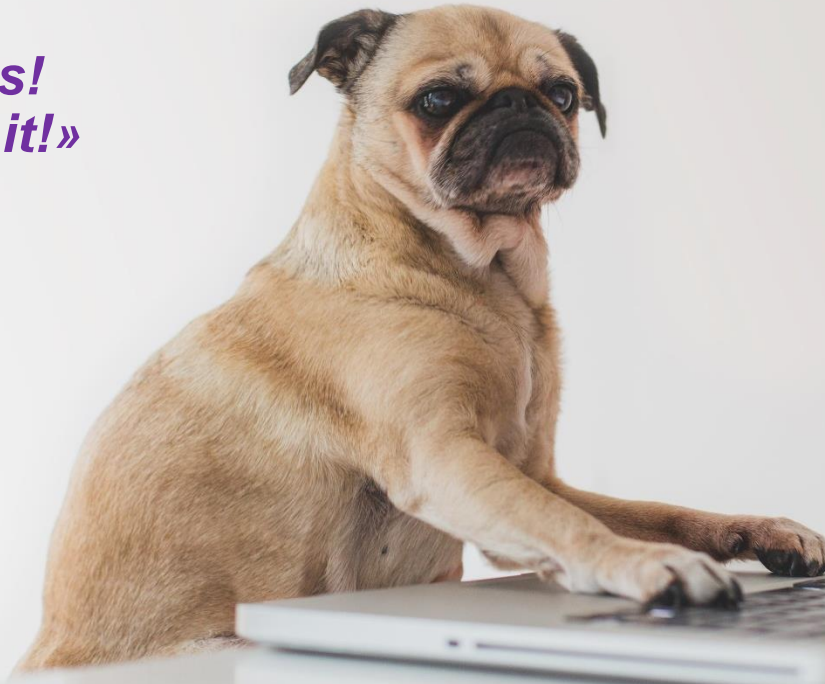


Digitalisation of Business Processes

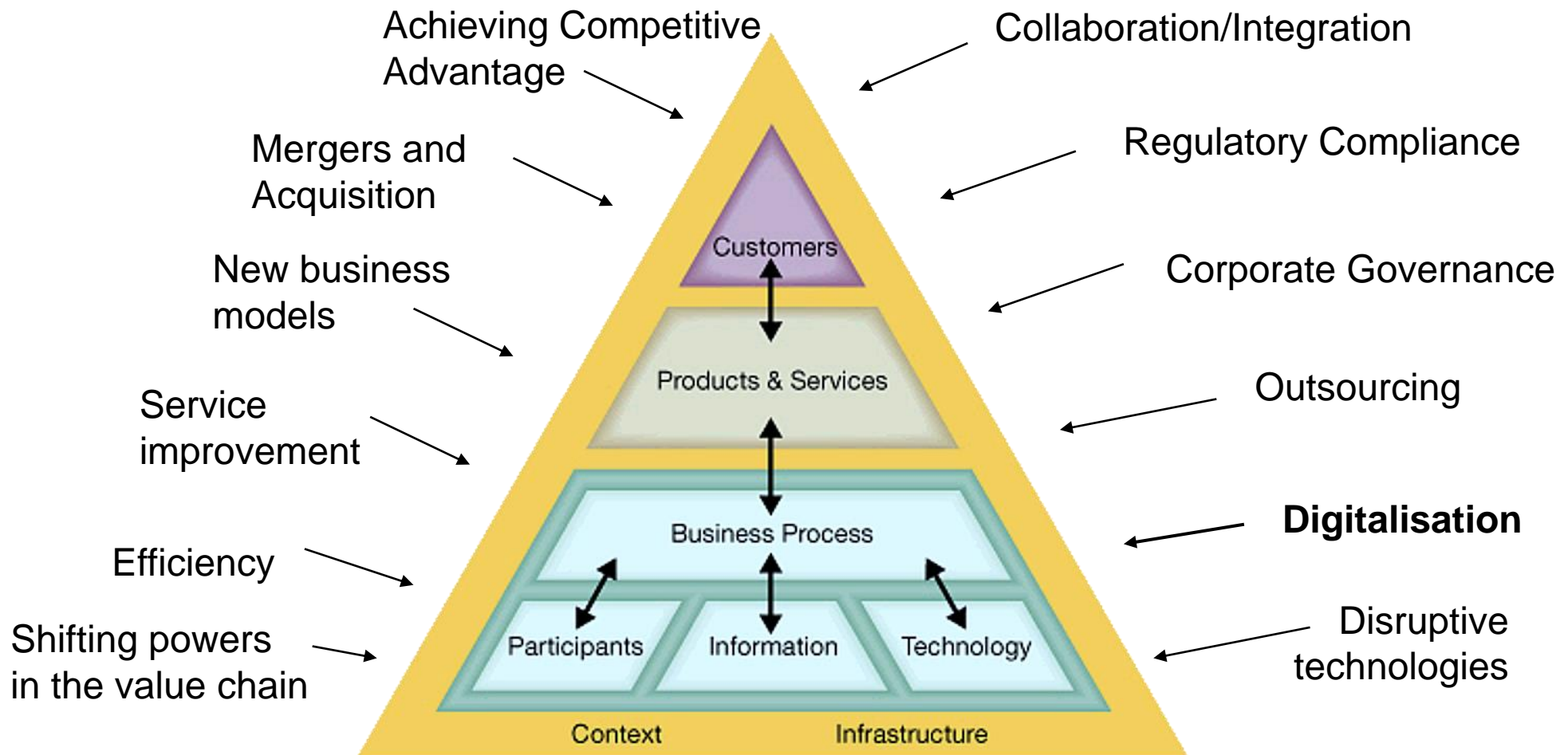
Andreas Martin | Digitalisation of Business Processes | MSc in Business Information Systems

*«Alright, folks!
Let's dive into it!»*



<https://burst.shopify.com/photos/business-pug-working-on-laptop>

Challenges confronting an Enterprise



adapted from a slide by Knut Hinkelmann | Alter 2002

Digitalisation DEFINED – Target

«Digitalisation revolutionises entire **industries**, challenges **business models** and **processes** through the availability of digital data, the automation of work, the connectivity of things and value chains, and the suitable inclusion of digital interfaces for users and applications.»



Industry



Business
Model



Business
Process

Digitalisation DEFINED – Drivers

«Digitalisation revolutionises entire industries, challenges business models and processes through the availability of **digital data**, the **automation of work**, the **connectivity** of things and value chains, and the suitable inclusion of **digital interfaces** for users and applications.»

Digital Data



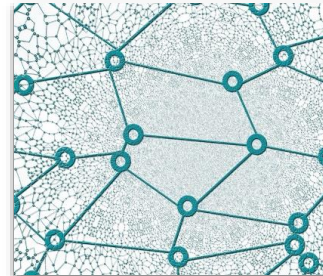
- Digital Data Management
- Data Analytics & Science
- Decision Support

Automation



- Software Agents
- Process Automation
- Robotics

Connectivity



- Internet of Things (IoT)
- Interconnected Value Chains

Digital Interfaces



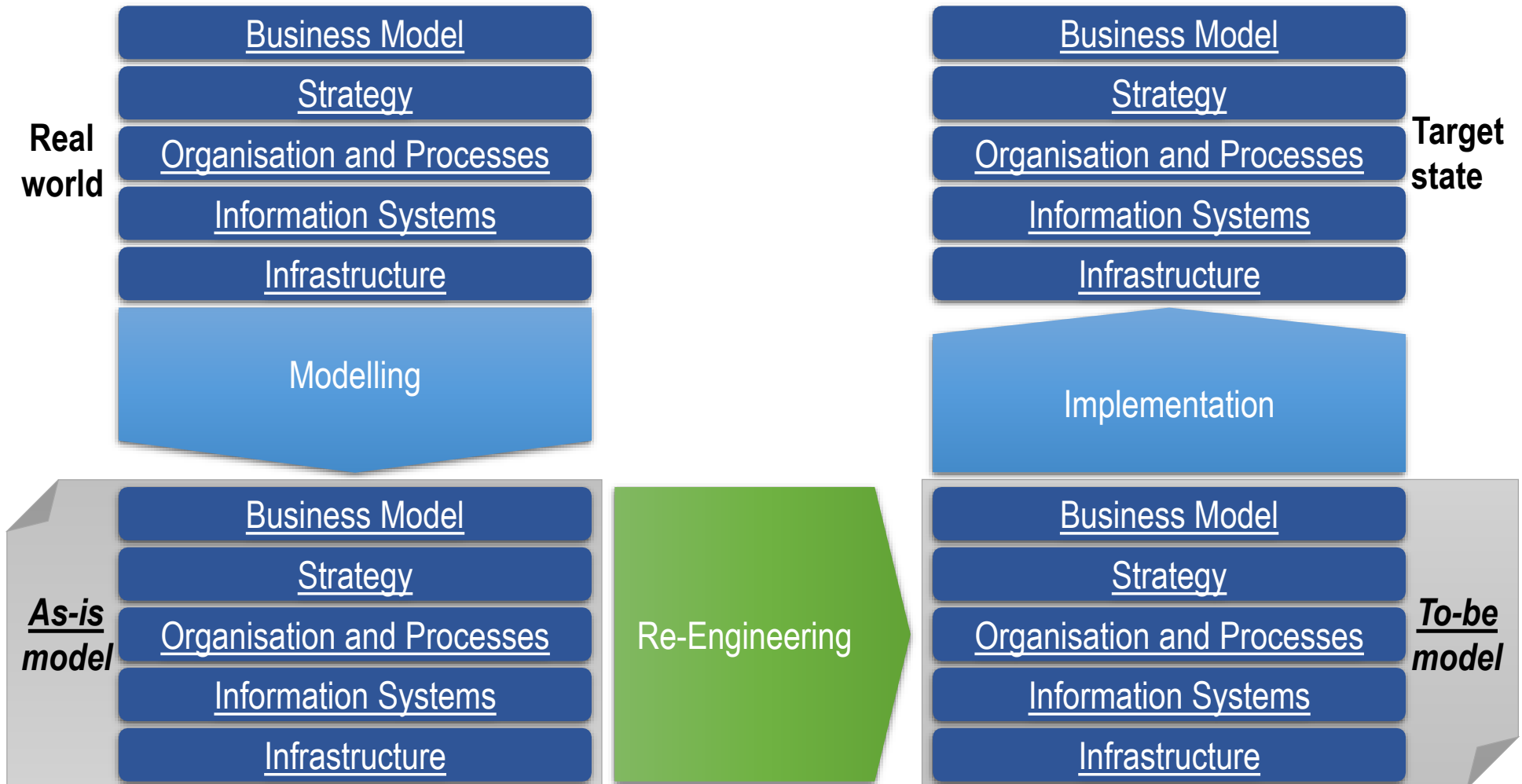
- Digital User Interfaces
- Application Programming Interfaces (APIs)

Agility: Demand for Continuous Change

- Enterprises need to be agile, to improve their chances of survival.
- Agility is the ability of enterprises to
 - seize **opportunities** in technological, economic and regulatory perspective as they avail themselves,
 - have the flexibility to deal with **individual customer requirements**, to design an adequate customer journey, reduce response time to external demands,
 - and to **react on events** and quickly adapt themselves to changes in their environment.

Adapted from: Op 't Land, M.; Proper, E.; Waage, M.; Cloo, J. and Steghuis, C.: Enterprise Architecture - Creating Value by Informed Governance, 2009, page 6.

Business Transformation and Modelling



adapted from a slide by Knut Hinkelmann

Digitalisation of Business Processes

Thesis I: An intelligent digitalisation of business processes ...

... should involve the investigation ...



... how the digitalisation affects (business) information systems supporting business processes in an enterprise, ...



... how an ideal interaction of natural and artificial intelligence in an organisational environment can be achieved, ...



... and how cooperation and partnership among humans, technology and organisation can result in an adequate business process execution.

Images: SRF/Oscar Alessio; startupstockphotos.com

Thesis II: An intelligent digitalisation of business processes ...

... should consider and provide an ideal, adequate and innovative:



Mapping of
Customer Journeys



Application of
Digitalisation Drivers



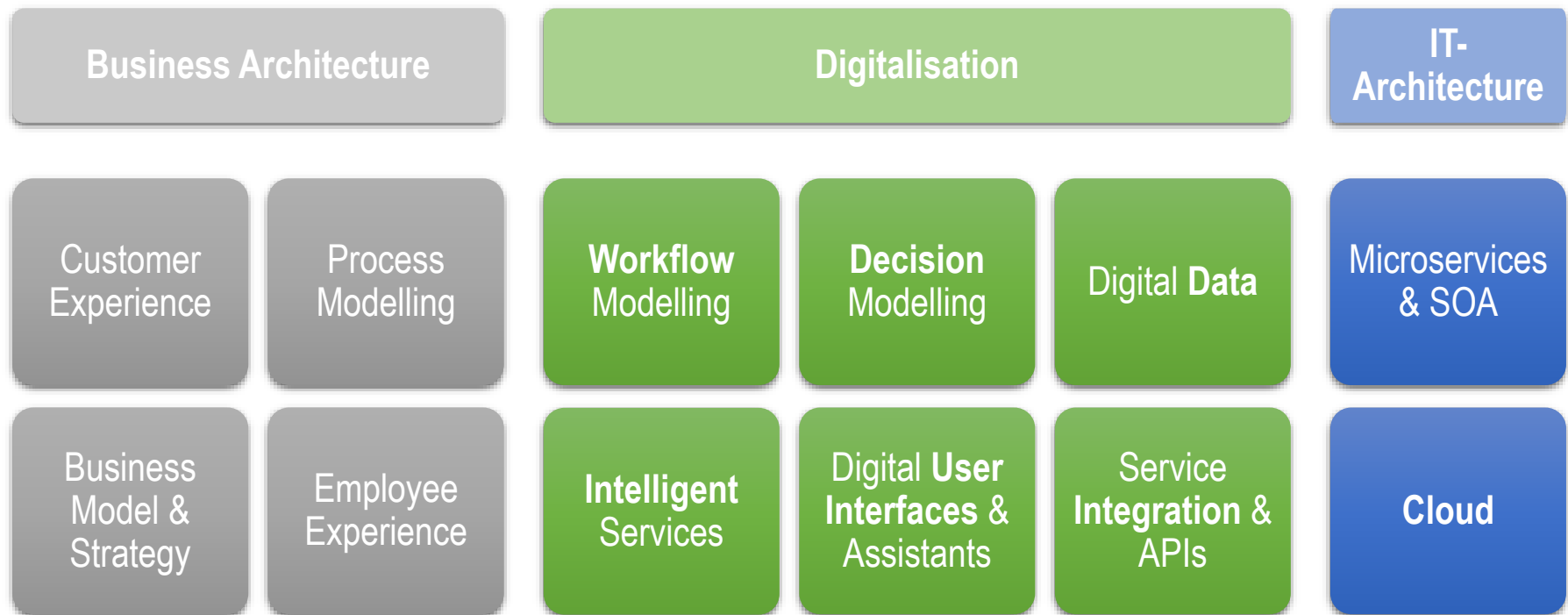
Inclusion of
Intelligent Systems



Design of
Employee Experience

Images: DesignThinkers Academy; SRF/Oscar Alessio; pixabay.com

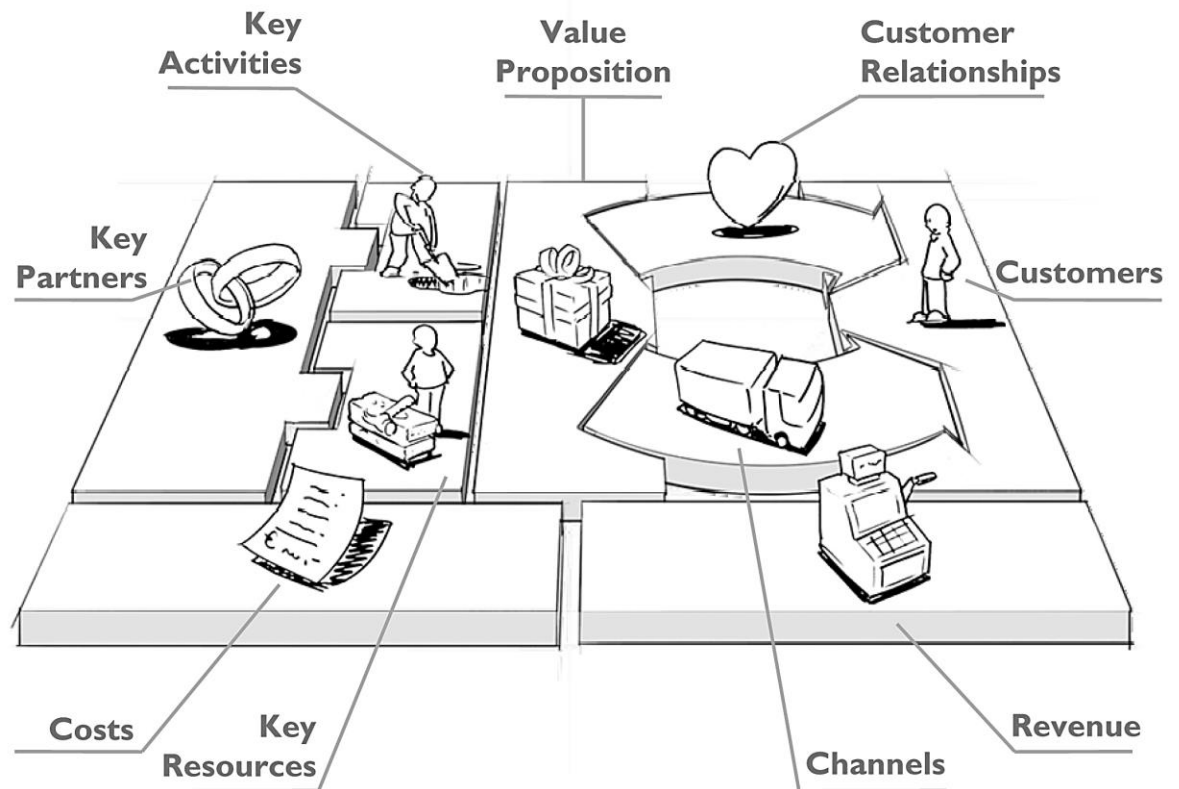
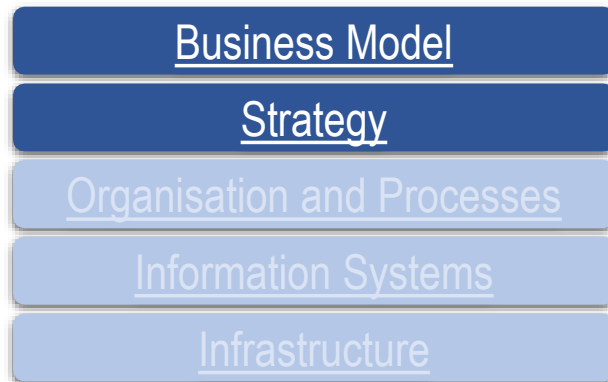
Building Blocks for a SUCCESSFUL Process Digitalisation



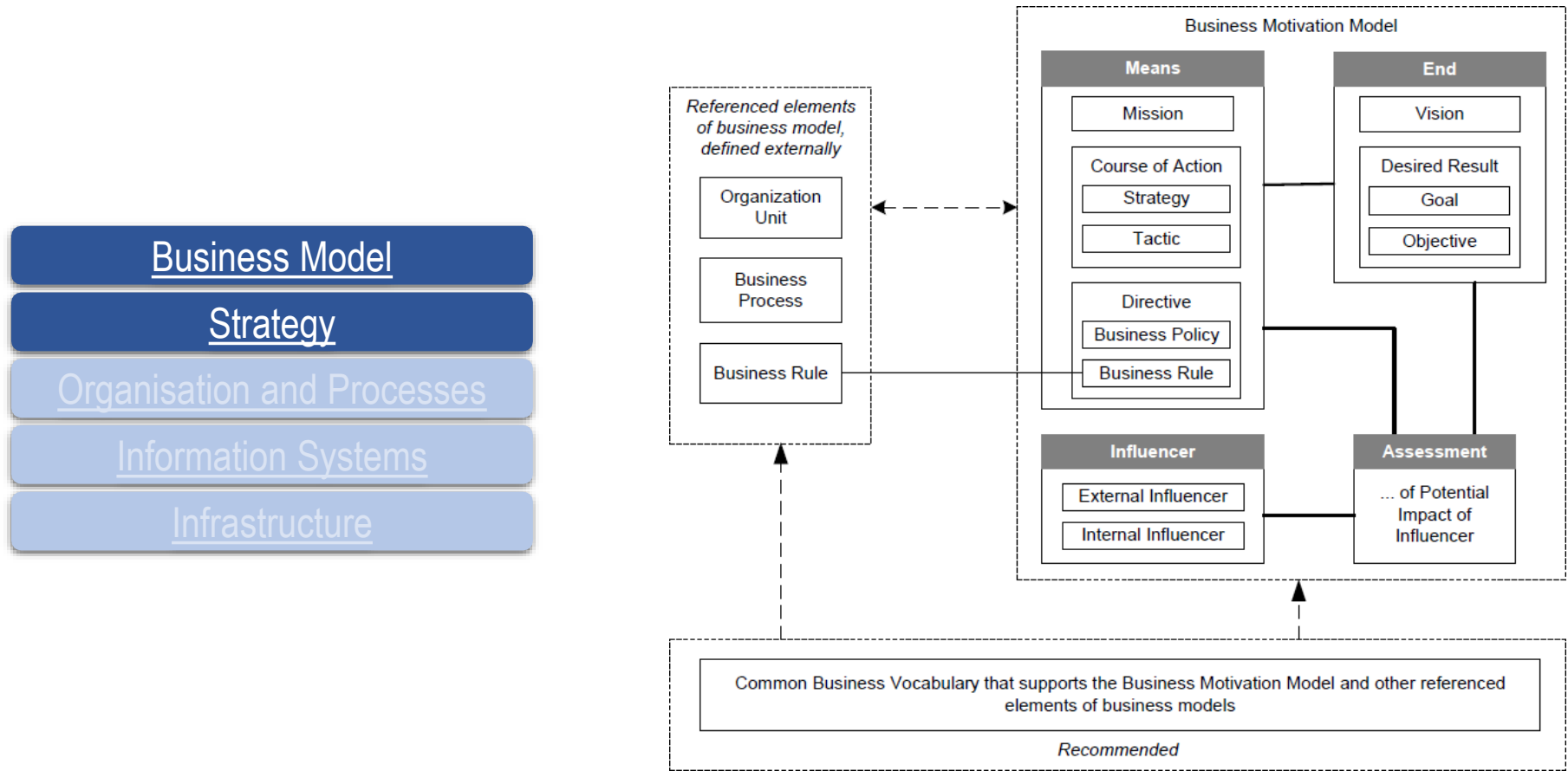
Business Architecture

Strategy & Business Modelling

Business Model Canvas



Business Motivation Model (BMM)



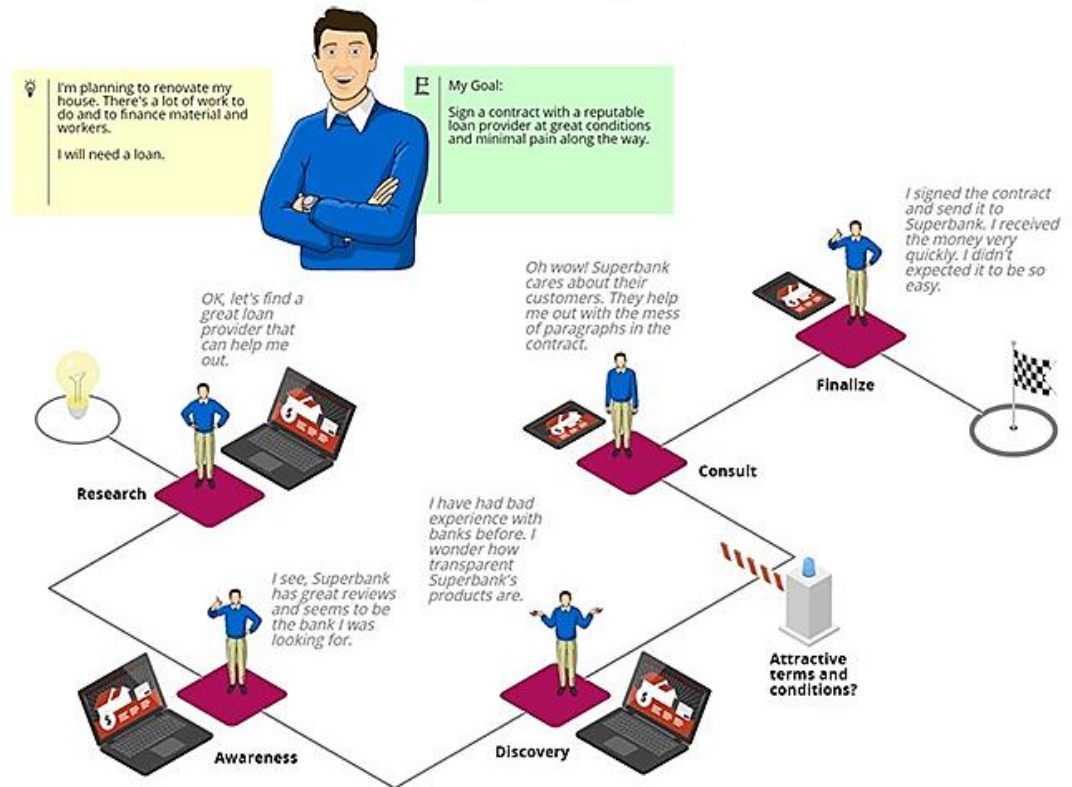
Customer Journey Modelling

Signavio Example

Customer journey map elements

- **Personas** represent typical customers.
- A **customer** element represents a persona at a specific step of a customer journey.
- **Outcomes** define what your customers are trying to get out of their experience.
- **Steps** show the sequence of events.
- **Paths** connect different step to define the flow of a customer journey.
- **Touchpoints** represent steps where your customer comes into direct contact with you.
- **Moments of truth** are key decision points that can make or break your business's chance for succeeding with the customer.
- **Triggers** start a customer journey.

Home Loan: Customer Journey



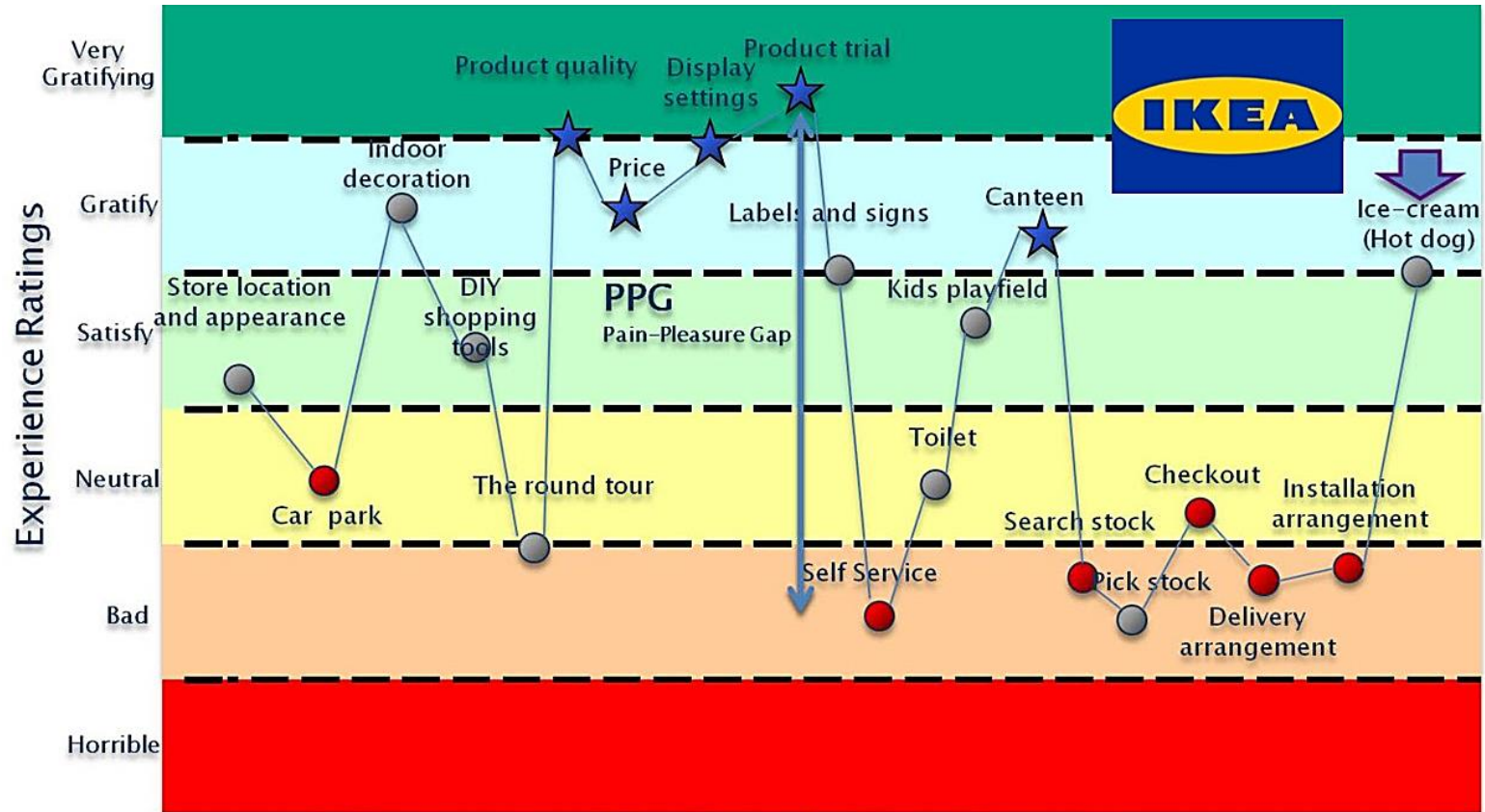
Source: https://docs.signavio.com/userguide/editor/en/modeling_and_notations/cjm

Customer Journey Modelling ARIS Example



Customer Journey Modelling / Analysis

IKEA Example

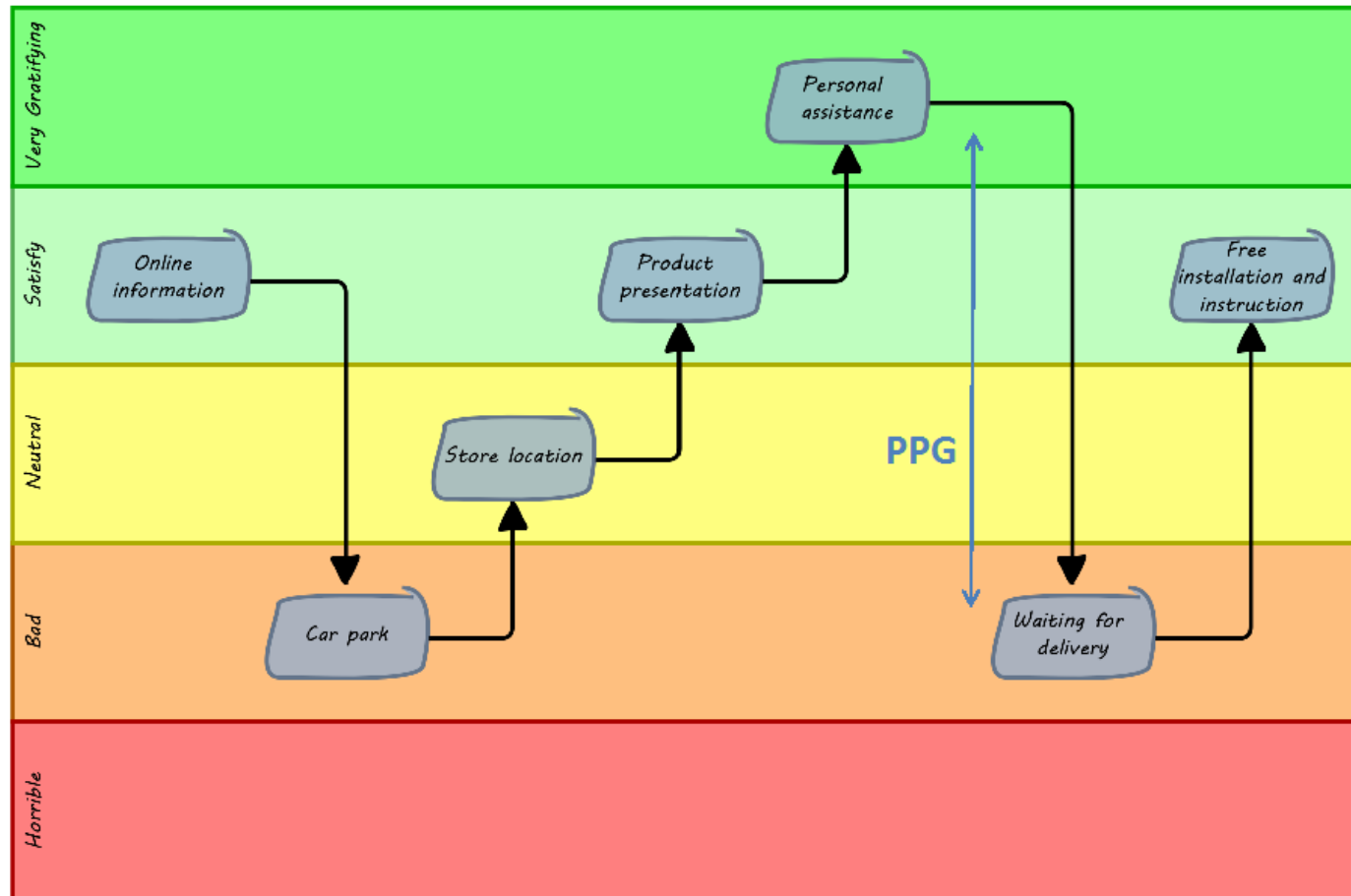


Sub-processes / Attributes In Time Sequence

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Customer Journey Modelling / Analysis

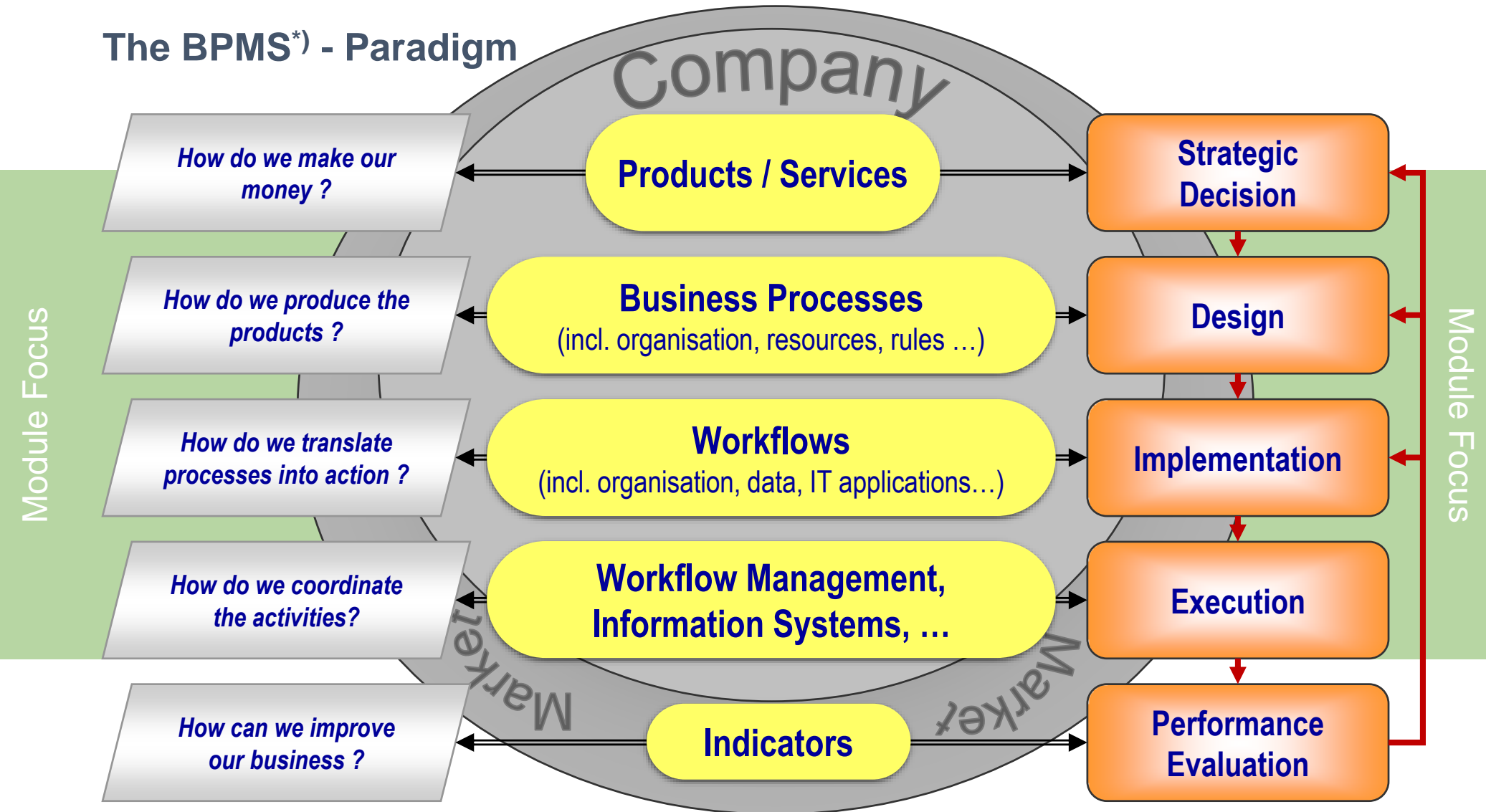
A BPMN-based Example



Source: <https://blog.bizzdesign.com/lets-go-on-a-customer-journey-with-bpm>

From Business Architecture to Digitalised Processes

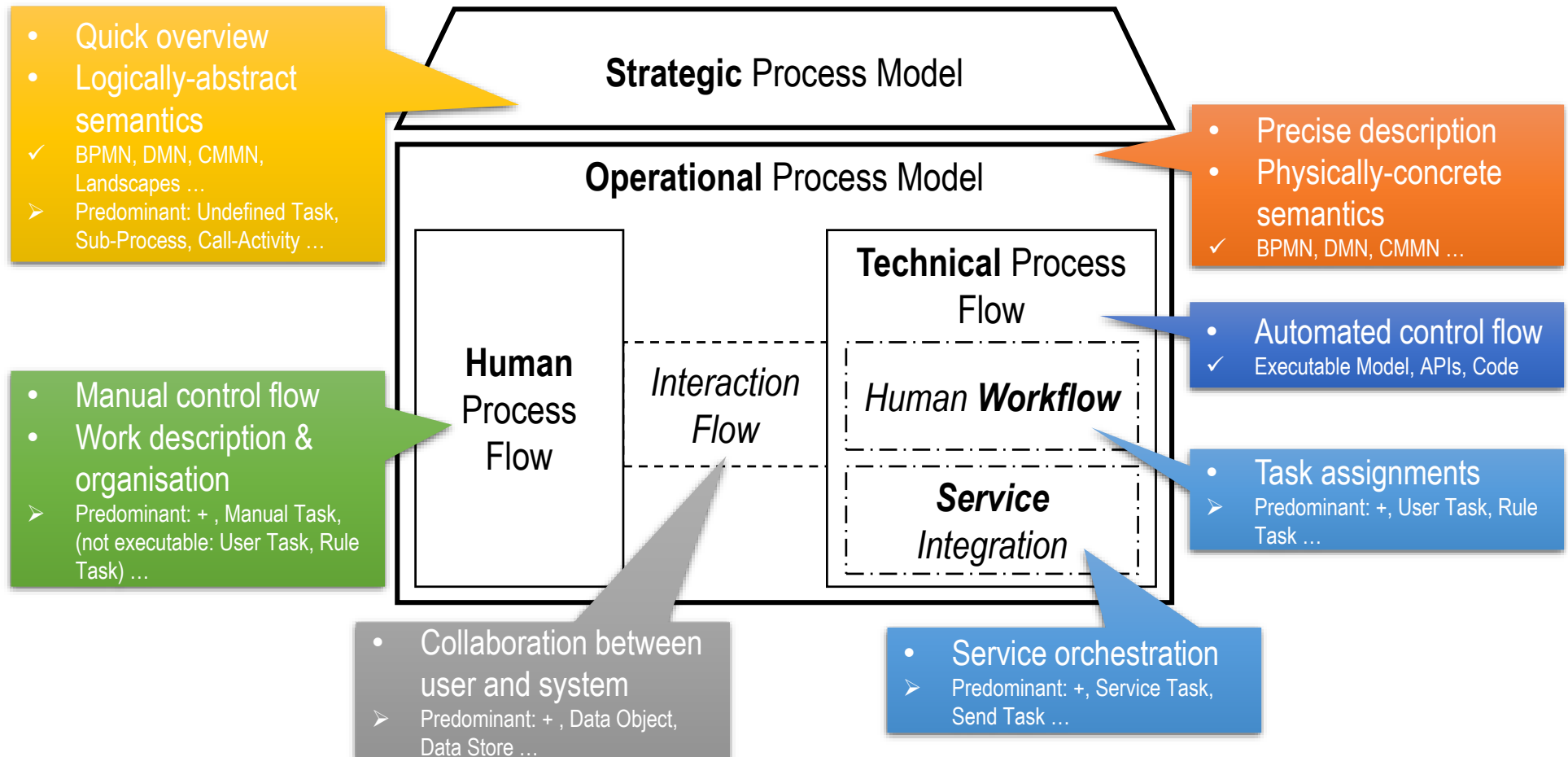
The BPMS*) - Paradigm



*) BPMS - Business Process Management Systems - Karagiannis et al. 1996

Strategic / Operational Process Modelling

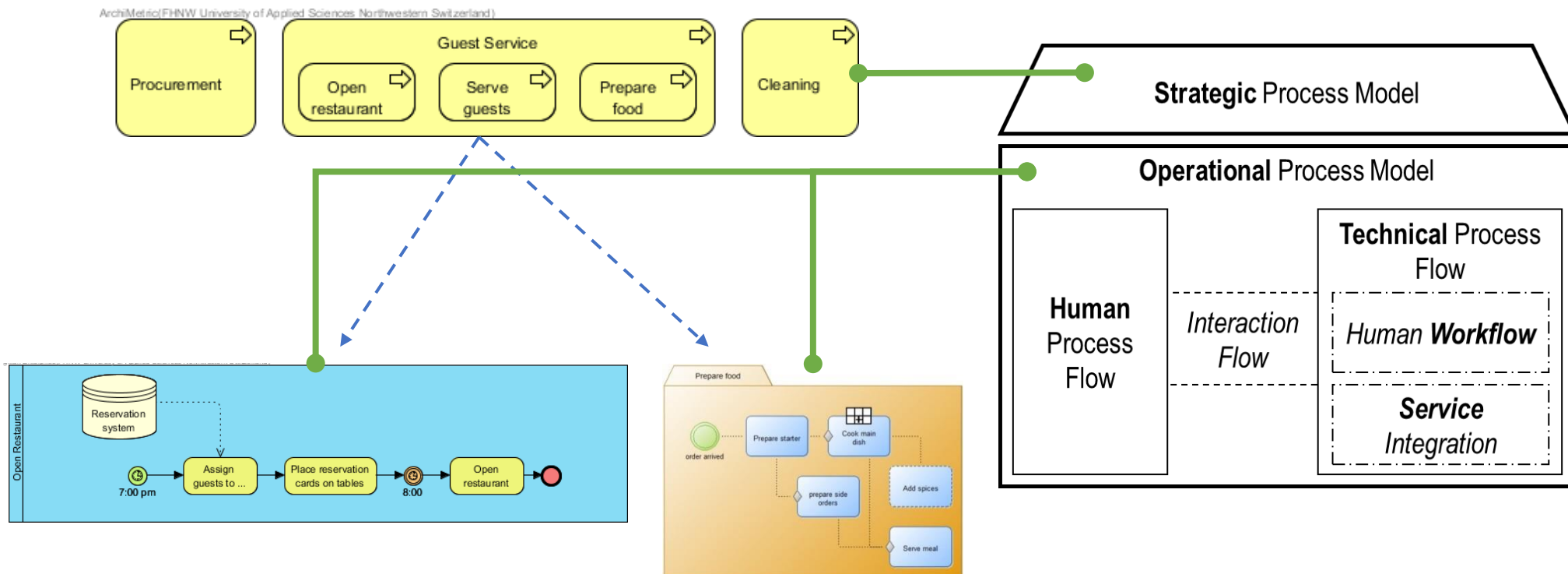
Extended «Camunda House»



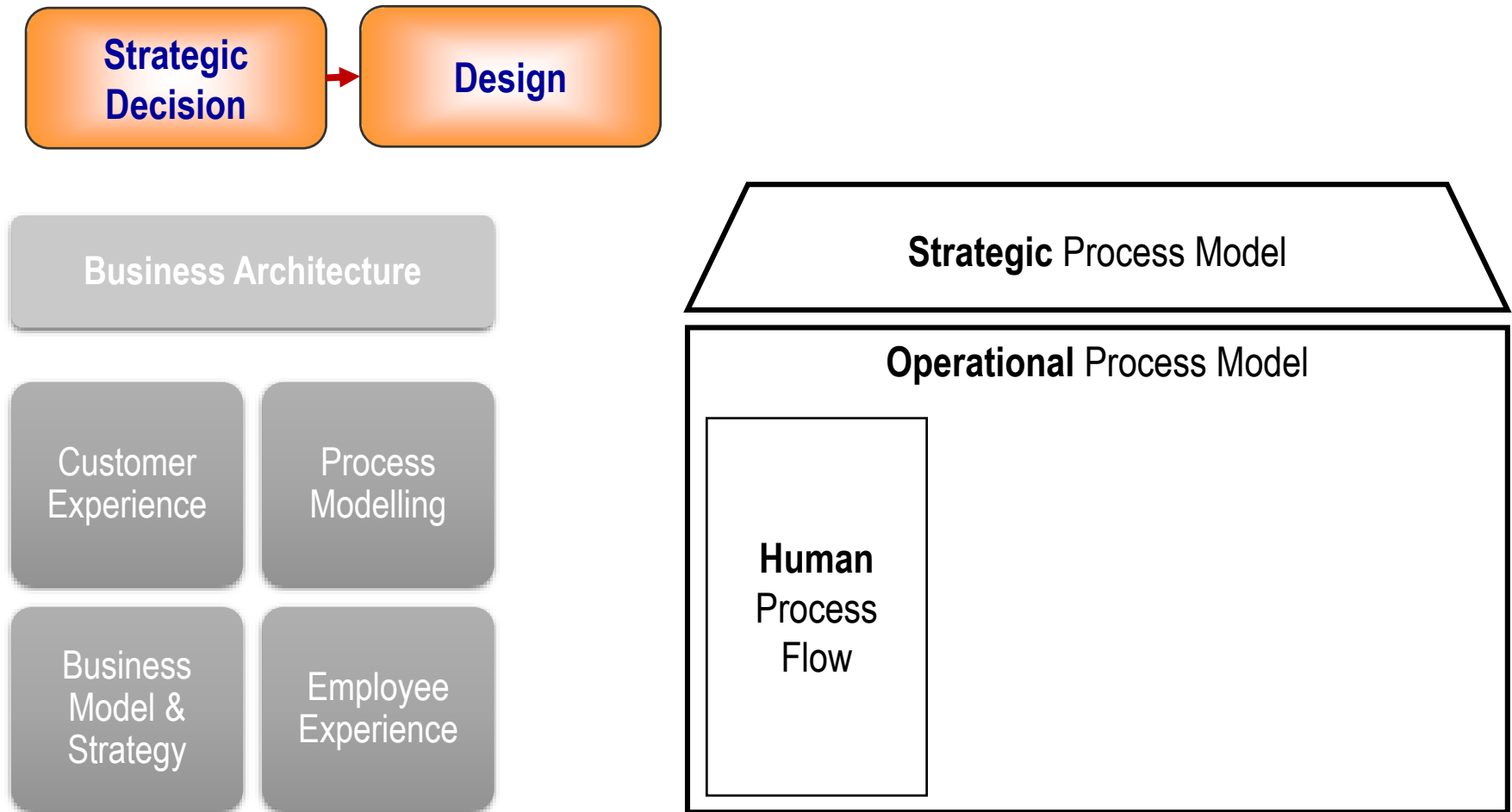
Based on: Freund, J. & Rücker, B. (2016). Real-life BPMN. Charleston, SC: CreateSpace

Hierarchical Process Modelling

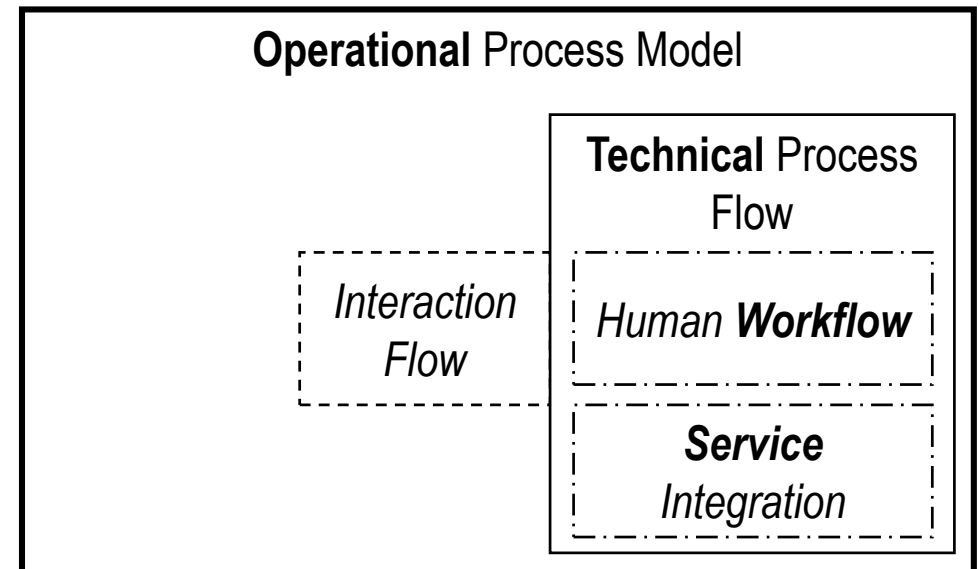
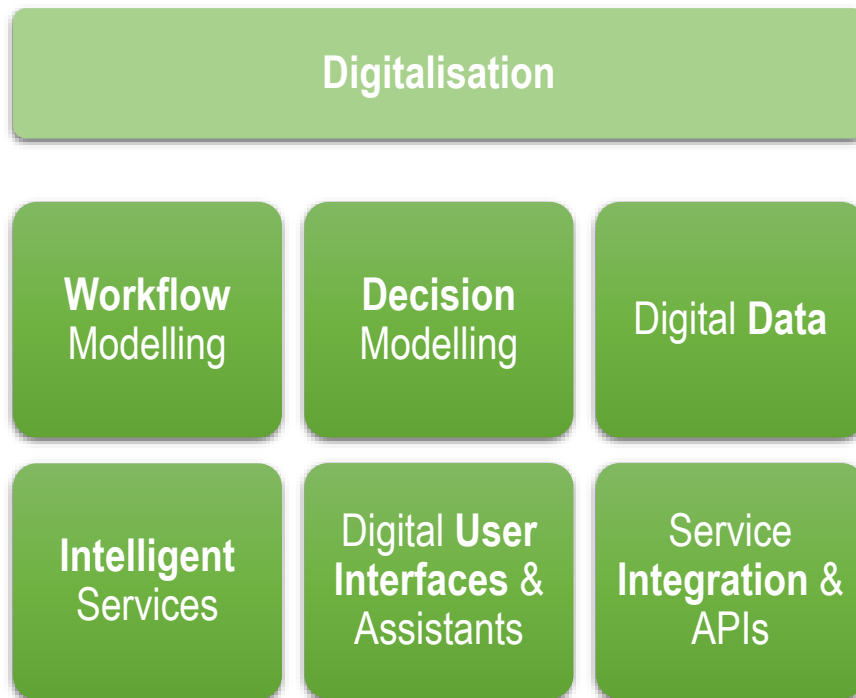
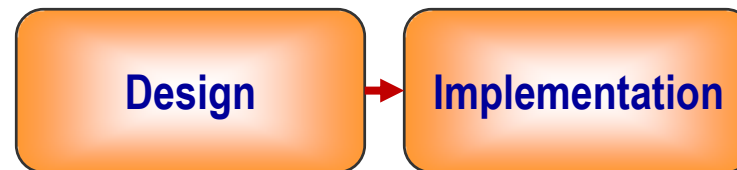
- An ArchiMate Model is an overall representation of an Enterprise Architecture
- To model details of elements (e.g. conditional flows and events of a process) one can use specific models



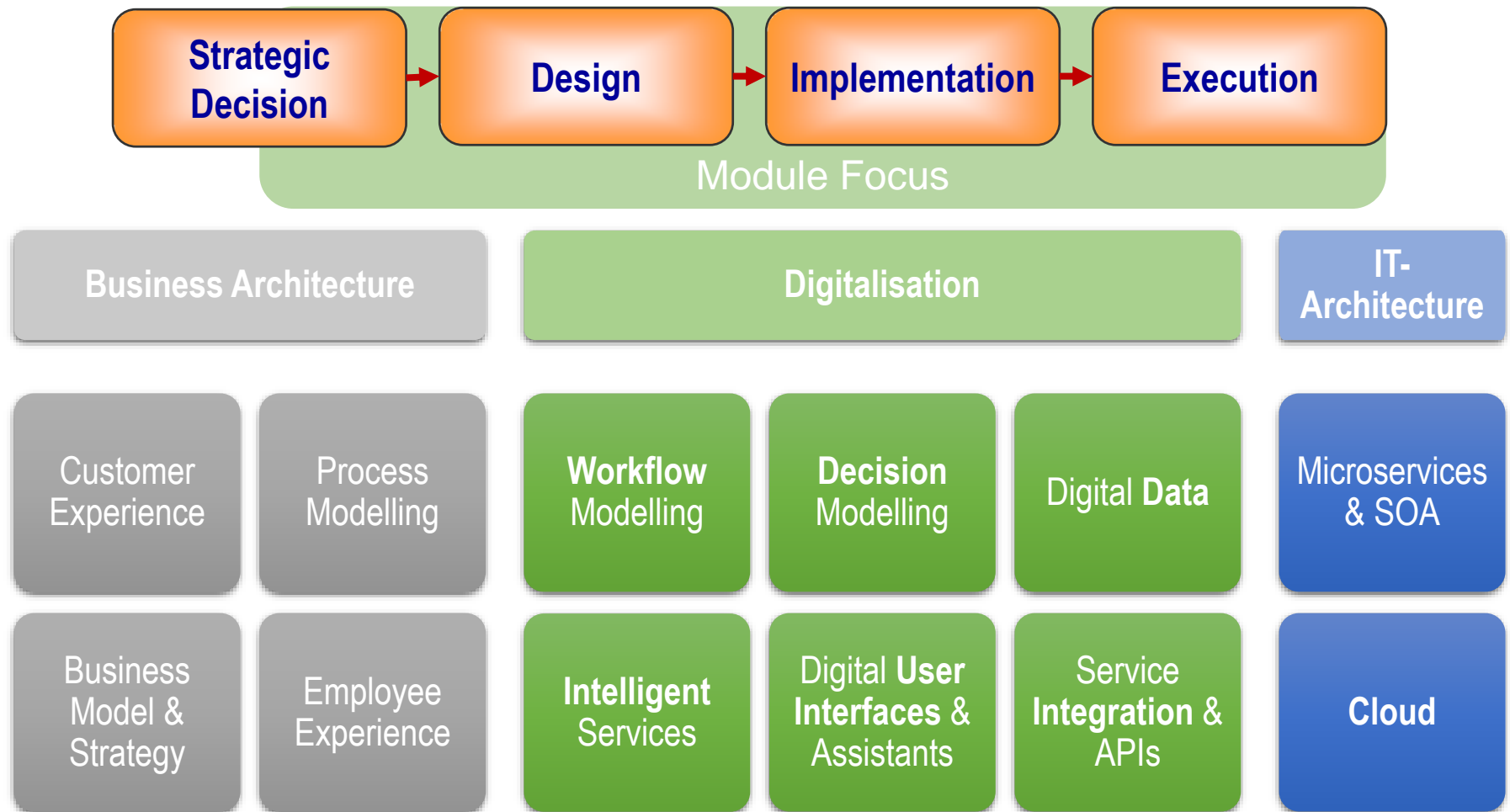
Mapping I: BPMS – Building Blocks – Process House



Mapping II: BPMS – Building Blocks – Process House



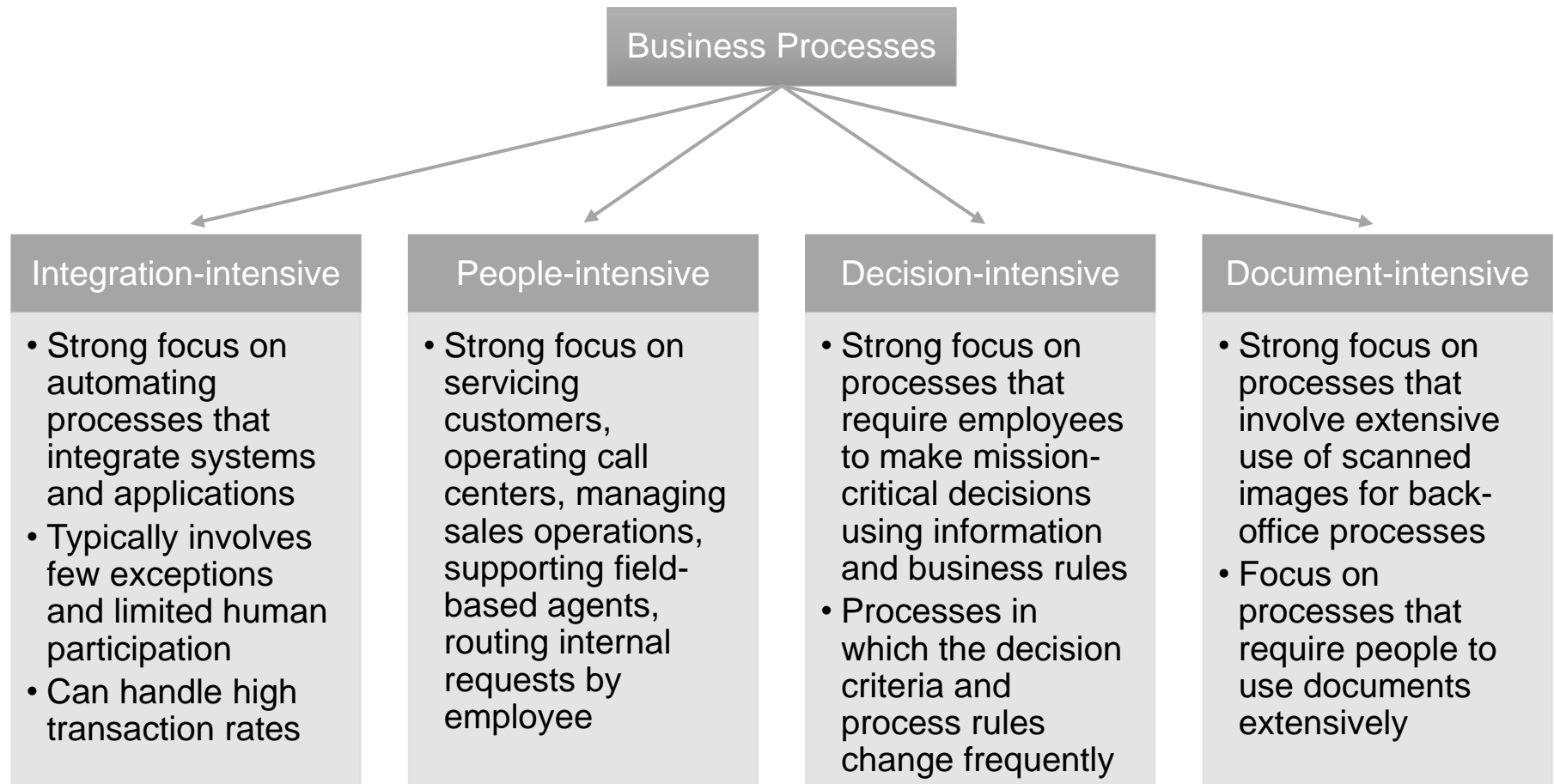
Mapping III: BPMS – Building Blocks



Consequences of a Business Processes Digitalisation

Business Process Types and Characteristics

Business Process Types and Characteristics



Based on: The Forrester Wave™: Human-Centric BPM for Microsoft Platforms, Q4 2007

Decision-intensive processes

- These complex processes involve
 - gathering information
 - automatic and manual scoring
 - mission-critical decision-making.
- Strong focus on processes that require employees to make mission-critical decisions using information and business rules.

Based on: The Forrester Wave™: Human-Centric BPM for Microsoft Platforms, Q4 2007

People-intensive processes

- These involve a high level of interaction among individuals for routing, approving, and fulfilling requests.
 - high degree of human interaction
 - need for human intuition or judgment
 - high rate of exception handling.



Based on: The Forrester Wave™: Human-Centric BPM for Microsoft Platforms, Q4 2007

Document-intensive processes

- These processes require users to
 - review documents for approval
 - enter data from documents into a back-office system
 - make decisions.
- Action is driven by information in documents
 - paper
 - scanned documents or forms
 - electronic documents
- Humans are needed to interpret information

Based on: The Forrester Wave™: Human-Centric BPM for Microsoft Platforms, Q4 2007

Integration intensive processes

- These business processes involve
 - high volume of transactions
 - need to integrate with other systems
 - high degree of straight-through processing
 - limited human interaction
- Action is driven by machine-interpretable data
 - data extracted from documents
 - electronic forms (web, apps)
 - database systems

| First Name | Last Name | Address | City | Age |
|------------|-----------|---------------------|----------|-----|
| Mickey | Mouse | 123 Fantasy Way | Anaheim | 73 |
| Bat | Man | 321 Cavern Ave | Gotham | 54 |
| Wonder | Woman | 987 Truth Way | Paradise | 39 |
| Donald | Duck | 555 Quack Street | Mallard | 65 |
| Bugs | Bunny | 567 Carrot Street | Rascal | 58 |
| Wiley | Coyote | 999 Acme Way | Canyon | 61 |
| Cat | Woman | 234 Purrfect Street | Hairball | 32 |
| Tweety | Bird | 543 | Itotttaw | 28 |

Based on: The Forrester Wave™: Human-Centric BPM for Microsoft Platforms, Q4 2007

Consequences of a Business Processes Digitalisation

