Software Center
2011 -> 2019 -> 2027

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Sprint 16 reporting workshop

Software Center 2011

Mission: To significantly improve the ***Software Engineering*** capability of the Swedish Software-Intensive industry

ERICSSON

SAAB TECHNOLOGIES

VOLVO

VOLVO

AVANCEZ 1829

CHALMERS

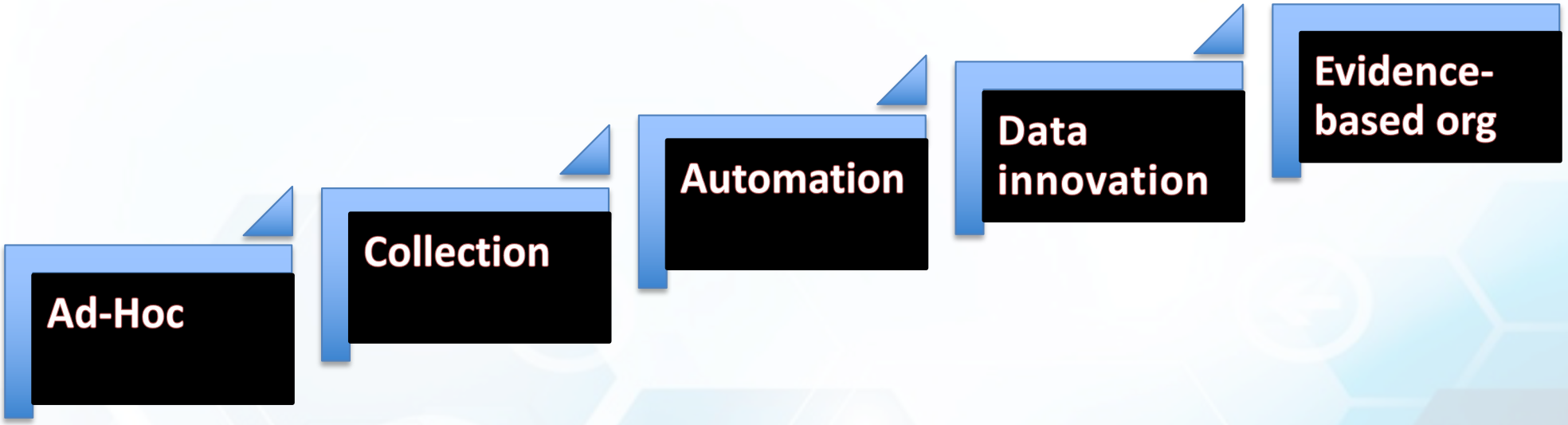
UNIVERSITAS GOTHOBURGENSIS 1891

Software Center 2019

Mission: To significantly improve the ***digitalization*** capability of the European Software-Intensive industry

Stairway to Heaven: Speed

Stairway to Heaven: Data

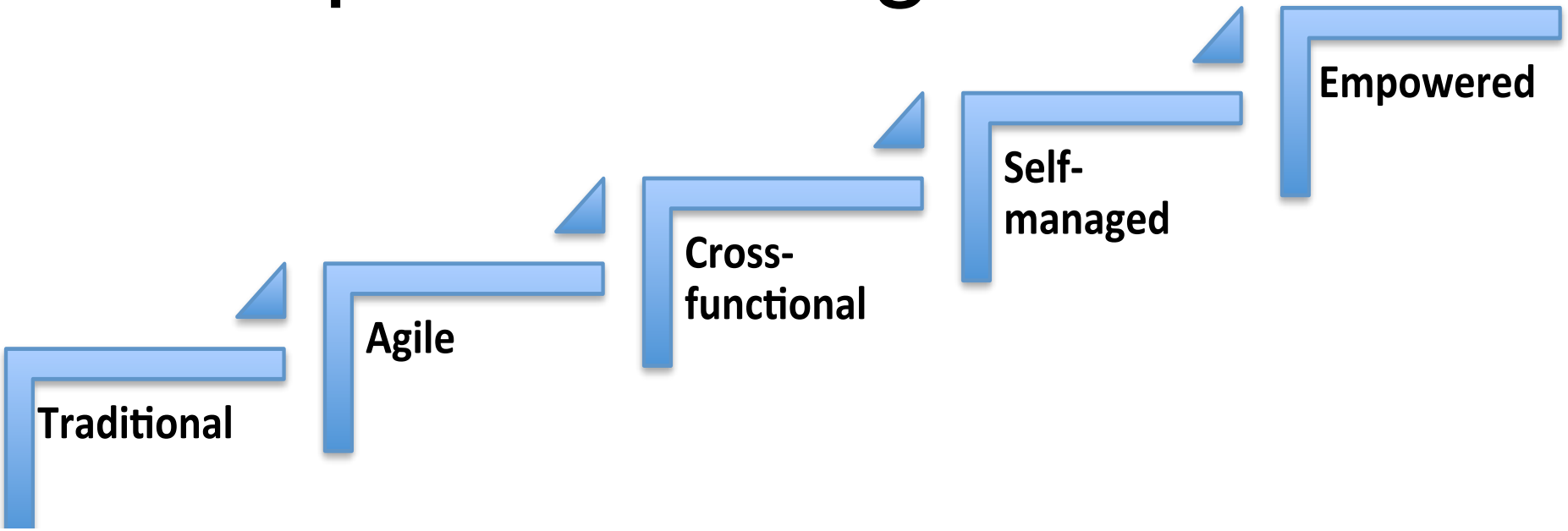


	Collection	Analysis	Reporting	Decision making
Ad-hoc	manual	manual	manual	manual
Collection	automated	manual	manual	manual
Automation	automated	automated	automated	supported
Data innovation	dynamic	dynamic	dynamic	supported
Evidence-based company	dynamic	dynamic	dynamic	automated

Stairway to Heaven: Ecosystems

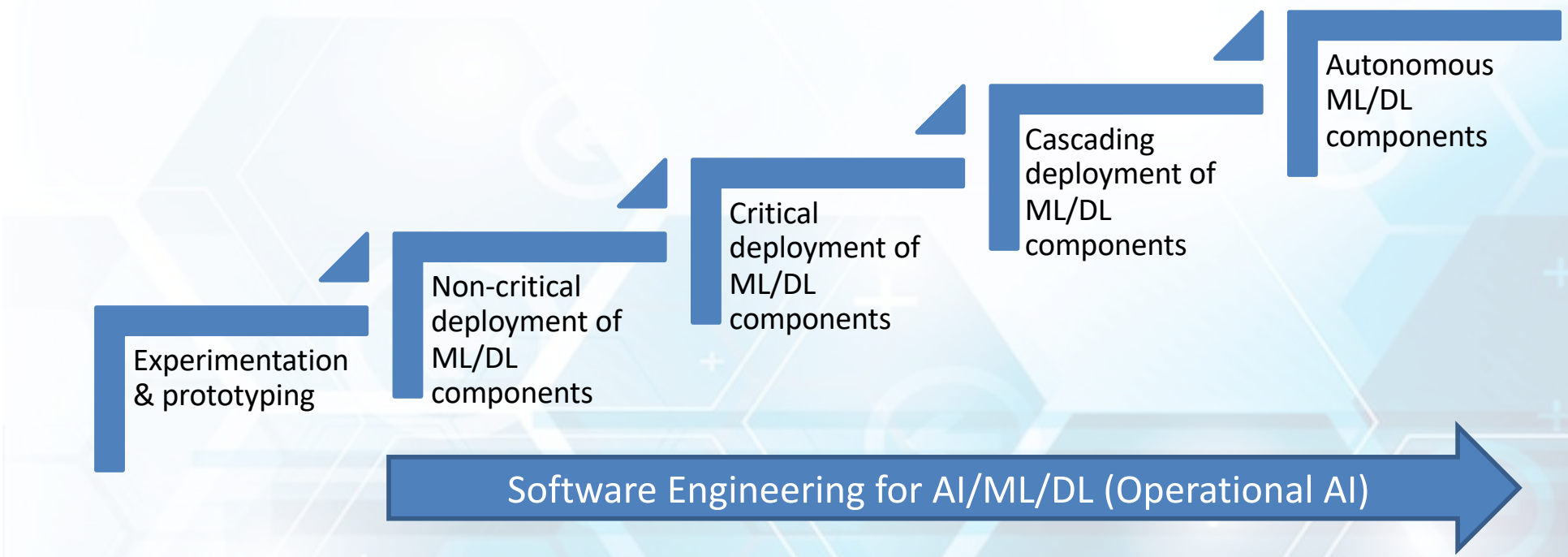
Levels	
Internally focused	do everything in-house unless it is really impossible
Ad-hoc ecosystem engagement	individuals take ad-hoc decisions to engage with ecosystem partners, but local optimization
Tactical ecosystem engagement	ecosystem engagement is centralized, but driven by tactical (rather than strategic) considerations
Strategic single ecosystem management	one of the ecosystem types is managed strategically
Strategic multi-ecosystem management	all three types (I, D, C) are managed strategically

Empowered Organizations



	Traditional	Agile	Cross-functional	Self-managed	Empowered
Culture	Hierarchical	Hierarchical	Hierarchical	Hierarchical	Empowered
General Mgmt.	Hierarchical	Hierarchical	Hierarchical	Empowered	Empowered
Inter-team (PdM/R&D)	Hierarchical	Hierarchical	Empowered	Empowered	Empowered
Local (R&D)	Hierarchical	Empowered	Empowered	Empowered	Empowered

Artificial Intelligence

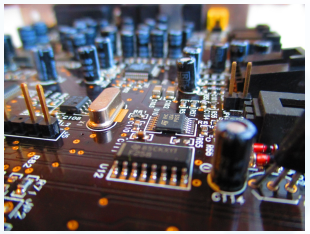


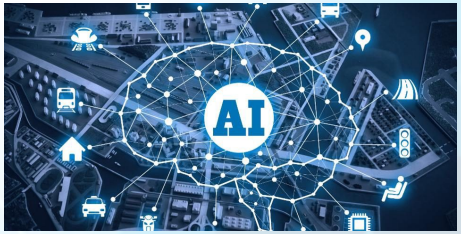
What Makes A Digital Company?

- Using email?
- Have a website?
- Use social media?
- Video conferencing?
- Chatbots?

- Data-driven decision making
- Relentless experimentation (e.g. A/B testing)
- Short feedback cycles
- Decision making pushed down in organization
- Strategic data collection
- Unified data warehouse
- Pervasive automation
- New job descriptions

Technology Evolution



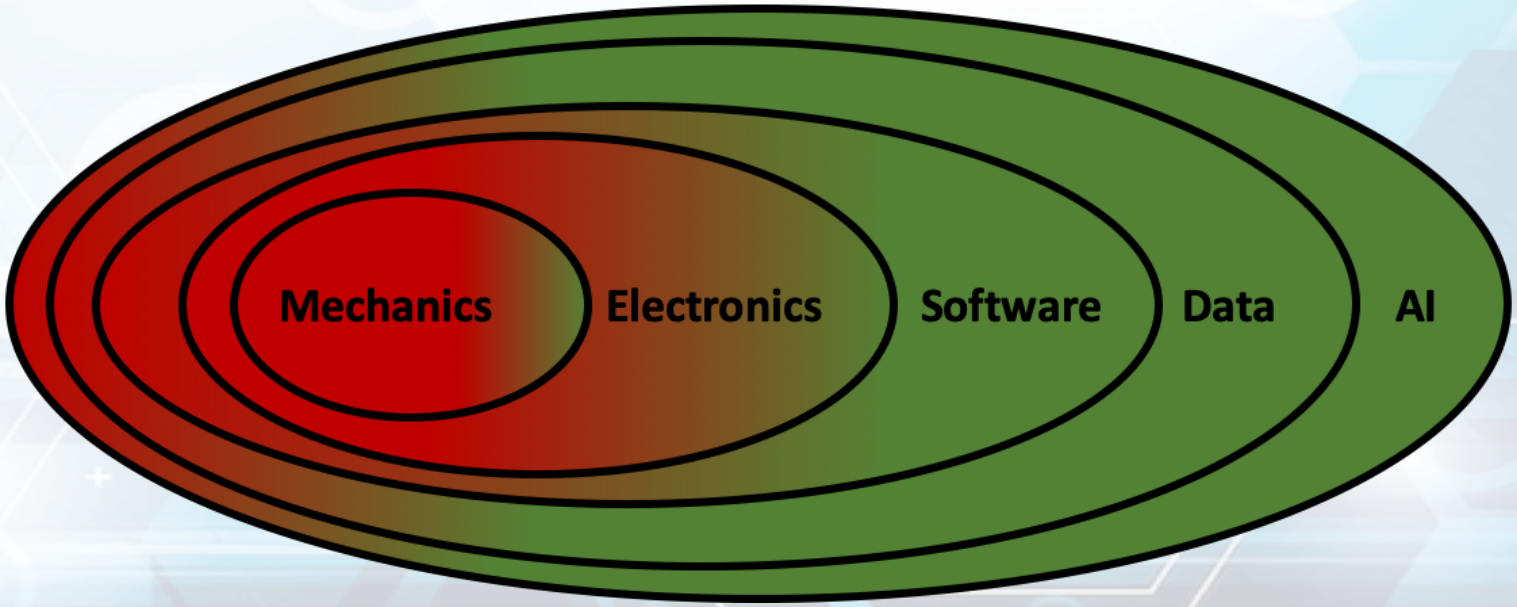


mechanics electronics software data artificial intelligence

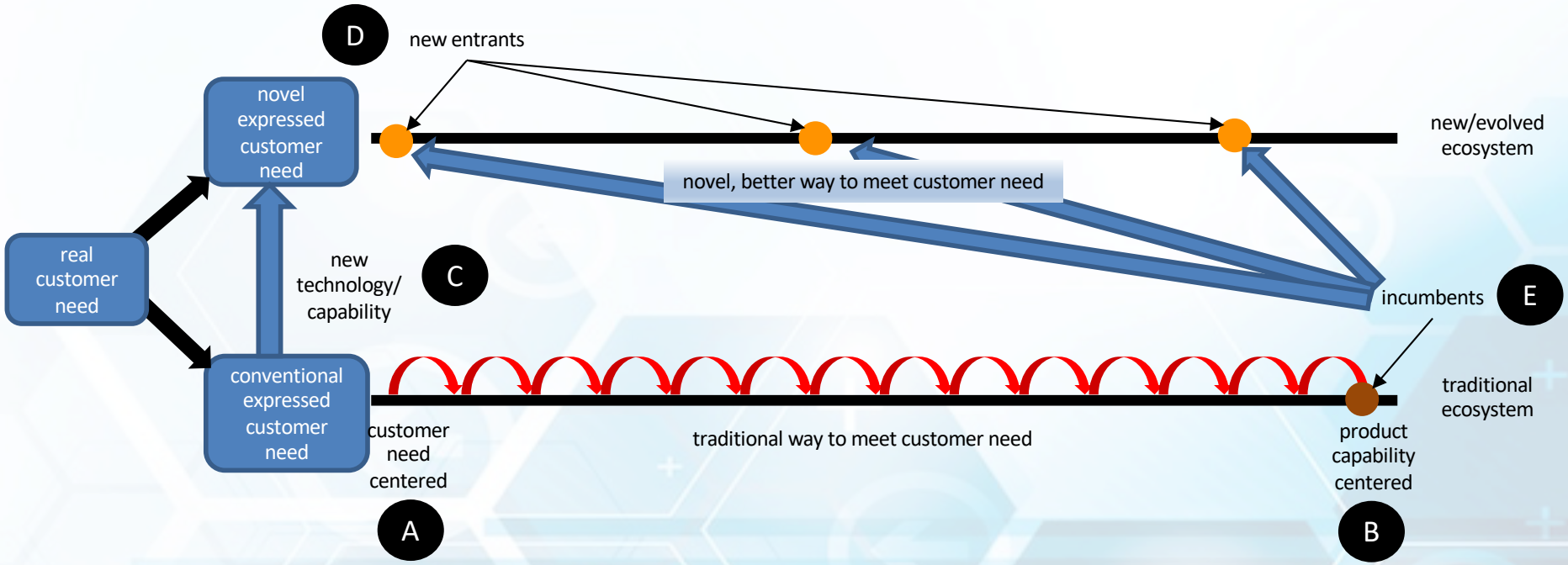
Business Evolution

: Commodity functionality

: Differentiating/innovative functionality

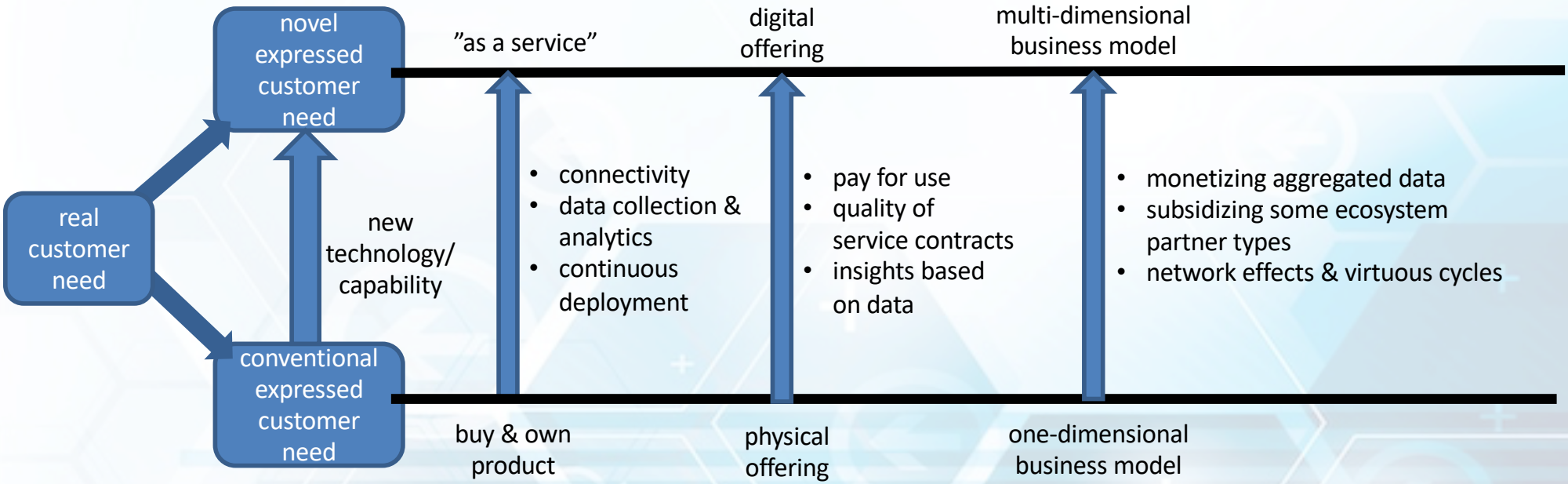


Disruption Model

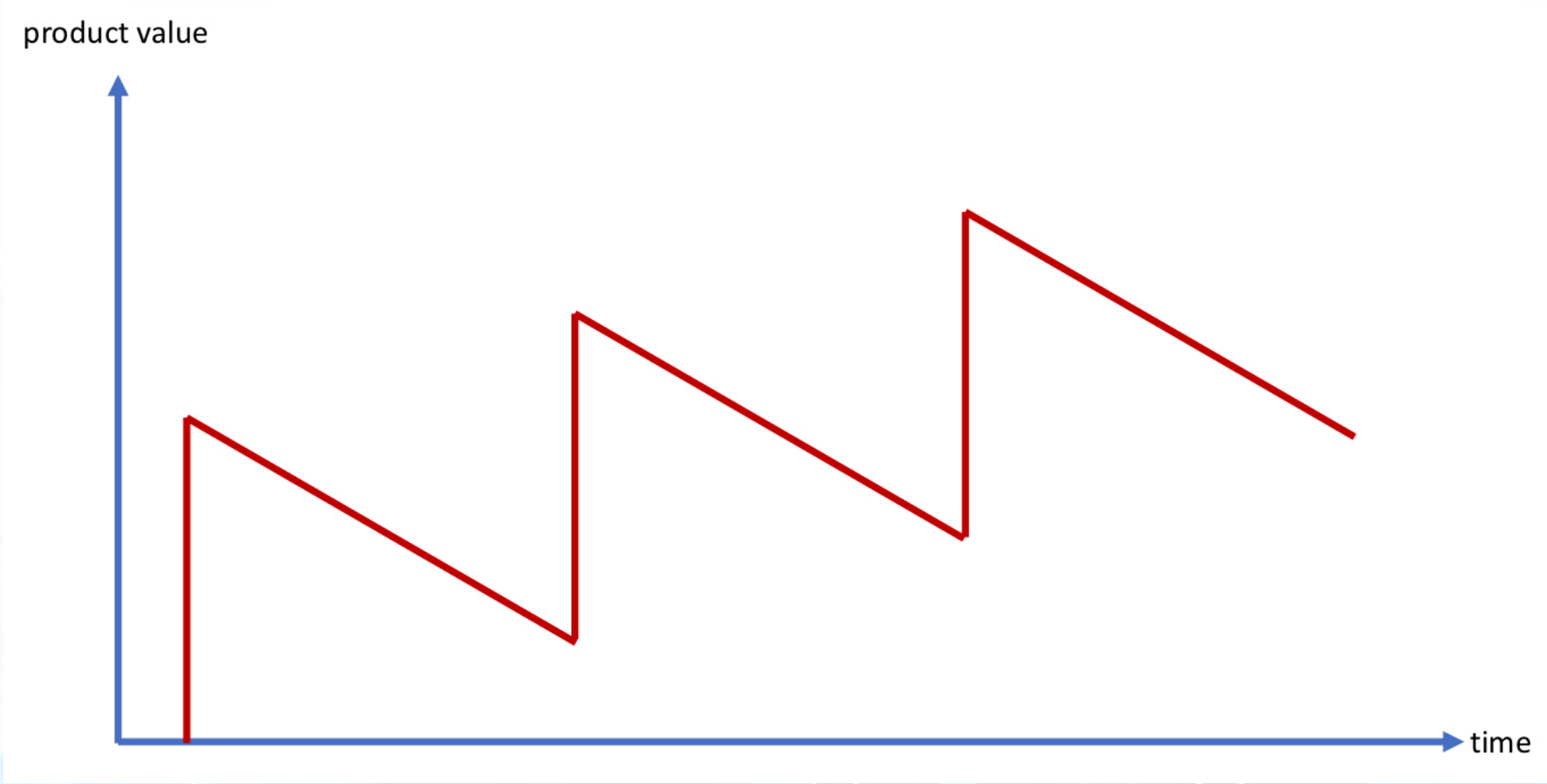


Expressed customer need = **f**(real customer need, technology capability, cost)

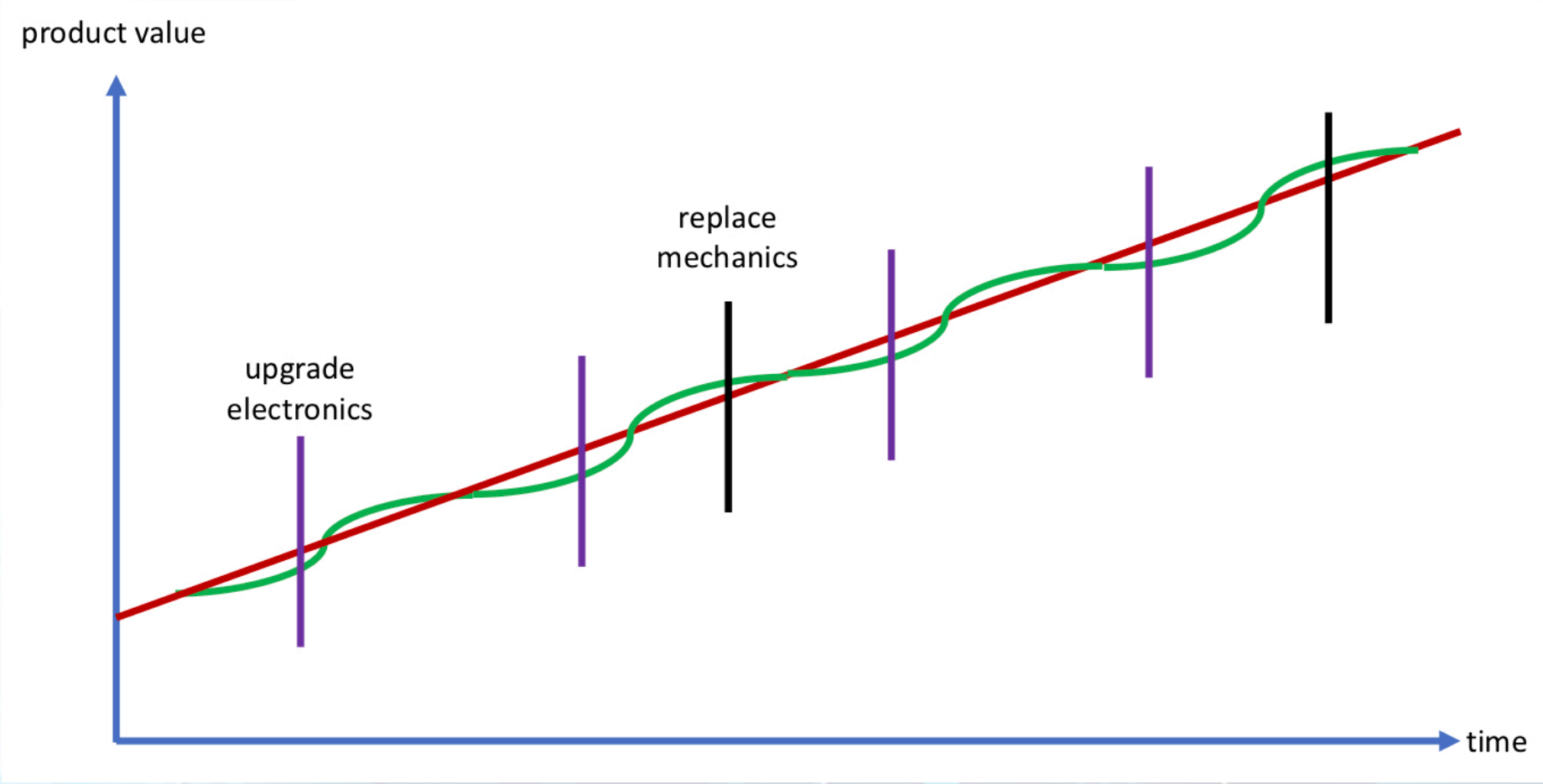
Instantiated For Digitalization



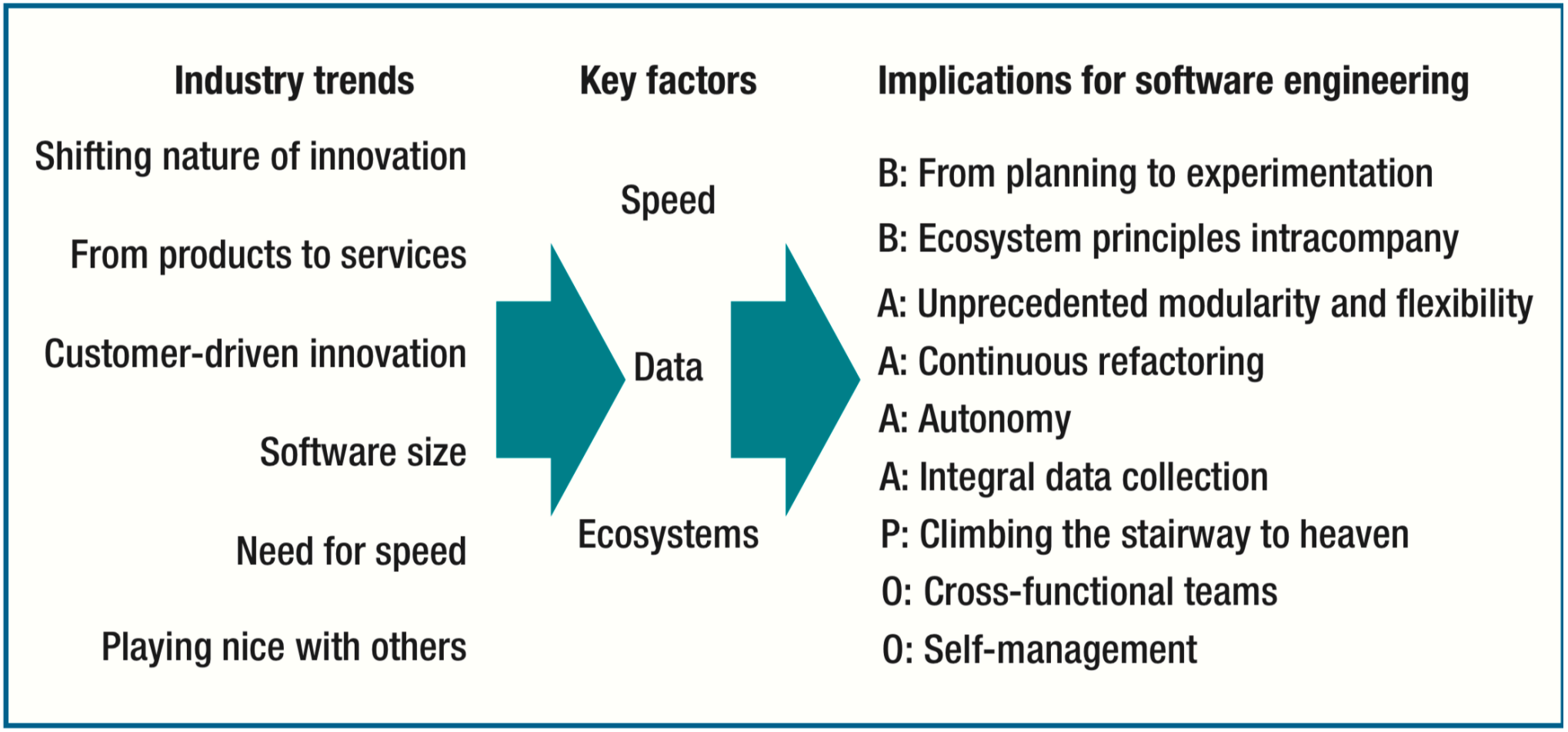
Traditional Value Delivery



Continuous Value Delivery



Conclusion


Industry trends
Shifting nature of innovation
From products to services
Customer-driven innovation
Software size
Need for speed
Playing nice with others
Key factors
Speed
Data
Ecosystems
Implications for software engineering
B: From planning to experimentation
B: Ecosystem principles intracompany
A: Unprecedented modularity and flexibility
A: Continuous refactoring
A: Autonomy
A: Integral data collection
P: Climbing the stairway to heaven
O: Cross-functional teams
O: Self-management

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