Explorative BPM: Lecture 7

Integration and Process Design





WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

Lecturer:

Encouraged by ERASMUS+ (EU Funding 2018-1-LI01-KA203-000114 "Reference Module Design for Explorative Business Process Management")

Today: Lecture 7 – Integration and Process Design





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Questions to be answered





How can process ideas be created and designed?



How can process ideas be evaluated?



How can the integration diamond be applied?





Erasmus+ AIBA

Sensing Innovation Opportunities





Creativity Techniques





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- Even looking at one potential process ideas / use cases, there are various ways these can be implemented from a process perspective
 - Use of video chat functionality and digital ID (technology) such that visits to the authorities (for renewing a passport, changing an address etc.) can be done from anywhere (business trend, customer demand).
 - Process-related questions:
 - When/How does the process start/end?
 - Which customer channels are supported?
 - Which functionality is included in the process?
 - Are all activities executed internally (within the authority) or are some aspects outsourced (e.g. security-related aspects to specialized firms)?
 - ...?





Example

Introducing the Design Space Concept







Introducing the Design Space Concept





Design space consists of an artefact and (infinite) design alternatives



https://getavataaars.com/

Structuring the Design Space

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Design Space: The design space consists of a design artifact and potential design alternatives

Design Dimensions: Design options through which possible artefact manifestations differ



Business Process Design Dimensions





BPR Framework (Reijers and Mansar 2005)





Definition of Dimension

- Services offerings commonly have a customer channel through which the service and the customer can interact, either interpersonal or technological (Bitner et al. 2008)
- Technological channels can support interpersonal or replace it

Potential Attributes

Digital channels have been categorized into **functional** (e.g. websites, emails, live chats), **social** (e.g. LinkedIn, Facebook, Foursquare), **community** (e.g. forums and blogs), and **corporate** (e.g. forms, magazines, digital advertisements) (Straker et al. 2015)

Customer Channel – Example Innovations



Webcam Social Shopper', which enables customers to try out different clothing products virtually through an **augmented reality environment** (Bonetti et al. 2018). By doing so, it extends the **traditional website-based** customer channel of e-commerce



DocOnline is a digital healthcare service provider in India, which offers online access to medical doctors through different modes of interaction, e.g. through **text-**, **audio-** or **video** chat



Example 2: Customer Experience



Definition of Dimension

- Customer experience has been defined as "the internal and subjective response customers have to any direct or indirect contact with a company" (Meyer and Schwager 2007)
- Customer experience is inevitably part of every service (Carbone and Haeckel 1994)

Potential Attributes

- Nine characteristic which influence the experience during a service:
 - Active or passive, real or virtual, mass produced or customized, interaction with others or alone, functional or emotional, and pleasure or arousal (Knutson and Beck 2004)





Innovated the (mobile) payment process from a private experience (alone) to a public experience (with others)



Netflix added interactive movies to its available content. This innovated traditional streaming from **a passive to an active experience**.



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BP-DS: Customer Layer



	Dimension	Guiding Question(s)	Potential Characteristics	Redesign Example
CUSTOMER	Customer Segment	How can the process deviate for different customer segments?	Demographic (e.g. age, occupation, gender), geographic (e.g. country, region, population density), psychographic (e.g. lifestyle, social or personality characteristics), behavioral (e.g. purchasing, consumption or usage behavior) criteria (Kotler et al., 2012)	Miles & More Cufthansa
	Customer Experience	Which experience does the customer gain through the process?	Active or passive, real or virtual, mass-produced or customized, with others or alone, functional or emotional, pleasurable or arousing (Knutson and Beck, 2004)	venmo
	Customer Value	Which (additional) value can the customer receive through the process?	Functional (e.g. reduces risk, reduces costs, simplifies, quality), emotional (e.g. reduced anxiety, entertainment, rewards me), life-changing (motivation, affiliation/belonging, provides hope), and social impact (self-transcendence) (Almquist et al., 2016)	FLY CARBON NEUTRAL
	Customer Channel	How can customers interact with the organization/process?	Functional (e.g. websites, emails, live chats), social (e.g. LinkedIn, Facebook, Foursquare), community (e.g. forums and blogs), and corporate (e.g. forms, magazines, digital advertisements) (Straker et al., 2015)	

Gross et al. (2021) Erasmus+ AIBA

BP-DS: Product/Service Layer



Dimension	Guiding Question(s)	Potential Characteristics	Redesign Example
Scope	What does the customer really want to achieve and (how) can this be integrated into the process?	Inclusion or exclusion of process logic (Ramias, 2018), i.e. functionalities during the process execution, which can be narrow or broad (Dumas et al., 2018)	RYANAIR Parking, Transfer
Flow Unit	What/who runs through the process during its execution?	Unit of input (e.g. a customer, patient, raw material), a unit of one or several intermediate products or components (e.g. bicycle frame in an assembly process), or a unit of output (e.g. a serviced customer or finished product) (Laguna and Marklund, 2013, p. 5).	Uber Eats Uber Health
Location	Where is the process executed / available? Where does it start? Where does it end?	Stationary or mobile (Gratsias et al., 2005). Stationary can be bound to a specific position (e.g. airport, train station, home) or an area (e.g. Switzerland or Italy).	Austrian 🗡
Temporality	When is the process executed / available? When does it start? When does it end?	Availability, execution, or termination of a process at a specific point in time or time-span, e.g. a certain time of the day, week, month, or a season of the year (Nivala and Sarjakoski, 2003).	Domino's

Logos and images from respective companies

Gross et al. (2021)

BP-DS: Business Process Layer

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	Dimension	Guiding Question(s)	Potential Characteristics	Redesign Example
OCESS	Coordination	How is the process structured in terms of activities, events, and actors? Should there be more/less structure (for specific cases)? How many variants of the process exist?	Standard processes (single variety, repetitive, binary logic), routine processes (limited set of variety, similar but not identical repetition, fuzzy logic), and non-routine processes (unlimited set of variety, non-repetitive, interpretative logic) (Lillrank, 2003).	Rerouting during delivery
SINESS PR	Trigger	What/Who starts the process?	Message events (e.g. order is received, need is identified), temporal events (e.g. every Friday morning, every working day of the month), conditional events (a business rule is met) or signal events (a process starts another process) (Dumas et al., 2018)	Anticipatory shipping
BU	Outcome	What are possible ends for the process? How can we react to negative outcomes?	Message events (e.g. package sent, loan approved), temporal events (e.g. Sunday night, two weeks after the last interaction), conditional events (a business rule is met), signal events (another process ends the process), or an error events (e.g. product not available) (Dumas et al., 2018)	😪 Lufthansa 🔀

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BP-DS: Organization Layer



	Dimension	Guiding Question(s)	Potential Characteristics	Redesign Example
	Objectives	How do we define and measure process success? What do we want to achieve with the process in terms of objectives?	Financial (e.g. return on capital, shareholder value), customer (e.g. image and reputation, customer relationships), internal BPs (e.g. improvement of products, services, and processes regarding quality, time, or flexibility), learning and growth (e.g. technology leadership, employee capabilities), trust (Dumas et al., 2018; Kaplan and Norton, 1993; Rosemann, 2019)	Re-confirming second purchase of same product
	Internal Participants	Who is doing what during the process execution?	Process responsibilities (e.g. process owner, process managers), competencies or disciplinary responsibilities of activities (e.g. for the allocation of resources or legal matters) (Lohmann and zur Muehlen, 2015)	SMSLIVRÄDDARE
	Revenue Model	How/where can we generate revenue (differently)?	Revenue techniques (e.g. advertising-based, commission-based or licensing-based revenue logics) and revenue sources (e.g. new revenue models through digitalization) (Veit et al., 2014)	ZIFERBLAT
	Business Partner PAGE 19	Which parts of the process can we outsource/insource ?	Suppliers (delivering materials or services to be further processed), intermediaries (agents between organization and customers), and alliance partners (producing complementary products or services) (Parker et al., 2016; Saxena and Bharadwaj, 2009)	Publishing books as an author without traditional publisher

Logos and images from respective companies

Gross et al. (2021)

BP-DS: Information Layer



Dimension	Guiding Question(s)	Potential Characteristics	Redesign Example
Information Source	How can we integrate new/different data into the process?	Internal (existing or self-generated) or external (acquired, customer provided, free available; e.g. social media or web- crawled) (Hartmann et al., 2014)	Image: Sector
Information Usage	How can we use the information collected/gathered in the process?	Generation (crawling, crowdsourcing), processing, analytics (descriptive, predictive, prescriptive), visualization, distribution of process data (Hartmann et al., 2014).	The Weather Weather Company An IBM Business



BP-DS: Technology Layer



	Dimension	Guiding Question(s)	Potential Characteristics	Redesign Example
CHNOLOGY	Infrastructure	Which software or hardware could support the process' execution and in what ways?	Ability to support process-related needs, e.g. by monitoring work-related activities and events (e.g. different BPMS solutions) (Pourmirza et al., 2017) or storing, distributing and searching relevant information (e.g. different ECMS solutions) (Jaakonmäki et al., 2018)	Signavio Process Manager
-	Automation	How can event detection, activity execution, or information exchange of the process be automated?	Sensors to detect start, intermediate and end events (e.g. temperature or movement sensors), activity automation (e.g. machine learning, natural language processing, robotic process automation), information exchange (e.g. RFID, NFC, barcodes)	IBM Watson for detecting insurance fraud





- The BP-DS helps to give a shared understanding how the process is planned
- Yet, there are several ways how to implement a specific configuration of the BP-DS
- Process models give clarity on the lowest level of granularity how the process is actually implemented
 - Modeling language depends on the knowledge of workshop participant, expected audience, ... In this course: BPMN





Questions to be answered





How can process ideas be created and designed?



How can process ideas be evaluated?



How can the integration diamond be applied?





Can you think of evaluation criteria for the generated use cases / process models?





Evaluation Criteria: Strategic Fit





Evaluation Criteria: Coverage of customer needs





Evaluation Criteria: Coverage of customer needs (fail)

Blockbuster

- Blockbuster was the market leader for VHS cassettes and DVD rental
- With an increasing degree of digitalization, the company was wondering how to attract customers to rent more movies
- First the company invested into its existing infrastructure and later it tried to copy competitors like Netflix
- Herbert (2017) -> Blockbuster should have investigated how the customer need for ubiquitous and convenient access could have satisfied using existing and emerging technology

Coverage of customer needs







Evaluation Criteria: Coverage of customer needs (success)

Encyclopedia Britannica

- Was one of the most famous printed encyclopedia in the world
- Asked itself the question "What do key customers (private end customer or educational institutions) really want?"
- Definition of key mission: high qualitative editorial services for educational institutions
- Subscriptions for online users and additional products and services for educational needs
- "When we stopped offering hardback editions it only accounted for 1% of our revenue" (Jorge Cauz, president of Britannica)









Weighting of evaluation criteria



Not all previously identified evaluation criteria are equally important in a given situation





Questions to be answered





How can process ideas be created and designed?



How can process ideas be evaluated?



How can the integration diamond be applied?



Five-Diamond-Method for Explorative BPM: Detailed view





Integration Diamond



Activity 4: Integration diamond

Techniques

- Derive ideas from purpose, business, and technology diamond (divergent)
- Develop process blueprints of new processes (divergent)
- Evaluate process blueprints (convergent)
- Select appropriate blueprints to develop new process designs (convergent)

Tools

- Creativity tools (e.g., brainstorming, mind-mapping)
- Modelling language (e.g., BPMN 2.0)
- Evaluation criteria (e.g., feasibility, costs, time-to-market)

Roles

- BPM manager / process consultant*
- Innovation manager**
- Project portfolio manager**
- Senior manager**
- Facilitator

Output

- List of innovative process ideas
- New process de-signs



Answered Questions





How can process ideas be created and designed?

 \rightarrow Using creative techniques to generate use cases which cover customer needs

 \rightarrow Deploying the BP-DS and process modeling to design the use cases



How can process ideas be evaluated?

- → Identifying and using appropriate evaluation criteria
- → Weighting evaluation criteria in order to rank process blueprints



How can the integration diamond be applied?

→ Through a set of techniques and tools supported by divergent and convergent thinking







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