

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

Lecture 4

Characteristics of Goods and Services in the Digital Economy

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Dr. Andreas Albers
www.m-chair.net



- Introduction to Services and Goods in the Digital Economy
- Information as Goods 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

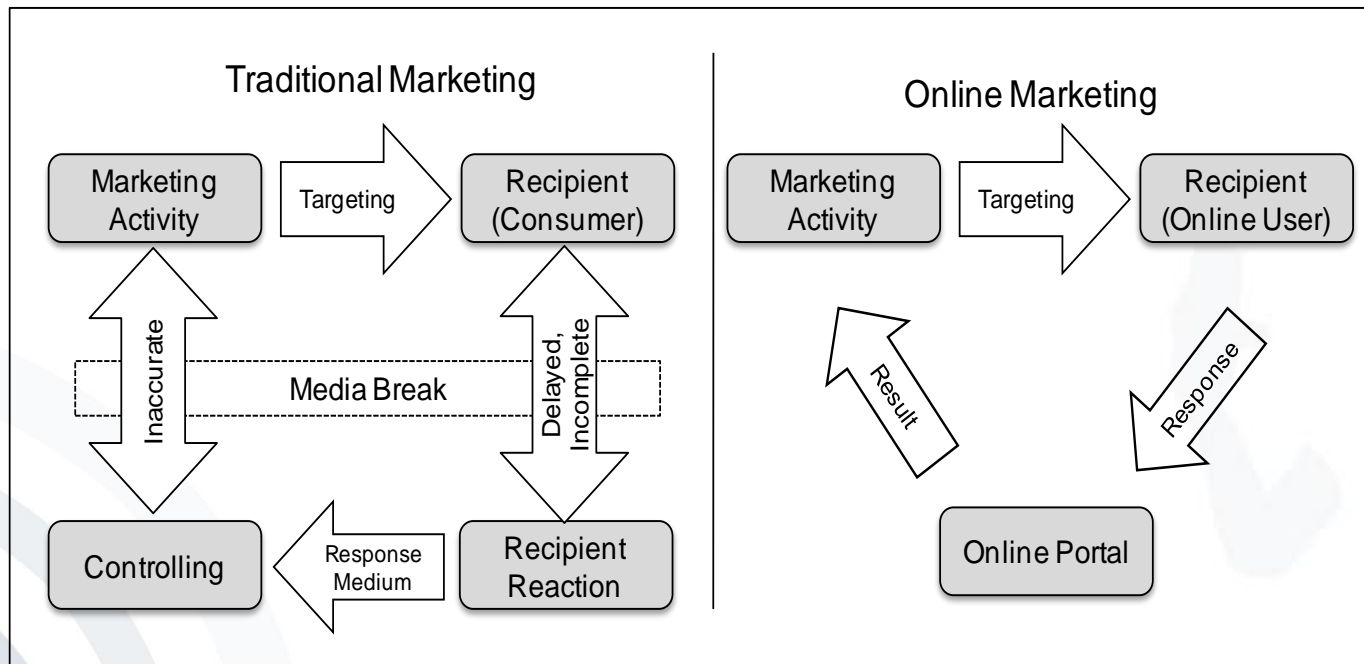
Working Definition for “Services”

- Integration of the external factor (e.g. user, customer, consumer, etc.) in the service provision
 - E.g. Web Search: Users enters search query and the results are displayed
- Immaterial
 - Service 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 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
- Attractive for advertisers



- **Measureable**
 - The quantity and/or quality of good or its 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

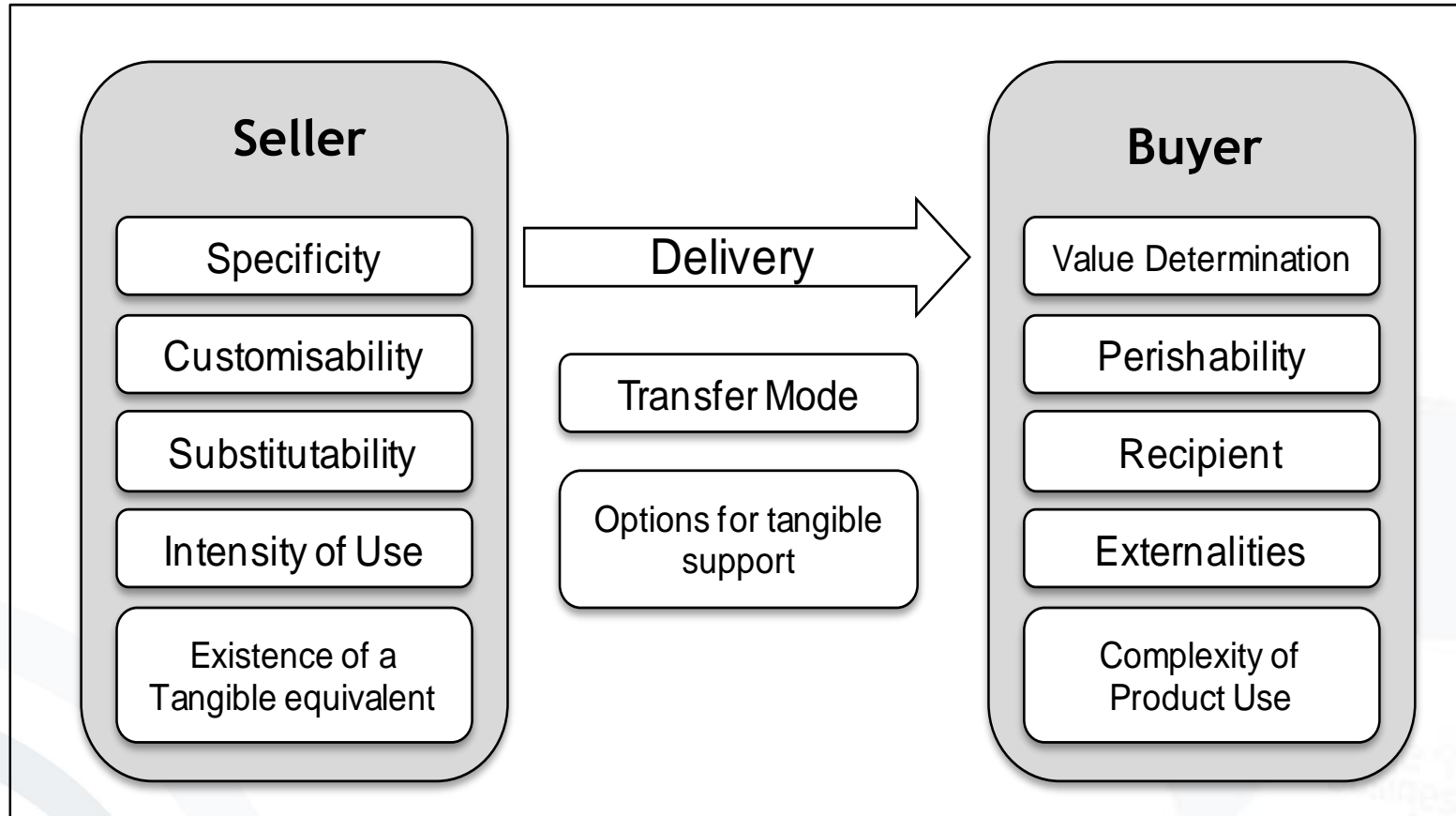


- Physical Goods (tangible)
(e.g. mobile phone)



- 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 costs of digital goods allow to produce and sell niche goods at a high volume
 - The low demand of an individual niche product is compensated by the high number of different individual niche products sold in total
 - Google AdWords / AdSense as an example

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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)

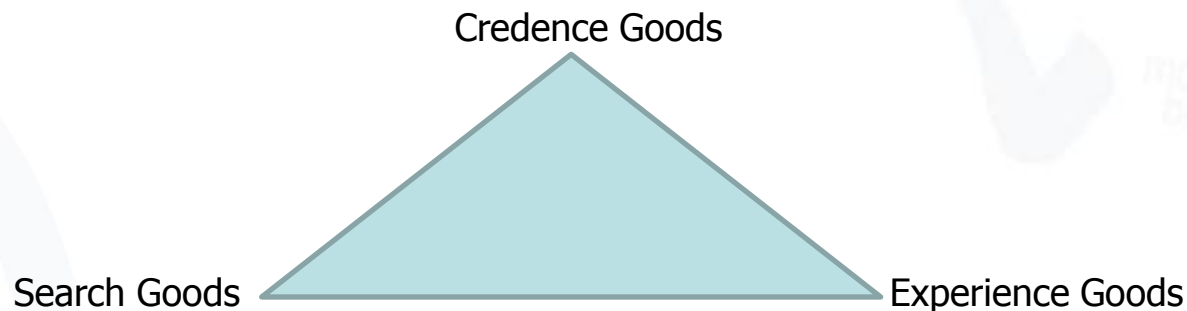
Costs for Information Production

- Information is costly to produce, but cheaply to reproduce (first copy costs)
- After 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 consumer
 - As long as information sellers (e.g. publishers) are not charged for transporting their information via mobile data communications, the mobile network operator pays the bill
 - The mobile network operator tries to mitigate this situation with quasi-flat rates or expensive data rates for consumers
 - But due to competition and mobile data communications as homogenous good, room for manoeuvre 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 the Telco Industry
 - 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 samples of information to 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
 - Meant for
 - personalising of information,
 - targeting of advertising or
 - recommendation of products



So, is personal data really often the postulated new oil or currency of the (mobile) digital economy?

Personal data as the new currency of the (mobile) Digital Economy?

- Individuals are paying for services with their personal data
- “If the product is free, you are the product” (unknown author)
- ...
- Personal data as currency?
 - Not purpose-neutral!
 - Not interchangeable!
- Personal data is NOT a *currency*!



	Oil Company	Advertising Company
1.	Harvesting of raw oil from oil fields	Harvesting of raw personal data from individuals
2.	Refinement of raw oil to product petrol	Aggregation of raw personal data to user profiles
3.	Sale of petrol to fuel station owners	Description of user contacts with user profiles
4.	-	Sale of user contacts described by their profiles to advertisers

- If personal data is supposed to be the new oil in the digital economy, then oil companies are using their petrol only for their own vehicles.
- In other words, personal data is not a product for sale, its product information required to sell a product (e.g. user contacts)

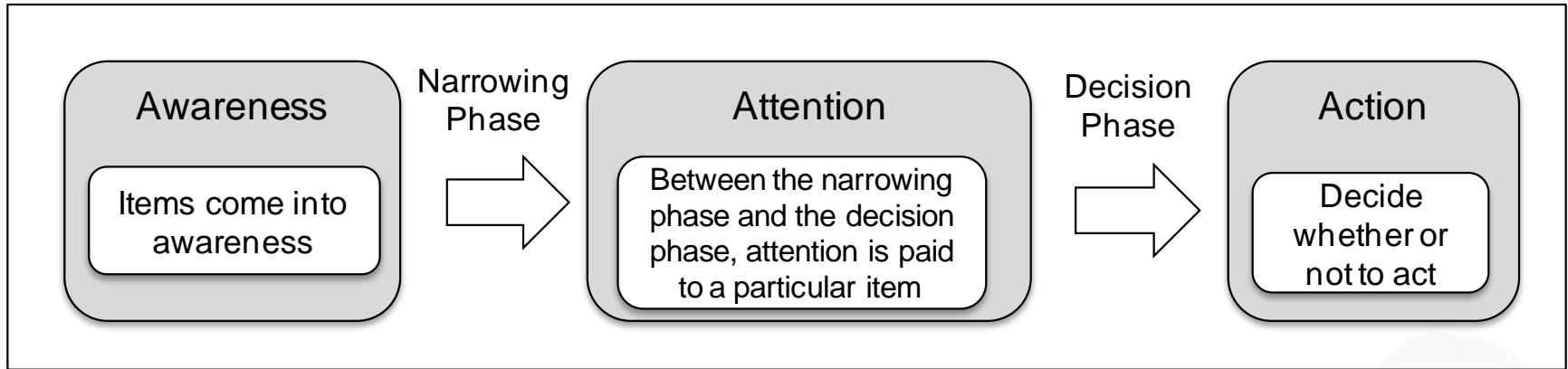
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- Herbert Simon stated in 1971!!! :

“... 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.”

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

Source: Albers (2010)



Source: Albers (2010)

- As in recent years, the increasing information overload became an economically relevant problem (Rose 1998)
- Analysts from a certain school of business 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 mobile attention as an economic good.

Attention is tradable

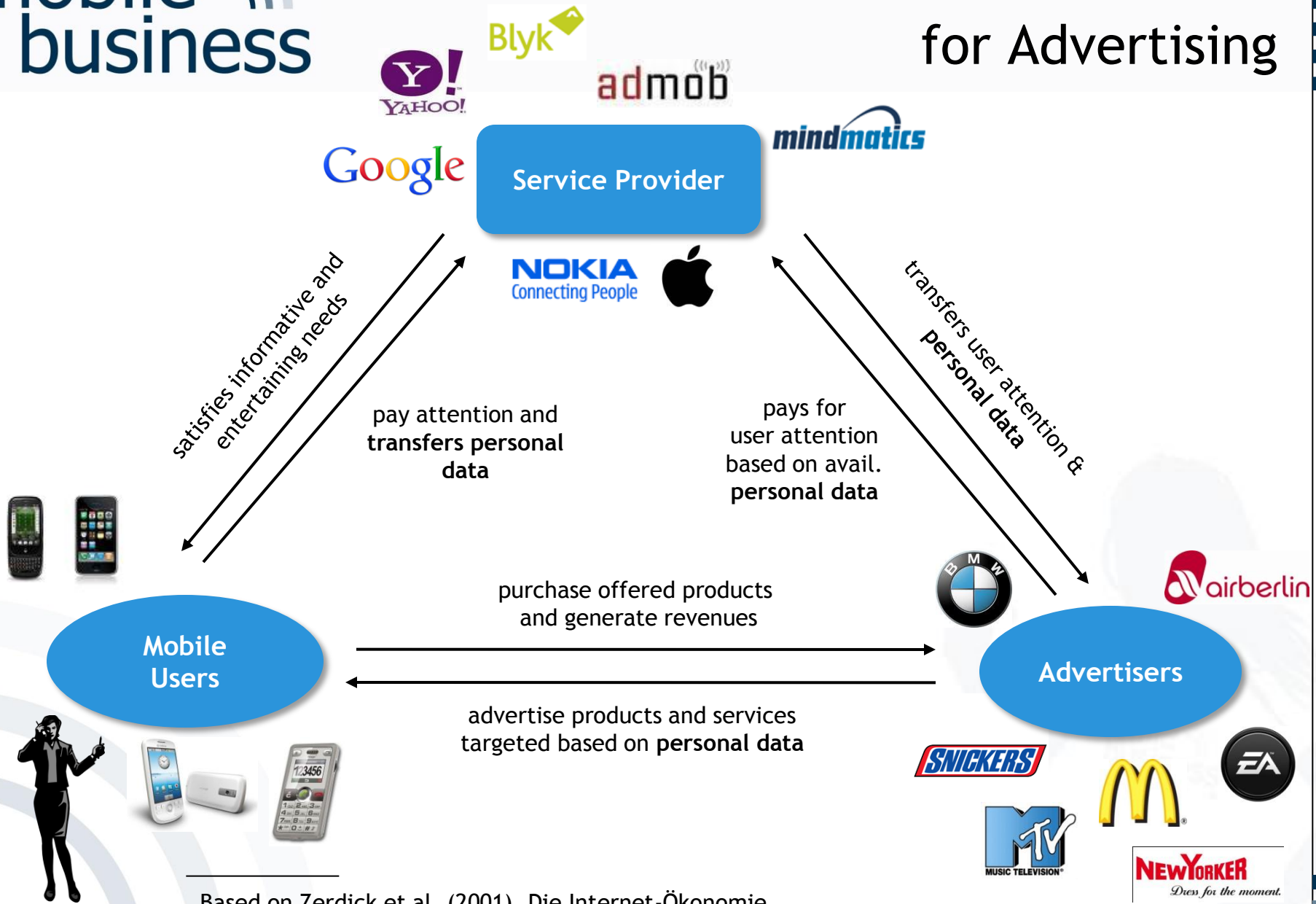
- Scarce
 - Measurable (indirectly)
 - Transferable
-
- What attention markets other than advertising exist?
 - Famous people (stars)
 - Why do they earn millions? Are they something so much better than others?



- 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 interchangeable
 - 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 content provided is relevant for the individual paying attention

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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**
- ✓ TomTom GPS Dashboard Mount for TomTom GPS Navigators by TomTom **\$11.60**
- ✓ Case Logic MGPS-2 Professional GPS Case for up to 5-Inch Screens (Black) by Case Logic **\$11.82**

Customers Who Bought This Item Also Bought

			
<p>TomTom GPS Dashboard Mount for TomTom GPS Navigators by TomTom</p> <p>★★★★☆ (299)</p> <p>\$11.60</p>	<p>Case Logic MGPS-2 Professional GPS Case for up to 5... by Case Logic</p> <p>★★★★☆ (50)</p> <p>\$11.82</p>	<p>For Tom Tom XXL 540S Premium Car Charger + Home Charger by Generic</p> <p>★★★☆☆ (12)</p> <p>\$3.86</p>	<p>ARKON TTEP115 TomTom EasyPort Windshield / Dash Mount by Arkon</p> <p>★★★★☆ (147)</p> <p>\$15.08</p>

Personalize Google News

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

Examples: Astronomy, New England Patriots, White House
[Advanced »](#)

[Reset](#) | [Help](#)

- Personal Data applied for
 - Personalisation,
 - Advertising,
 - Recommendation, ...
- Eventually, it is all about attracting the attention of individuals ...

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