

Mediation Patterns in e³value

Benjamin Rensmann

Workshop on Value Modeling

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Overview

- **„Agent-mediated Business Coordination“ (ABC)**
- (Inter)mediation
- Mediation Patterns in e³value
- First Examples
- To Do's

The ABC-project



Business Coordination:

- Integrating / Coordinating existing processes, applications (e.g. EAI, B2B)
- Various types of mediators / adapters are used (or not used!)
- Should a mediator be used? Which type of mediator should be used? → No decision method that combines technical and economic aspects
- Identify roles and added-values of mediators in certain business situations

Primary objectives:

- a) Develop an *interdisciplinary theory of mediation* that is applicable in the context of business coordination
- b) Build a *decision process* that generates and evaluates different mediation patterns
- c) Create an *agent society test bed* that incorporates the theory and use it as a tool to simulate this decision process

The ABC-project



Basically 2 perspectives on mediation:

1) Agent Perspective:

- Term „mediator“ or „broker agent“ often used in the field of Multi-agent systems (MAS)
- No grounded theory about the preferability of those mediators
- Usage more intuition-based → ad-hoc usage
- Perform systematic research on the occurrence and success of several forms of mediators in the MAS-field

2) Organizational and economic perspective:

- Several forms of economic coordination exist: Markets, Hierarchies, Networks
- Intermediaries are coordinating entities, having several roles and performing various tasks
- Added-value of intermediaries unclear: Disintermediation- / Reintermediation-discussion
- Perform systematic research on the value of intermediaries in certain situations

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Intermediaries - Definitions

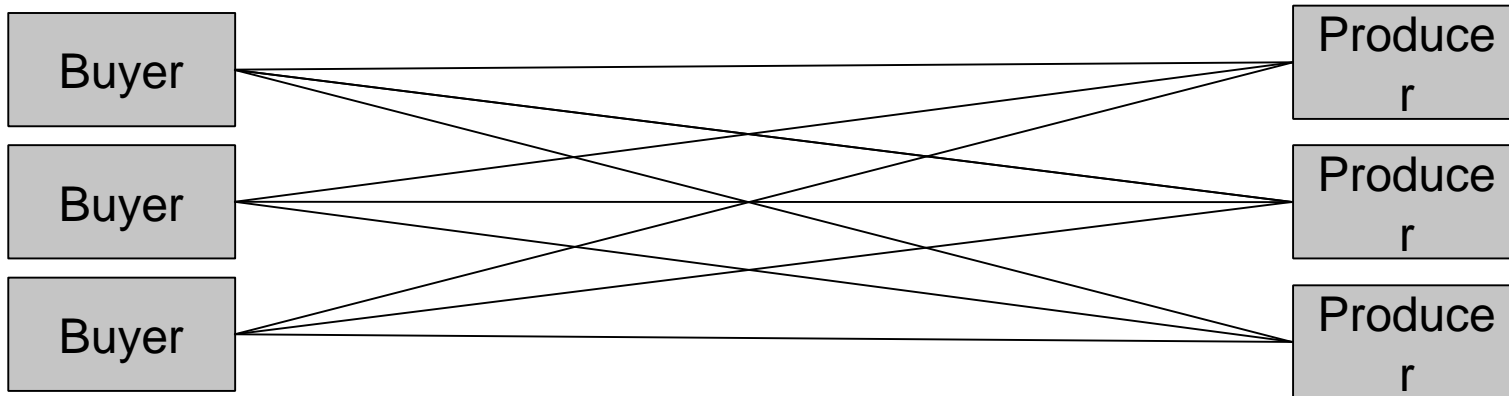
What is an intermediary?

(Spulber 1996): “An intermediary is an economic agent that purchases from suppliers for resale to buyers or that helps buyers and sellers meet and transact”

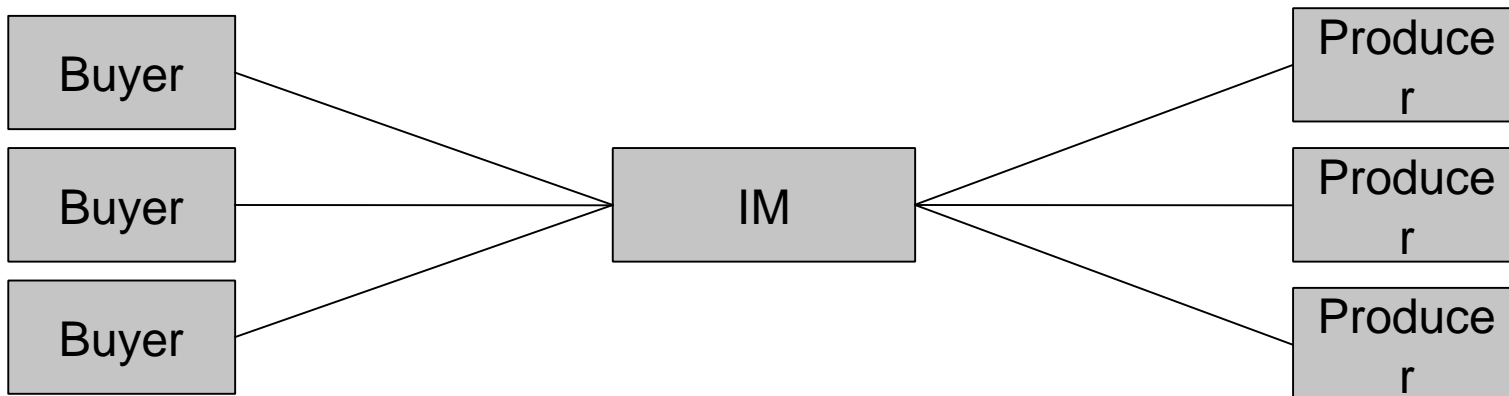
(Chircu/Kauffman 2000): “Intermediaries typically provide transaction-processing capabilities for buyers and sellers, and thus act in an operational capacity, or they bring enhanced levels of knowledge and expertise, and add to the transactability of a given good or service”

(Janssen 2001): “We define *electronic* intermediaries as *independent organizations that support buyers and sellers to coordinate their activities using ICT in distribution networks*”

Intermediaries – Reduction of Links



$3 \cdot 3 = 9$ connections; in general: $n \cdot m$ connections



$3 + 3 = 6$ connections; in general: $n + m$ connections

Intermediaries – Roles and Values

Four most important functions of economic IM (Spulber 1996):

1. Price Setting and Market Clearing
2. Providing Liquidity and Immediacy
3. Matching and Searching
4. Guaranteeing and Monitoring

Four important roles of Market IM (Bailey/Bakos 1997):

1. Aggregate buyer demand or seller products to achieve economies of scale and scope and to reduce bargaining asymmetry
2. Protect buyers and sellers from the opportunistic behaviour of other participants in a market by becoming an agent of trust
3. Facilitate the market by reducing operating costs
4. Match buyers and sellers

Intermediaries - Disintermediation

- ICT reduces Transaction Costs
 - Hypothesis: Shift from hierarchies to markets (Malone/Yates/Benjamin 1987: 'Electronic Markets and Electronic Hierarchies')
 - Electronic Brokerage Effect: The electronic market itself fulfills the intermediating function
- “IDR framework”:
 - Recurring pattern: Intermediation / Disintermediation / Reintermediation (Chircu / Kauffman 2000)

- Differentiated view on Intermediation / Disintermediation (Sarkar/Butler/Steinfeld 1995):

		Pre-Internet	
		Direct costs < IM costs	Direct costs > IM costs
Post-Internet	Direct costs < IM costs	1. Internet-supplemented Direct Market	2. Threatened Intermediaries
	Direct costs > IM costs	3. Cybermediaries	4. Internet Supplemented Intermediaries

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Problem

- Theory on intermediaries is somehow widespread
- A lot of authors identify basic roles
- Different opinions about disintermediation-question
 - it strongly depends on the scenario whether disintermediation will happen.
- No common ground: Leads to difficulties in practically assessing intermediation:
 - How is my business affected?
 - Will disintermediation take place in my markets?
 - How can I identify possible threats?
 - What are benefits of using third-party intermediating services?

Our Idea

- Make value exchanges and activities in intermediated business scenarios more explicit
- Usage of examples and case studies
 - Exemplary scenarios
 - „With-without“-scenarios
 - Evolutionary scenarios
- Identify typical situations and visualize them with value models → provide a basis for further analysis
- Search for common (atomic) „mediation patterns“
- Look at capabilities of certain Intermediaries, derive generic functions / function groups
- Find a framework for describing mediation / intermediation in a more abstract way

Contributions

- Provide a (generic) framework for identifying risks & opportunities in using Intermediaries in contrast to other coordination mechanisms
- Provide decision support for certain situations
- Clarification of the added-value of certain intermediary functions in various situations
- Provide a basis for discovery of new intermediary roles and services
- Get to a more abstract understanding of the concept of mediation through analysis of mediation patterns found in the models
- Compendium of exemplary situations where disintermediation is likely / unlikely to happen

Mediation Patterns

- **Definition Pattern** (thefreedictionary.com):
 - „A model or original used as an archetype”
 - “A plan, diagram, or model to be followed in making things”
- **Question: What is a mediation pattern?**
 - It should have an objective / intent
 - It should describe or respond to a recurring problem or phenomenon
 - It [is embedded in / interacts with / depends on] some context (usually a value constellation)
 - One should be able to model it in e³-value
- **Maybe analogy to control patterns** (Kartseva et al. 2006):
 - „A control pattern is a generic and re-usable control mechanism for a recurring control problem, selected on the basis of aspects of the context of application.”
 - Structure: Context – Problem – Solution

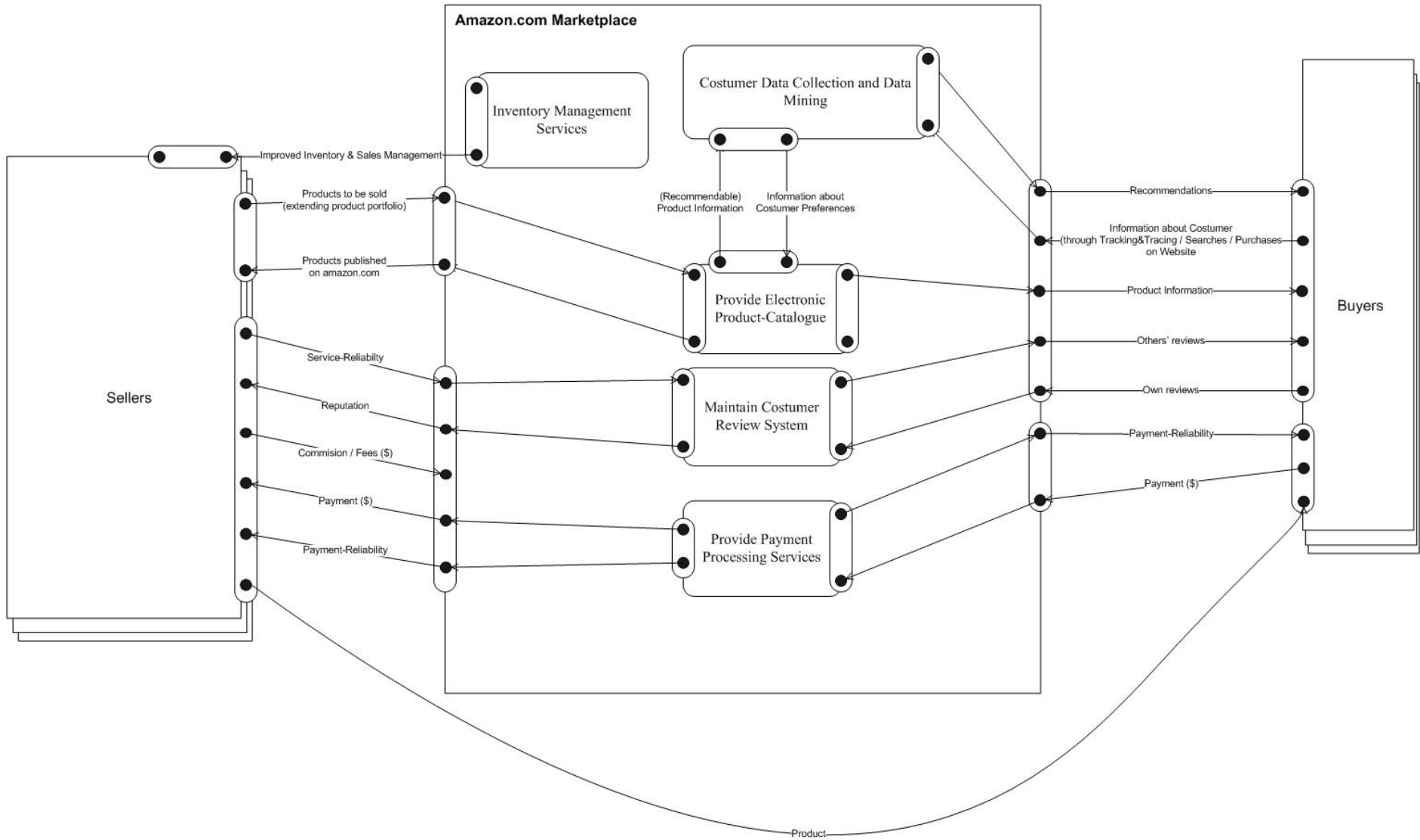
Usage of e3-value

- Visualizing value exchanges in mediated business situations
 - Make potential mediation patterns visible
 - enable different perspectives for different stakeholders in mediated scenarios (how does it affect my business?)
 - discover opportunities / risks / threats
 - Provide a common ground for discussions in certain value constellations
- Use e³-value to justify the use or the avoidance of an intermediary in a certain situation

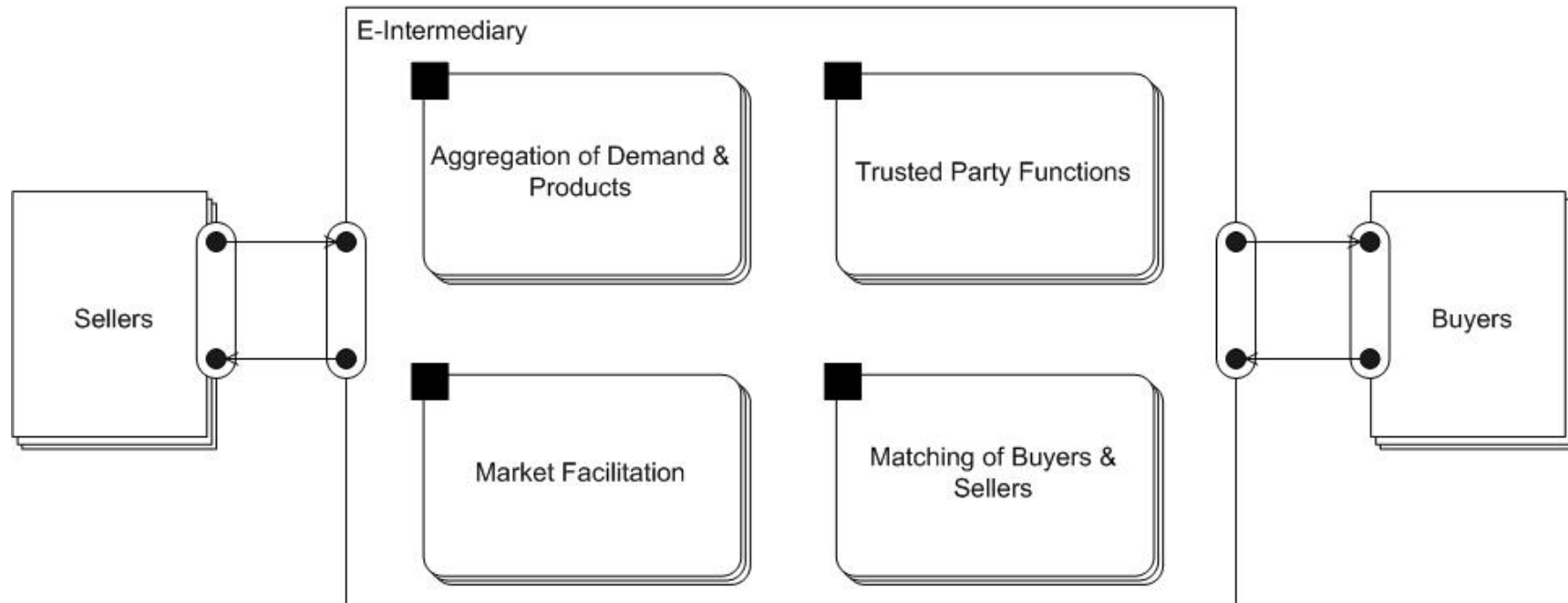
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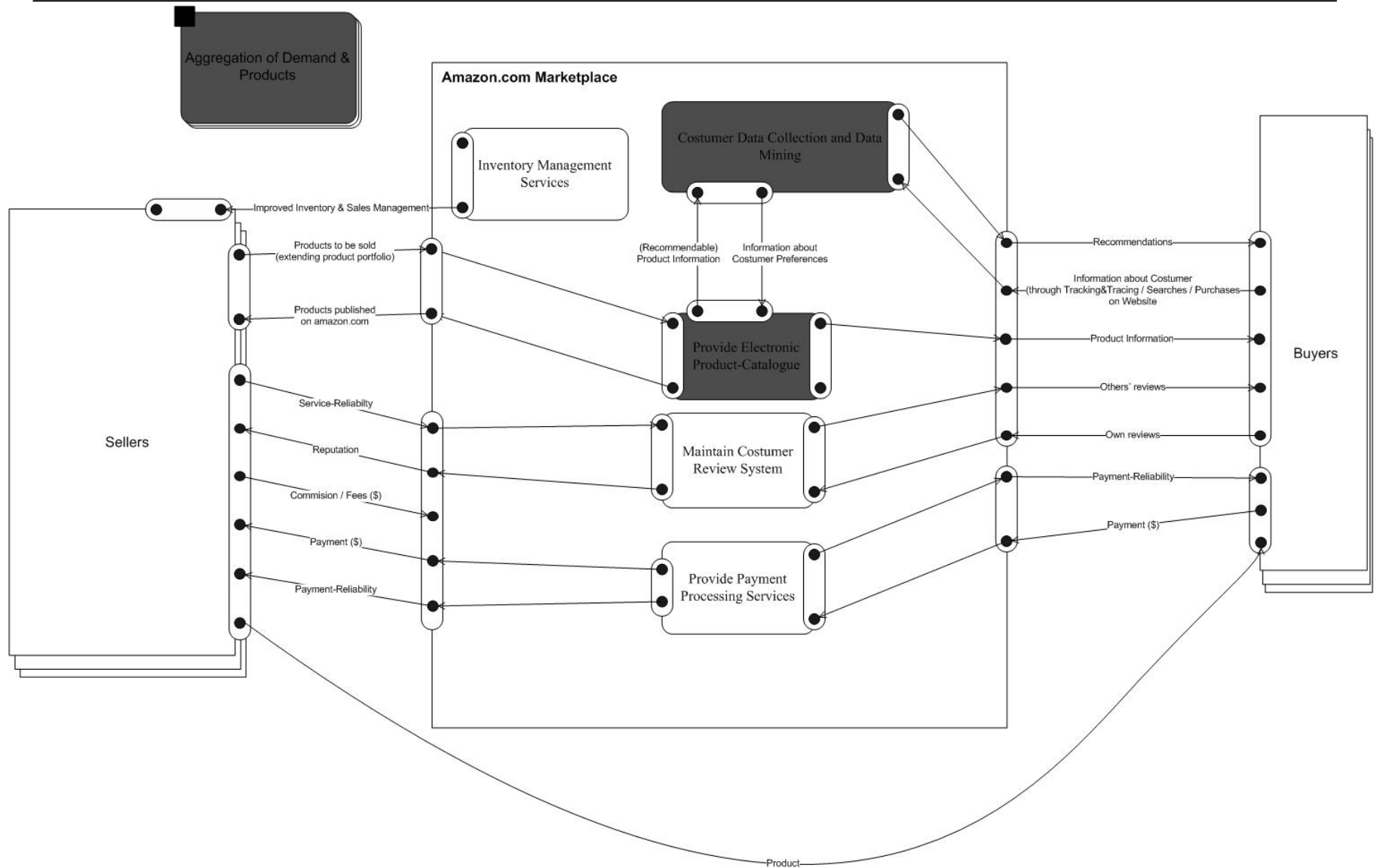
Example – Amazon Marketplace



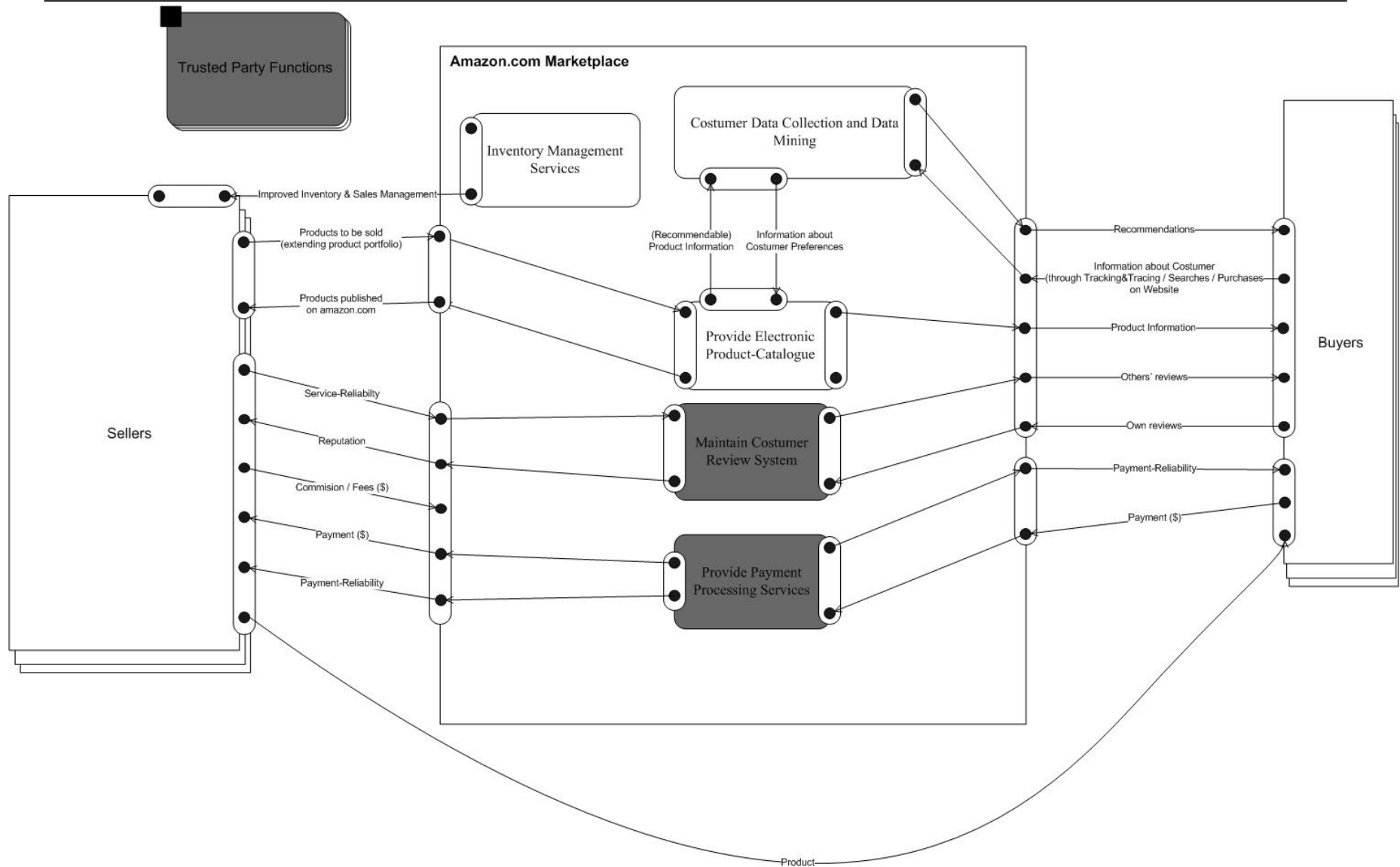
Examples – Looking for Intermediary functions



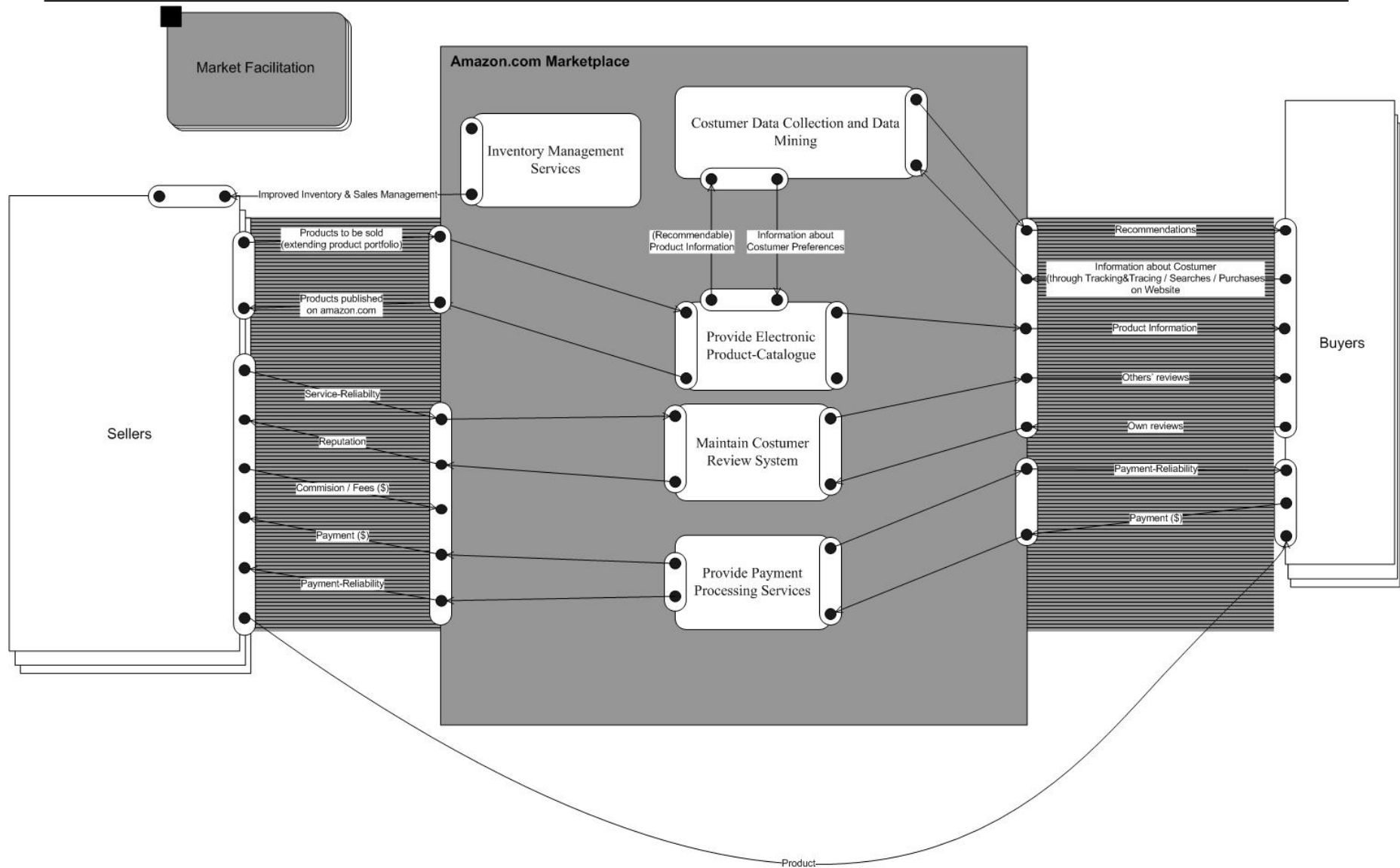
Examples – Demand / Product Aggregation



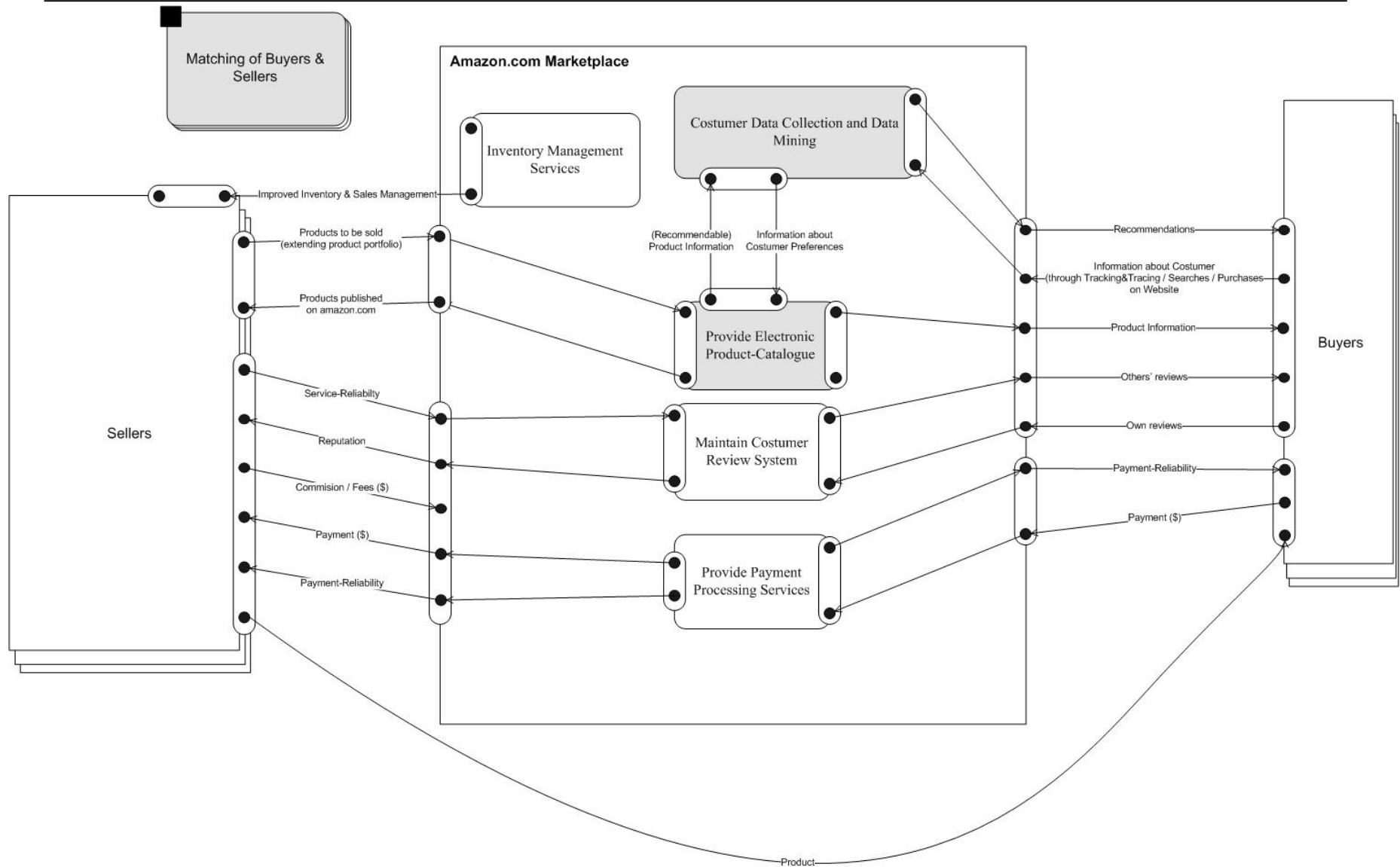
Examples – Trusted Party



Examples - Market Facilitation



Examples – Buyer / Seller Matching

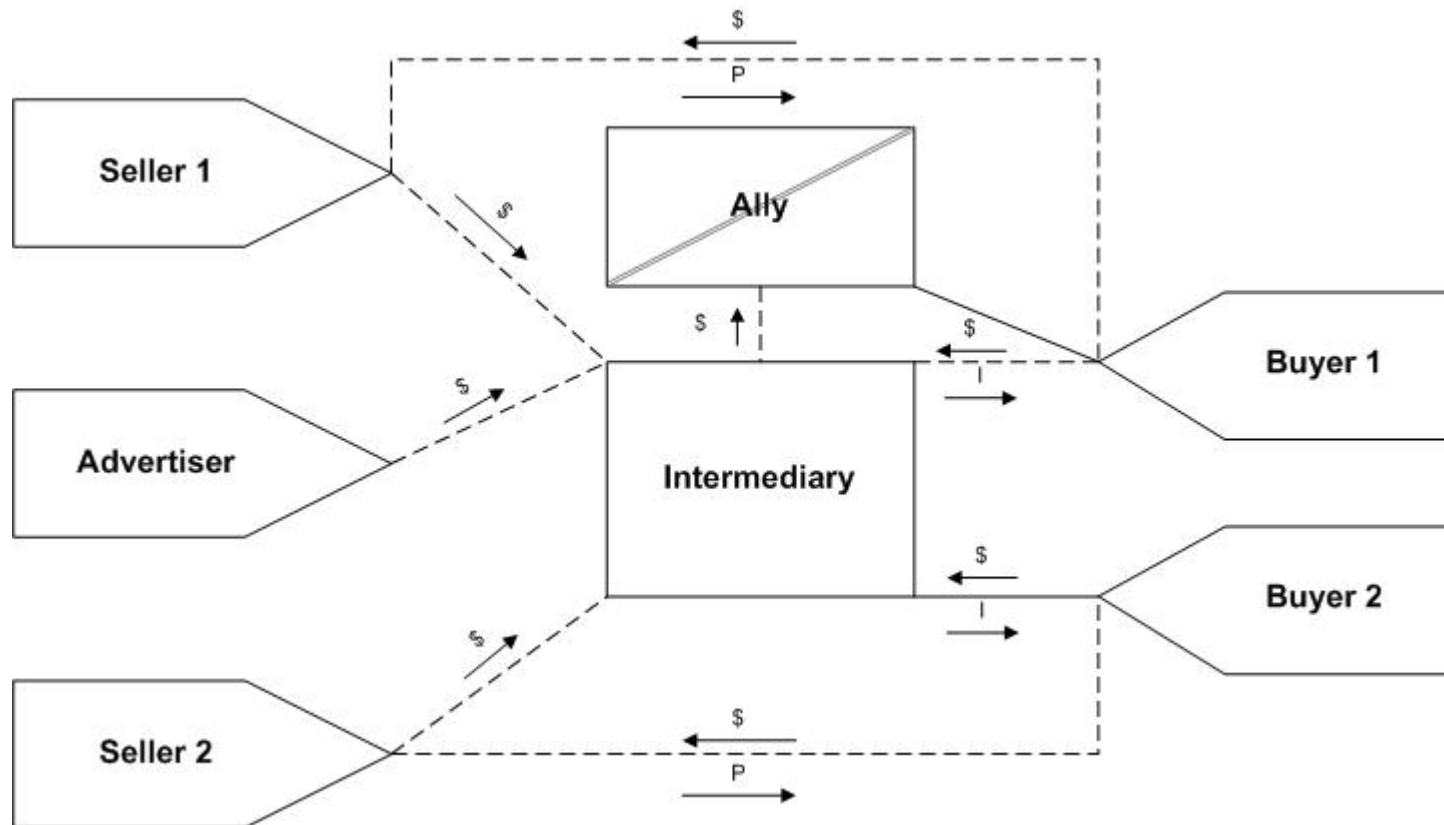


Atomic Business Models

- Weill / Vitale (2001) identify 8 „atomic“ business models
- The intermediary is one model
 - Brings together buyers and sellers by concentrating information (e.g. Auctions, search engines etc.)
- Other atomic business models also fulfil intermediary roles (Straub 2004):
 - Shared infrastructure
 - Value net integrator
 - Full-service provider
- Look at these models:
 - Translate them to e3-value, using examples
 - Identify value exchanges, mediation patterns

Atomic Business Models

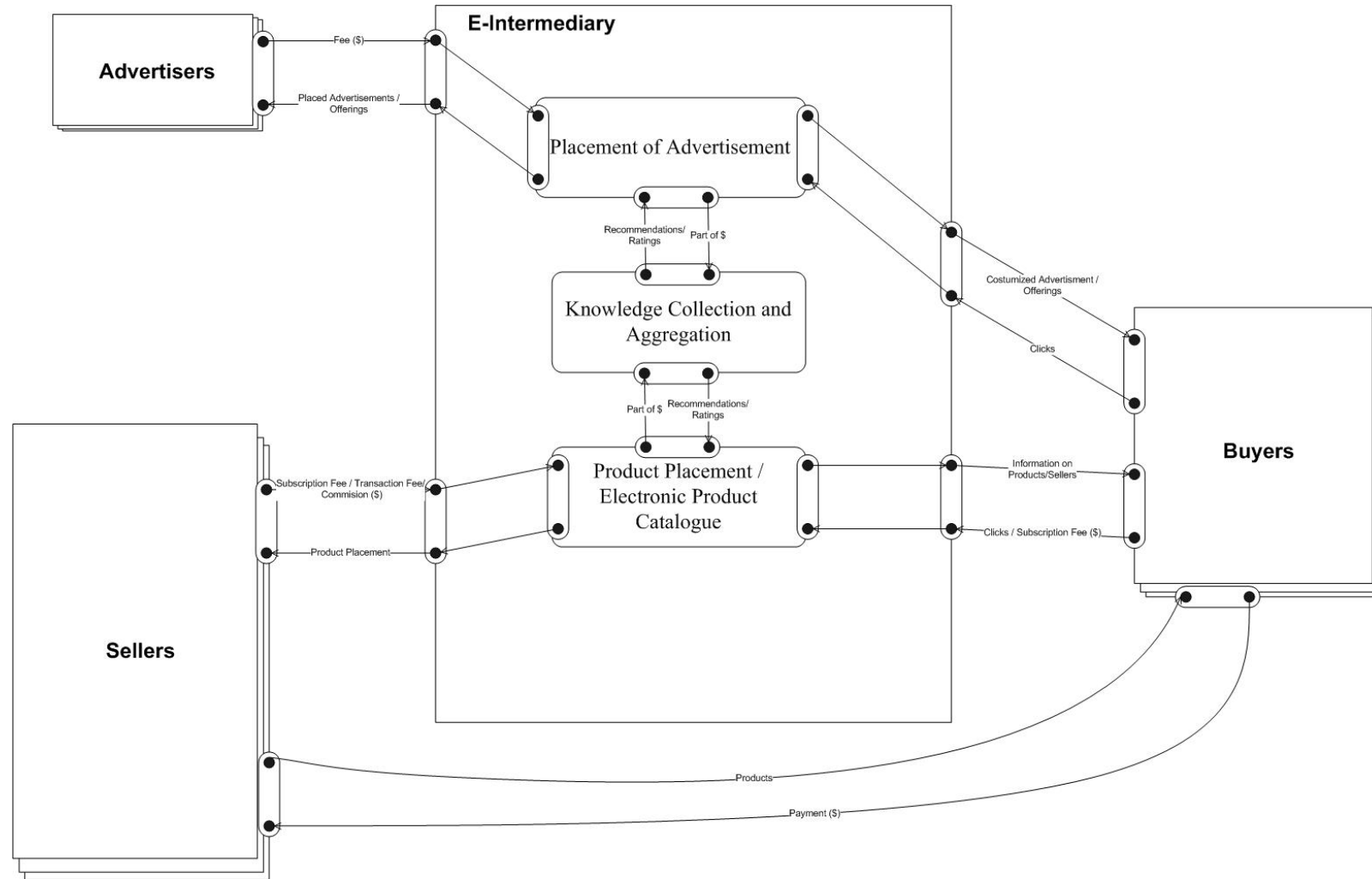
The atomic E-Business intermediary model:



(Weill/Vitale 2001)

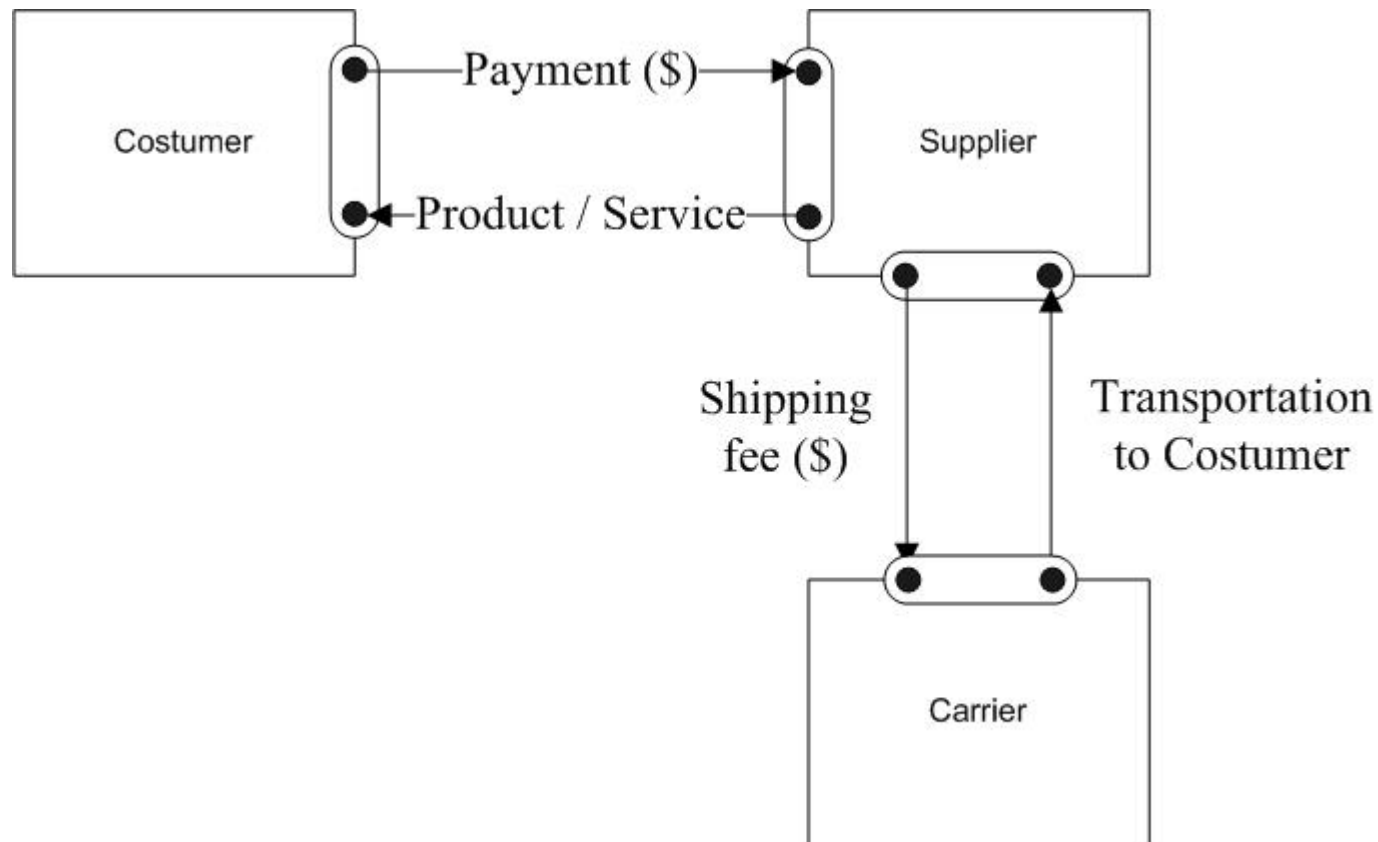
Atomic Business Models

One possible transformation to e³-value:



Negative example: No mediation

Example: Third-Party deal (Carrier company)



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To Do's

- Further develop and define the concept of a „mediation pattern“
- Develop a systematic approach for finding and classifying mediator patterns
- Find good cases
- Do case study research on the basis of mediation patterns
- Develop further theory on mediation / mediation patterns

Questions / Contact

Thanks for your attention!

M.Sc. Benjamin Rensmann

Tilburg University
Department Informatiekunde
Warandelaan 2 / P.O. Box 90153
5000 LE Tilburg
Mail: b.rensmann@uvt.nl
Phone: +31 13 466 8201
Room: K718

Dr. Hans Weigand

Tilburg University
Department Informatiekunde
Warandelaan 2 / P.O. Box 90153
5000 LE Tilburg
Mail: h.weigand@uvt.nl
Phone: +31 13 466 2806
Room: K706

<http://www.uvt.nl/infolab/prj/abc/>