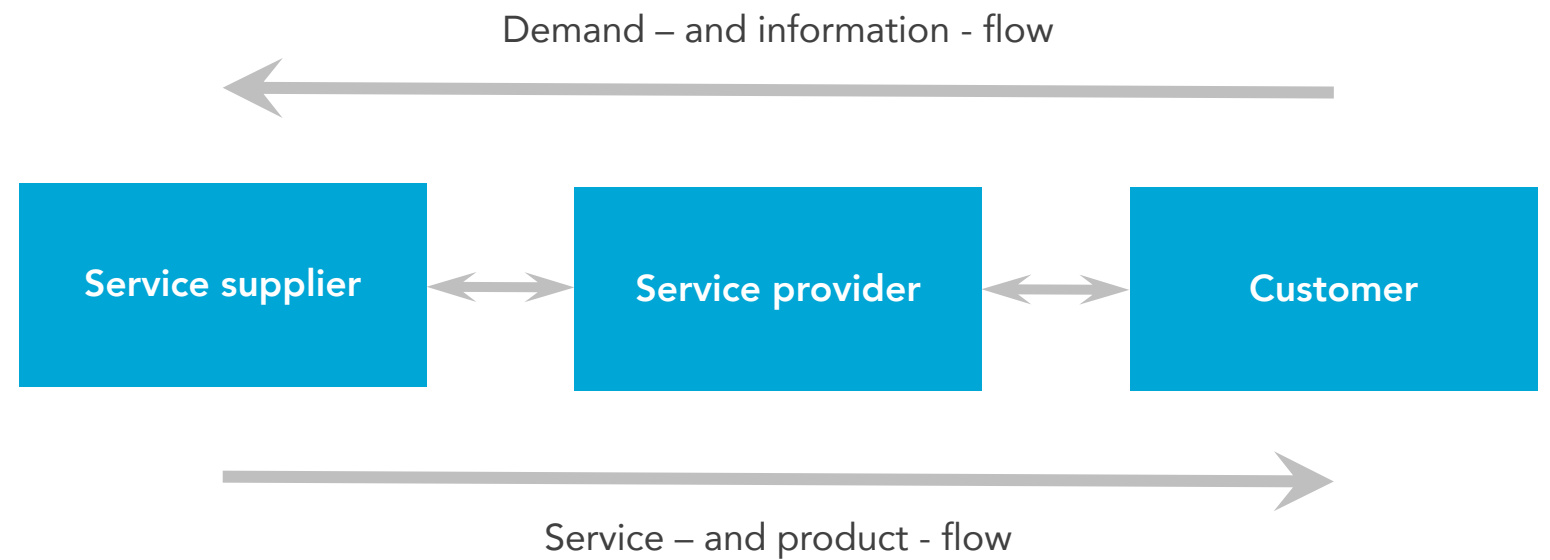
# mitsubishi

## M-Use Elevators

- Realisation
- Performance guarantee
- Monitoring & maintenance
- Product take-back
- Finance
- Pay per Use
- Stable product / service fees



Source: [www.mitsubishi-liften.nl](http://www.mitsubishi-liften.nl)



# RESEARCH PROBLEM

## IN SCIENCE

A research gap exists how to successfully implement PSS business models

(Reim, Parida & Örtqvist., 2015, p.62)

The exact role of the service provide remains vague

(Van den Brink, 2016, p.130)

## IN PRACTICE

Ongoing discussion around issues concerning, responsibilities, liabilities and ownership

(Kazemi, 2016; Kok, Wurpel & Ten Wolde, 2013; Van den Brink, 2016)

Market parties do not know how to cooperate with each other and find the right development processes

(J. Bergman; personal communication, August 24, 2017; M. Bierman, personal communication, October 05, 2017; N. Eekhout, personal communication, September 11, 2017; M. Veerman, personal communication, July 05, 2017)

# GRADUATION COMPANY

- Not the proper knowledge how to implement Product-Service-Systems
- Not enough parties are available that provide Product-Service-Systems

(C. Berning, personal communication, September 20, 2017)



# PROBLEM STATEMENT

Real estate developers do not know  
to interact with service suppliers  
and customers in order to realise  
circular real estate development  
projects.

There is not enough knowledge available in science and practice about:

The functioning of  
Product-Service-Systems  
on an operational level

The position and the role  
of the service provider

# RESEARCH QUESTION

**How could a real estate developer interact with service suppliers and customers  
in order to implement Product-Service-Systems  
in real estate development projects?**

An abstract graphic consisting of several concentric circular segments. The segments are arranged in a way that they overlap, creating a sense of depth and movement. The colors used are various shades of blue, teal, and grey. The word "METHODOLOGIES" is centered within the white space of the graphic.

# METHODOLOGIES



# METHODOLOGIES

## STEP 1: CONCEPTS

- Explorative literature review
- Explorative interviews

## STEP 2: THEORIES

- Literature review

## STEP 3: PRACTICES

- Case studies
- In-case analyses
- Cross-case analysis

## STEP 4: SYNTHESIS

- Theory building
- Expert panel





The image features a series of concentric circular segments, resembling a stylized spiral or a series of overlapping rings. The segments are colored in shades of blue, teal, and grey, and are arranged in a way that creates a sense of depth and movement. The text "CASE STUDIES" is centered within the white space of the spiral.

## CASE STUDIES





Source: OVG Real Estate



# TRIODOS

- Monitoring of the technical performance
- Cleaning
- Maintenance & Repairs
- Upgrade the façade
- Product take-back
- Second-life



Source: OVG Real Estate







# BASISWEG

- Monitoring of technical performance
- Monitoring of Indoor Environmental Quality
- Maintenance & Repairs
- Product take-back
- Second-life
- Financing of energy generation assets









# THE BOUTIQUE OFFICE

- Decorated office space
- Office amenities & operation  
(catering, hospitality, cleaning, ICT)
- Flexible lease terms
- Flexible conditions  
(i.e. different packages)

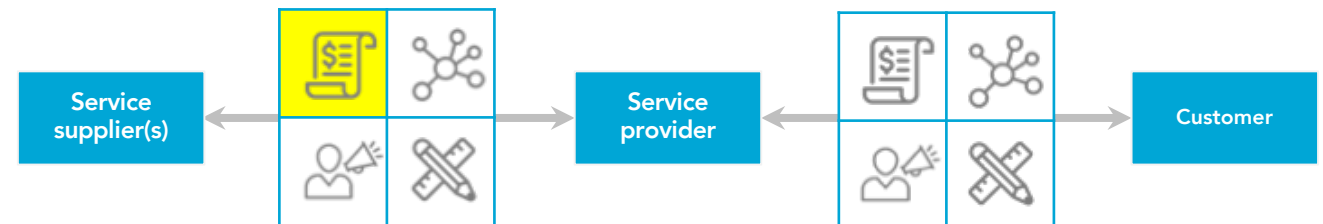


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## FINDINGS

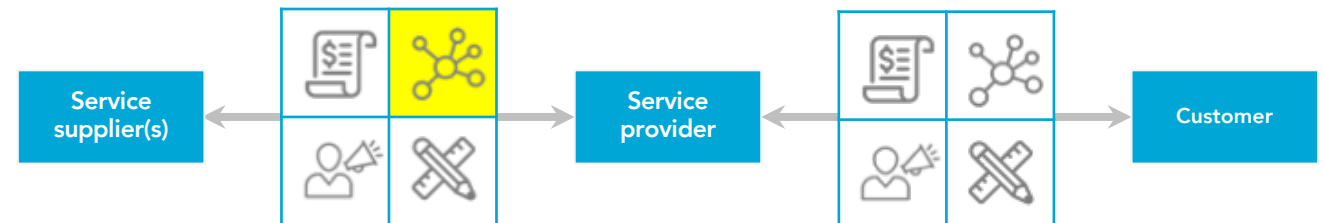
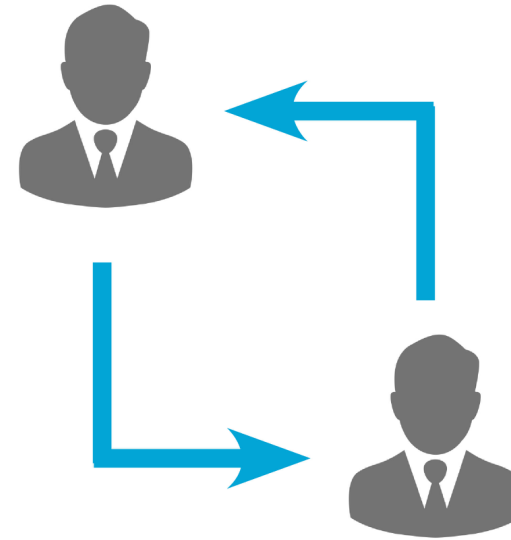
# SALE AND LEASE-BACK

- Splitting of ownership
- Use of superficies (*opstalrechten*)
- Essential vs. non-essential building components



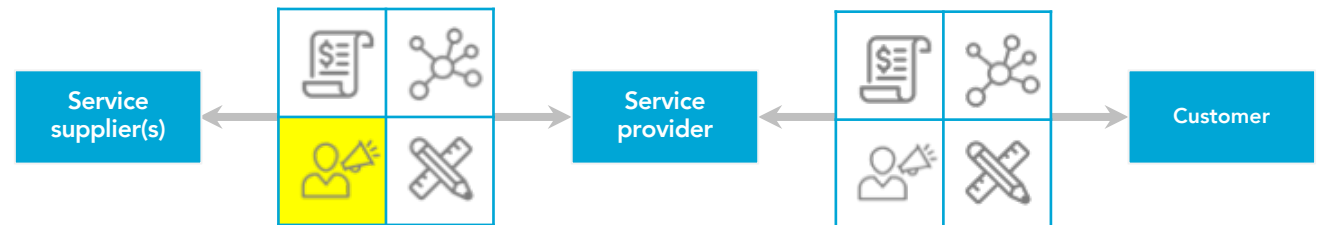
# CO-CREATION

- Risk increase for service suppliers
- Mutual dependency
- Relationship building
  - Trust
  - Common understanding
- Open & flexible contracts



# CONNECTION FOR INNOVATION

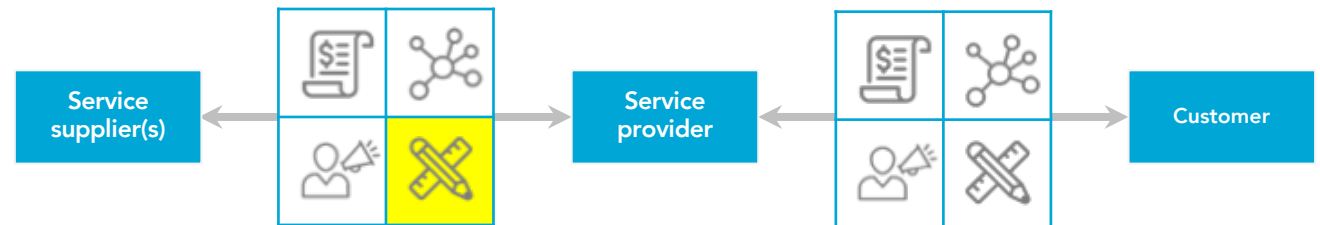
- Extended involvement
- Procurement based on outcomes
- Bottom-up commitment
- Increased performance





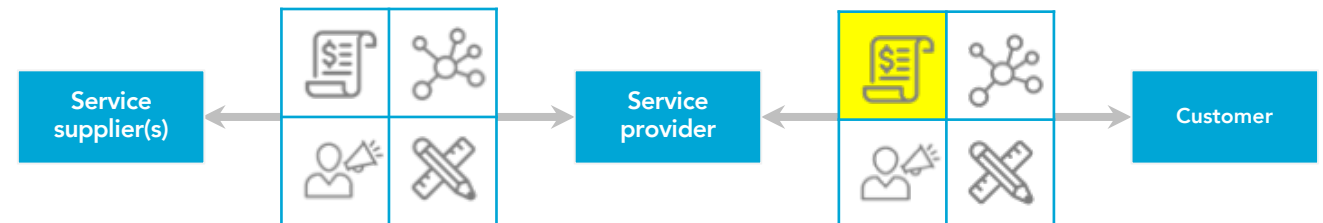
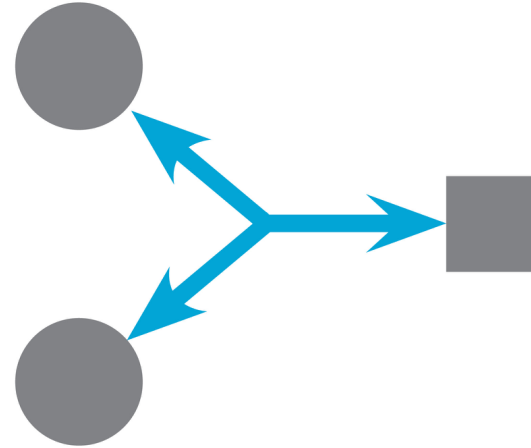
# INTEGRATED IMPLEMENTATION

- Involve suppliers early
- Joint decision-making
- Balance between
  - Functionality
  - Architectural quality
  - Delivered services
  - 'Circularity'



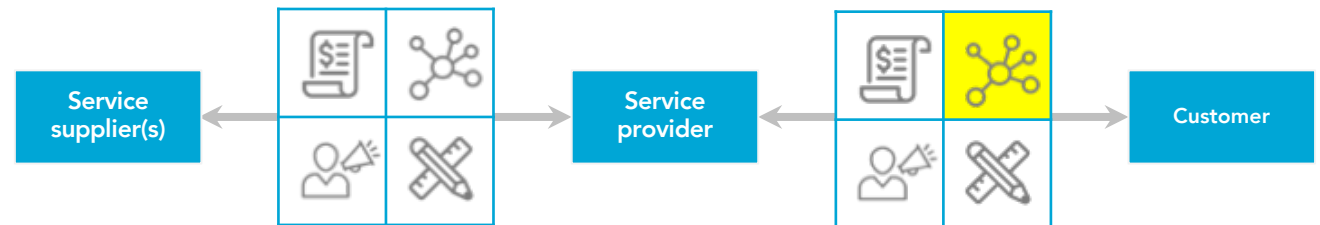
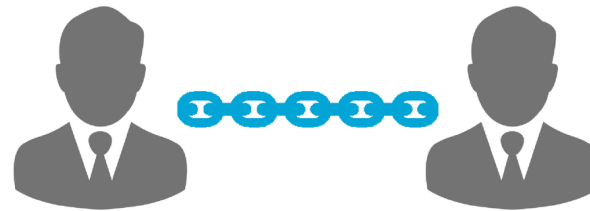
# TRANSLATING & INTEGRATING

- Technical requirements > outcomes
- Product-Service-Systems > Servitized real estate



# DIRECT PARTNERSHIP

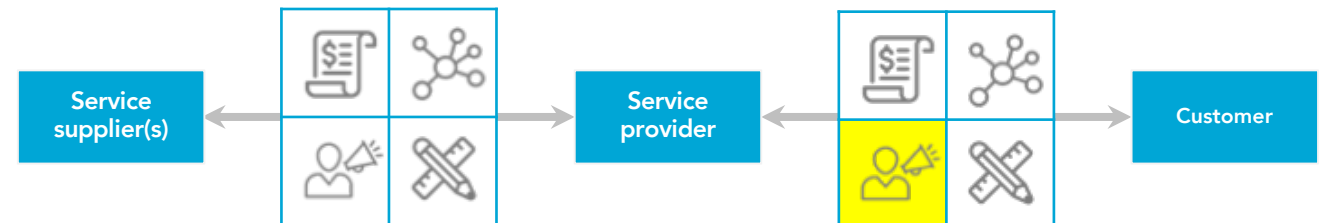
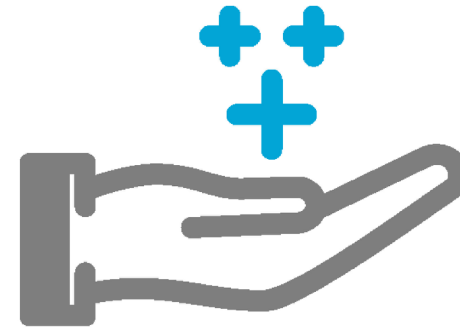
- User-centered approach
- Customers' preferences
- Gain data from exploitation





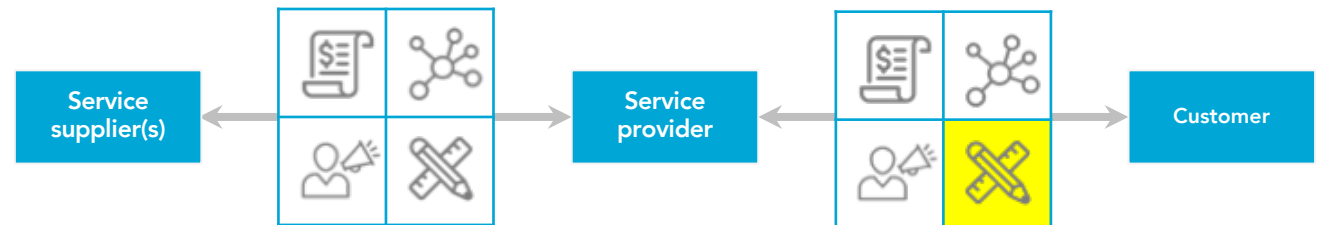
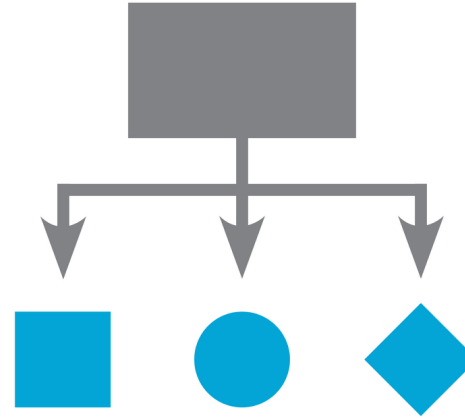
# SERVICE DELIVERY MINDSET

- Long term 'value' delivery
- Added value for organisation
- Competitive offer

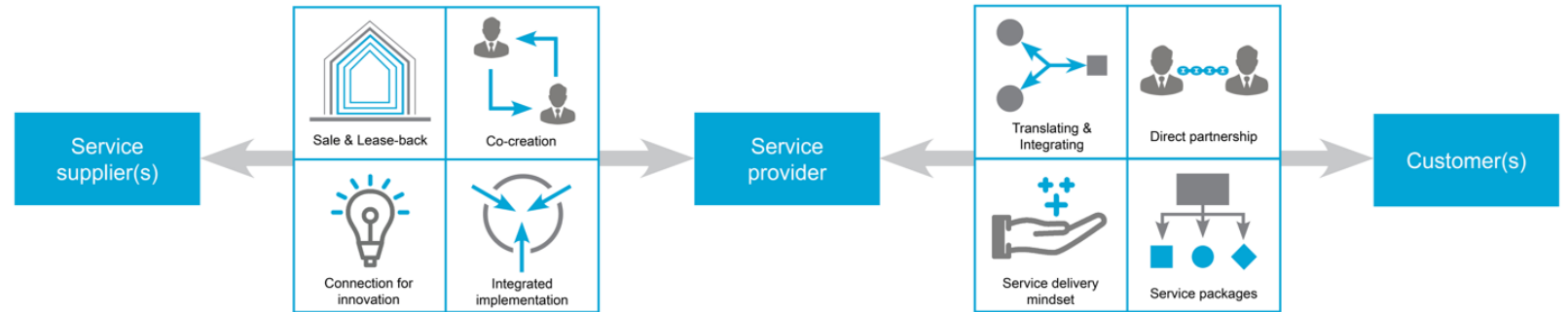


# SERVICE PACKAGES

- Blueprint for servitized buildings
- Sub-lease
  - Flexible duration
  - Flexible conditions



# INTERACTION MODEL



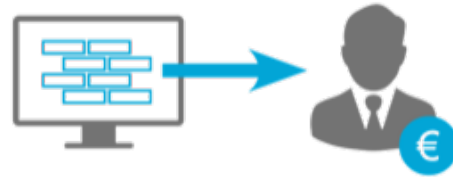
# CONDITIONAL LESSONS

## SPECIAL PURPOSE VEHICLES



- Risks related to bankruptcy
- Balance sheet accounting
- Joint Product-Service-System delivery

## ONLINE MATERIAL DATABANKS



- Guarantees for material take-back
- Uncertain material prices
- Pre-finance future expenditures

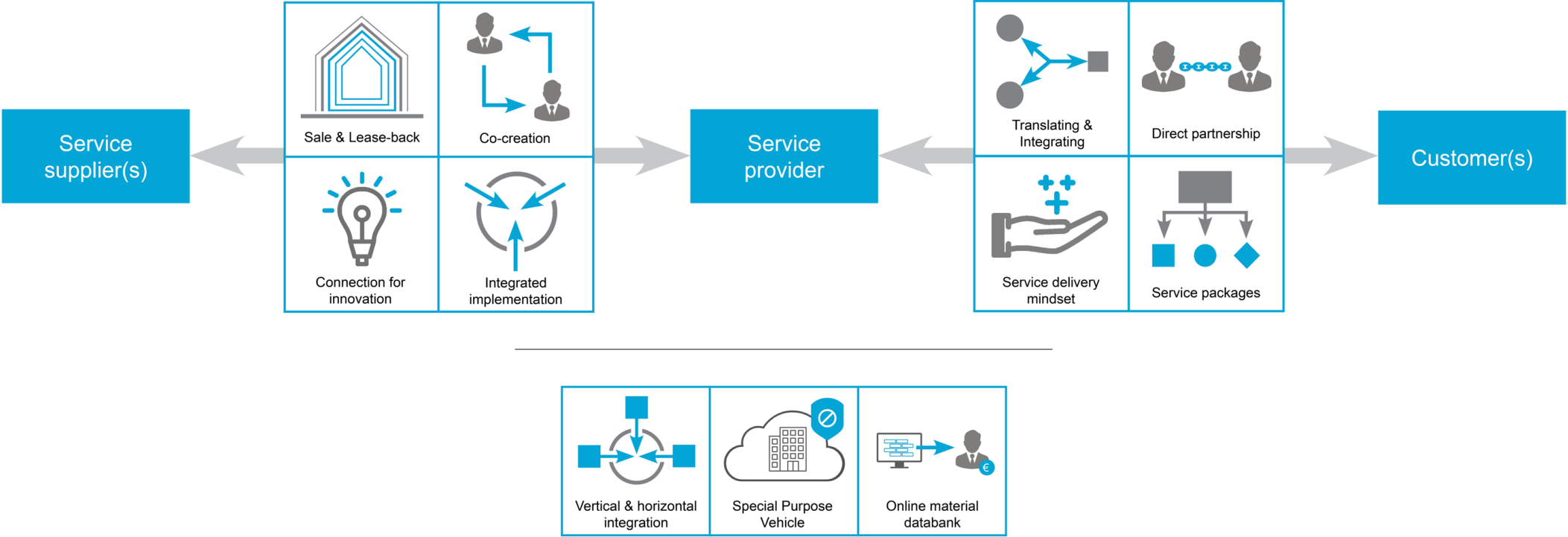
## VERTICAL & HORIZONTAL INTEGRATION



- Backward vertical integration
- Integration of neighbouring activities
- Different roles for existing organizations



# INTERACTION MODEL

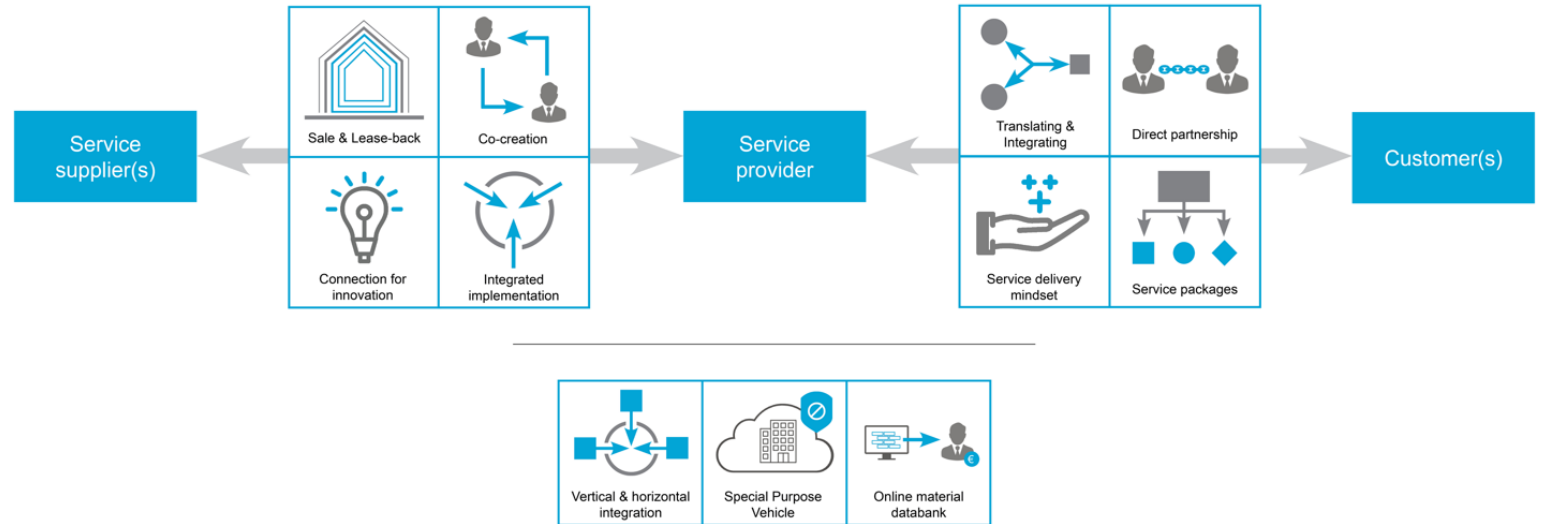


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**CONCLUSION**

# CONCLUSION

How could a real estate developer interact with service suppliers and customers in order to implement Product-Service-Systems in real estate development projects?



- Mindset change
- Long-term service delivery
- Proper incentives
- Equal partnership

# RECOMMENDATIONS

## FOR PRACTICE

### **Service suppliers**

Gain stronger position by developing and proposing PSSs themselves

### **Service providers**

- Pilot projects
- Explore potential PSSs

### **Customers**

Rethink added value of real estate

## FUTURE RESEARCH

- Increase the validity
- Exploitation phase of servitized buildings
- Feasibility of SPVs
- Online building material passports + indicators for circularity



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