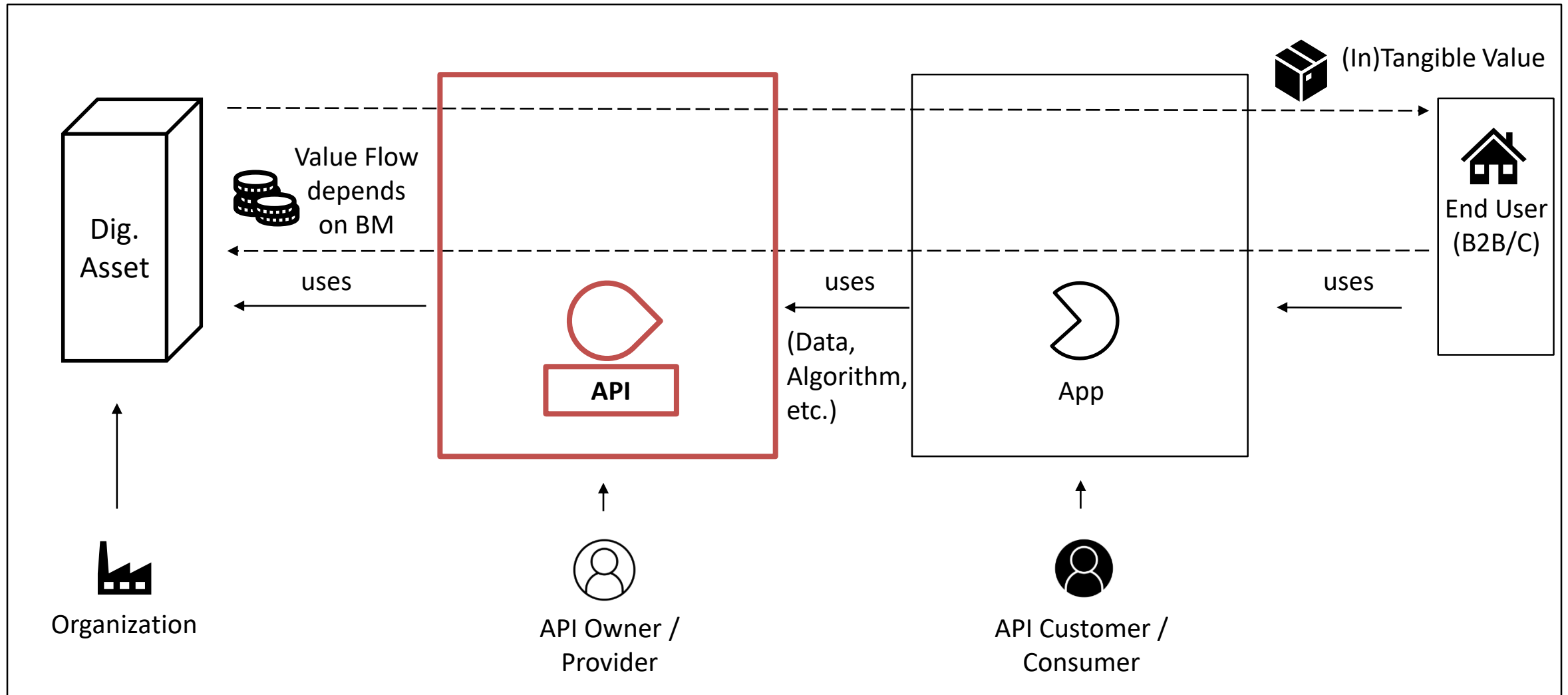# Identification of API-Enabled Value Creation Archetypes and their Implications for Organizations
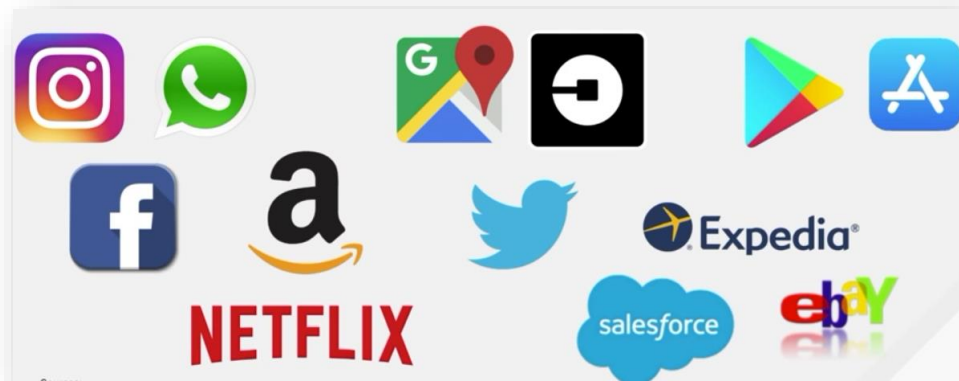
Benjamin Strobel (B.Sc.), 20.05.2019, Master's thesis – Kick-Off

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Outline

1. **Motivation**

2. **Goal**

3. **Research Question**

4. **Approach**

5. **First Results**

6. **Timeline**

Motivation – Recap: What are APIs?

(In)Tangible Value

Dig. Asset

Value Flow depends on BM

uses

API

uses

(Data, Algorithm, etc.)

App

uses

End User (B2B/C)

Organization

API Owner / Provider

API Customer / Consumer

Motivation – Why Value Creation through Business Model matters

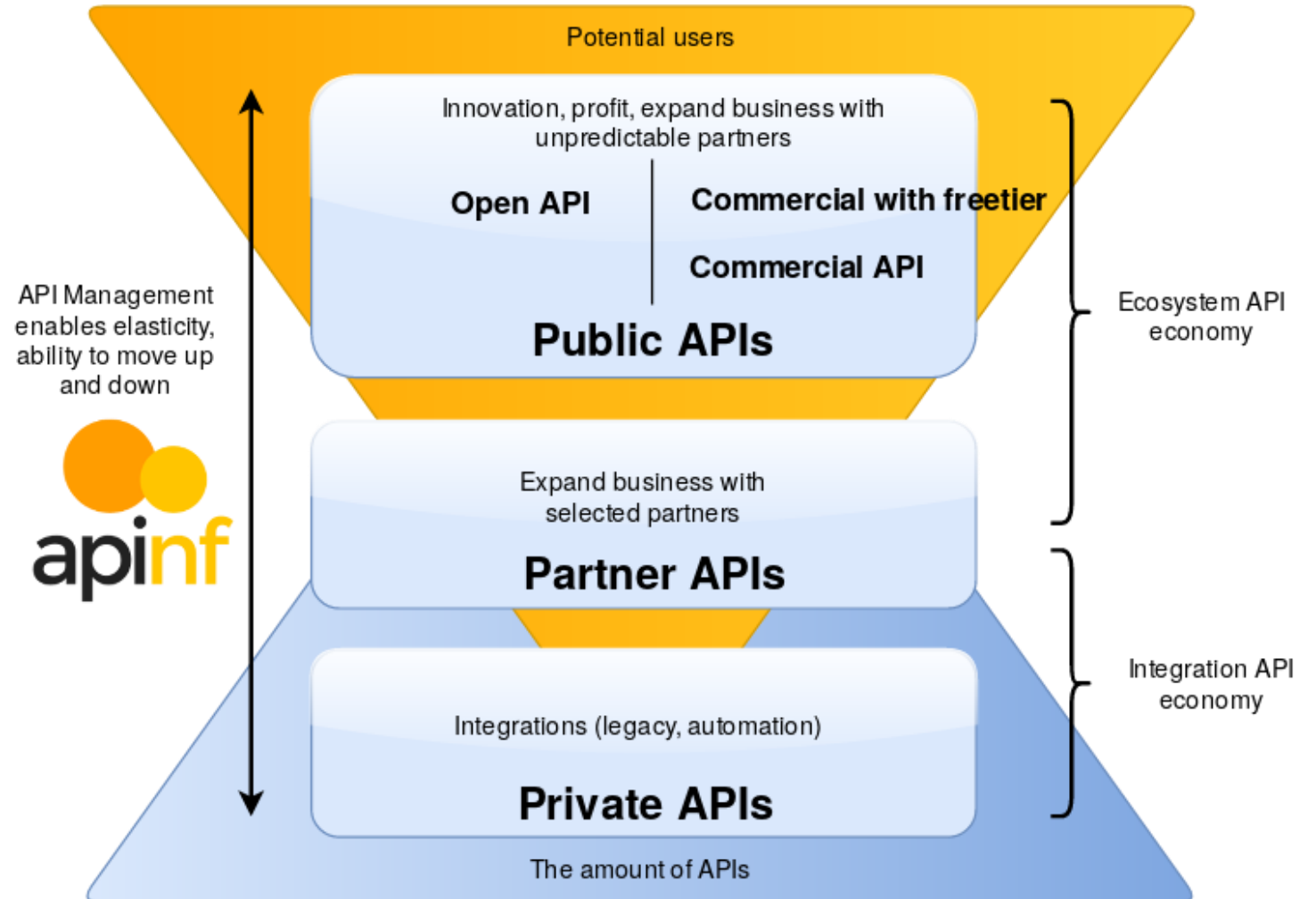**VS**

"[…] potential business models are unclear for the OEMs. […] [They] are still in an identification stage regarding potential business models." – MA *Fridolin Koch - Opportunities and Barriers for Advancing the API Economy within the Automotive Industry (2019*)

- Apart from a few early movers, most organizations:

  - do **not** have a formal **API strategy or business model**

  - are **unclear** about the true **value** at stake and **where it comes from**

  - are **uncertain** about how to **implement** a program that quickly **maximizes consumer and business impact**

- A lot of companies are in a "**identification stage**"

Motivation – Set the scope

Important to keep in mind:

- **Focus on non-private API [partner & public]**

- **Focus on value creation of API offering stakeholders [no developer, enduser, etc. viewpoint]**

Goal Model & Research Questions

RQ 1 — How is the **API economy** defined and how do **APIs differ from services**?

RQ 2 — What are **potential goals / value creation types** through APIs?

Value

	direct			indirect		
	Turn-over	Market access	...	Comp-liance	Image	...

(Value Creation) Goals

RQ 3 — What are **typical business model archetypes** used to achieve those goals?

Archetypes

RQ 4 — Which business model archetypes typically appear in **which industries**?

Manu-facturing	Soft-ware	...	Banking	Retail	...

Industries

Approach

| RQ 1 | How is the API economy defined and how do APIs differ from services? | RQ 2 | What are potential goals / value creation types through APIs? | RQ 3 | What are typical business model archetypes used to achieve those goals / value creation? | RQ 4 | Which business model archetypes principally appear in which industries? |
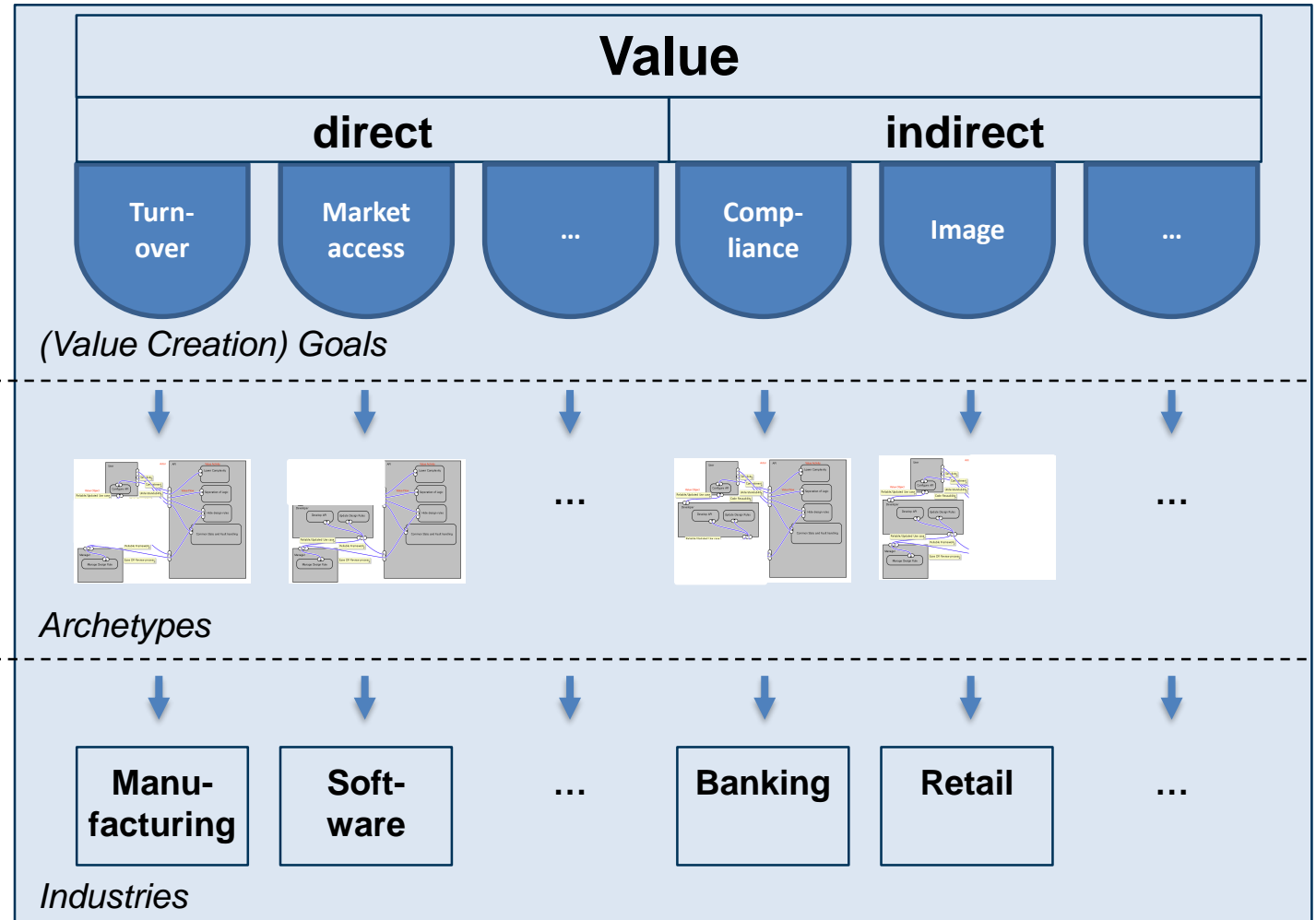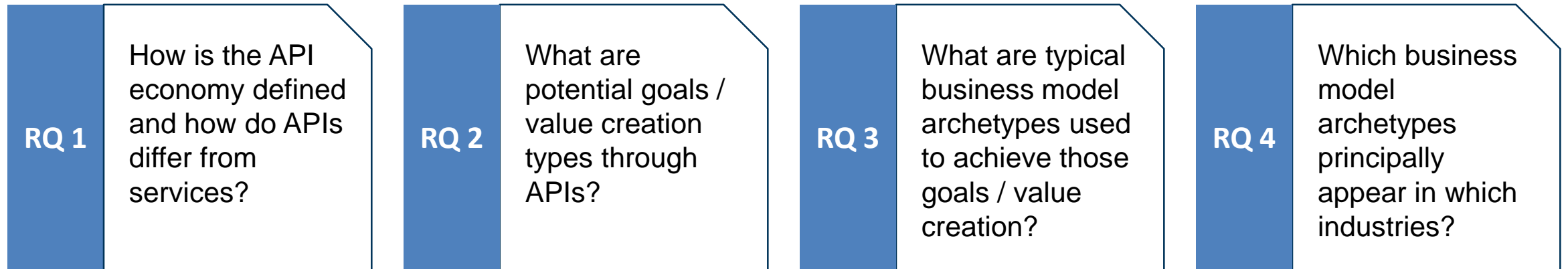
Extensive literature / online research

- Structured approach via scientific literature [Webster & Watson, 2002]
- Practical extensive literature research
  - Existing consultancy case studies
  - Research Papers
  - Other literature sources

Interview partners

- Grounded theory methodology: provide a set of systematic guidelines [Wiesche et al., 2017]
- Qualitative data collection via 10-15 semi structured and recorded interviews (via interview guide, including pre-study) of around 45 mins
- Interview partners from different industries
- Coding: MAXQDA

Table 1. Available business model representations and main characteristics

Business model representation	Domain of origin	Main concepts	Main scope	Design tool / financial tool	Options considered	
Activity system map* [23]	Strategy	Strategic theme, activity	General	No / No	No	
Business models for e-government (BMeG) [22]	E-business	Partner, object ex-change, (dis)advantage	E-government	Yes / No	No	
Business model ontology (BMO) [17]	E-business	Interrelated building blocks	General	Yes / No	No	
Causal loop diagram [7]	Causality theory	Choice, consequence	General	No / No	No	
e3-value [12]	E-business	Actor, value exchange	General	Yes / Yes	No	Gordijn, Akkermans
E-business model schematics [33]	E-business	Actor, flow, relation	E-business	No / No	No	
Eriksson-Penker business extensions of the Unified Modeling Language [11]	Information systems	Actor, interaction, goal, rule	General	Yes / No	No	
Resource-event-agent* (REA) [16]	Accounting	Resource, event, agent	General	Yes / No	No	
Strategic business model ontology (SBMO) [27]	E-business	Actor, goal	General	Yes / No	No	
Value map [2], [30]	Value networks	Actor, value exchange	General	No / No	No	Allee
Value net* [19]	Value networks	Actor, activity, flow	General	No / No	No	Parolini
Value stream map [24]	Value networks	Actor, value stream	ICT	No / No	No	Pynnönen

For general Overview and archetypes

* = the contributing author makes no explicit reference to the term "business model": These approaches had been developed before the business model concept gained prominence. Nonetheless, they are listed because of their conceptual similarity to later approaches which are explicitly intended to represent business models.
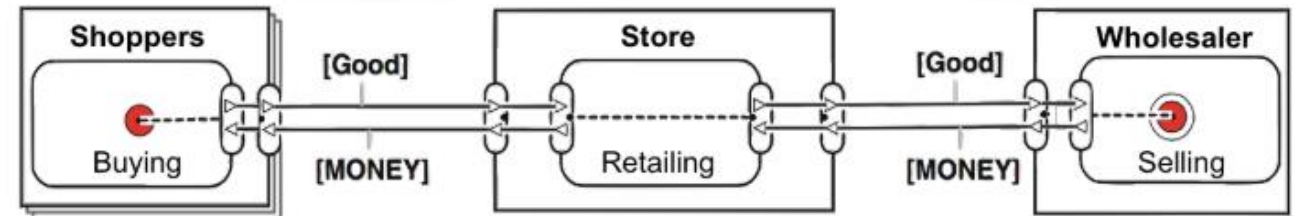
- Dynamic Value Description method [value]   Souza et al.

Source: Kundisch, Dennis; John, Thomas (2012 - 2012): Business Model Representation Incorporating Real Options: An Extension of e3-Value. In: 2012 45th Hawaii International Conference on System Sciences., S. 4456–4465.
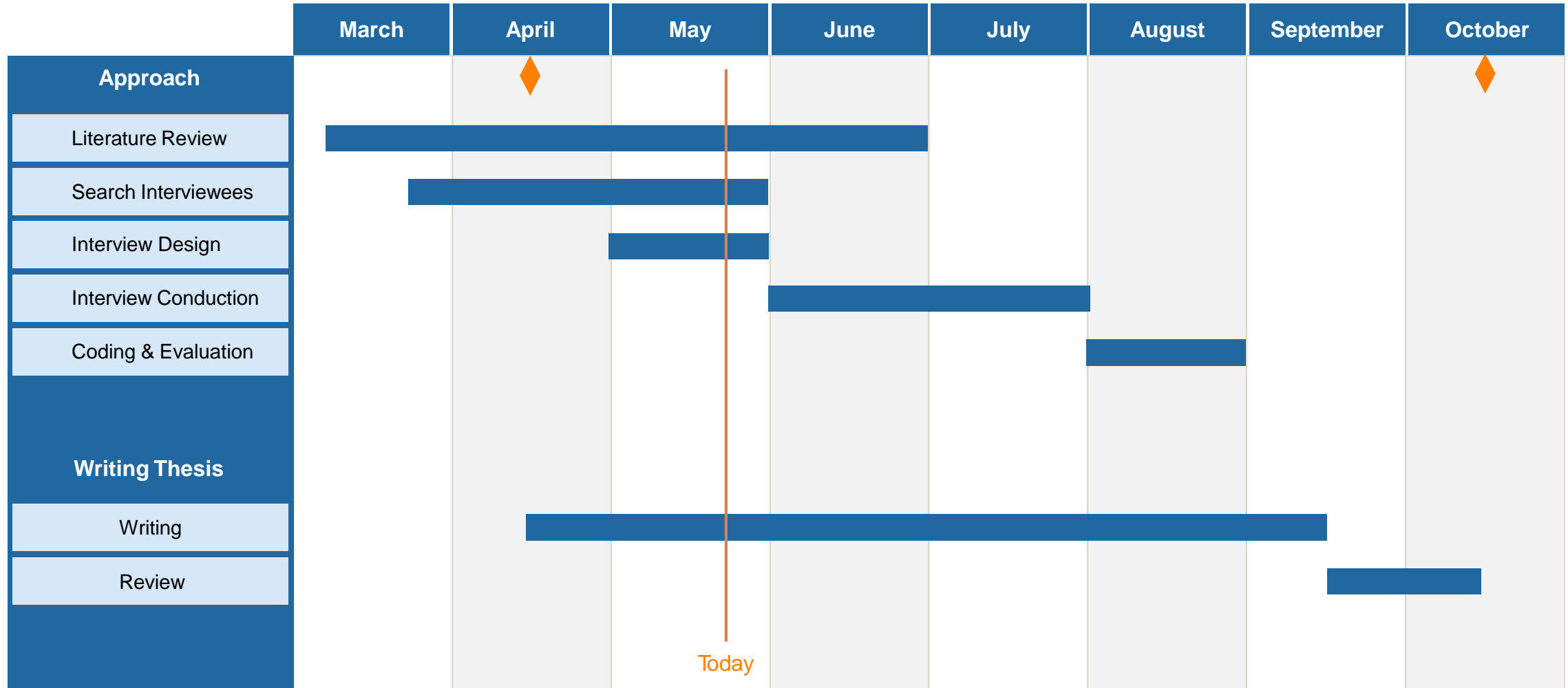
Reasons for choosing the e3 Value Model for the business model archetypes:

- Includes important elements for business model archetypes (stakeholders/actors, object, value flow, activities)

- Clearly structured

- Well known in business research

Source: Gordijn, J. and J. M. Akkermans (2003). "Value based requirements engineering: Exploring innovative e-commerce idea." Requirements Engineering Journal 8(2): 114-134.

Timeline

	March	April	May	June	July	August	September	October
Approach		◆						◆
Literature Review								
Search Interviewees								
Interview Design								
Interview Conduction								
Coding & Evaluation								
Writing Thesis								
Writing								
Review								

Today

◆ Registration Date: 15.04.2019   ◆ Submission Date: 15.10.2019

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Back up

TLM

Extract of a simplified E3 Value Model of Actors in the API Economy

Source: Mohagheghzadeh, Lindman et al. – Managing Organizational Resources as Platform, p.9

Interview Questions
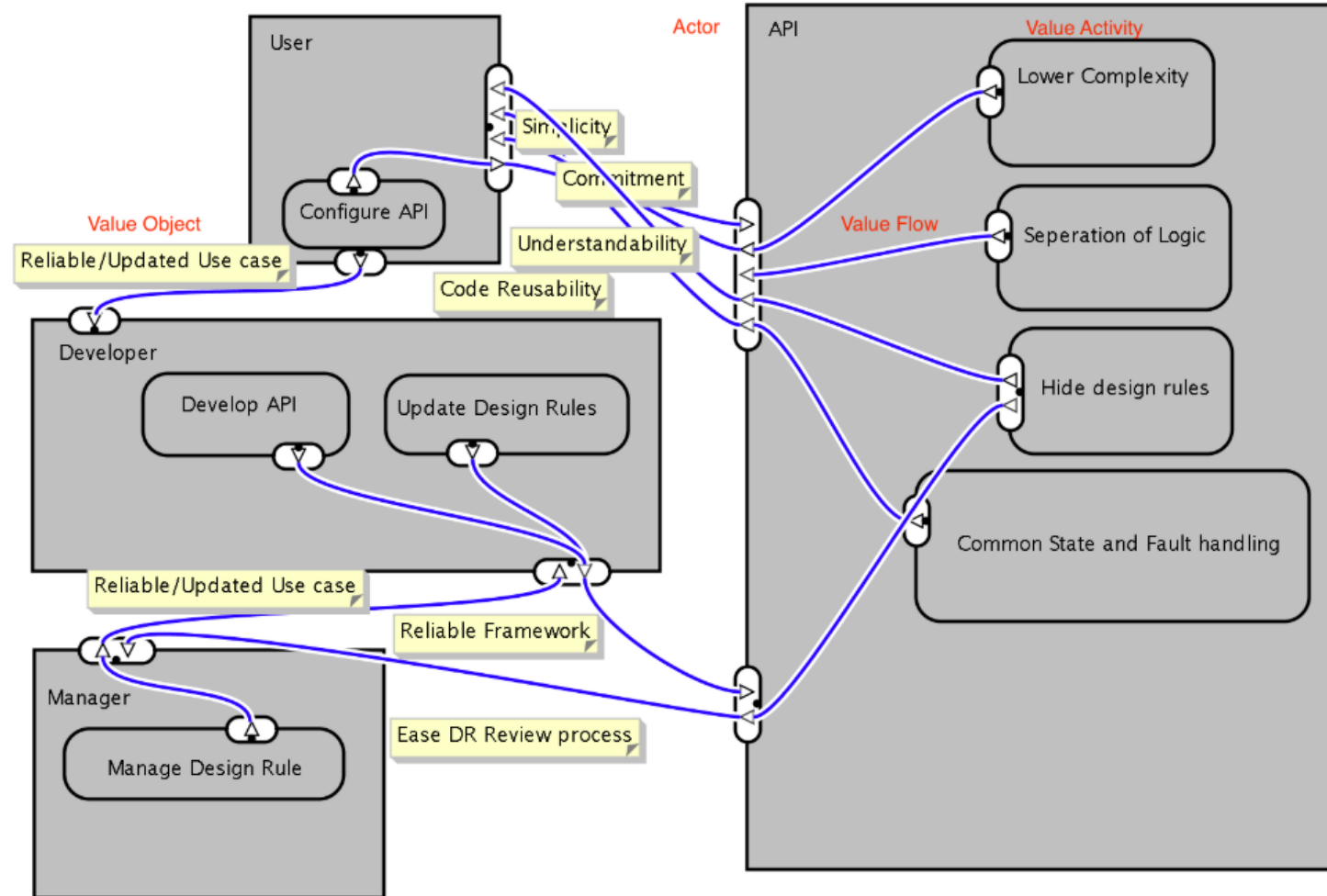
1. Welche Erfahrung haben Sie dem Angebot von nicht-privaten Schnittstellen (APIs)?

2. Ziele

   a. Was waren/sind Ihre Ziele, die sie mit dem Angebot von nicht-privaten APIs erreichen wollen?

   b. Inwiefern haben sie diese oder weitere Ziele erreicht ?

3. Können Sie die in genannten Geschäftsmodelle näher erläutern?

   a. Was bieten Sie an?

   b. Aktoren

        i. Welche Aktoren nehmen an ihrem API-Geschäftsmodell teil?

        ii. Welche Teilnehmer aus ihrer vorherigen Frage sehen Sie als besonders relevant für die Wertgenerierung an und wieso?

   c. Wertflüsse

   d. Weitere Einflussfaktoren / Elemente

4. Was sind die Gründe, warum Sie sich genau für die genannten Geschäftsmodelle entschieden haben, auch in Abhängigkeit von der eigenen Industrie?

5. Können Sie uns weitere Ansprechpartner im Bereich der API Geschäftsmodelle nennen, mit denen wir uns zu diesem Themenbereich unterhalten könnten?

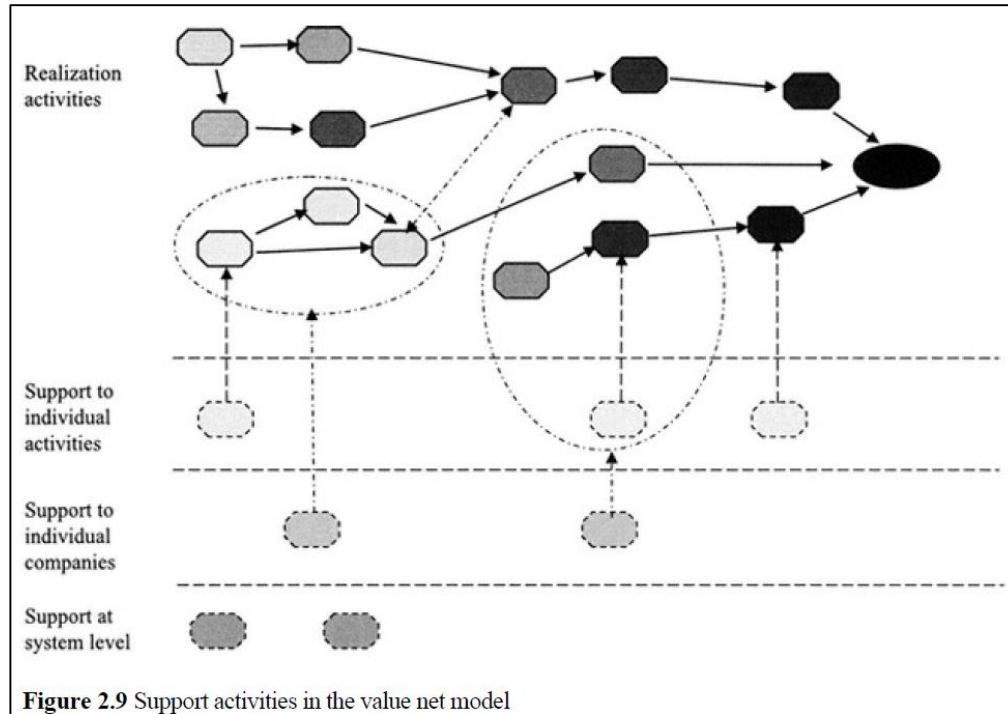# Examples Value Modelling – Value Map

Allee
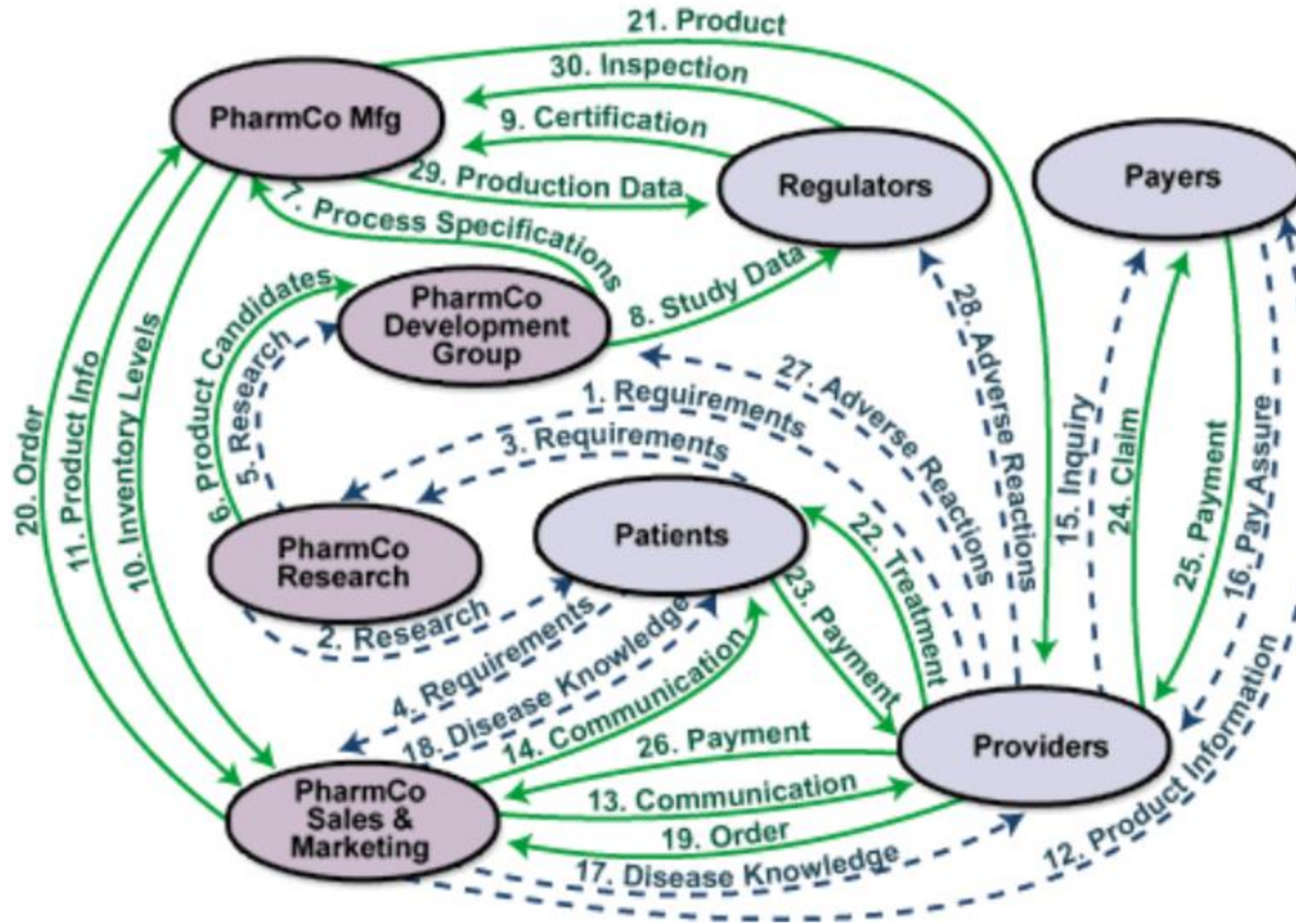
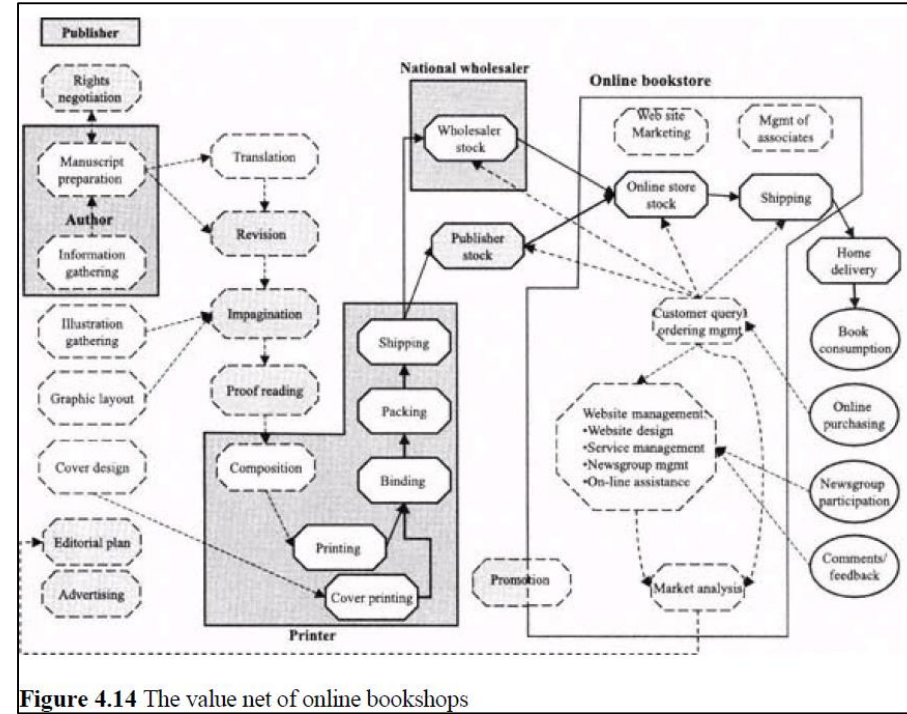Figure 2.9 Support activities in the value net model

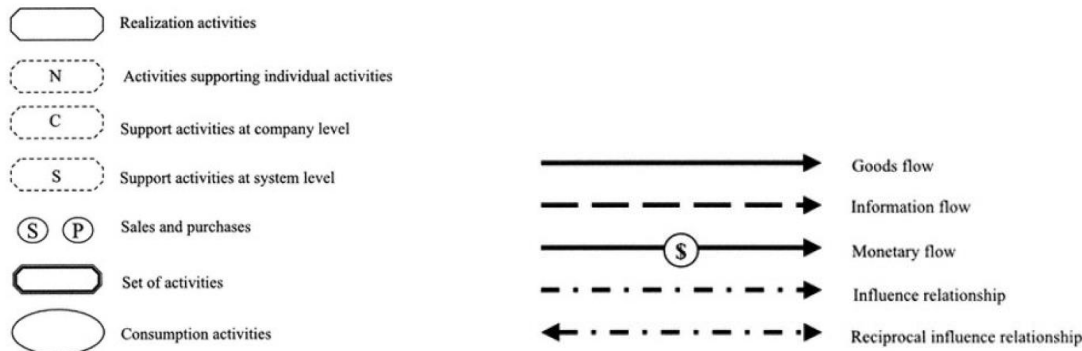Figure 4.14 The value net of online bookshops

Parolini

Figure 2.11 The representation of different types of value net activities

Figure 2.6 The representation of the relationships between value net activities

Source: Parolini, C., The value net: A tool for competitive strategy, Wiley, 1999

Examples Value Modelling – Value Stream Map
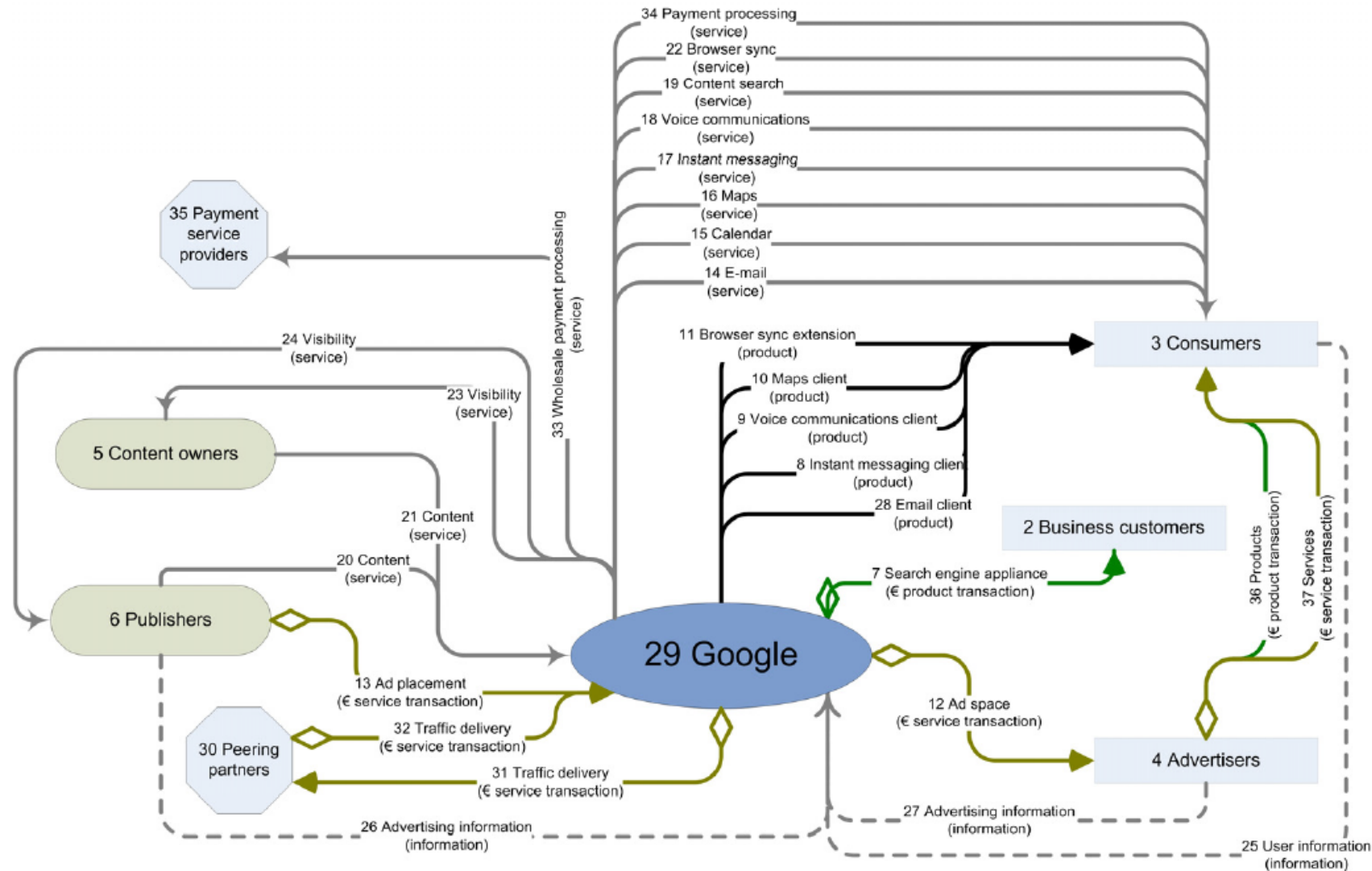
Figure 3 Example of Google's value stream map (see online version for colours)

Examples Value Modelling – Dynamic Value Description method

Souza et al.

?
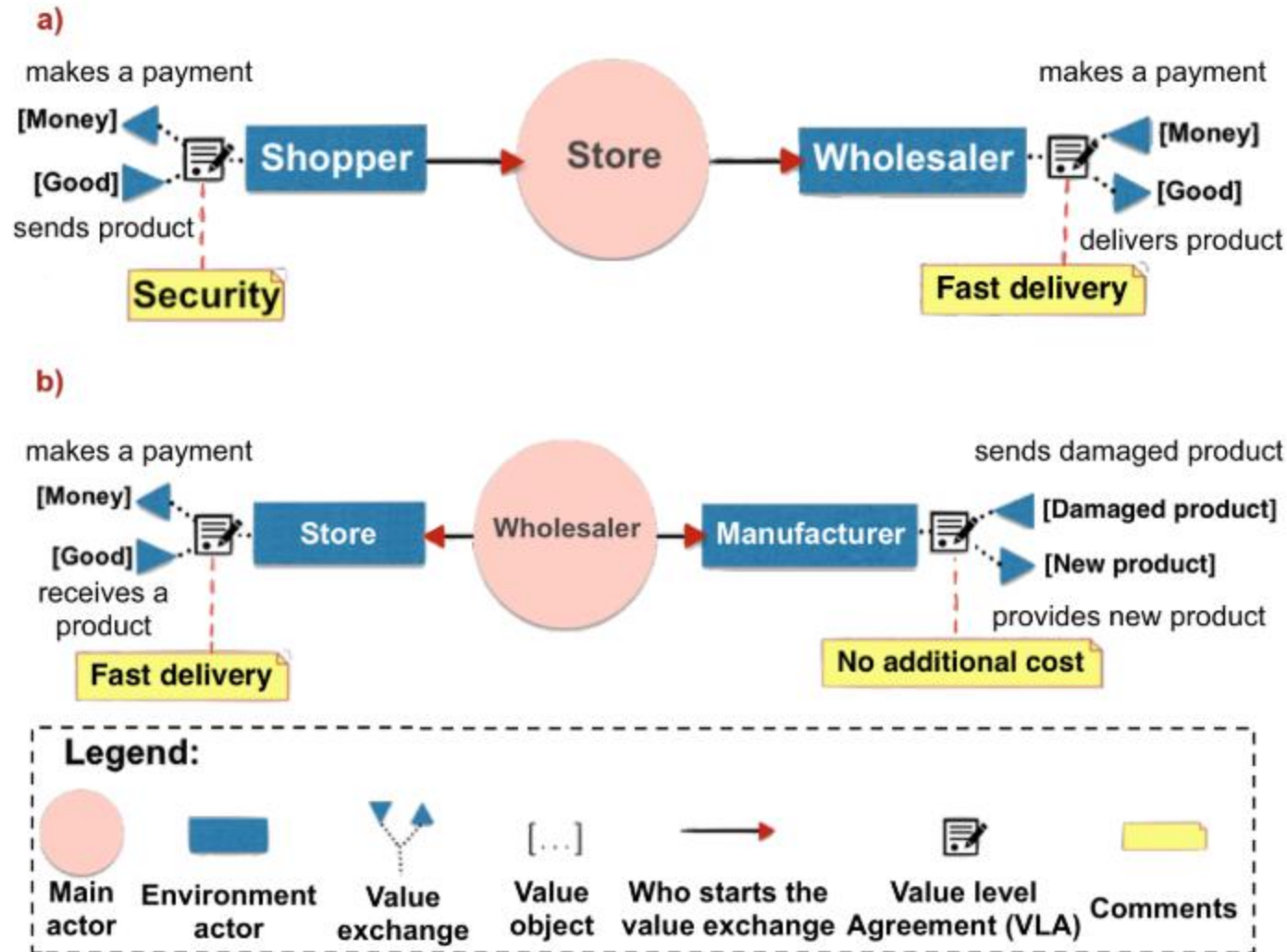
Is there a rule / scale for price and value?

Oster-walder

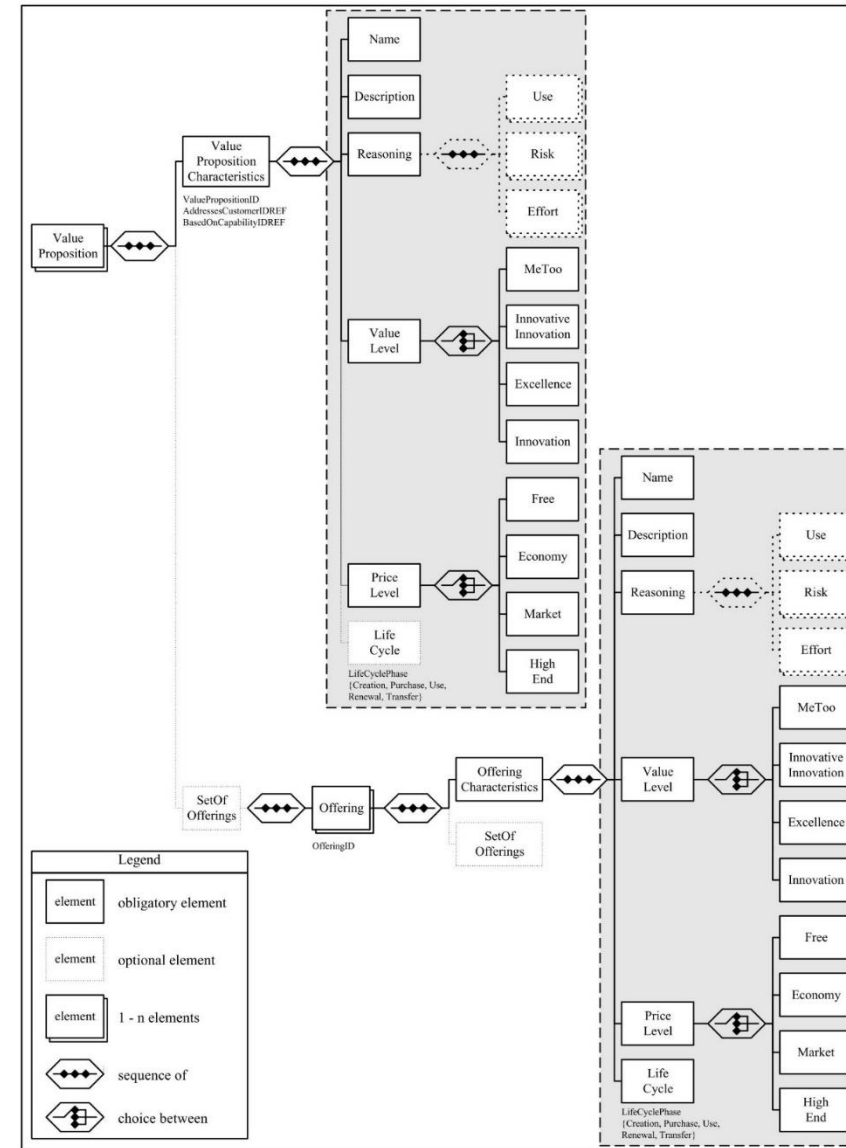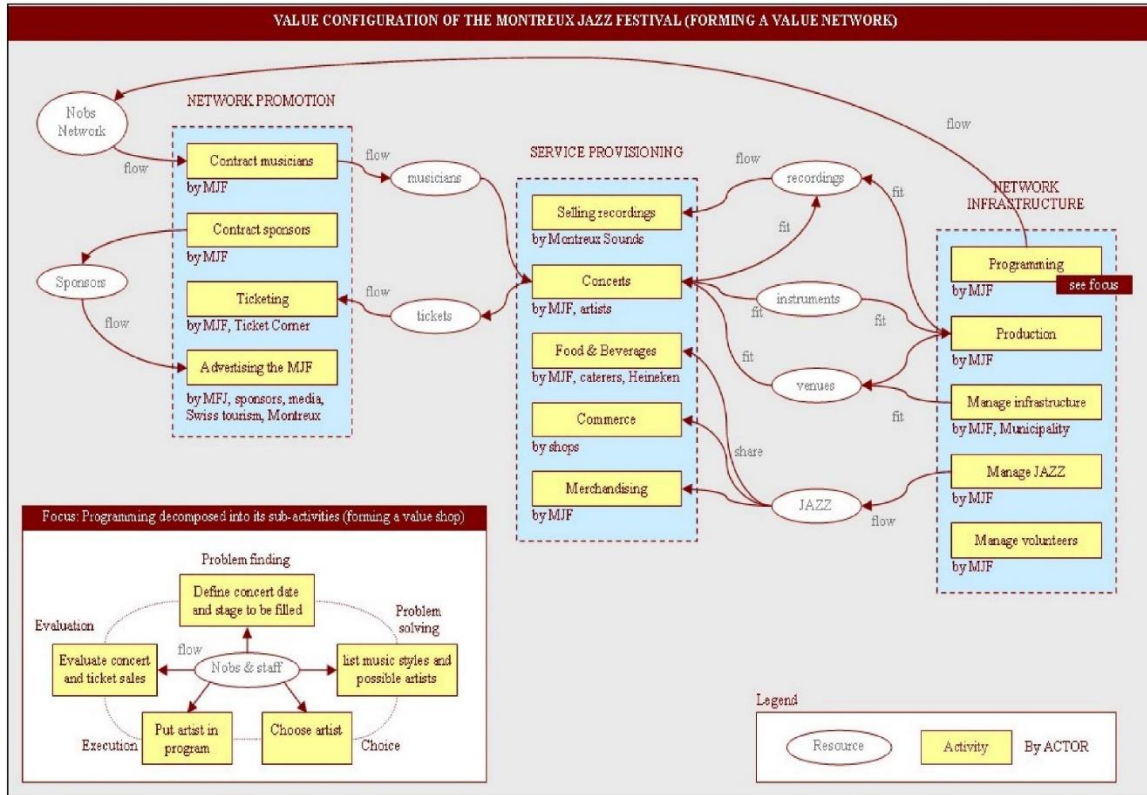| Customer Equity	{Acquisition}			{Retention}	{Add-on selling}		
Relationship description	Orange tries to make new phone models affordable and tries to be present in the market as a young brand for communicating human emotions.			Orange rewards loyalty and communications of its customers with points, which can be used to buy a new mobile phone or pay bills.	Orange tries to make customers use data services, such as WAP, SMS and MMS as much as possible (especially teenagers).		
Name of the relationship mechanism	Phone subsidies	Orange World portal	Habbo Hotel	Loyalty points	Location based services	SMS Publisher	Orange Heartbreak
Relationship mechanism description	Orange pays a part of or the whole price of a new phone a customer wants to buy in exchange for a 12-month contract with Orange	A portal that provides a mixture of news, sports, entertainment and mobile phone features, such as games. Customer login for Orange phone account management	A virtual meeting place with public and private rooms where people can gather and chat, handle e-mail, instant messages and SMS'	-	Location based services for places of interest, route planning, traffic and cinema guides	A tool that allows customers to create their own SMS-channel to send information to channel-subscribers	SMS-based services that allow (teen) customers to flirt anonymously by using their mobile phone
Reasoning	{Risk}: Minimizes the risk to be stuck with an expensive phone that is soon outdated. {Use}: Customers can afford the newest mobile phones with the newest phone features (e.g. MMS)	{Use}: Provides customers and prospects with an information portal and mobile entertainment services. Allows customers to manage their phone account	{Use}: Provides potential (teen) customers with a place to hang out and manage their e-mail, instant messages and SMS'.	{Risk}: Minimizes the risk to be stuck with an expensive phone that is soon outdated. {Use}: Customers can afford the newest mobile phones with the newest phone features (e.g. MMS)	{Effort}: minimizes the efforts for finding useful and location-based information	{Use}: Allows customers to send information to a list of people that are interested in the same topics (e.g. info for the members of a hobby soccer team)	{Use}: Allows teenagers to resolve the most pressing problems of their age - love issues – without losing their face.
CBC	{Evaluation}	{Awareness}	{Awareness}	{After Sales}	{After Sales}	{After Sales}	{After Sales}
Value level/ price level	price↑ / value→	price↑ / value→	price↑ / value→	price↑ / value→	price↑ / value→	price↑ / value→	price↑ / value→
Function	-	Brand	Brand	-	Personalization	Personalization	-
Channel	Orange shops Retailers	Internet	Internet	-	Mobile phone	Mobile phone Internet	-
By Actor	Self	Self	Self	Self	Self (& with partners)	Self	Self
Target customer	All prospects	Customers and prospects	Teen customers and prospects	All current customers	Nomad customers	Active teen customers	Teen customers

Source: Osterwalder, A., The business model ontology: A proposition in a design science approach, University of Lausanne, 2004.
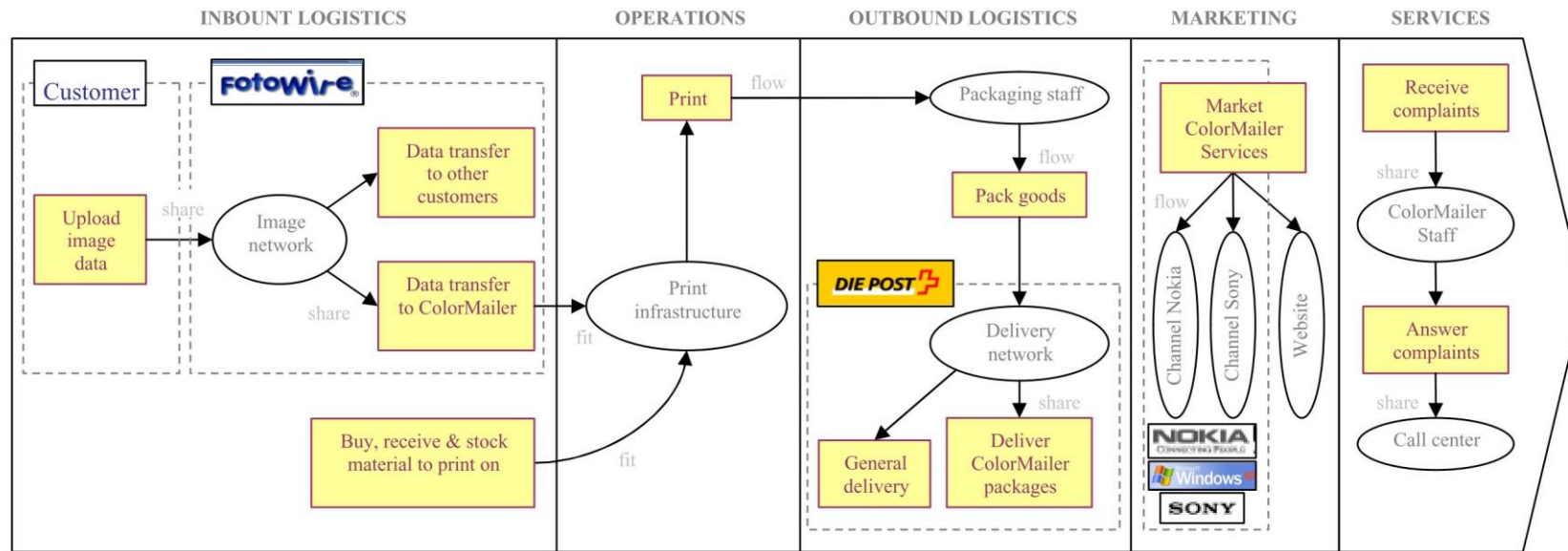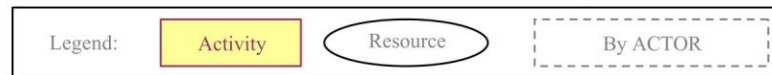
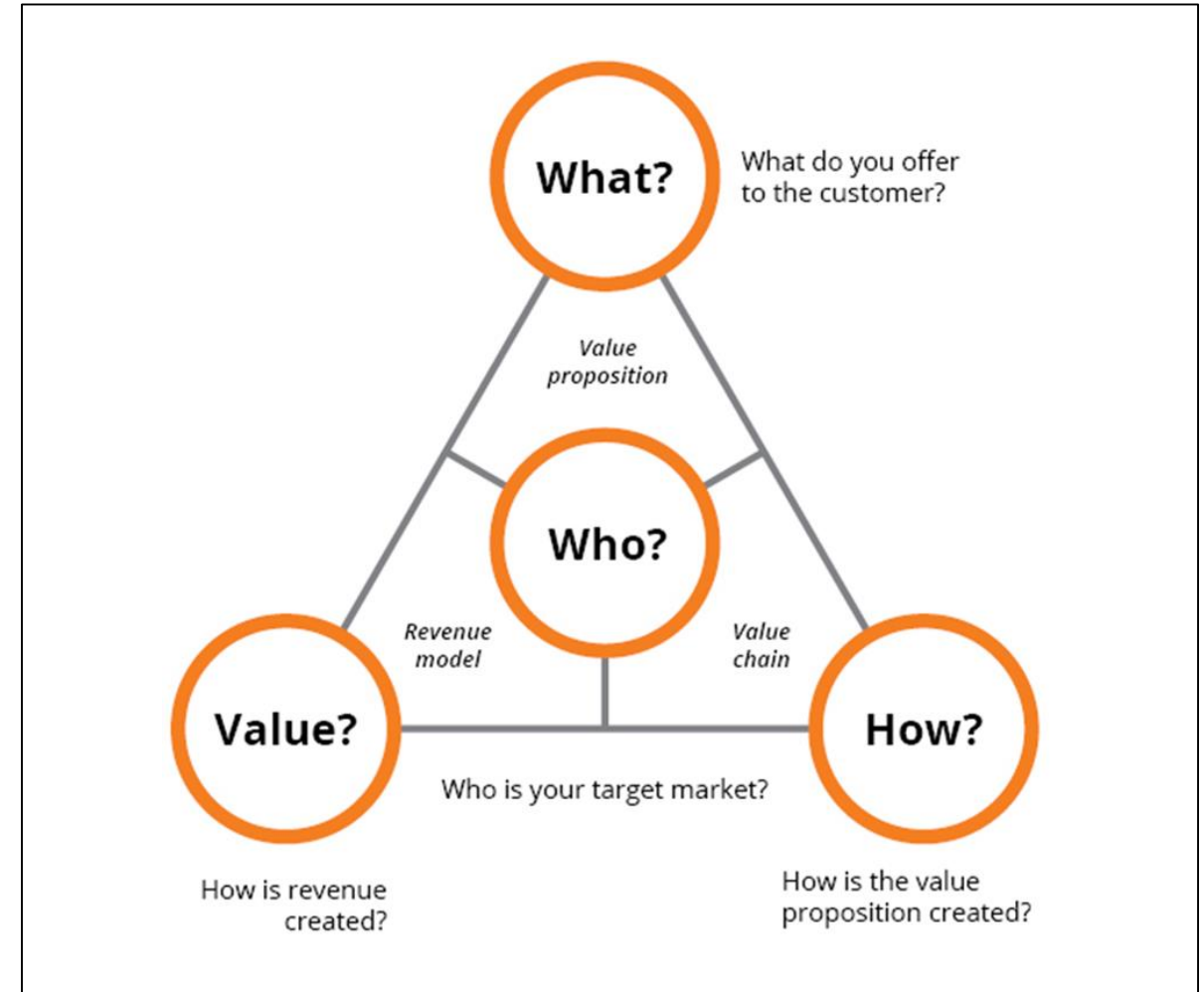| Upload of digital images & order	Transfer of digital images to the printing facilities	Buy, receive & store material to print on	Print digital images on photo paper or goods	Pack goods for delivery	Deliver packages	Answer complaints	Sell ColorMailer services		ACTIVITY Name
The digital images have to be uploaded from the customer's camera or PC	The digital images have to be transferred from the customer to the printing facilities	The primary material to print on has to be received and eventually stored	The digital images have to be printed on either photo paper or goods, such as t-shirts, cups etc.	The order has to be packaged for home delivery	The orders have to be delivered to the customer's home	Possible complaints have to be answered to the customer's satisfaction	ColorMailer's services have to be marketed to potential customers		ACTIVITY Description
{Primary activity}	{Primary activity}	{Primary activity}	{Primary activity}	{Primary activity}	{Primary activity}	{Primary activity}	{Primary activity}		Level
{Inbound logistics}	{Inbound logistics}	{Inbound logistics}	{Operations}	{Outbound logistics}	{Outbound logistics}	{Services}	{marketing}		Nature
{Shares} image network	{Fits} print infrastructure	{Fits} print infrastructure	{Flows} to packaging staff	{Shares} delivery network	{Flows} to customer	{Shares} call center	{Flows} to channels		Related to RESOURCE
Customer	FotoWire	ColorPlaza	ColorPlaza	ColorPlaza	Postal service	ColorMailer	ColorPlaza		By ACTOR
							Sony	Nokia	
							Microsoft	Agfa	

Source: Osterwalder, A., The business model ontology: A proposition in a design science approach, University of Lausanne, 2004.

Motivation – Why Value Creation through Business Model matters
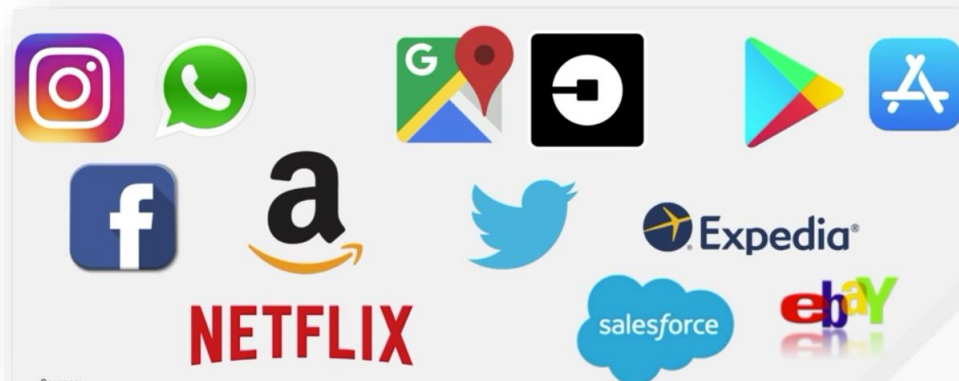
VS

"[…] potential business models are unclear for the OEMs. […] [They] are still in an identification stage regarding potential business models." – MA *Fridolin Koch - Opportunities and Barriers for Advancing the API Economy within the Automotive Industry (2019*)

What? — What do you offer to the customer?

Value proposition

Who?

Revenue model

Value chain

Value?

Who is your target market?

How?

How is revenue created?

How is the value proposition created?

Freemium	Customer Data Monetization	Hook and Bait
Explanation A freemium business model offers a basic service for free, additional premium functions or services are only available for a fee.	Customer Data Monetization means that the user gets the service (for free) and the company sells the data to a partner.	The basic product (hook) is offered cheaply or free; the complementary product or refill (bait) is sold expensively. The basic product cannot be used without the complementary product.
Modelling		

Source: BM Toolbox; https://bmtoolbox.net/patterns/; last accessed: 22.03.2018

Potential Interview Partners – How to proceed?

Dennis Seidel · 2nd

Software Architect - API & Platform at Allianz

Munich Area, Germany

3 shared connections

Andrea Kämmerer · 3rd

-Product Manager API partner by Sixt -

Munich Area, Germany

Current: Product Manager API Partner at Sixt

Reiner Schad · 3rd

We make API@Daimler happen with our oneAPI platform

Stuttgart Area, Germany

Current: API Architekt at Daimler AG

Martin Siebke · 3rd

API Strategy at BASF

Frankfurt Am Main Area, Germany

Current: Global API Strategy at BASF at BASF

Edith Kuttesch · 3rd

API Sourcing Manager

Munich Area, Germany

Current: API Sourcing Manager at Sandoz

… plus personal contacts in different sectors

celonis

wieland

Deloitte.

accenture