

Privacy vs. Data: Business Models in the digital, mobile Economy

Lecture 4

Characteristics of Goods and Services in the Digital Economy

SS 2015

Dr. Andreas Albers



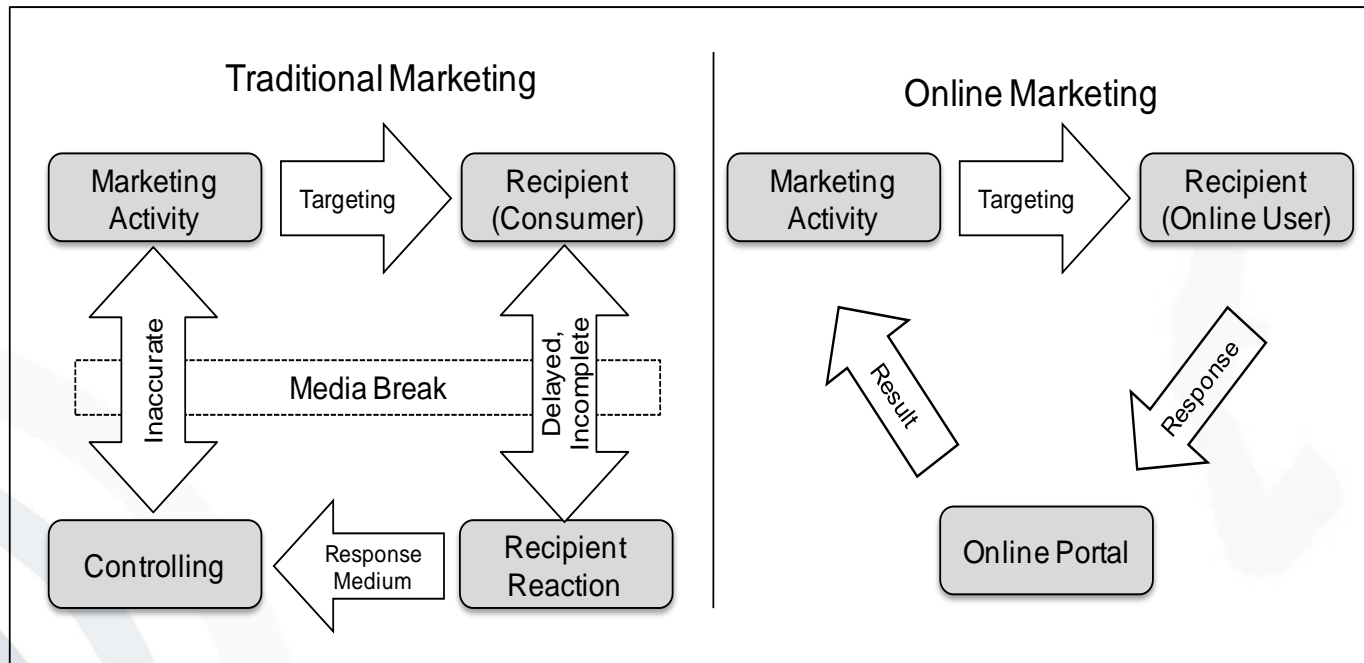
- Introduction to Services and Goods in the Digital Economy
- Information as Good in the Digital Economy
- Personal Data as special Good in the Digital Economy
- Attention as Good in the Digital Economy
- Use and benefits of Personal Data in the Digital Economy

- Integration of the external factor (e.g. users, customer, consumer, etc.) in the service provision
 - For instance:
Web Search - A user enters search query and the results are displayed.
- Immaterial
 - Services are intangible and thus cannot be stored
- Uno-Actu Principle
 - Service provision and consumption have to happen at the same time



Source: Holtmann (2004)

- Interaction between user and service provider without or less media disruptions
- Example: Online Marketing



Source: Skiera, (2001)

- Personal
- 1:1 communication possible
- High attention and interaction
- Ubiquitous availability
- Context information about the current usage situation of a user available



- **Measureable**
 - The quantity and/or quality of good. It needs to be measurable in order to estimate its value
- **Scarce**
 - Unlimited supply of a good would make its trading obsolete since it would have no market value
- **Transferable**
 - Ownership rights of an economic good needs to be exchangeable between different parties

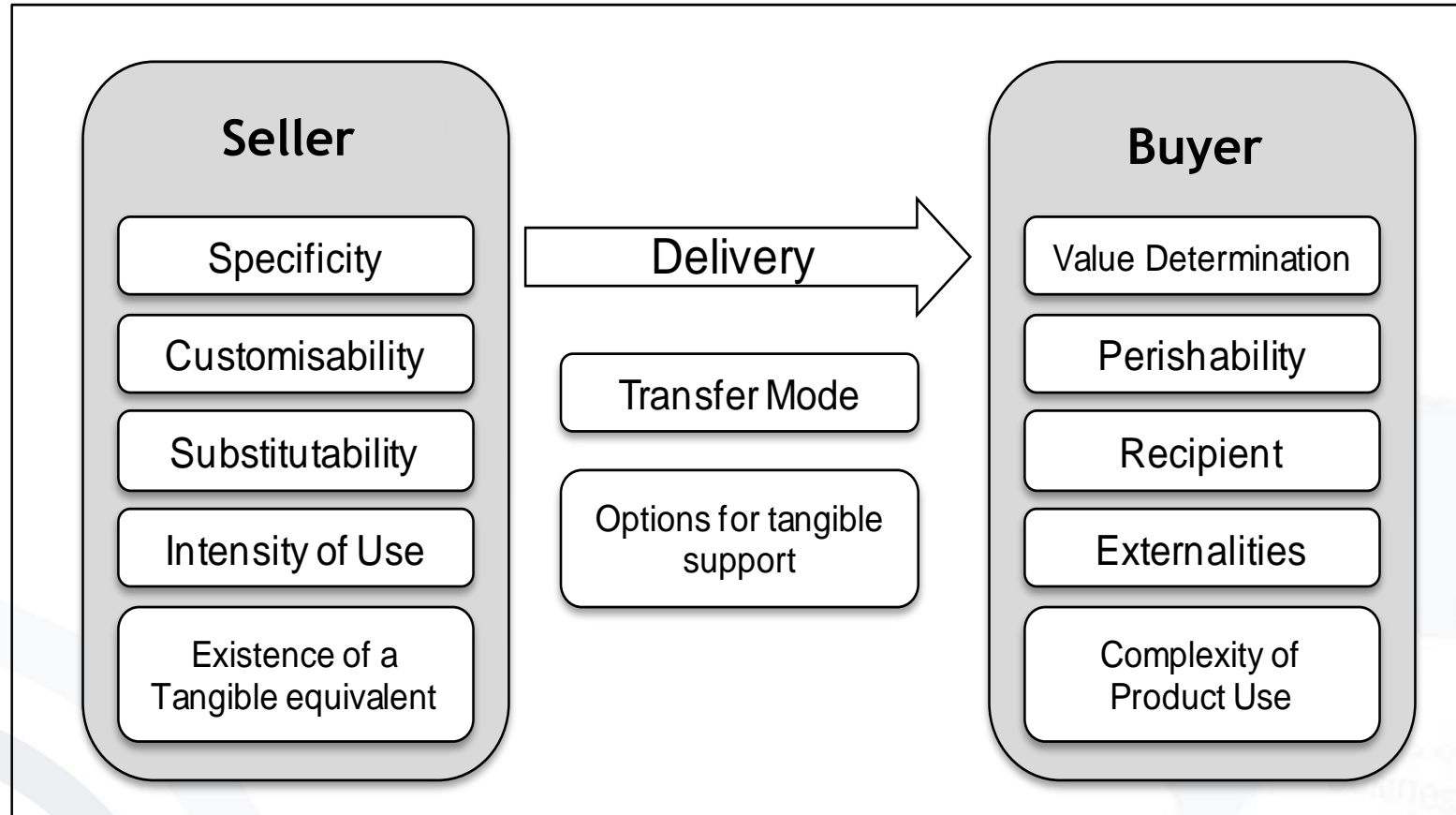


- Physical Goods (tangible)
(e.g. mobile phone)



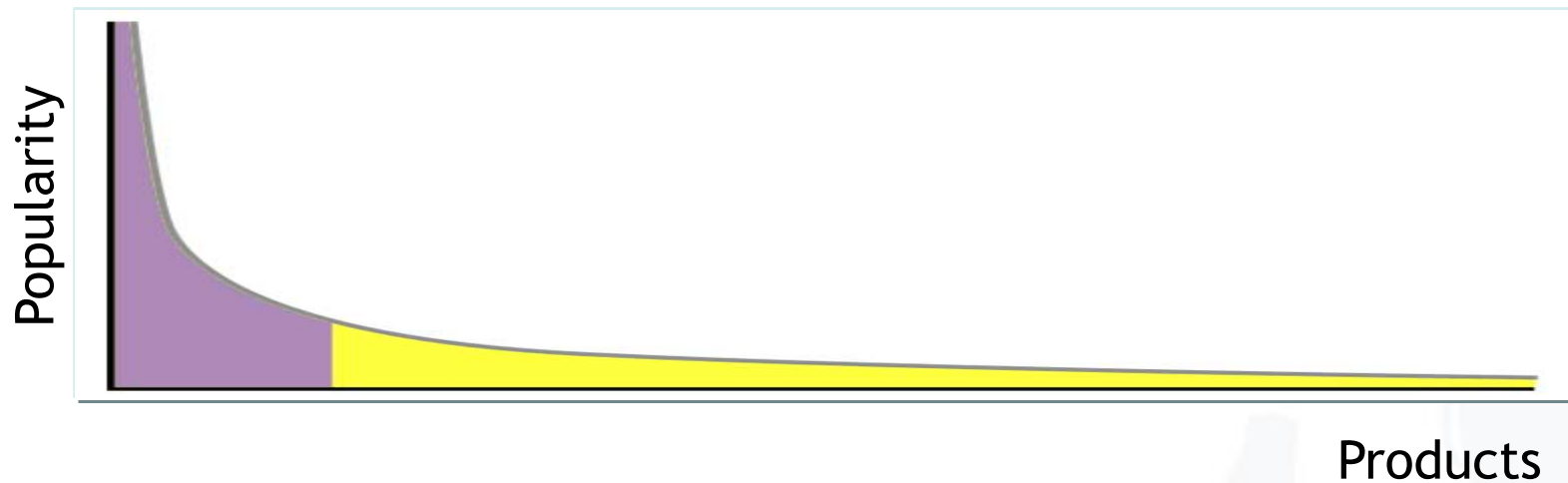
- Non-Physical Goods (intangible)

- Digital goods
(e.g. software, information, music)
- Digital-representable goods
(e.g. patents)



Source: based on Koppius (2000)

- Special case that works only in the Digital Economy?




- Idea
 - The low reproduction and storage costs for digital goods allow even the production and sale niche goods
 - The low demand of an individual niche product is compensated by the high volume of different individual niche products sold in total
 - Examples: Google AdWords Ads or Niche Music in iTunes

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What is Information?

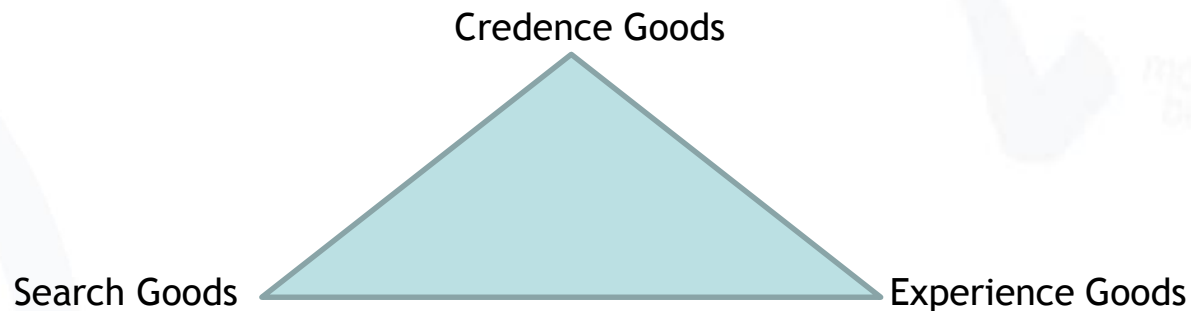
- **Data:** Characters (symbols), which are based on mutual agreements, represent information in an electronically processable manner.
- **Knowledge:** Contents containing the beliefs about the truth of statements. (Wittmann, 1959)
- **Information:** Explicit (in the form of language expressed) knowledge, which is used by humans in order to accomplish business objects. → purposeful knowledge (Wittmann, 1959)
- **Communication:** Exchange of information between humans as well as the exchange of data between machines.

Source: Wittmann (1959); Holten (1999), p. 71ff.; Teubner (1999), p. 16 ff.
(translated into English)

- Information is costly to produce, but cheaply to reproduce (first copy costs paradigm) 
- After a first copy is produced, most of the costs are sunk costs
- Multiple copies at roughly constant per unit-costs
- No natural capacity limits for reproducing information - with one recent exception
 - The bandwidth capacity of mobile networks is rather limited compared to fixed line networks
 - Consequence: Although information can be cheaply reproduced, there is a limit for transferring them to the subscriber
 - As long as information sellers (e.g. publishers) are not charged for transporting their information via mobile data communications, the mobile network operators pay the bill
 - Mobile network operators currently try to mitigate this situation with quasi-flat rates, more expensive data rates or quality of service offerings
 - But due to competition and mobile data communications as homogenous good, the room for such manoeuvres is rather limited

Differentiation between search and experience goods

- Quality of search goods
 - Can be inspected prior to the purchase (e.g. price)
- Quality of goods with experience qualities
 - Can only be determined after the purchase or consumption (e.g. information goods such as books or papers)
- Quality of credence goods
 - The value of such goods cannot be determined at all - even after consumption or purchase (e.g. consultancy).



- Pricing of information should happen according to its value, not its costs
- In addition, personalise the prices for information
 - Individualised pricing of information
 - Versioning of the information product
 - Group pricing of information
- Why?



- Avoid Commodity Markets of Information
 - Commodity drives prices down to zero → Similar to Telco services/products
 - Differentiate and/or try to archive cost leadership through economics of scale and scope
- Consequently, ...
 - Differentiation of information through personalisation or customisation
 - Therefore, know your customer through **collecting and analysing their personal data**



- Arrow's Information Paradox
 - A potential buyer of information can only assess its quality by actually consuming it
 - However, the seller has already transferred the good without receiving compensation in exchange
- Approach to mitigate the problem
 - Provision of information samples to a seller instead of all information at once (e.g. demo software, music snippets, document extracts, etc.)



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- Personal Identifiable Information (US Privacy Law)
 - *Information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, etc. alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name, etc.*
- Personal data (EU Directive 95/46/EC)
 - *'Personal data' shall mean any information relating to an identified or identifiable natural person ('data subject'); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity;*
- Personal Data = Personal Identifiable Information (PII)?



- General Information
 - Costly to produce, cheaply reproducible
 - Customisable and saleable
 - Meant for direct consumption

- Personal data
 - Costly to produce, cheaply reproducible
 - Customisable and saleable
 - Use for
 - personalising of information,
 - targeting of advertising,
 - recommendation of products,
 - prediction of future needs or preferences
 - ...

What is the role of Personal data of in the (mobile) Digital Economy?



- Some (hype) statements ...
 - “Data is a currency in the Internet“
 - “Individuals are paying for services with their personal data”
 - “Personal data is the new oil for/of the digital economy”
 - “If you pay for a product, your are the customer; if the product is free, you are the product”

What is the role of Personal data of in the (mobile) Digital Economy?



- (Personal) data is the most important resource (like fuel) in the digital economy, but
 - unless you sell/trade it, it does not have a value on its own
 - it is a resource, which needs to be applied in order to create a product/service or to improve the latter
- Which product (based on data) is esp. offered to marketers/advertisers by businesses?
 - (from a more abstract/general perspective)

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Herbert Simon already stated in 1971:

*“... in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of **attention** and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.”*

- As in recent years, the increasing information overload became an economically relevant problem (Rose 1998)
- Analysts from a certain school of businesses started to address Simon's early postulated statement under the term *attention economy*.
- Although, the attention economy does not represent a proven theory framework (Zerdick et al. 2001), it allows analysing the characteristics of attention as an economic good.

Working Definition for Attention (in the Online Advertising context)

“Attention constitutes an economic good offered by Online Businesses, which, if purchased, provides advertisers the opportunity to expose users to Online/Mobile Marketing campaigns in order to influence their behaviour according to their needs.”

Attention as an economic good
has to be tradable, i.e.

- Scarce
 - Measurable (at least indirectly)
 - Transferable
-
- What attention markets other than advertising exist?
 - Famous people (stars or celebrities)
 - Why do they earn millions? Are they so much better than others in what they are doing?





- Attention
 - can be described by profiles of individuals
 - cannot be manufactured
 - is not a commodity because there is no market for attention
 - is no currency because not purpose neutral and exchangeable
 - is a none-digital, but intangible good

■ Attention

- that is sold/shared multiple times, loses value proportionally
- cannot be stored
- cannot be replicated
- has only value if the information provided is relevant for the individual paying attention



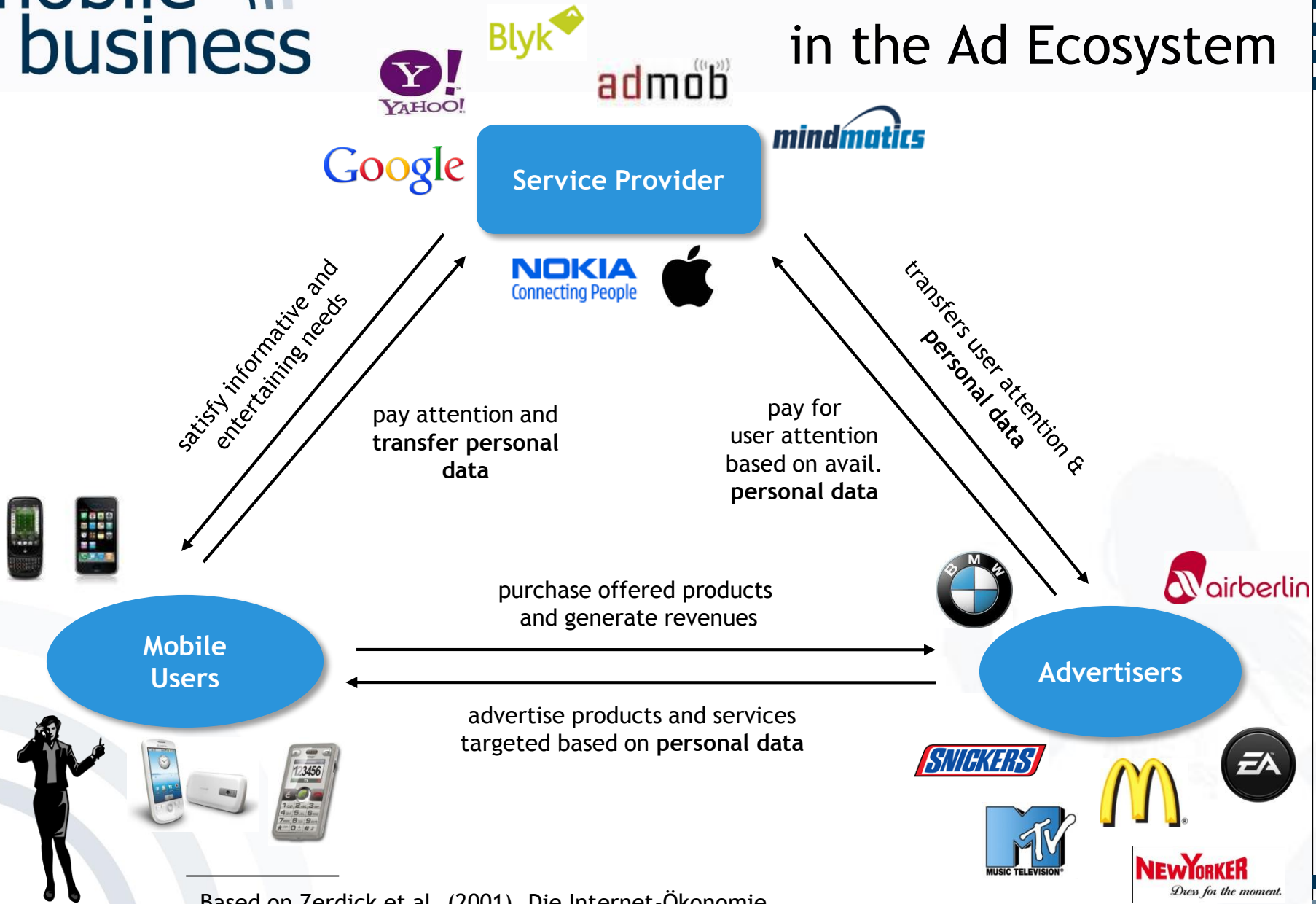
Attention as the real Asset of Online Businesses?



- Personal data alone does not finance a free service
- Personal data is important but can only be used to describe the attention of users
 - (“Eyeballs are more valuable when you know to whom they belong” - Attention Economy)
- Since attention has the characteristics of an economic good
 - Attention of users can be considered as the actual good/product offered by Online Businesses (esp. by Online Advertisers)

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Personal Data/Attention used in the Ad Ecosystem



Based on Zerdick et al. (2001), Die Internet-Ökonomie



Frequently Bought Together



Price For All Three: \$103.41




Add all three to Cart

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- ✓ **This item:** TomTom XXL 540S 5-Inch Widescreen Portable GPS Navigator by TomTom **\$79.99**
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Personalize Google News

World	-		+
U.S.	-		+
Business	-		+
Technology	-		+
Entertainment	-		+
Sports	-		+
Science	-		+
Health	-		+

Examples: Astronomy, New England Patriots, White House

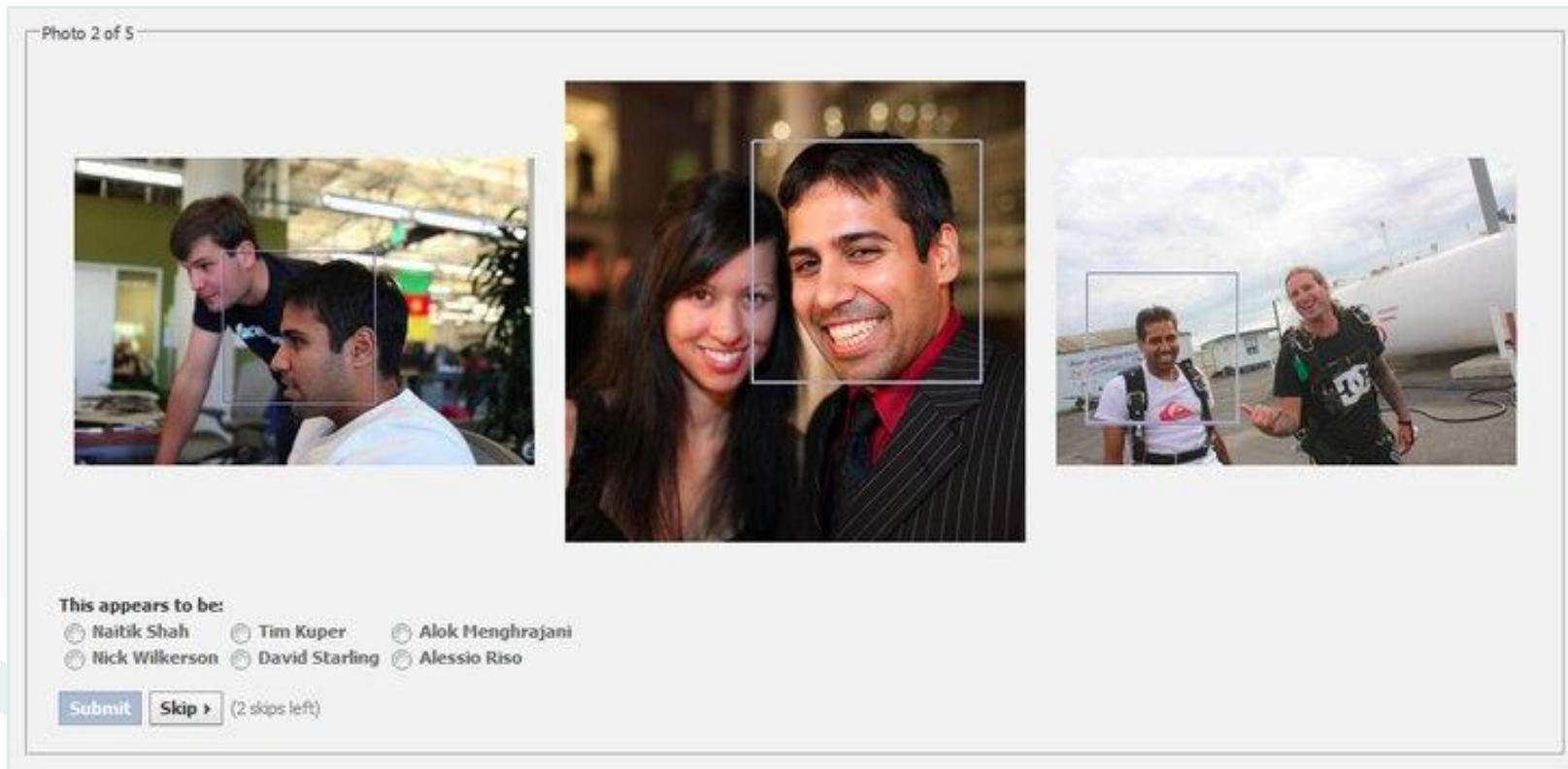
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- Analysing the needs of Website visitors
- Example: Google Analytics



- Example: Facebook „Social Authentication“ Mechanism



Source: kiwiccommons.com (2012)

- Good idea, but what could be an issue here?

- Personal Data applied for
 - Personalisation,
 - Advertising,
 - Recommendation,
 - Service Utility,
 - ...
- Eventually, it is mainly about attracting and monetising the **attention** of individuals ...

- Celebrities / Stars
- News Paper Headlines
- Music Charts
- Apple iPhone
- Amazon Recommendations
- Google Web Search
- Price Search Engines
- ...



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