

Digital Innovation & Transformation to Business Ecosystems

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PART ONE: DIGITAL INNOVATION

Overview of Digital Innovation



An effort to re-imagine familiar products and services using unique capabilities of digital technology



Involves carrying out new combinations of digital and physical components to produce novel products, e.g. through servitisation



Focuses on creating radically different user experiences and new business models

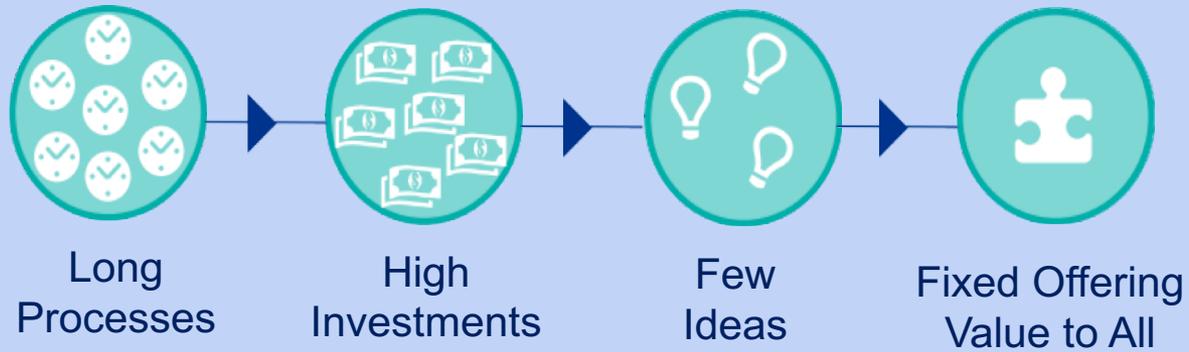


Aims at creating new types/forms of business previously not existed

(Yoo et al. 2010)

Traditional Innovation Process

Innovation Model (Linear)



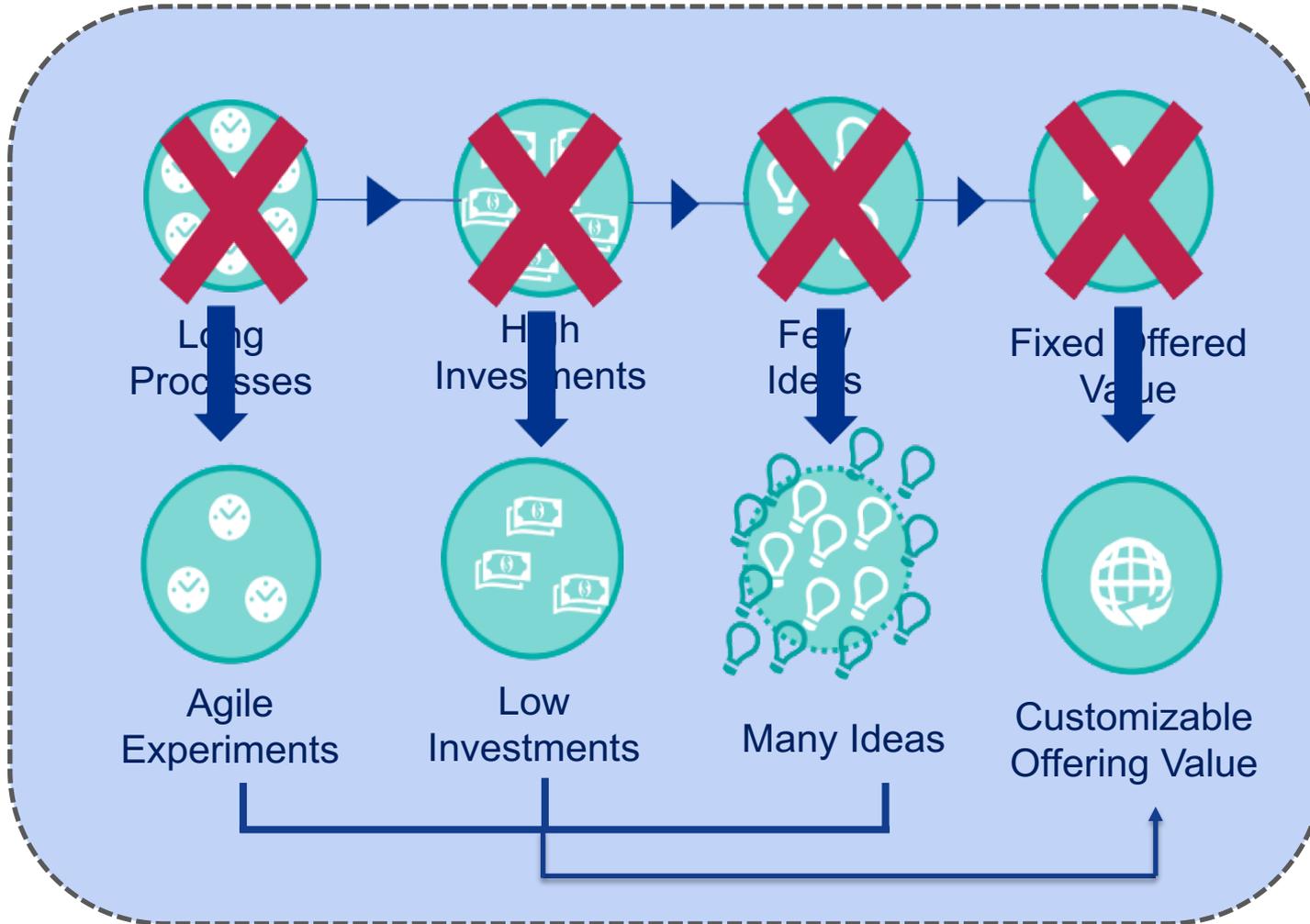
01 Product/Price Competition

02 Passive Customers

03 Single Source Data

Enhanced Innovation Process

Innovation Model (Exponential)



- 01 Value Competition
- 02 Integrated Clients
- 03 Multi-source Data

Sustaining Innovations

- Refers to an innovation that happens on an incremental basis, often in response to customer and market demands or improvements in technology
- E.g. Adding more cameras to smart phones



(Christensen et al., 2015)

- Creates a new market and value network
- Disrupts an existing market and value network
- Displacing established market-leading firms, products, and alliances

Tend to be produced by outsiders and entrepreneurs in start-ups, rather than existing market-leaders

Examples:

Wikipedia on Encyclopaedias;

Internet on traditional commerce and business;

Netflix

Evidence of Digital Innovation

2007

1. **ExxonMobil**
2. 
3. **ICBC** 
4.  Microsoft
5. **citigroup** 
6.  **GAZPROM**
7.  **TOYOTA**
8. **Bank of America** 
9.  
10. 

4 oil companies 1 auto maker
 3 banks 1 software
 1 conglomerate company

2017

1.  **Apple**
2. **Alphabet**
3.  Microsoft
4. **BERKSHIRE HATHAWAY INC.**
5. **amazon**
6. **ExxonMobil**
7. **facebook**
8. **Johnson & Johnson**
9. **JPMORGAN CHASE & CO.**
10. 

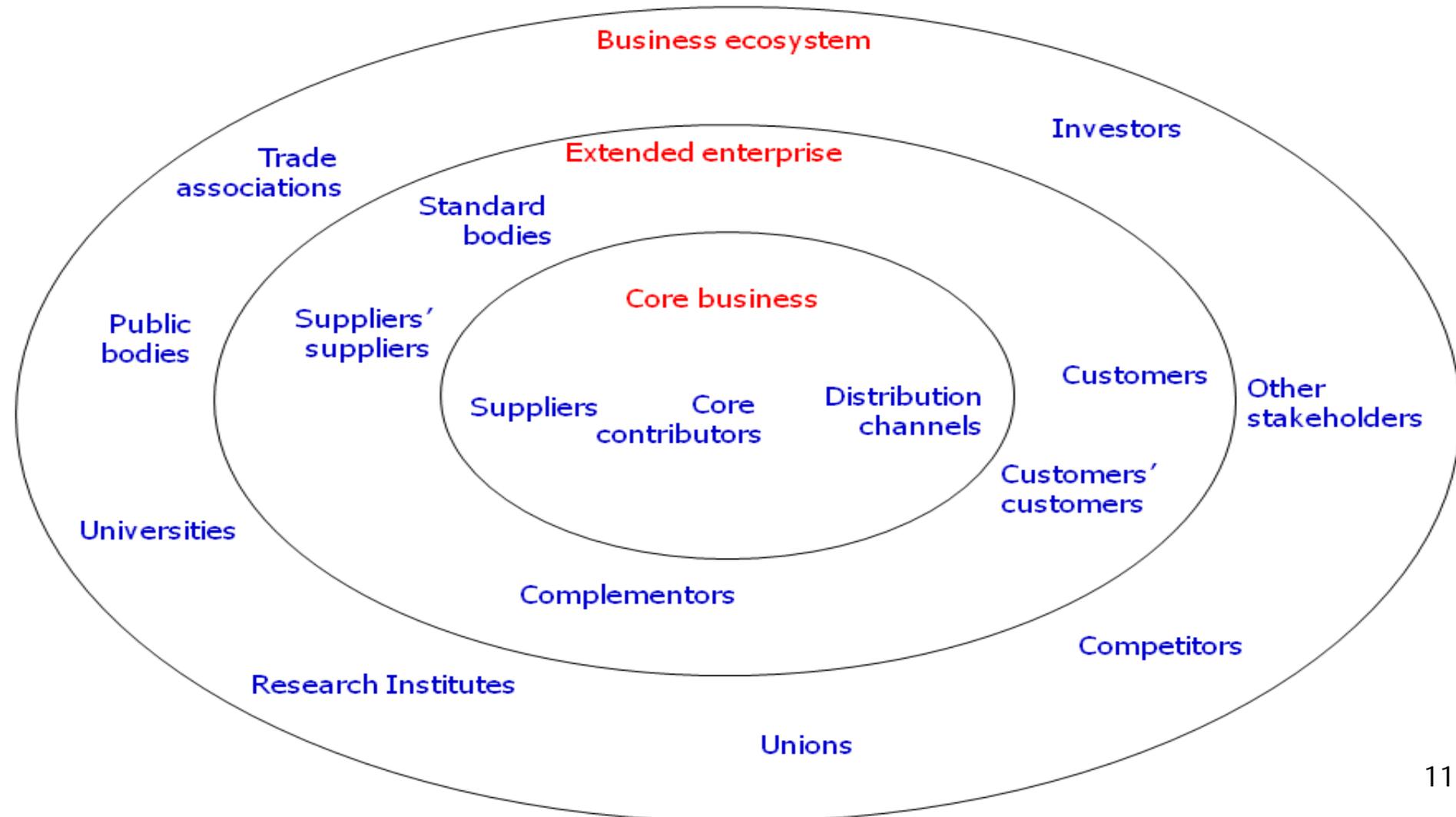
5 digital companies 2 conglomerates
 1 bank 1 oil company
 1 pharma

(Source: KPMG, 2017)

PART TWO: DIGITAL BUSINESS ECOSYSTEMS

Evolution of Business Ecosystems

Business ecosystem allows members to co-create value in the network



- Emphasising on interactions between organisations across traditionally demarcated industry boundaries
- An economic community of win-win for all members
 - Supported by interacting organisations & individuals
 - Deliver valuable goods+services for customers
 - customers & partners themselves as members of the ecosystem

Digital Business Ecosystem



- Interconnections among business participants by digital means
- Real-time information sharing
- Growing Interdependency
- Outcomes
 - Connection & collaboration
 - Co-value creation
 - Industrial disruption

Characteristics of Digital Business Ecosystem



Platform

refers to a collection of tools that partners in DBEs use for their individual innovations and business operations (Selander et al., 2013)



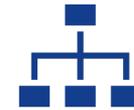
Symbiosis

refers to interdependencies between DBE entities such as partners, processes and technologies that support value co-creation (Senyo et al., 2019)



Co-evolution

refers to a situation where two or more entities reciprocally affect each other's development (Stanley and Briscoe, 2010)



Self-organising

is a process where a DBE learns from its context and accordingly evolves to maintain its balance (Senyo et al., 2019)

Need for DBE (eg iPhone vs. BlackBerry)



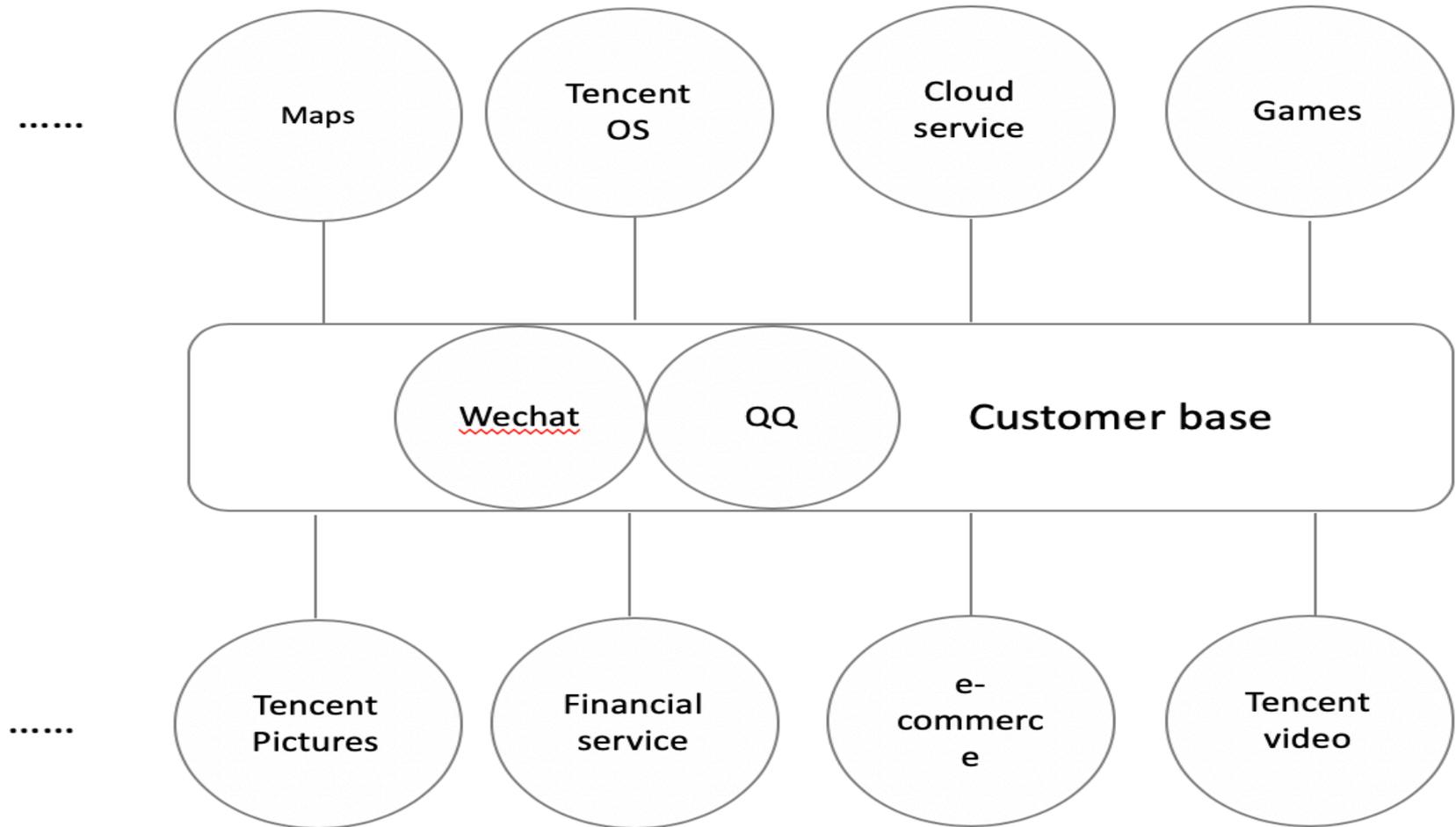
- BlackBerry (RIM) was competing alone and had little strategic partnership with other partners
- BlackBerry concentrated on its messenger app (BBM) without innovating quickly towards an ecosystem
- iPhone was successful because of strategic partnership in its ecosystem
- Apple had many partners who contributed value to its iPhone ecosystems

Example of DBE: Tencent

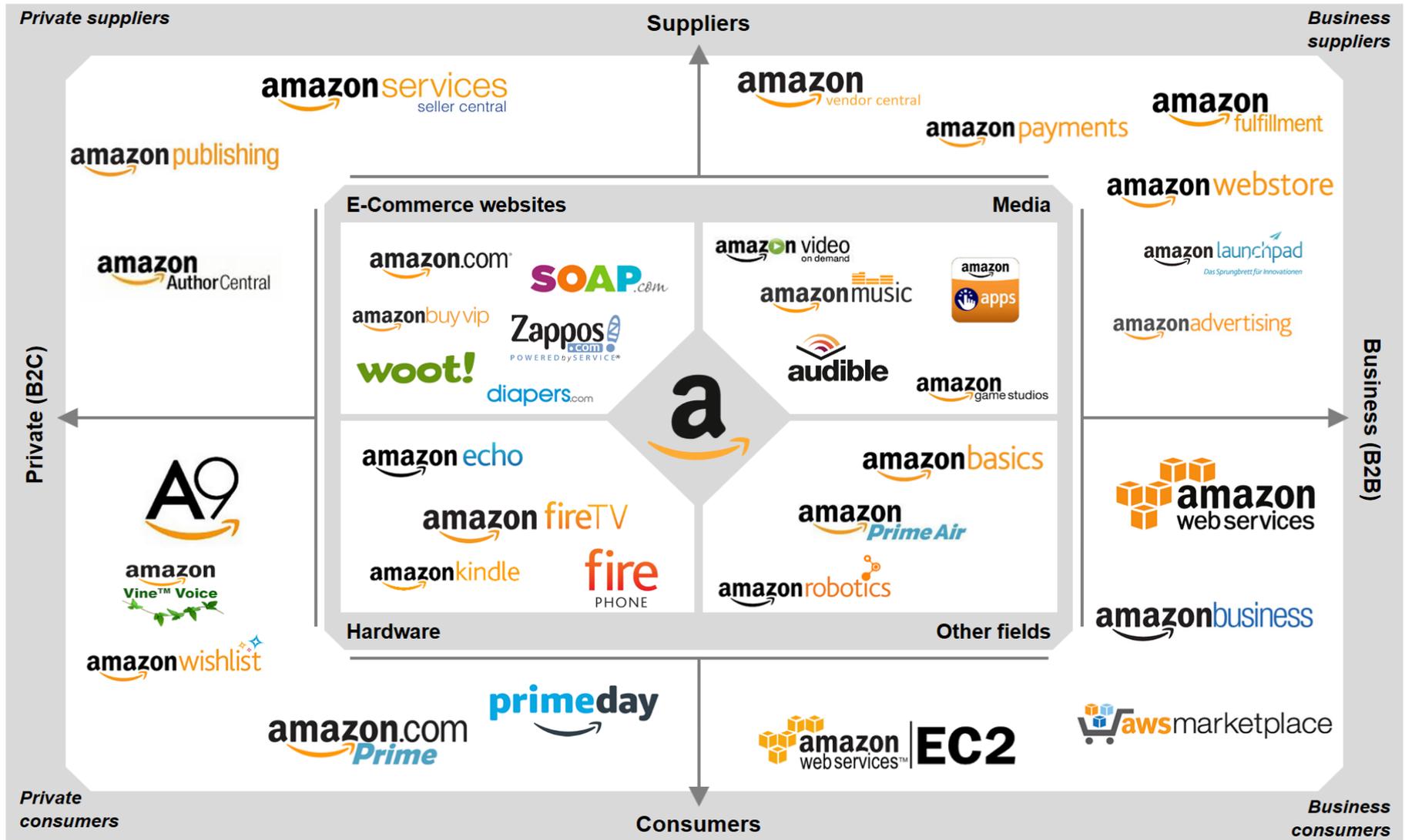


(Source: <https://www.deraktionaeer.de/artikel/aktien>)

Bus Topology of Tencent Ecosystem



Example of DBE: Amazon

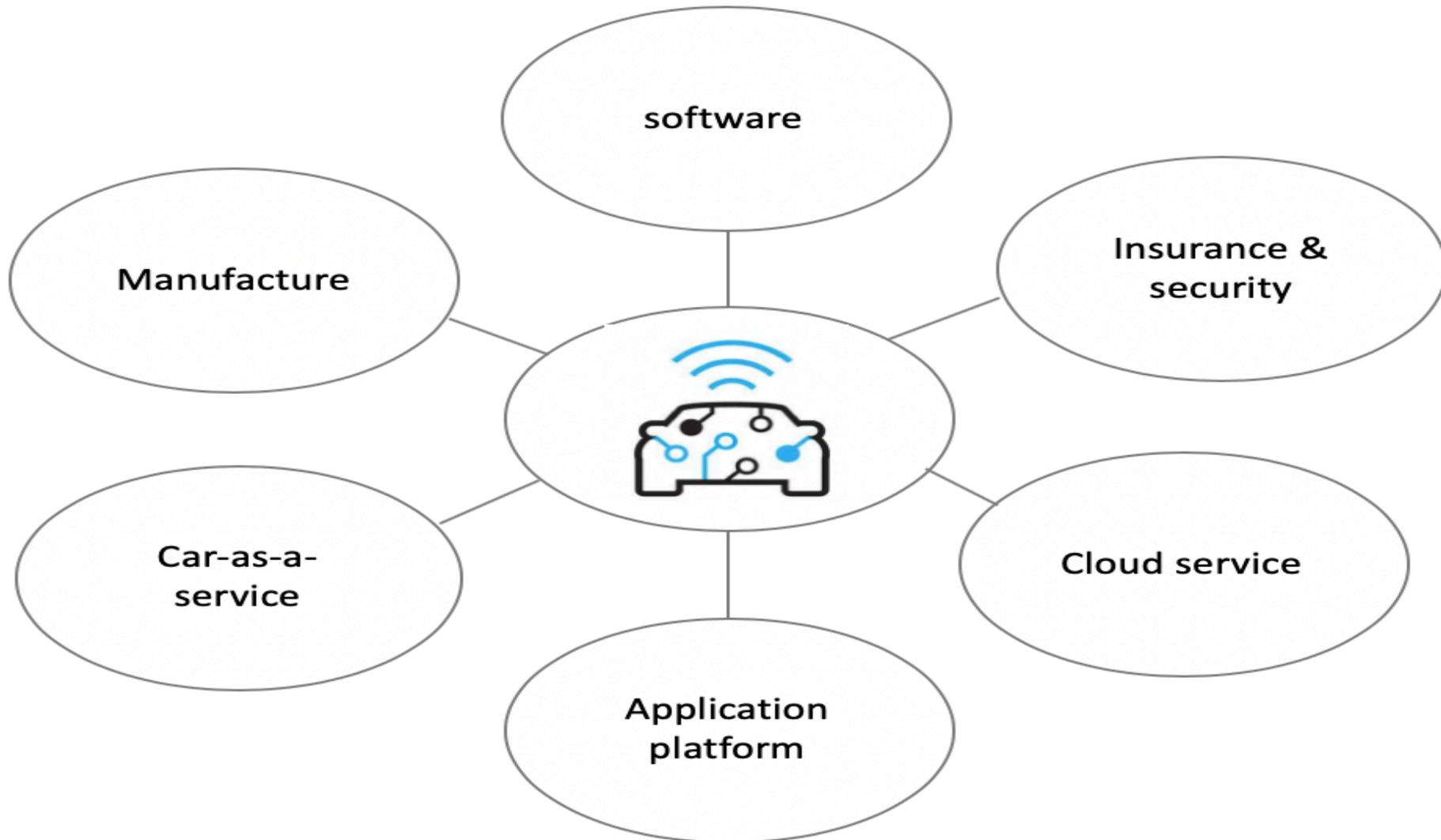


(Source: <https://www.fostec.com/en/competences/digitalisation-strategy/>)

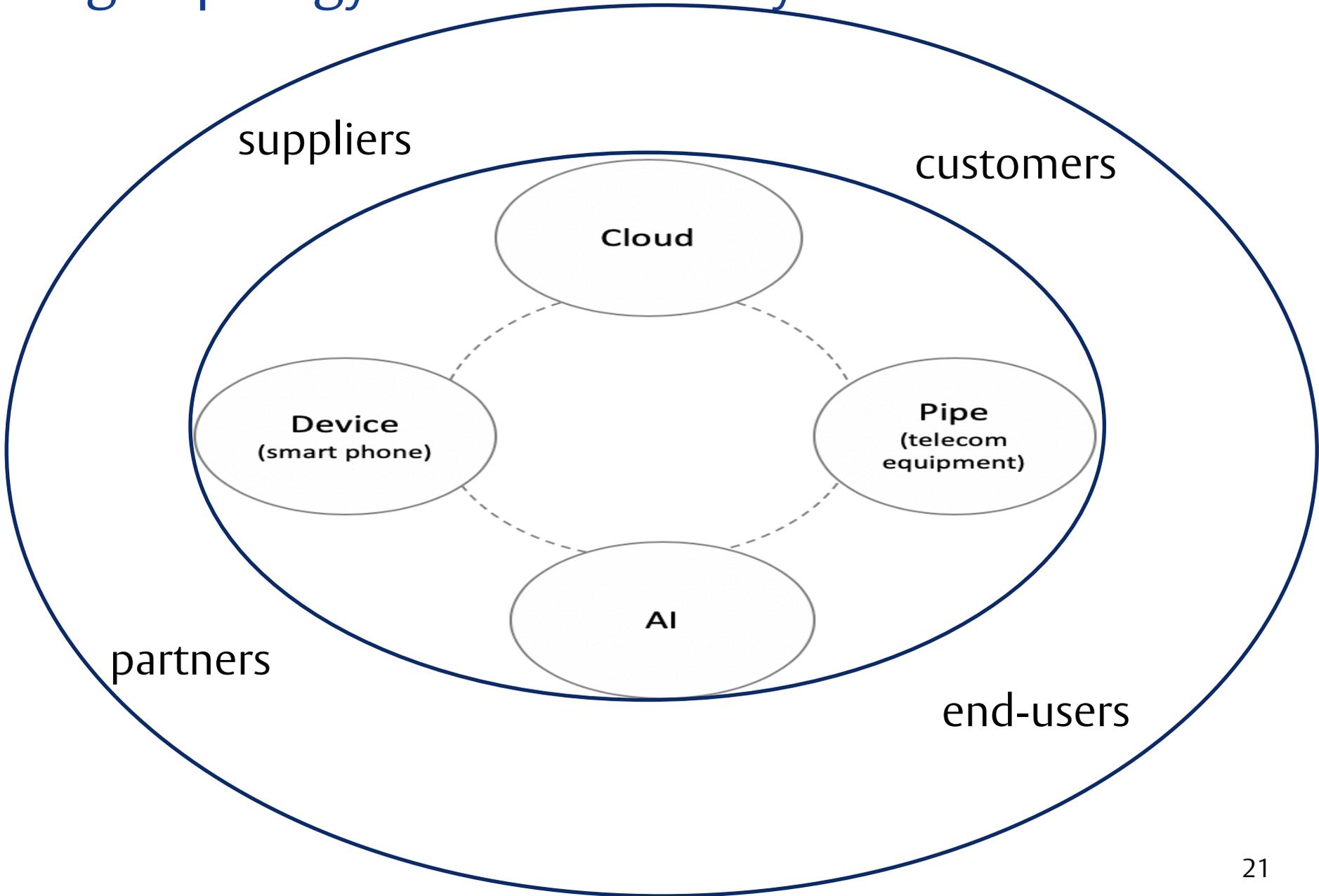
Mesh Topology of Amazon Ecosystem



Star Topology of Daimler Ecosystem



Ring Topology of Huawei Ecosystem



Varieties in DBE formations

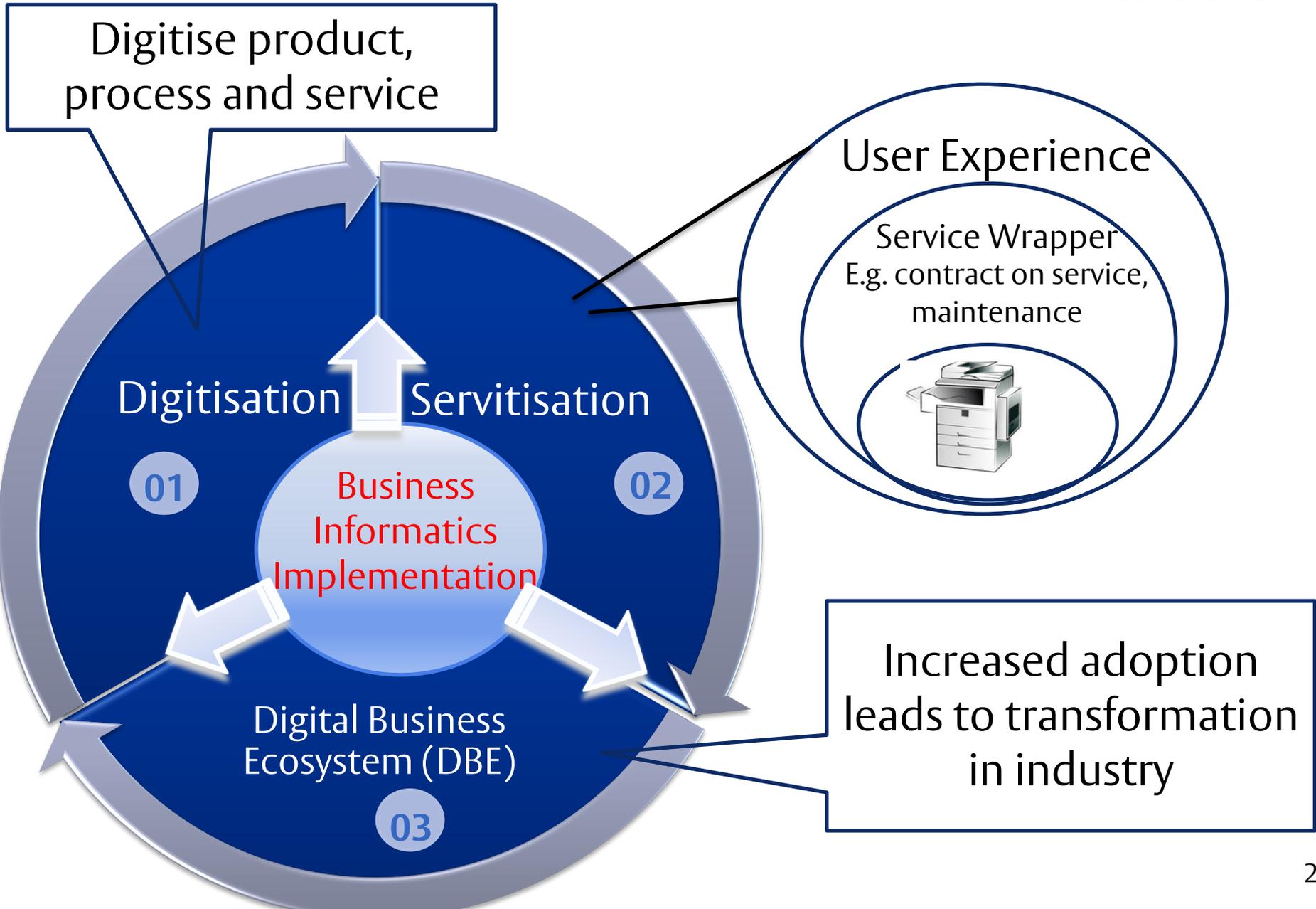
Principal driver	Typical enterprise	Typical DBE typology	Operating philosophy
Financial flow	Amazon	Mesh topology	Discover profitable businesses
Information flow	Tencent	Bus topology	Traffic monetization
Physical goods flow	Mercedes	Star topology	Increase sales & expand scope
Financial flow	Huawei	Ring topology	Raise barriers, secure leadership

PART THREE: DIGITAL TRANSFORMATION

The Nature of Digital Transformation

- Using signals, symbols, data and information
 - to perform business functions and processes
 - to extend functions and utility of physical goods
- Extended business affordances with virtual capabilities
- Digitisation-servitisation-transformation:
 - driven by effective use of signs
 - sign-based organised activities
 - implementing informatics in business

Transformation Stages



Transform the Organisation

– understand the organisation

Informal System

Sub-culture where meanings are established, intentions understood, beliefs, commitments and responsibilities made, altered and discharged

Formal System

Bureaucracy where rules, processes and procedures replace meaning and intentions

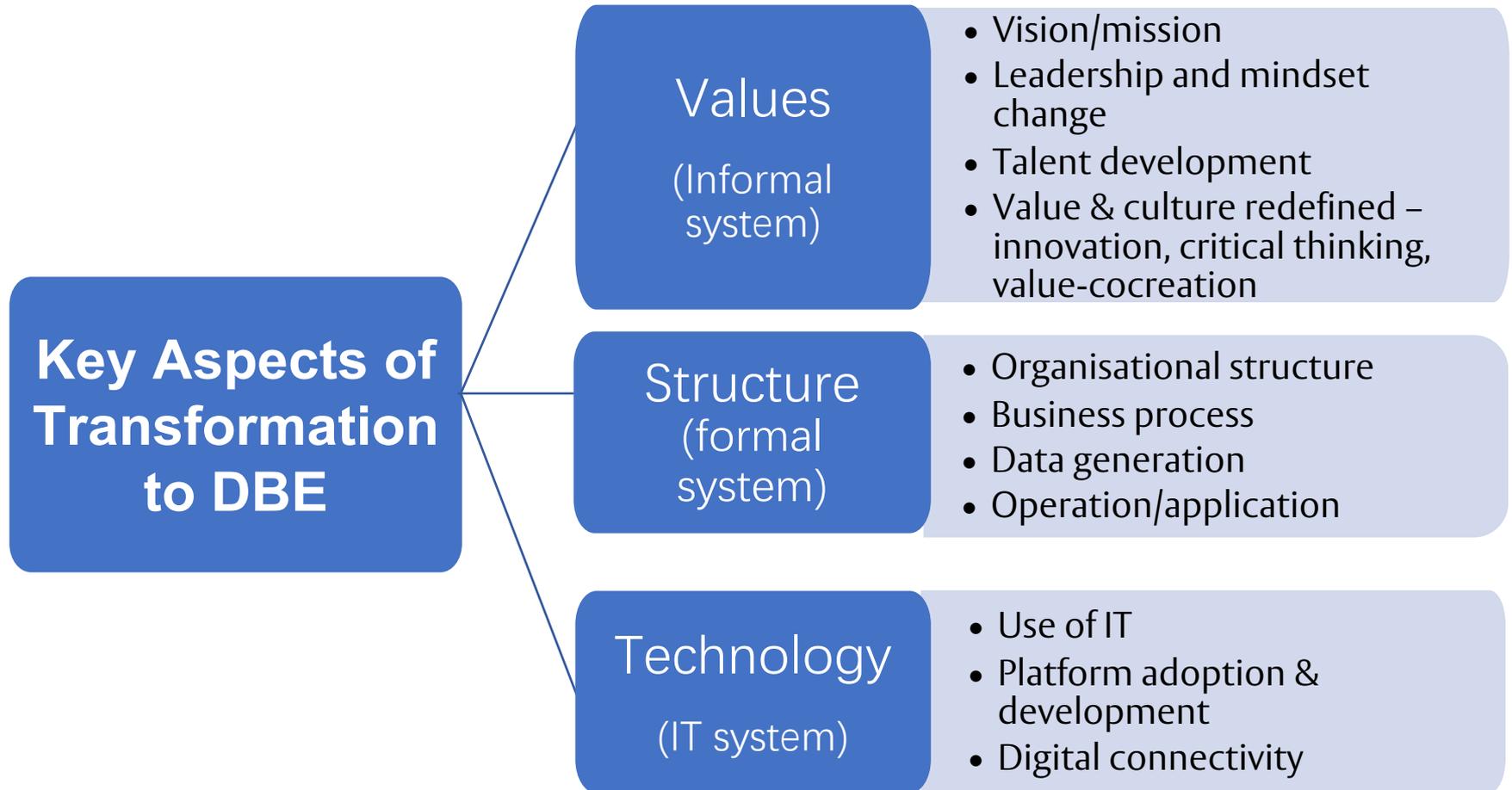
Technical System

Automated part of the formal system, IT systems

(Stamper 1991; Liu 2000)

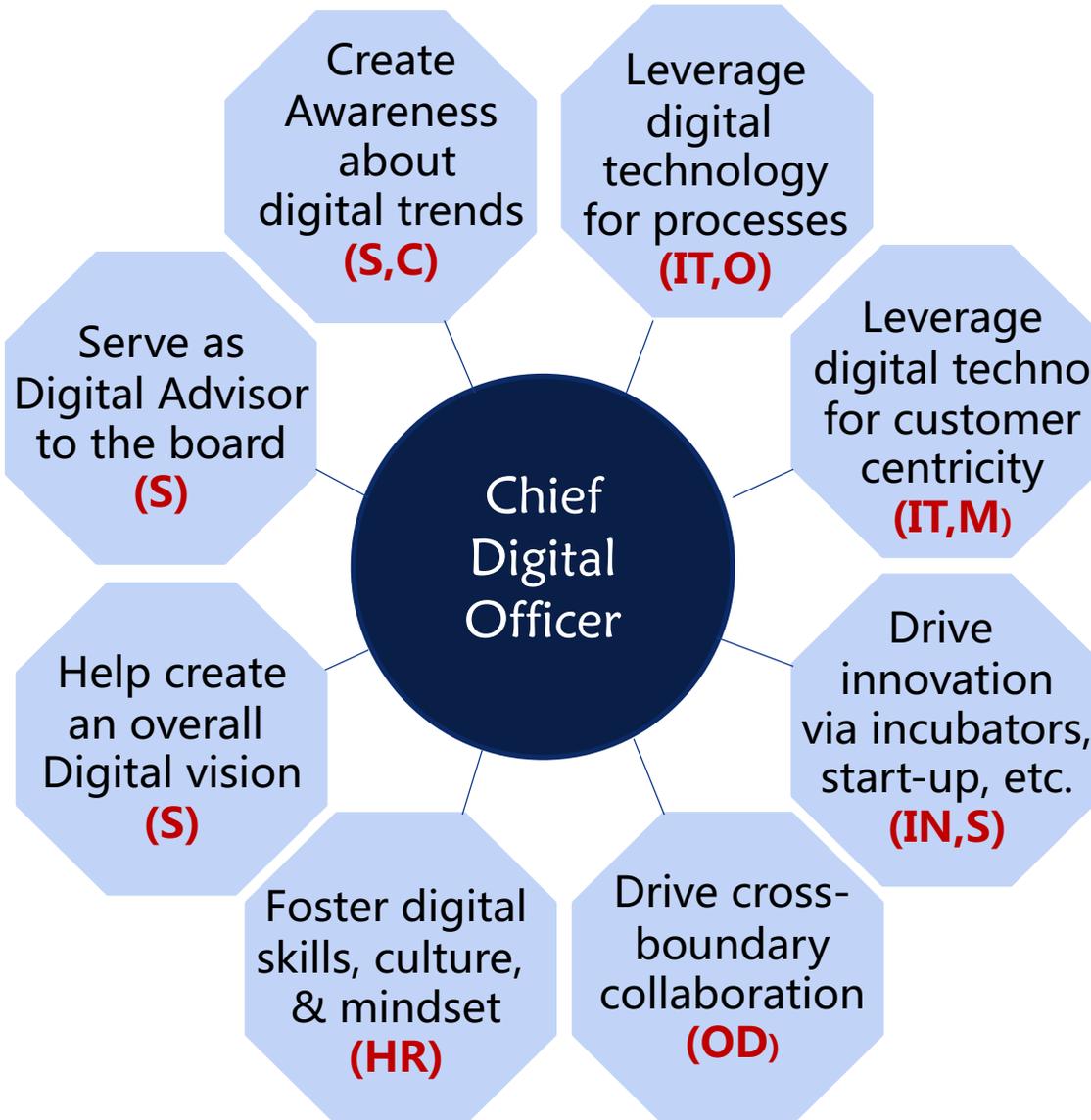
Transform the Organisation

- key aspects of implementing the transformation



Digital Leadership in Transformation

- the key role of Chief Digital Officer



Chief Digital Officer must work with other directors

Functional Domains:

S Strategy

C Communication

IT Information Technology

O Operations

M Marketing

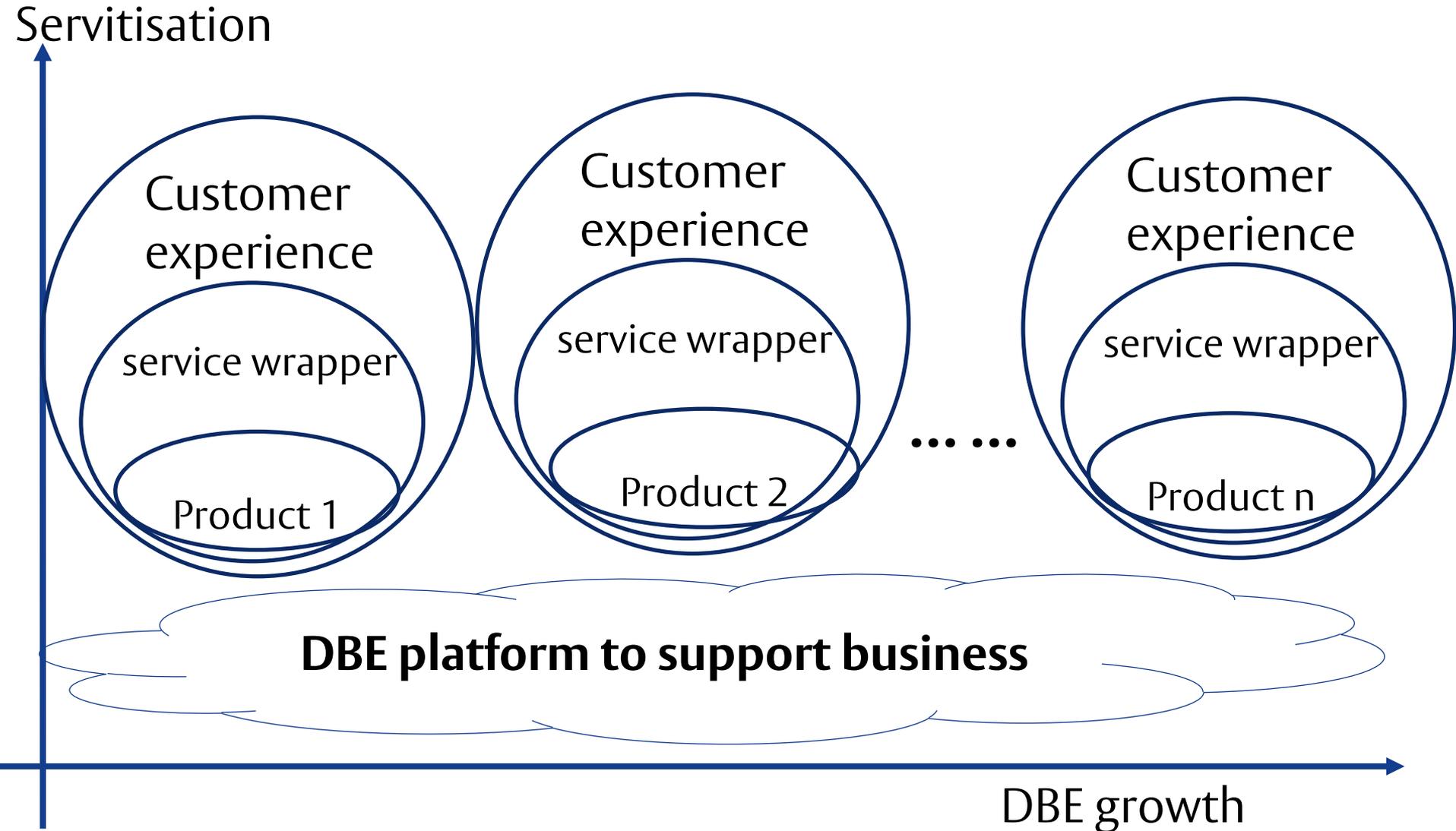
IN Innovation/R&D

HR Human Resources

OD Organizational Development

Conclusion and Moving Forward

- transformation for value co-creation



Moving Forward: Digital Transformation

- Transform from physical to socio-technically connected systems: digitisation – servitisation – digital business ecosystem
- Compete as an ecosystem instead of an individual firm
- Adopt co-petition business strategies
- Treat customers as contributing partners instead of end-users

- Embracing challenges in transformation involving whole organization:
 - Informal - visions, leadership, mindset, values and culture
 - Formal – structure and process
 - Technical – adoption and development of technological platform

Thank you!

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