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Lecture 6

Economic Basics II: Market Structure and Value Creation

Mobile Business I (WS 2015/16)

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- Mobile Communications Market
  - Market Players
  - Market Structure
- Value Creation
- Mobile Internet Market

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Market Environment

- Players:*
  - Device manufacturers
  - Infrastructure manufacturers
  - Network operators
  - Mobile virtual network operators
  - Service providers
  - Content providers
  - Customers

* One possible segmentation!

Device Manufacturers

- Mobile device manufacturers
  - Manufacture and distribute mobile terminals
  - Examples: Apple, Microsoft Mobile, Sony Ericsson, Samsung, HTC, RIM, …; earlier Nokia, Siemens, …

Device Manufacturers

- Mobile device manufacturers
  - Frequently in partnerships (e.g. distribution via mobile network-operator, i.e. operator branded (SIM-locked or individualized) devices)
  - Almost all mobile device manufacturers are global organisations.
  - Currently, …
    - More lifestyle products for different target groups rush into the market (e.g. special designs, with high resolution cameras, mp3-players etc.).
    - Break-up of traditional syndicates, e.g. in the area of operating systems

Infrastructure Manufacturers

- Infrastructure manufacturers/providers
  - Produce and provide infrastructure, necessary for network operation, such as GSM base stations.
  - Examples: Nokia Networks, Lenovo (Motorola), Ericsson, ZTE, Huawei, …

Infrastructure Manufacturers

- Infrastructure manufacturers/providers
  - Important interaction between infrastructure and terminals.
  - Currently new orders because of LTE

Network Operators

- Network operators
  - Operate mobile networks and provide access
  - E.g. Deutsche Telekom, Vodafone, E-Plus, O_2, Orange, …
  - Competition on national and international level

Mobile Virtual Network Operators

Definition:

A **mobile virtual network operator** (MVNO) is a company that does not own a licensed frequency spectrum and wireless infrastructure, but resells wireless services under their own brand name, using the network of another mobile network operator.

Explanation:

- An MVNO's roles and relationship to the network operator vary by market.
- In general, an MVNO is an entity or company that works independently of the operator and can set its own tariff structures.

Based on [Wikipedia2013]

Mobile Virtual Network Operators
Different Perspectives

- Network perspective:
  An MVNO is an entity providing a mobile service without owning its own mobile spectrum licence, and not necessarily owning all, or indeed any, of the elements of a mobile network infrastructure.

- Customer or business perspective:
  An MVNO is an entity that the customer believes is its mobile operator, but does not necessarily have to own or manage all or part of the underlying physical network.

Mobile Virtual Network Operators
Why are they attractive?

Motivations for mobile operators (MO) to allow MVNOs on their networks:

- **Segmentation-driven strategies**: MOs often find it difficult to succeed in all customer segments. MVNOs are a way to implement a more specific marketing mix, whether alone or with partners and they can help attack specific, targeted segments.
- **Network utilisation-driven strategies:** Many MOs have capacity, product and segment needs. An MVNO strategy can generate economies of scale for better network utilisation.
- **Product-driven strategies:** MVNOs can help MOs target customers with specialised service requirements and get to customer niches that MOs cannot get to.

Based on [Wikipedia2013]

Mobile Virtual Network Operators Opportunities

- Lower operational costs for mobile operators (billing, sales, customer service, marketing).
- Growth of average revenue per user by providing new applications and tariff plans.
- Help with difficult issues like how to deal with fixed-mobile convergence by allowing MVNOs to try out more experimental projects and applications.

Based on [Wikipedia2013]

1. **Subsidiary companies**, especially by an established network operator
2. **OEM/Branding-products**, that use the name and the marketing channels of already established brands to address their client base
3. **Resellers** offer contracts without owning a network infrastructure but to a large degree they provide the services of the value chain on their own (e.g. the integration of services, the billing, order processing and customer care services)
4. **Full MVNOs**: operate parts of the network infrastructure, e.g. HLRs

[Wikipedia2013]

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Mobile Virtual Network Operators
Exemplary MVNOs

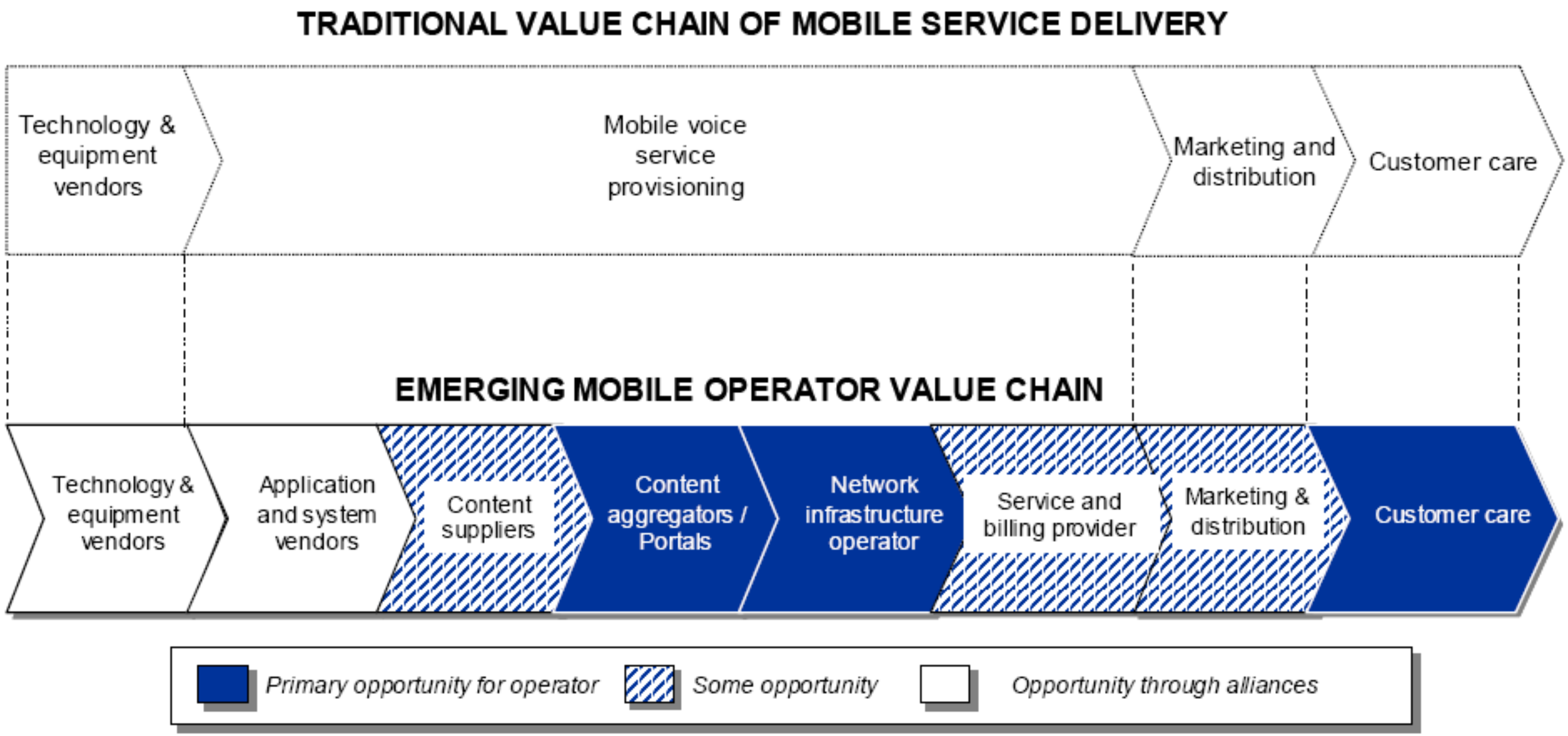
1. Subsidiary company:
   - congstar GmbH (Deutsche Telekom)
   - Simyo GmbH (E-Plus)

2. OEM/Branding-products:
   - ALDI TALK (E-Plus)
   - Bild mobil (Vodafone)
   - ja!mobil (Deutsche Telekom)
   - Lidl (Telefónica O_2)
   - Tchibo mobil (Telefónica O_2)

3. Resellers:

- DRILLISCH TELECOM
- klarmobil.de
- mobilcom debitel
- simply

Mobile Virtual Network Operators Value Chain perspective



[PasseriniGagnonCakici2004]

4. Full MVNOs:

- CALLAX MVNO Platform, CALLAX Telecom Holding GmbH (using E-Plus access network)
- Lycamobile MVNO Platform, Lycamobile Germany GmbH (using Vodafone access network)
- Turkcell, Turkcell Europe GmbH (using Deutsche Telekom access network)

Resellers vs. MVNOs:

- In contrast to resellers all incoming and outgoing calls are handled by MVNOs' own mobile switching infrastructure.
- MVNOs receive revenues from incoming calls, the so-called interconnection fees (per minute), and not only for outgoing calls, as compared to the resellers.

[Teltarif2013]

Special role of MVNOs:

- Innovative pricing
- Some value-added services
- Different customer care provision

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Service Providers

- Provide different kinds of services, e.g.
  - Billing and customer management
  - Acquisition of customers
  - Advertising campaigns
  - Server-hosting
  - Communication management
  - …
- Term rarely used since MVNOs came up.

Content Providers

- Content providers

  Examples
  - Banks
  - Shops
  - Media-companies
  - Game Provider
  - …

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Customers

- Use…
  - infrastructure,
  - network,
  - devices,
  - service and
  - information
- High market power because of full market penetration [Bundesnetzag2013]
- Customers are…
  - Private customers
  - Corporate customers

- Mobile Communications Market
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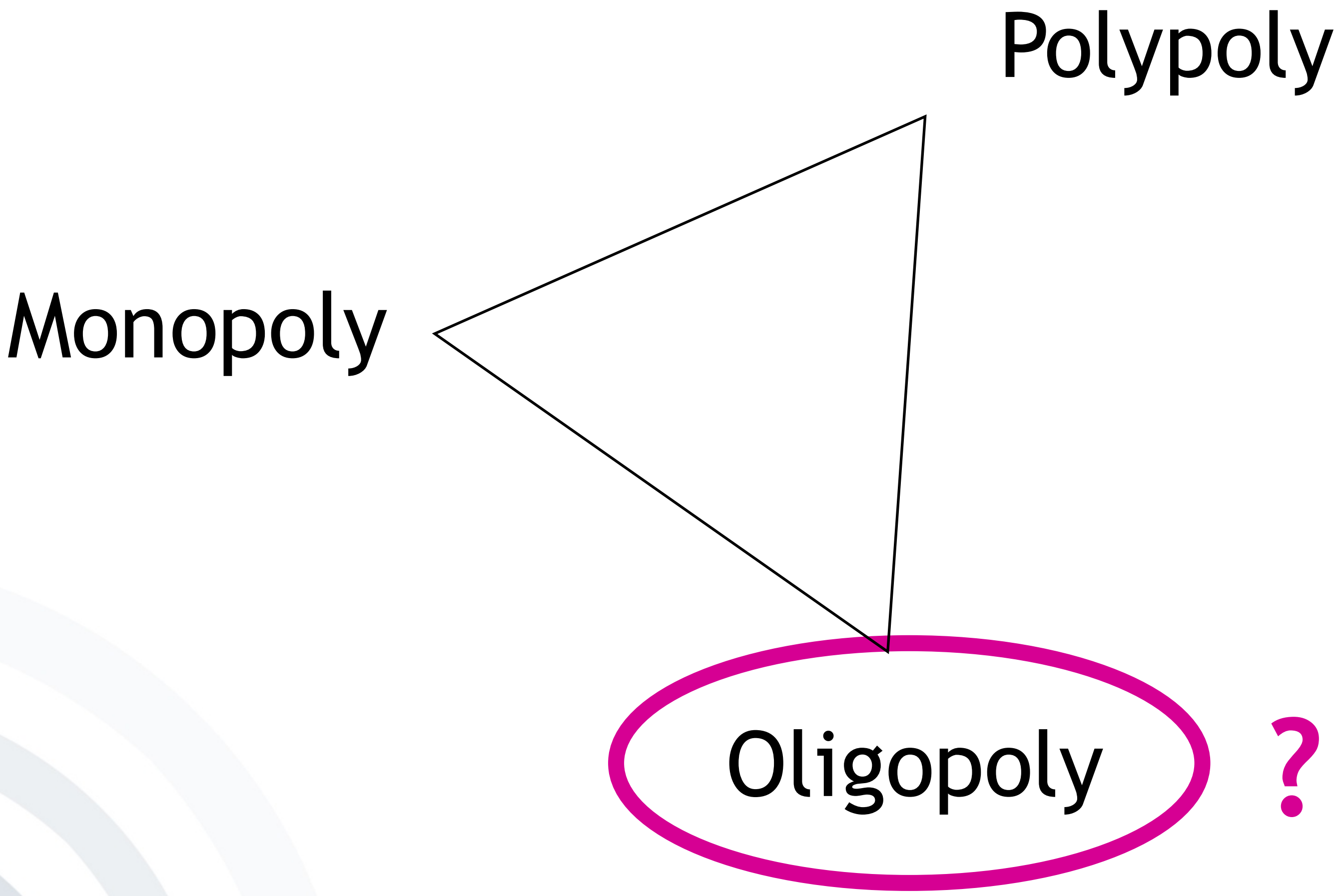
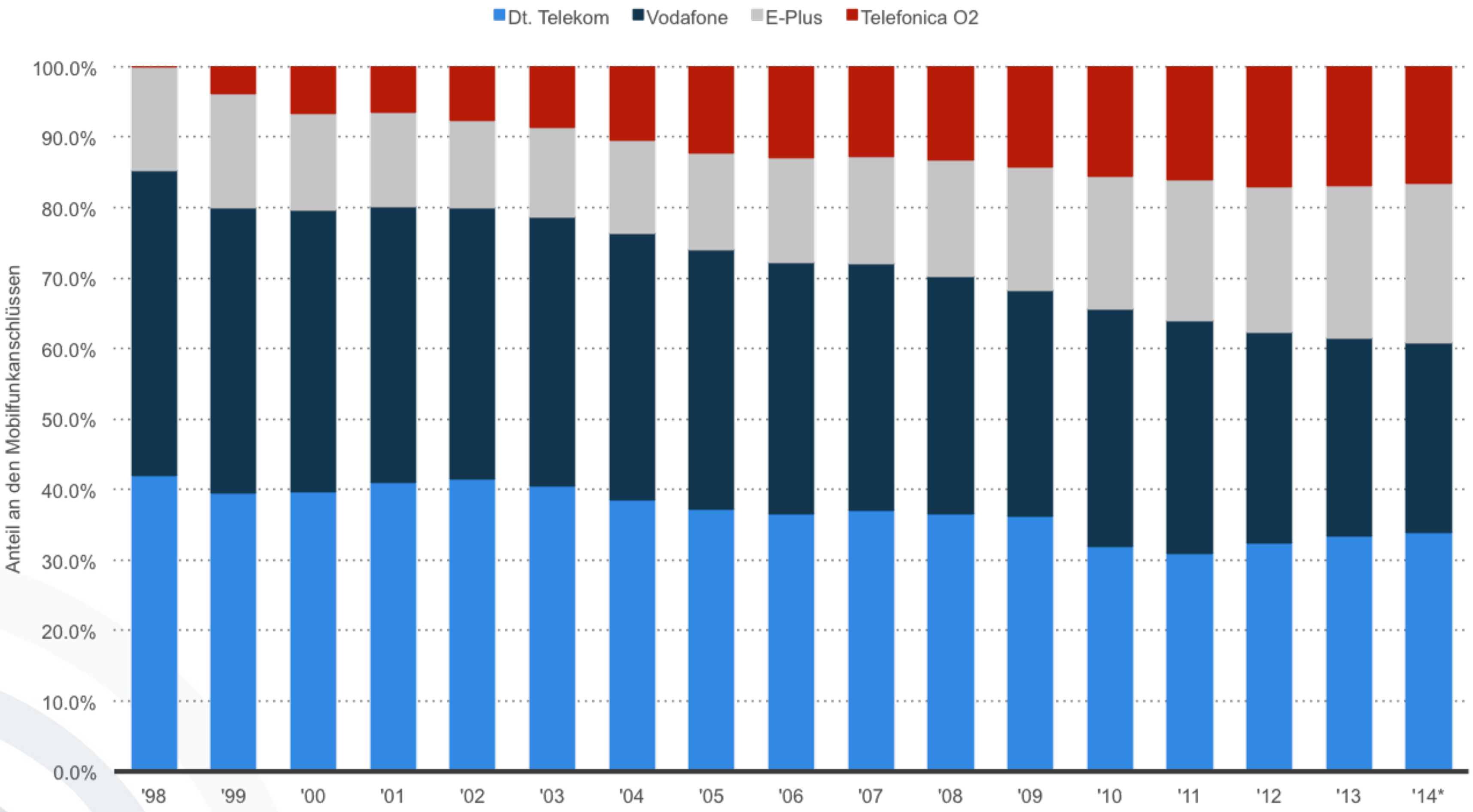
Market Structure



Market Share and Market Power

Market share (subscribers) of mobile network operators



*Data for 2014 are estimated

[Statista2015]

Market Structure

➲ Few mobile network operators, many customers

- Heterogeneous oligopoly (Gutenberg)
  - A heterogeneous oligopoly is a market form, in which a market or industry is dominated by a small number of middle-sized sellers with heterogeneous products
  - Many (small-sized) customers

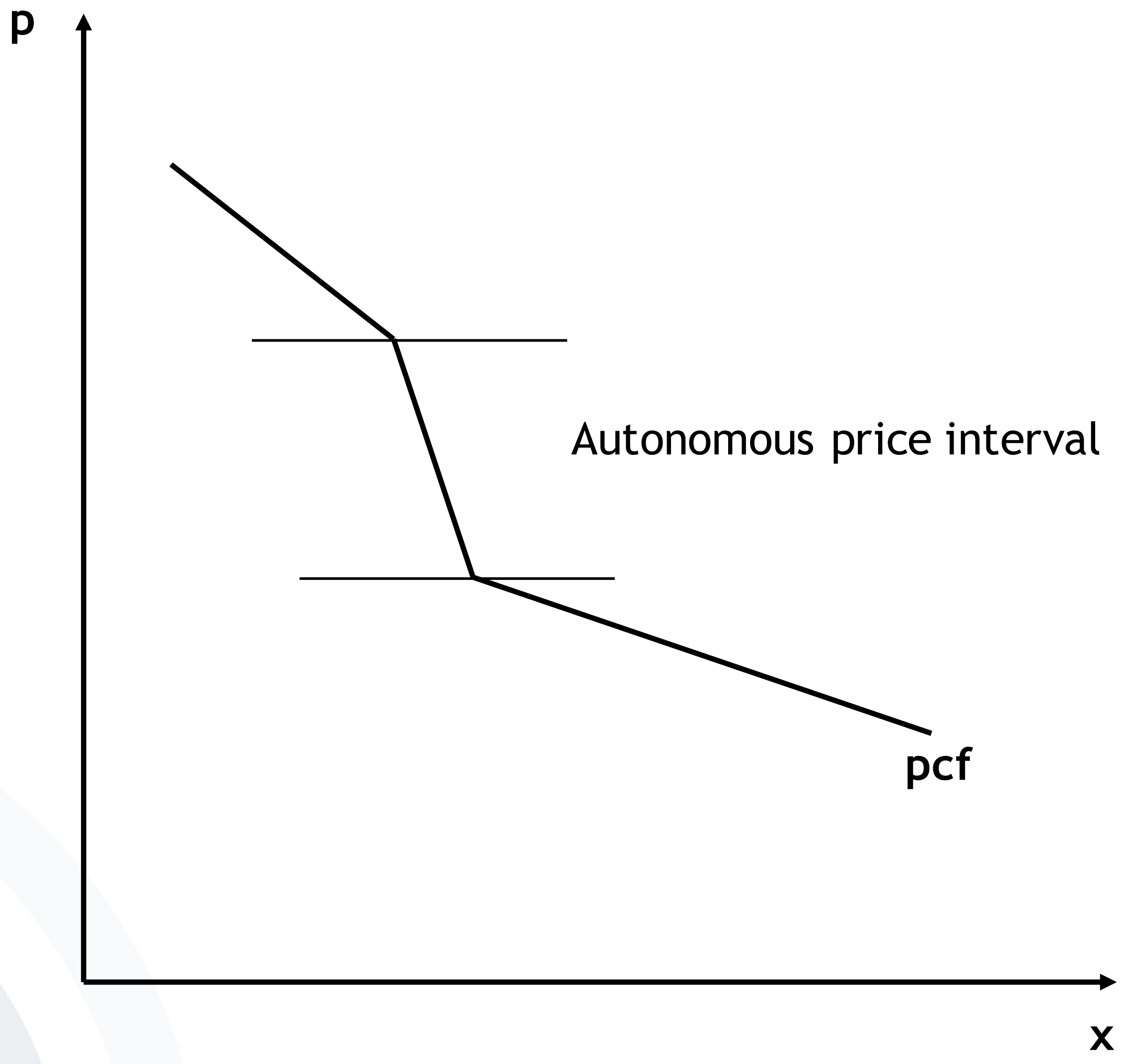
Based on [Wied-Nebbeli1997]

Market Structure

- Heterogeneous oligopoly (Gutenberg)
  - Autonomous price interval, in which the respective organisation (operator) can operate…
    - without losing customers to the business competition due to rise in price
    - without acquiring customers from business competition due to cut in price
  - Within price interval only latent increase and loss of demand, e.g. because of switching costs

Based on [Wied-Nebbeli1997]

Price-consumption function in a heterogeneous oligopoly (Gutenberg)



Market Structure

- Heterogeneous oligopoly (Gutenberg)
  - Leaving this price interval leads to migration of customers:
    - Prices above price barrier lead to latent and fluctuating loss in demand
    - Reduction in price below the barrier lead to latent increase in demand

  … as long as competitors do not change prices

➲ Partial interdependency

Based on [Wied-Nebbeli1997]

Market Structure

- **Till 2005**
  The mobile market had few network operators (MNOs):
  T-Mobile, Vodafone, Telefonica O2 and Eplus

- **Since 2005**
  By the market entry of MVNOs, the mobile market has changed:
  - Few middle-sized providers (four MNOs)
  - Many small providers, e.g. Tchibo mobil, ALDI TALK, simyo, klarmobil, blau.de

- **Since 2009**
  Convergence of mobile providers and fixed-line providers

- **Soon**
  Only three MNOs left

Telefonica Deutschland's E-Plus takeover faces legal challenge

- 8.6bn € deal announced July 2014
- Set to create one of Germany's largest mobile networks by customer base (not revenue).
- National and pan-European regulatory authorities, were worried that consolidation in the market would lead to higher prices and reduced competition to the detriment of German consumers.
- Telefonica had to agree to initially sell 20 percent of the combined network's capacity to Drillisch (German MVNO). Drillisch is able to acquire a further 10 percent in the future.
- The concessions are seen as a way to restore competition, giving smaller network carriers the chance to balance the market.
- German regional wireless operator Airdata has challenged the EU's approval of Telefonica Deutschland's acquisition of E-Plus, saying concessions offered to allay competition concerns did not go far enough.
- The European Commission, which cleared the deal, said it would defend its decision in court. The last successful appeal against a merger finding was in 2002.

http://www.zdnet.com/telefonicas-acquisition-of-e-plus-gets-final-approval-from-europe-7000033172/
http://uk.reuters.com/article/2015/06/08/us-germany-telecomunications-m-a-idUKKBN0OO0WH20150608

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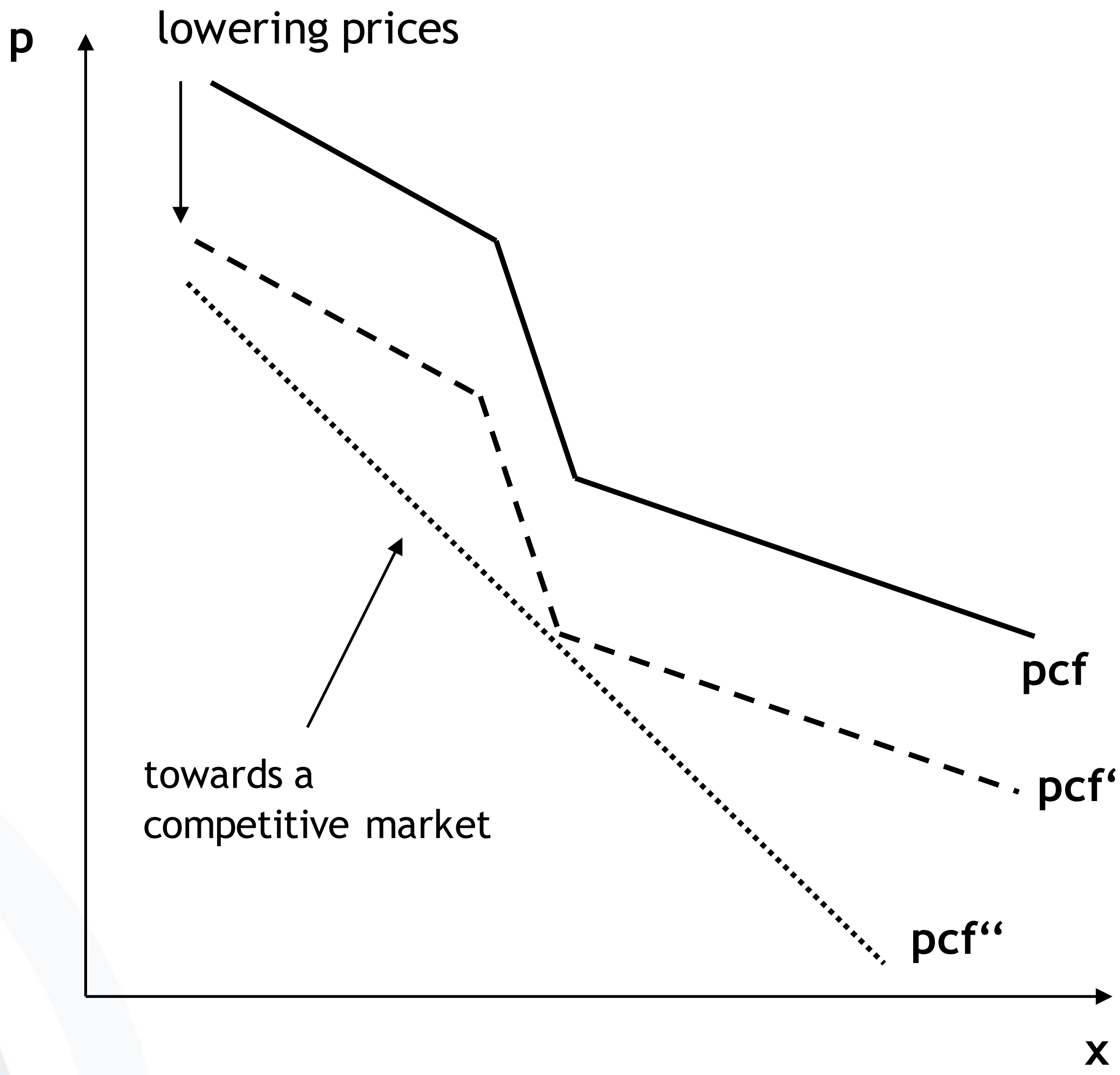
Market Structure

- Price effect:
  - Increasing number of sellers (i.e. network operators, MVNOs) in an oligopolistic market
    ➲ causes tendency towards competitive market:
    - The price converges to the marginal costs.
    - The output converges to the economically efficient level.
    - Lower MVNO prices due to lower service costs of MVNOs

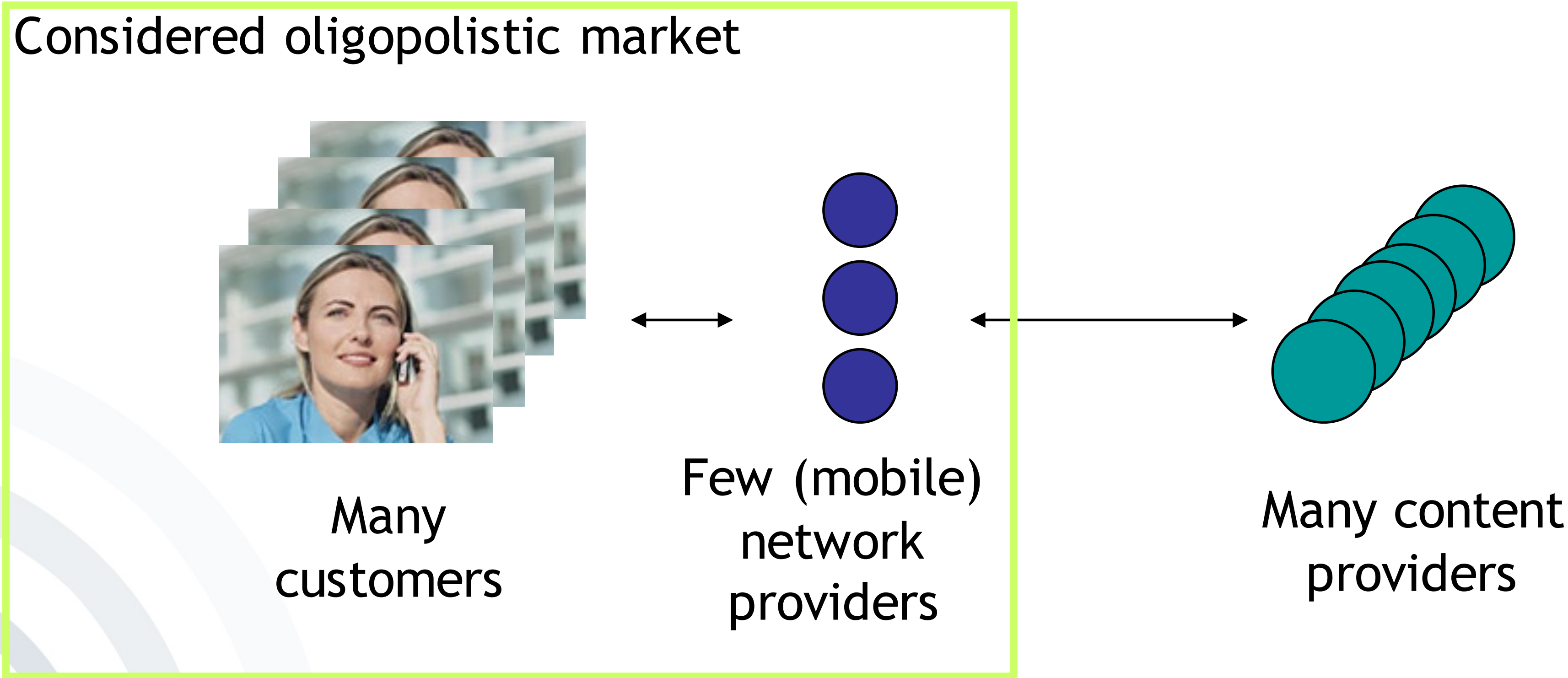
[Mankiw1999]

MVNO driven change of price-consumption function



Market Structure

- Also many providers in the second row (e.g. content providers)



Market Structure

- Interesting disintegration of 1st-tier-, 2nd-tier-structure
- Increasing contact between 2nd-tier and customer.

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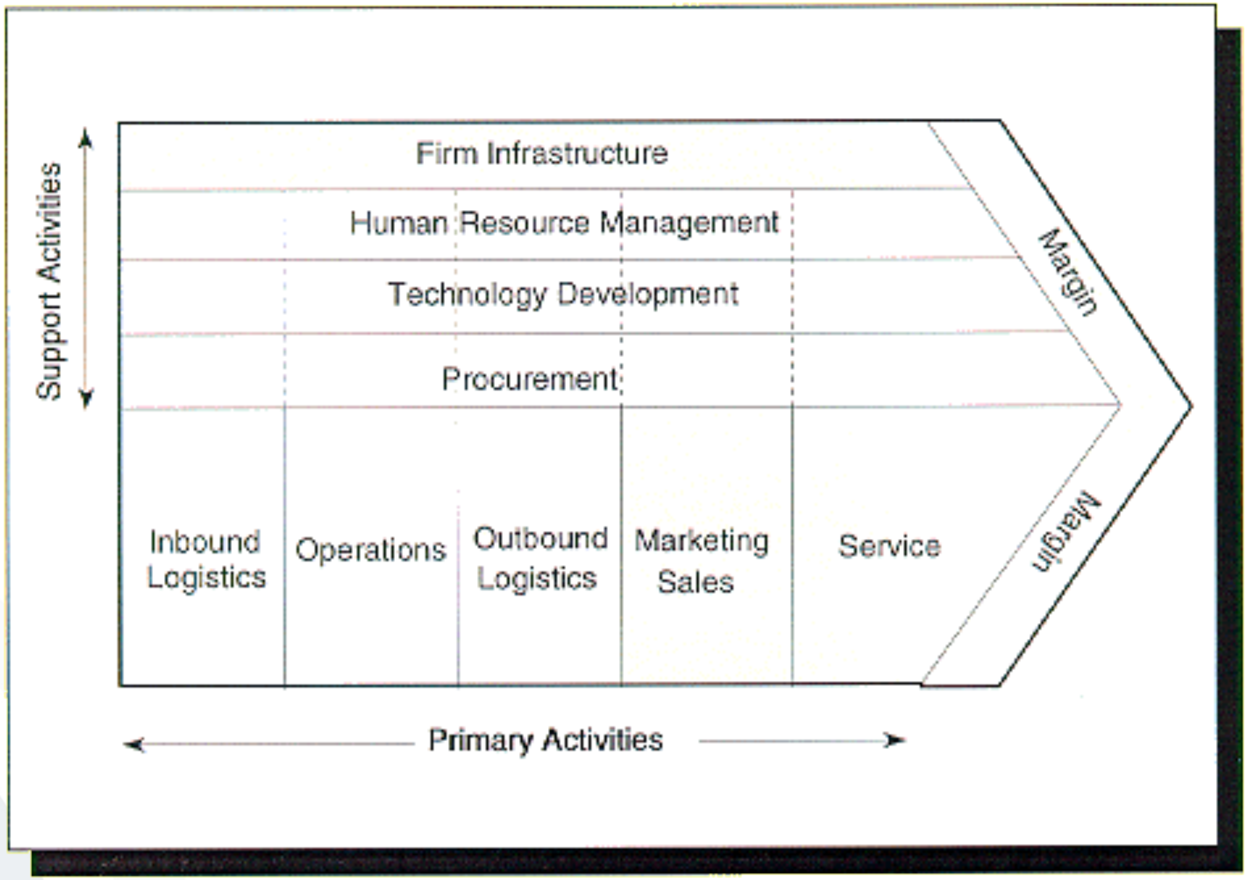
Value Creation

- Classical value chain (Porter 1985)



[Porter1985]

Value Creation

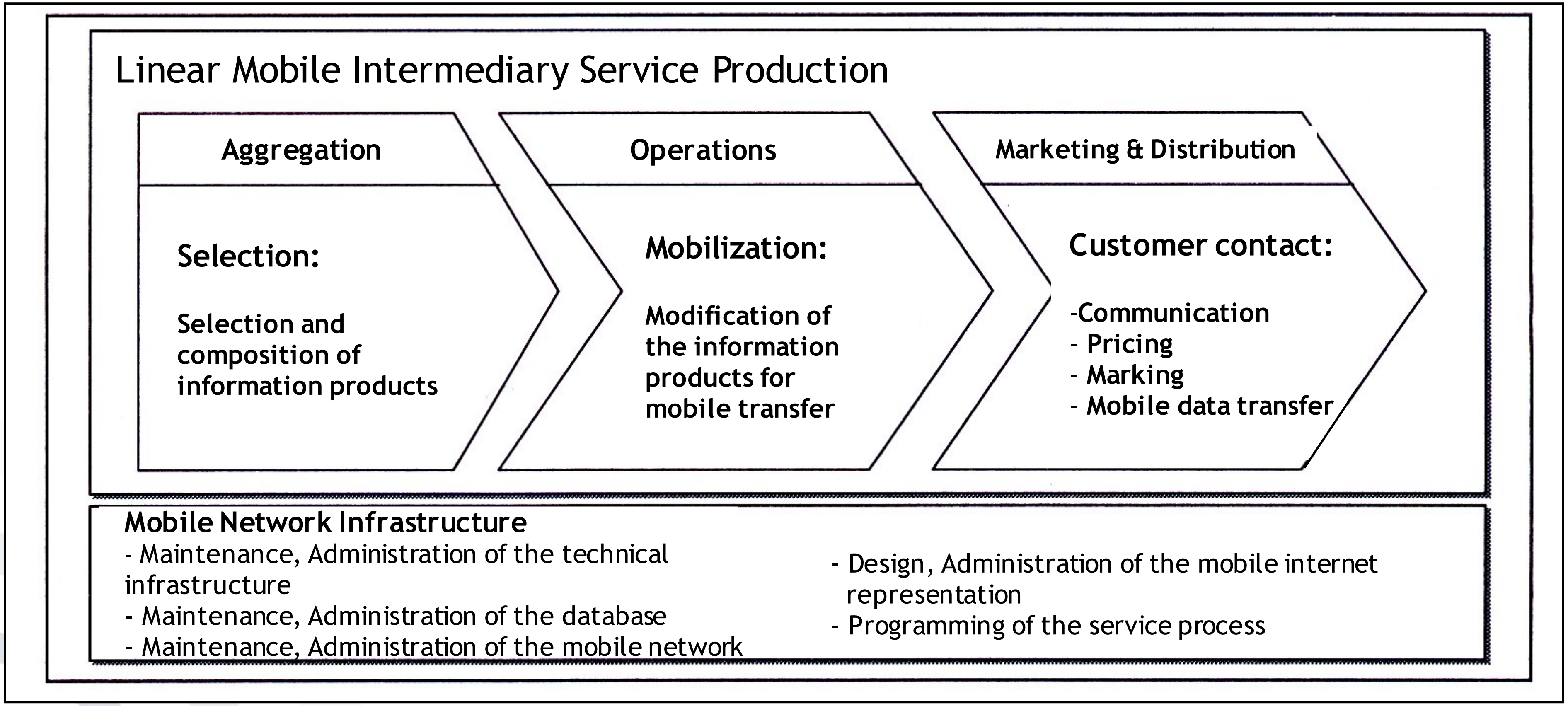
- Suitable for illustrating value-adding activities
- Input-output-orientation of the different value chain elements
- Applicable to services? (criticism)
- Mobile segment: Only for linear mobile services (procurement, preparation, sales)

➲ Modification of the value chain

[ReicMeieFrem2002]

Value Creation

- Modified value chain



[ReicMeieFrem2002]

Value Creation

- Suitable for illustrating *linear mobile services*.
- Example:

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Value Creation

- However, it is not applicable to networked intermediary service settings

➲ “Value creation network” or “value network”

[ReicMeieFrem2002]

Value Creation

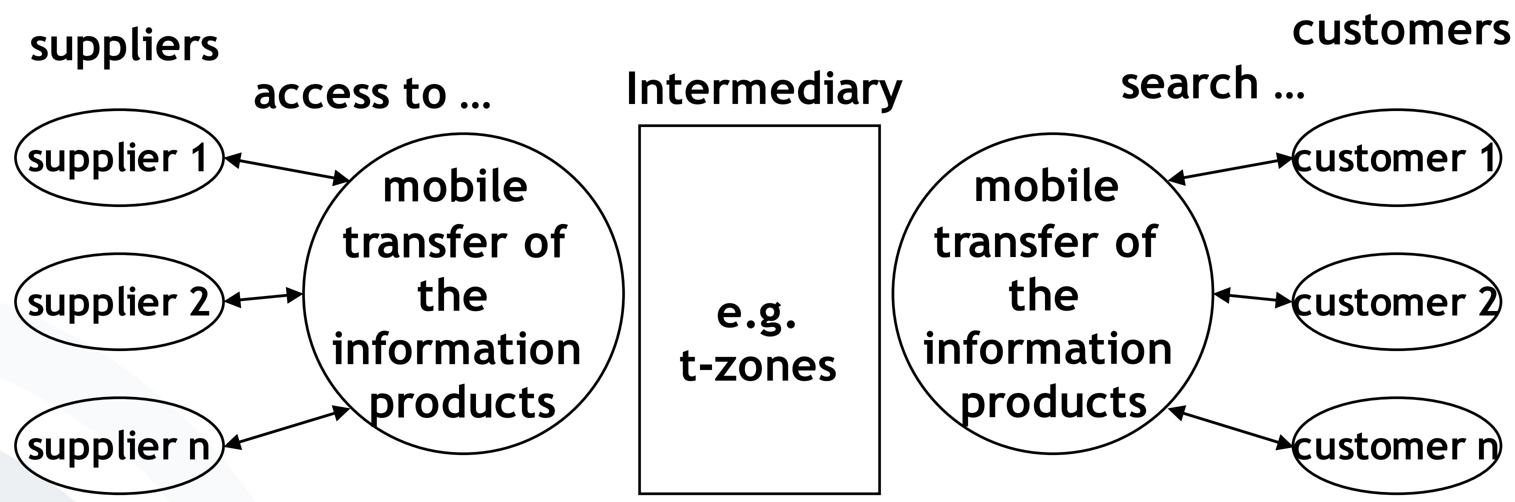
- Value network

[ReicMeieFrem2002]

Network Marketing

- Acquisition of network members (information product customers and suppliers)
- Promotional activities
- Charging

Networked Mobile Intermediary Service Production



Mobile Network Infrastructure

- Maintenance, administration of the technical infrastructure
- Maintenance, administration of the database
- Maintenance, administration of the mobile network
- Design, administration of the mobile internet presentation
- Programming of the service process

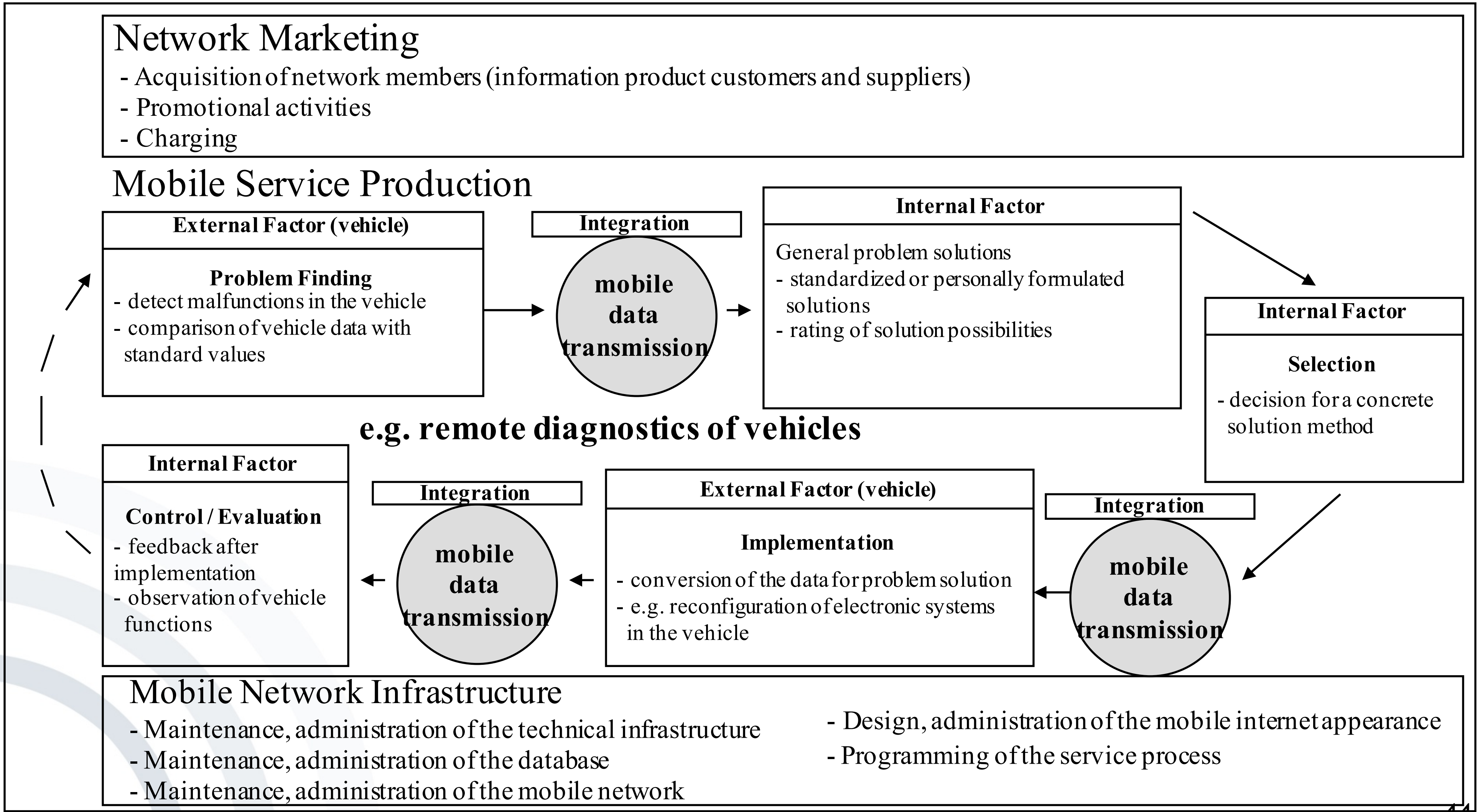
Value Creation

- Example: Community-approaches, dating, …

- One of the unique benefits of taking Match.com's dating services mobile **is the ability to match members based on their physical location**. Initially, matches will be made based on the user profile zip code but in coming months, the service will be enhanced with location-based technology. This means match.com users can locate their matches within an approximate geographical location automatically **using their mobile device**.

Value Creation

- Value added shop [ReicMeieFrem2002]

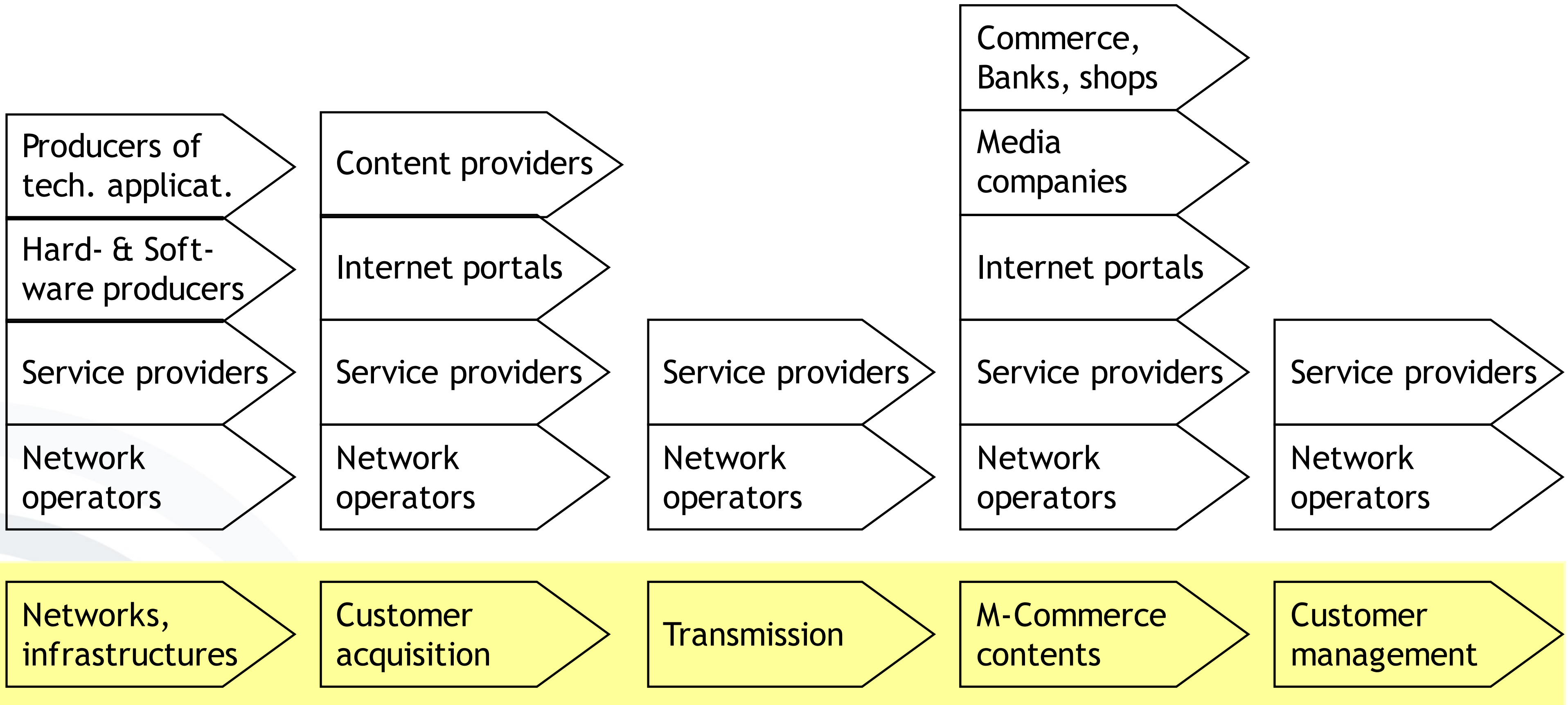


Value Creation

- The presented classification is just **one possibility**

- Further example:
  Mobile value chain [PicotNeuburg2002]

- M-value chain



[PicotNeuburg2002]

Overview

- Mobile Communications Market
  - Market Players
  - Market Structure
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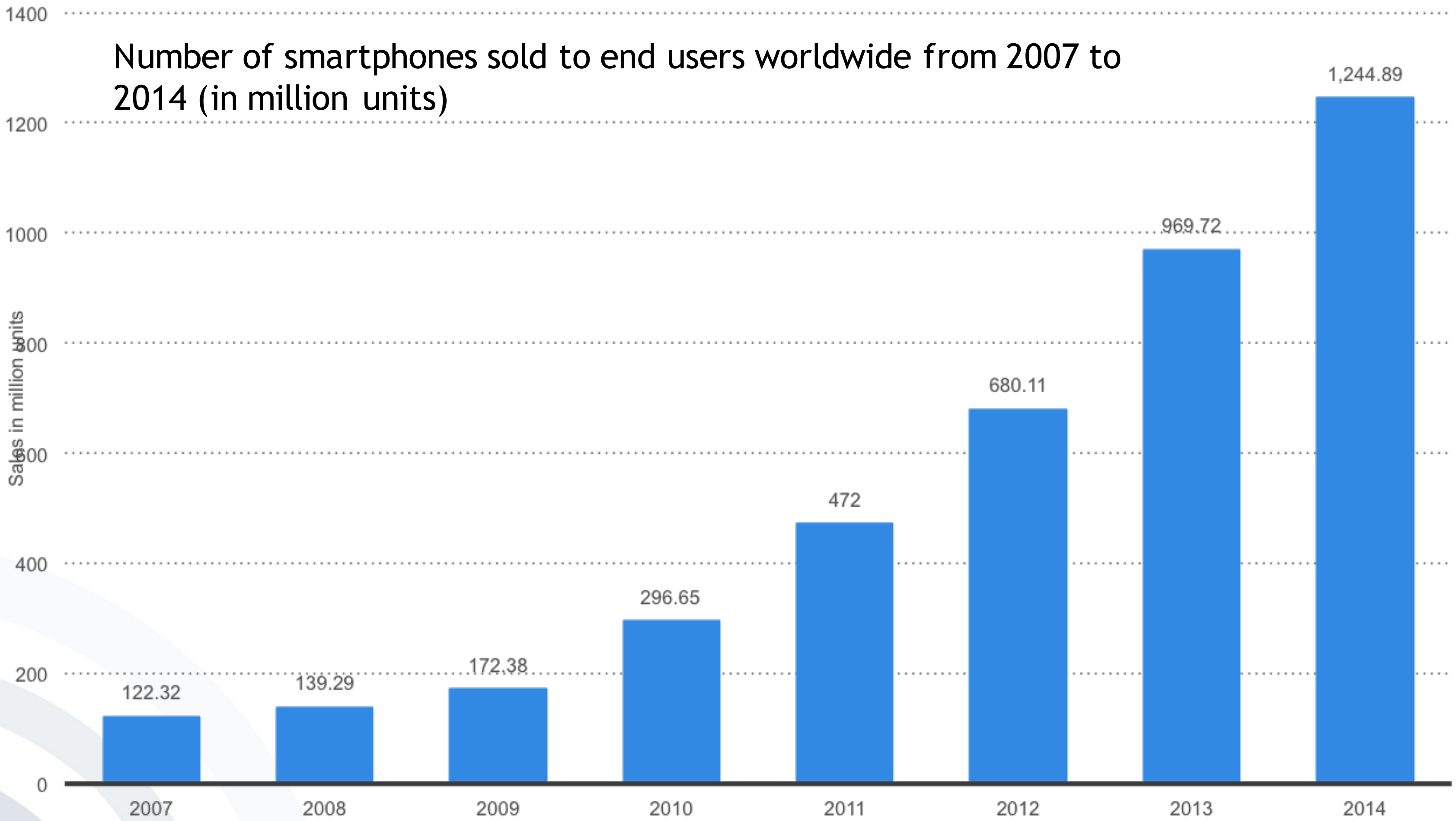
Mobile Internet Market

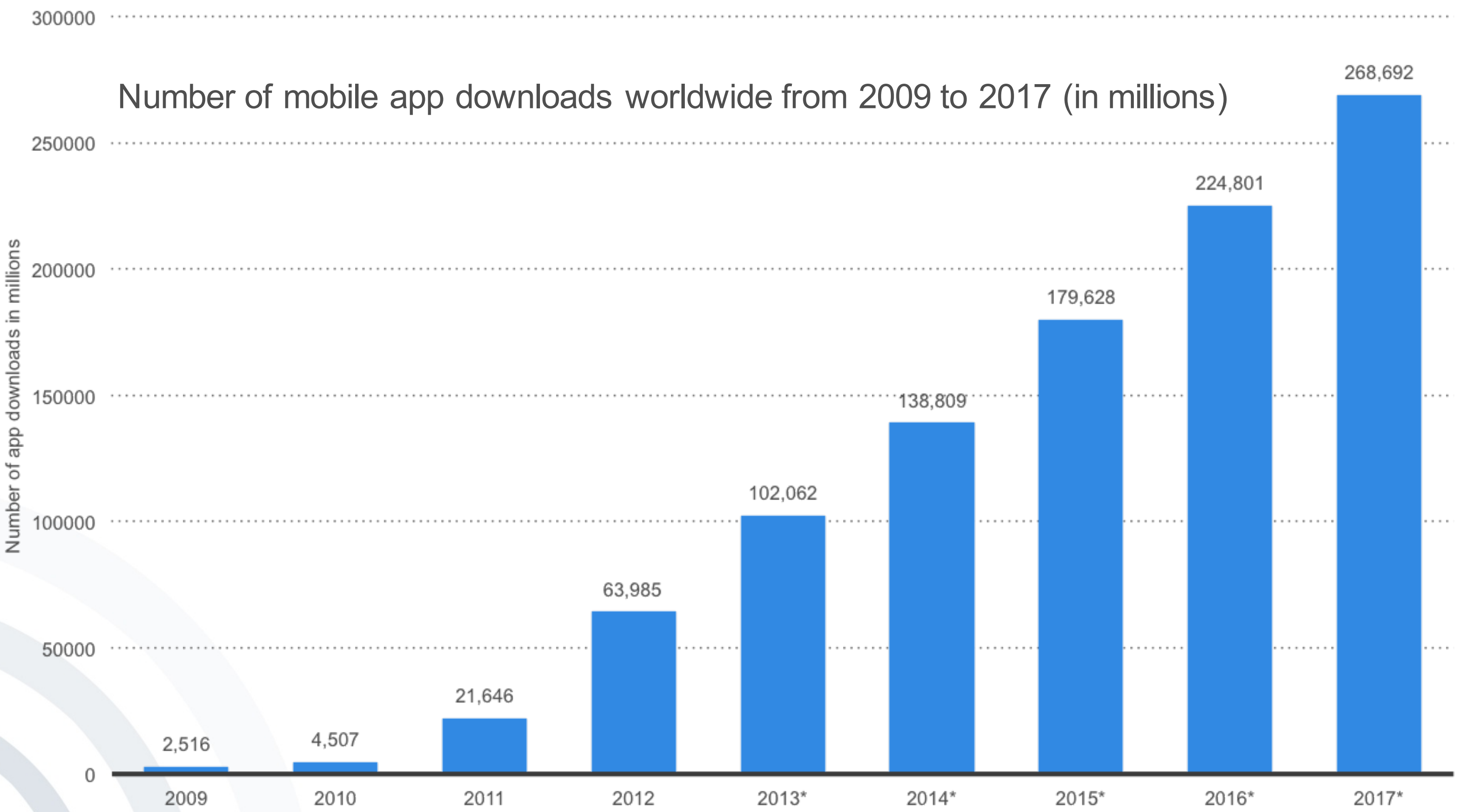
More Smartphones…



http://www.statista.com/statistics/263437/global-smartphone-sales-to-end-users-since-2007/

Mobile Internet Market

…and more Apps

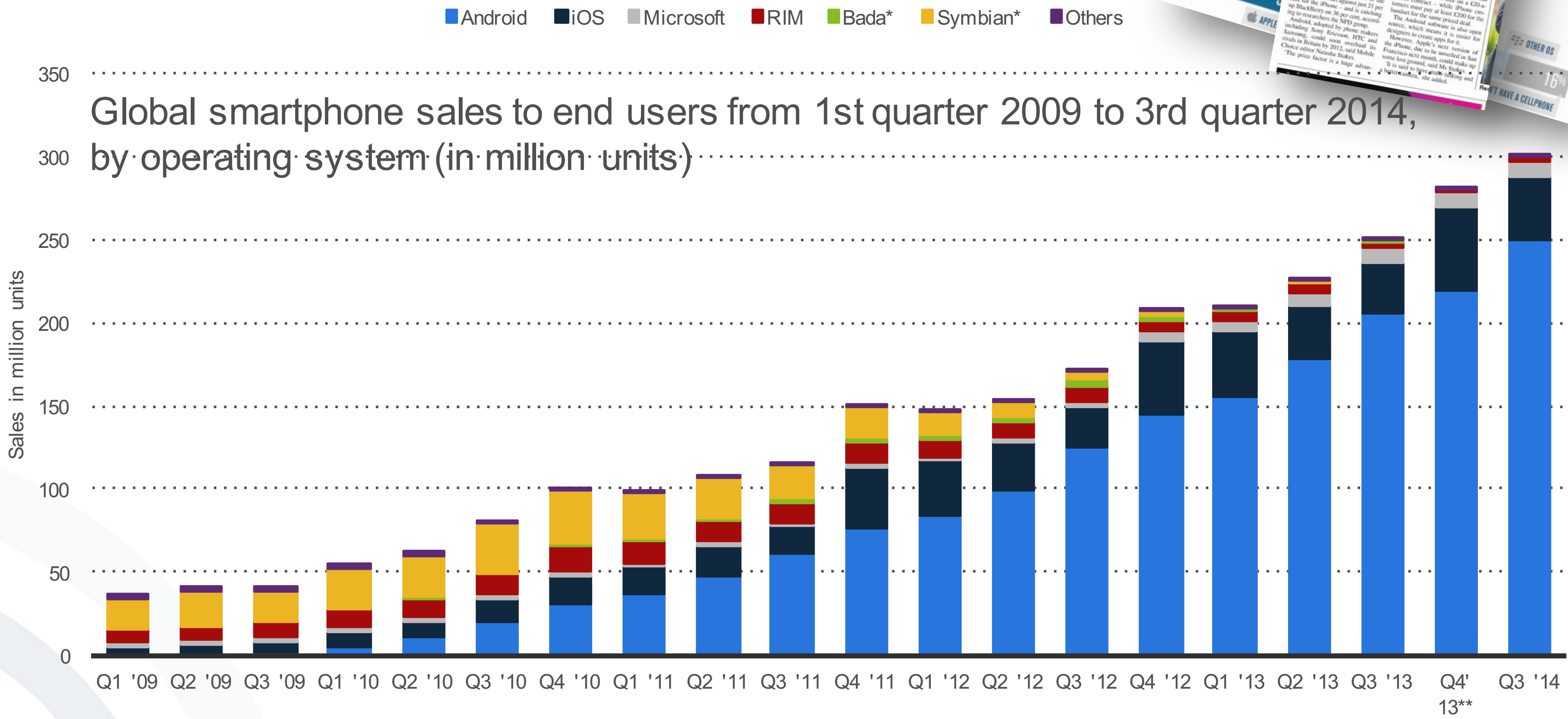


http://www.statista.com/statistics/266488/forecast-of-mobile-app-downloads/

Mobile Internet Market

Android vs. iOS Market Share

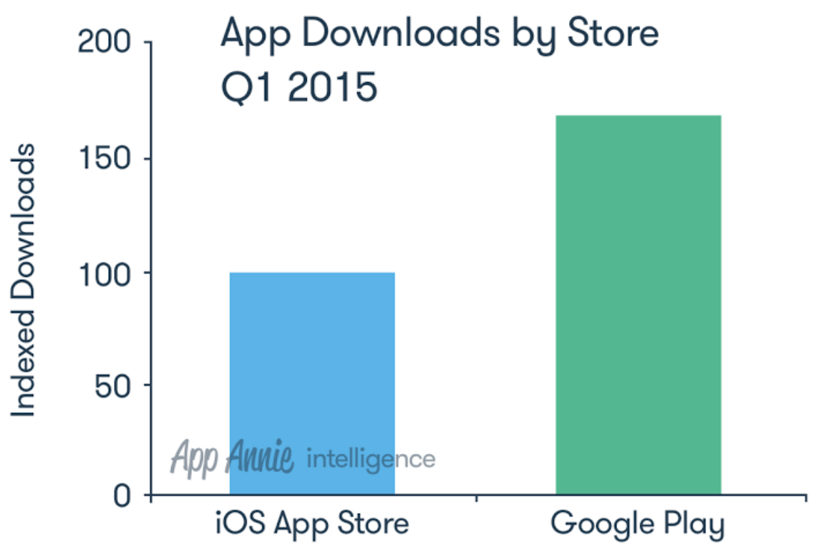
- Android market share increased rapidly.
- Android has overtaken iOS already in Q2‘10.

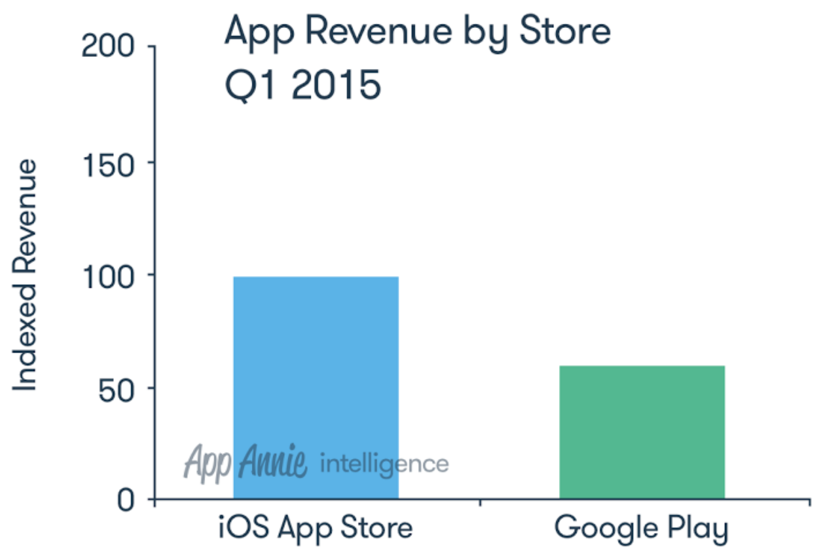


www.statista.com/statistics/74592/quarterly-worldwide-smartphone-sales-by-operating-system-since-2009/

But: iOS is still ahead in App Revenues

- Google Play has more app downloads
  - 70% more than Apple Store in Q1 2015
- Apple Store generates more revenues
  - 70% higher than Google Play in Q1 2015





Source: App Annie IndexTM¤ Market Q1 2015

Mobile strategy of Apple and Google (1)

- Mobile platform for selling content, services (Apps) and hardware
- Offering channels against the *everything is free* culture of the internet
- Currently entering advertising market with iAd for iPhone OS 4

- *„Mobile First“*
  – Eric Schmidt, CEO Google
- Having control over which Search Engine is used on mobile devices
- Making the mobile web attractive to build new *advertising pillars*

Mobile strategy of Apple and Google (2)

- Like Microsoft for desktop computers Android as a rather non-restrictive platform will become a major player on the mobile market.
- Android can profit from Apple‘s restrictive strategy, but can also be affected by Google’s bad image.
- There will not be a monopoly or duopoly on the mobile OS market.
- With the rising complexity of mobiles the challenge will be recognizable trustworthiness.

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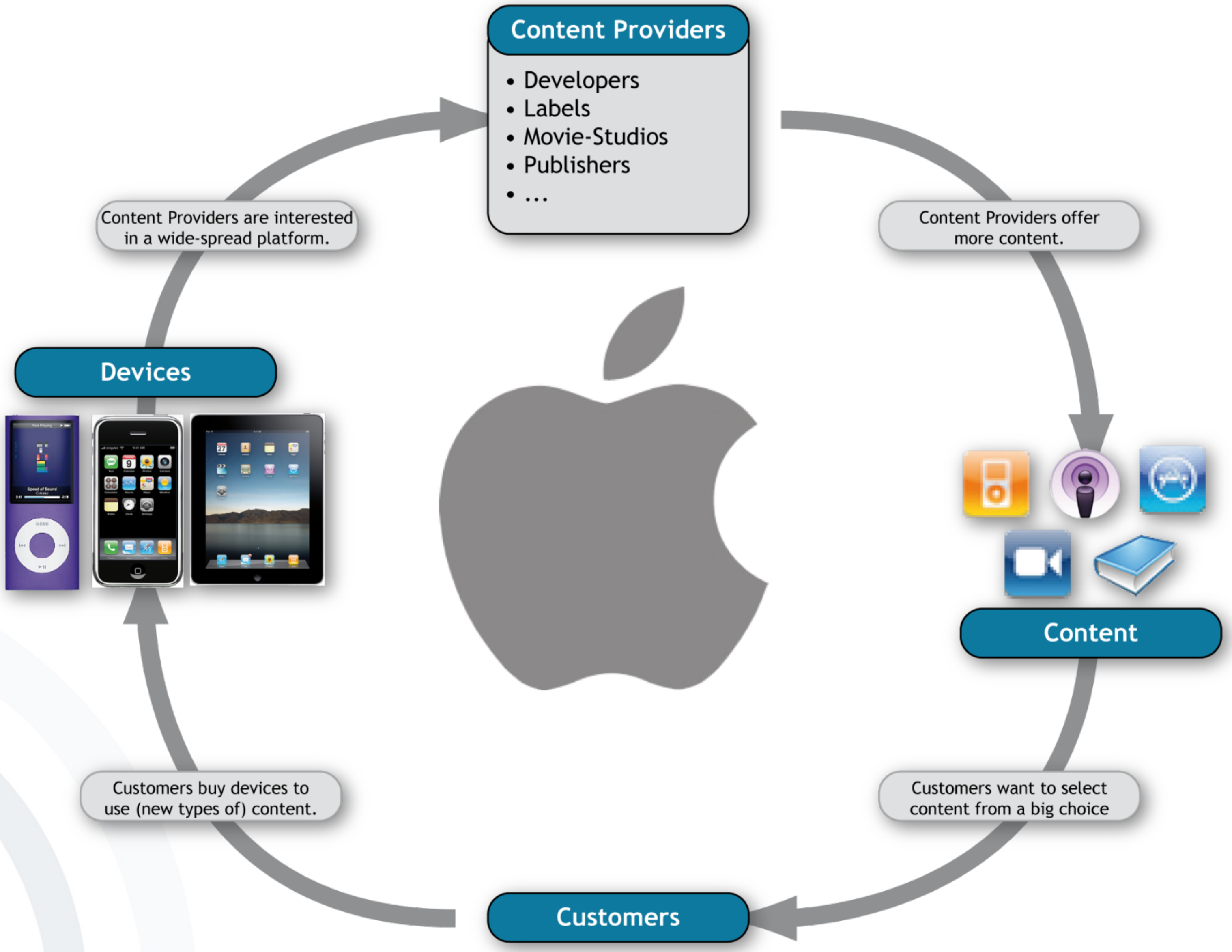
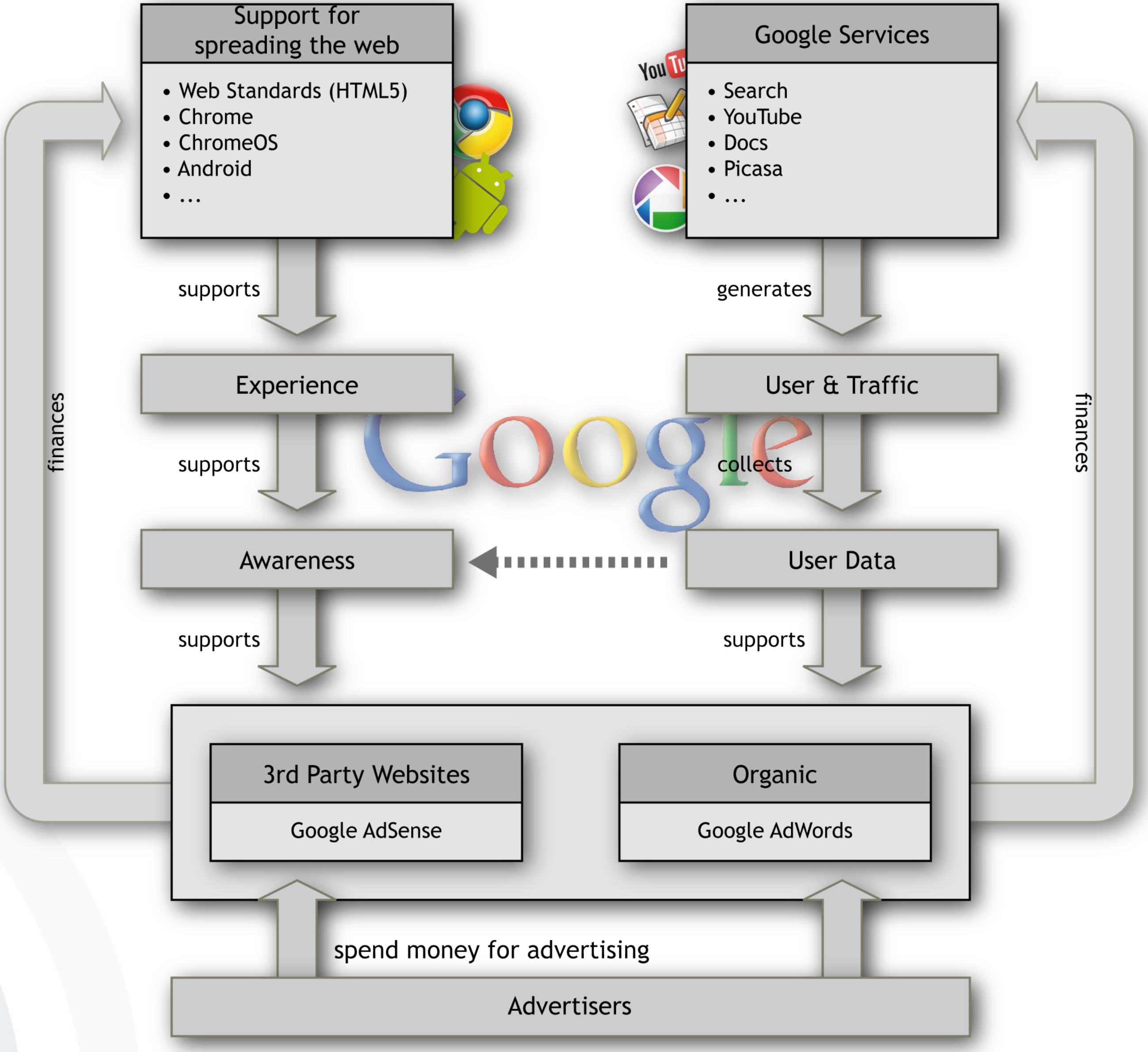
Apple's economic cycle



Google's economic cycle



Future of Mobile (Web) Apps

- Mobile Browsers are likely to gain access to more OS core functionality (e.g. 3D graphics processing; location API already available)
- The trio HTML 5, CSS, JavaScript is expected to further improve the graphical user interfaces (GUIs) towards native mobile apps as well as to provide more platform independence
- Consequently, it is likely that Mobile Web Apps will be the future dominating application type in the mobile ecosystem
- Possible consequences for the mobile ecosystem
  - Specific mobile platforms and app markets become less relevant in the mobile market
  - Reduced market power of app market operators such as Apple

- How would/will Apple, Google & Co. react to this scenario?

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