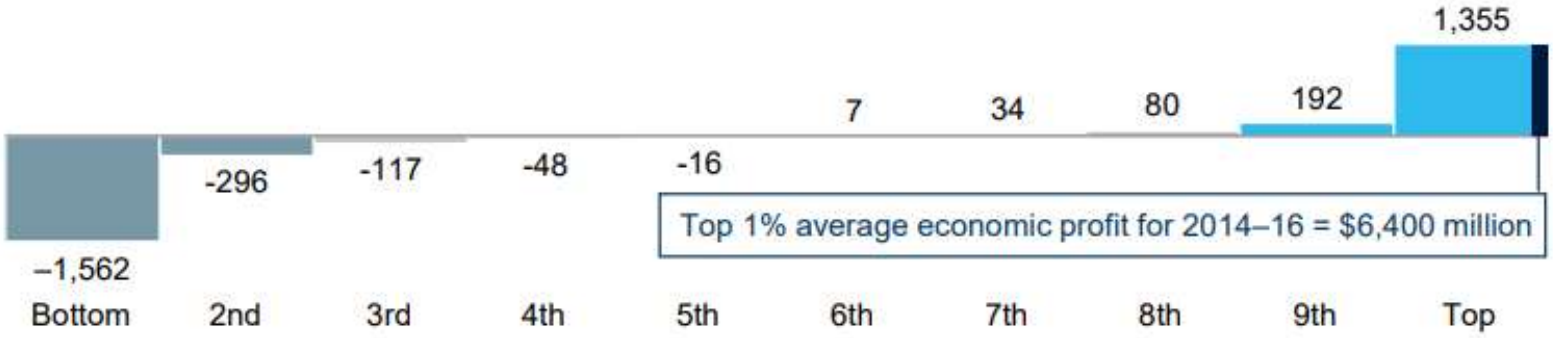
Competition in digital markets – The winner-takes-it-all effect

Technische Hochschule Rosenheim

For firms, economic value creation (measured by economic profit) is distributed unevenly along a power curve.

Distribution of economic profit among large companies with average sales above $1 billion
Average economic profit per firm in each decile, 3-year average (2014–16) (n = 5,750)
$ million



Bottom 20% of firms destroy value nearly equivalent to the top quintile

60% of firms compete away much of their economic profit

Top 20% of firms generate nearly all economic profit

Number of firms	1,150	3,450	1,150
Share of revenues (%)	37	25	38
Share of net income (%)	20	17	63

NOTE: Economic profit calculated as invested capital times the difference between return on invested capital and weighted average cost of capital. Sample of 5,750 firms has 74% (4,254) public and 26% (1,492) private companies. While private firms make up 26% of the total sample, they are only 14% of the top 10% by economic profit. For more information on the power curve of economic profit, see Chris Bradley, Martin Hirt, and Sven Smit, *Strategy beyond the hockey stick: People, probabilities, and big moves to beat the odds*, Wiley, February 2018.

SOURCE: McKinsey Corporate Performance Analytics; McKinsey Global Institute analysis

The-winner-takes-it-all-markets

Technische Hochschule Rosenheim

Many markets are breaking apart into winners and losers in a way that is obvious to every market participant. A dominant company owns a multiple of the market shares compared to the competing companies.

Such a „the-winner-takes-it-all-market“ is characterized by a significant concentration of success at one market player.

Examples can be found in many industries. They are not limited to digitial markets. Example: A local Pizzeria might be busy every evening while another one is mostly empty and fighting for survival.

In digital markets the phenomenon of the-winner-takes-it-all-market is quite frequent, e.g. in social media platforms, online shops, auctioning portals, streaming services ….

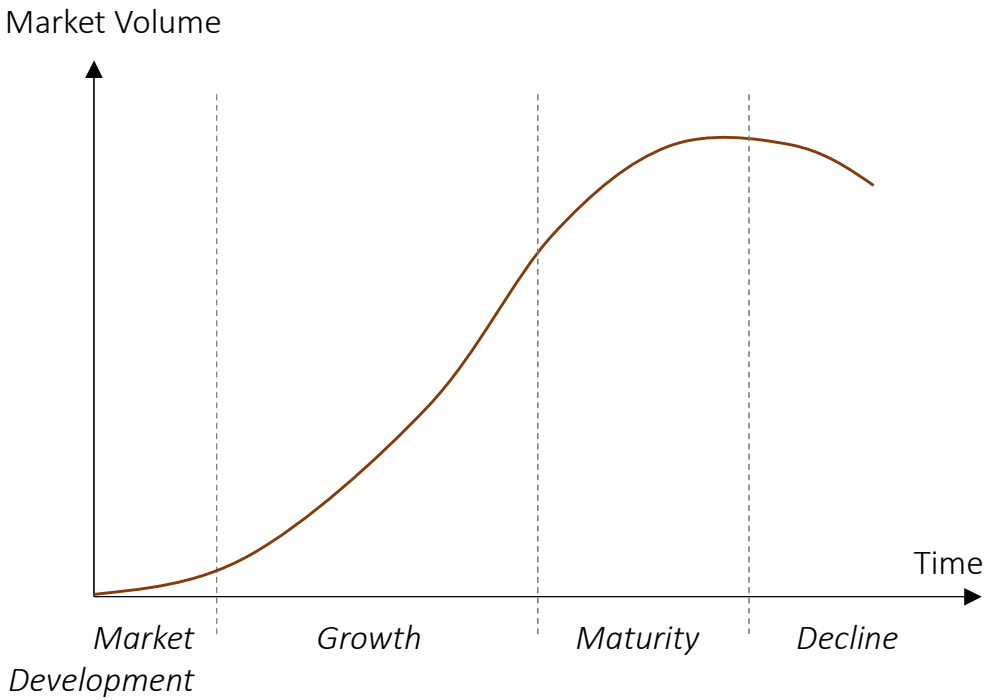
The market lifecycle

A market / a technology / a product runs through a lifecycle:

- Initially it takes some time for the market to be developed.
- From a certain point onwards the market volume starts growing significantly.
- When a market matures, the growth rates start to decline again.
- At the end of the lifecycle the market in total shrinks, e.g. because its products are replaced by a new technology / a new market.

Even though this lifecycle can be seen in almost any product / market, the duration and dynamics of each phase can vary significantly.

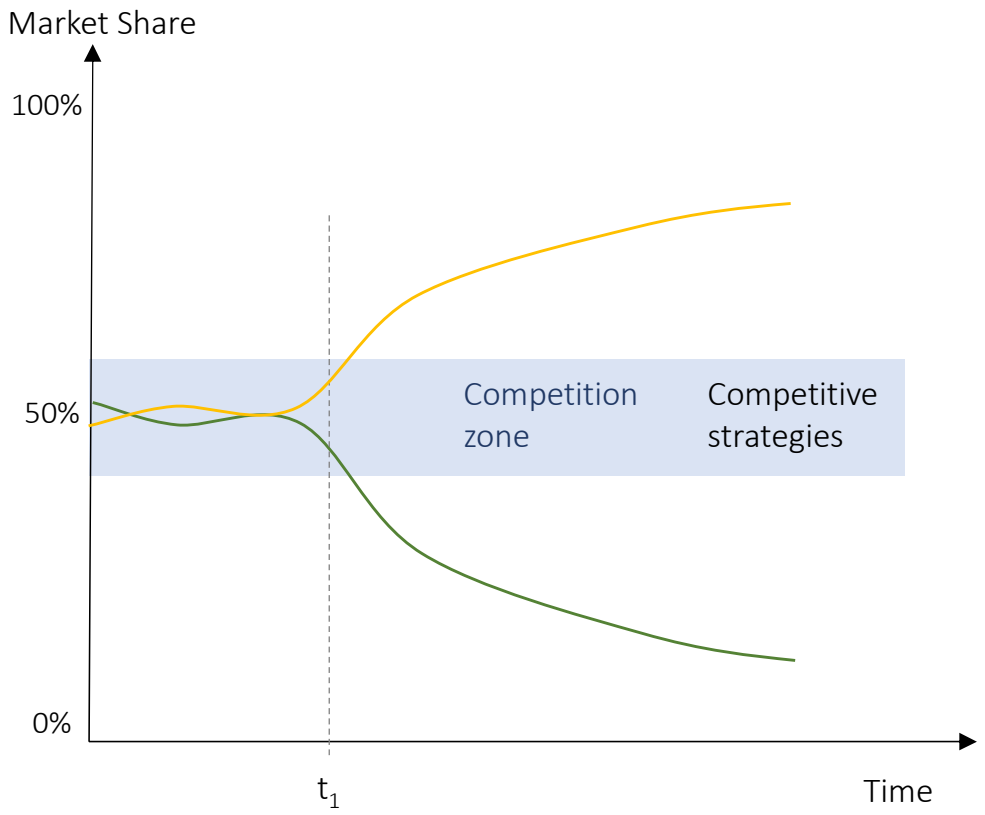
The growth phase of a market is decisive for how competition evolves.



The-winner-takes-it-all-markets

A new market in its early stages is usually characterized by a **small number of competitors**. At first none of the competitors has achieved a market dominance. The competitors try to position themselves for the expected upcoming growth phase.

From a certain time (t_1) onwards self-reinforcing effects kick in for one company. Typically one company manages to benefit from the growth of the overal market stronger than the competition. Therefore it grows much faster (growth of the market + growth of own market share).
The losing competitor‘s growth falls behind market growth. Therefore it loses market shares. Over time the gap between the companies widens with the growing market.



Reasons for the-winner-takes-it-all-effect: 1. Fixed Cost Degression

The cost structure of digital goods is characterized by:

- High fixed costs
- Low and constant marginal costs

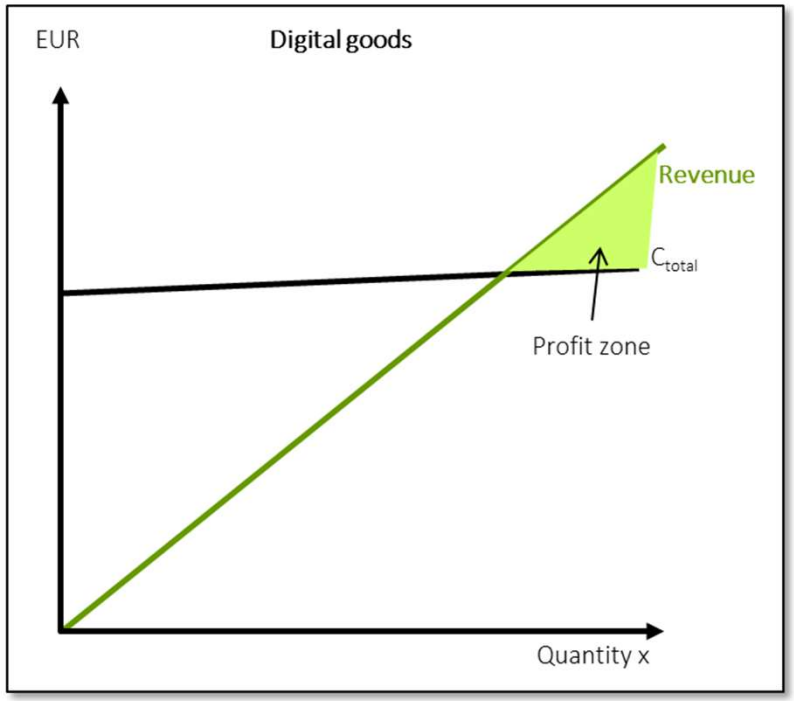
The more units a company sells the lower the average price per unit will become. The reason for this is the **fixed cost degression**: Fixed costs are divided by an increasing number of units.

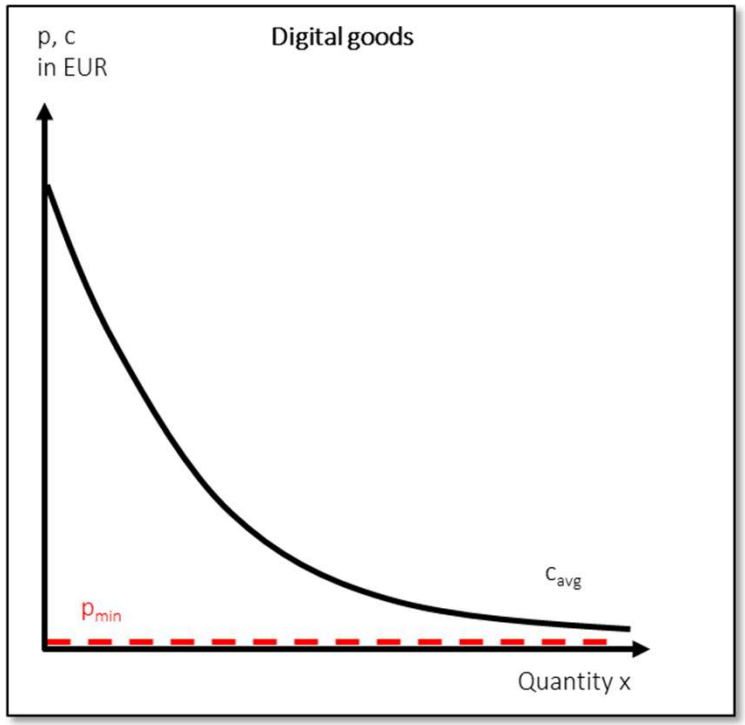
The **long-term price floor** therefore is extremely low. **It equals the marginal costs**.

The higher the fixed costs compared to direct costs, the stronger the fixed cost degression effect.

Digital goods ….
- Have high fixed costs
- Have hardly any direct costs

=> Show a strong fixed cost degression effect.





Reasons for the-winner-takes-it-all-effect: 1. Fixed Cost Degression

Technische Hochschule Rosenheim

Any competitor offering digital goods can gain advantages by reducing the price.

Example:

- Two identical companies produce a homogeneous product for 100 consumers. Each consumer requests 1 unit.
- The company offering the lowest price will receive the full demand.
- Both companies produce at marginal costs of 5 EUR per unit.
- Each company can fulfill the full demand (= no capacity limit).
- Prices cannot fall below marginal costs as this would lead to insolvency.

Starting point:

Price of 6 EUR. Both companies share the market:

Revenue per company:	50 x 6 € = 300 €
Gross margin per company:	50 €

Price reduction:

A company can increase its revenue by lowerin the price:
Company 1 reduces to 5,99 €:

Revenue company 1	100 x 5,99 € = 599 €
Profit company 1	99 €
Revenue company 2	0 €
Profit company 2	0 €

Reasons for the-winner-takes-it-all-effect: 1. Fixed Cost Degression

Technische Hochschule Rosenheim

⇒ each competitor has an incentive to lower the price.

In the **theory of the Bertrand competition** this war of attrition ends when the price reaches the marginal costs of the companies! If the price is lowered further, one company will drop out and the resulting company will face a **monopoly** without profits.

Lowest market balance:

Both companies offer at 5 EUR:

Revenues of each	50 x 5 € = 250 €
Profits of each	0 €

Monopoly after one competitor drops out:

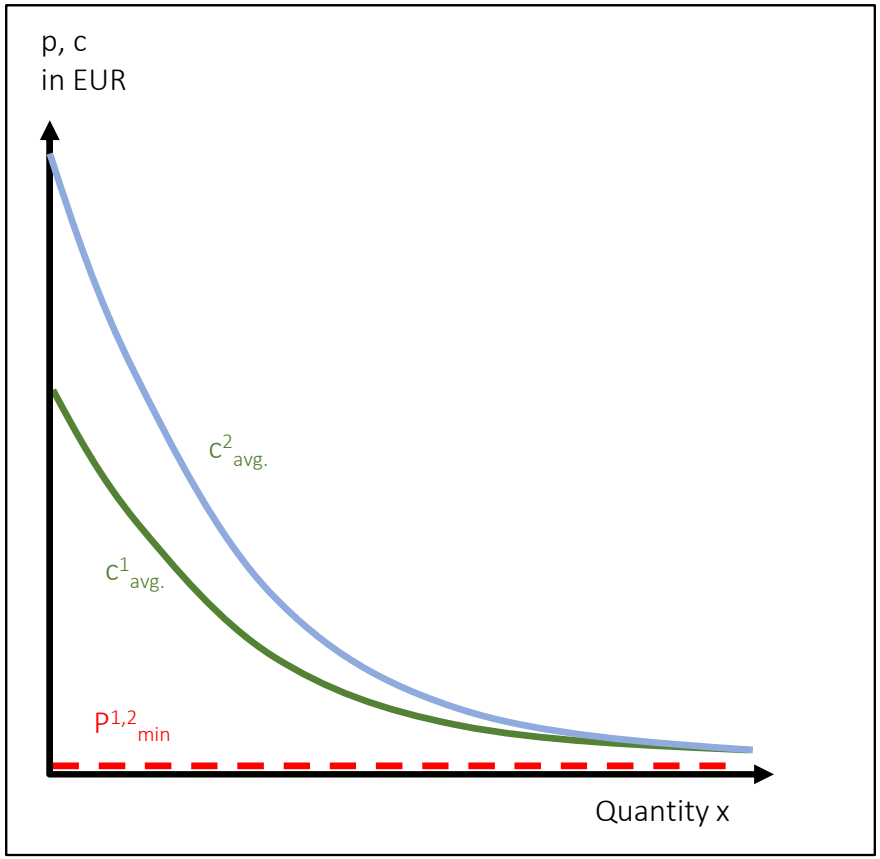
Revenues of monopolist	100 x 5 € = 500 €
Profit of monopolist	0 €

Reasons for the-winner-takes-it-all-effect: 1. Fixed Cost Degression

Technische Hochschule Rosenheim

In reality different competitors have different fixed cost structures and also different sales volumes.
Even if marginal costs are the same for both competitors of a purely digital good, the competitor that grows faster will experience a higher fixed cost degression and therefore will have a better position to lower prices.

Question:
How does the Follow-the-free strategy relate to this?



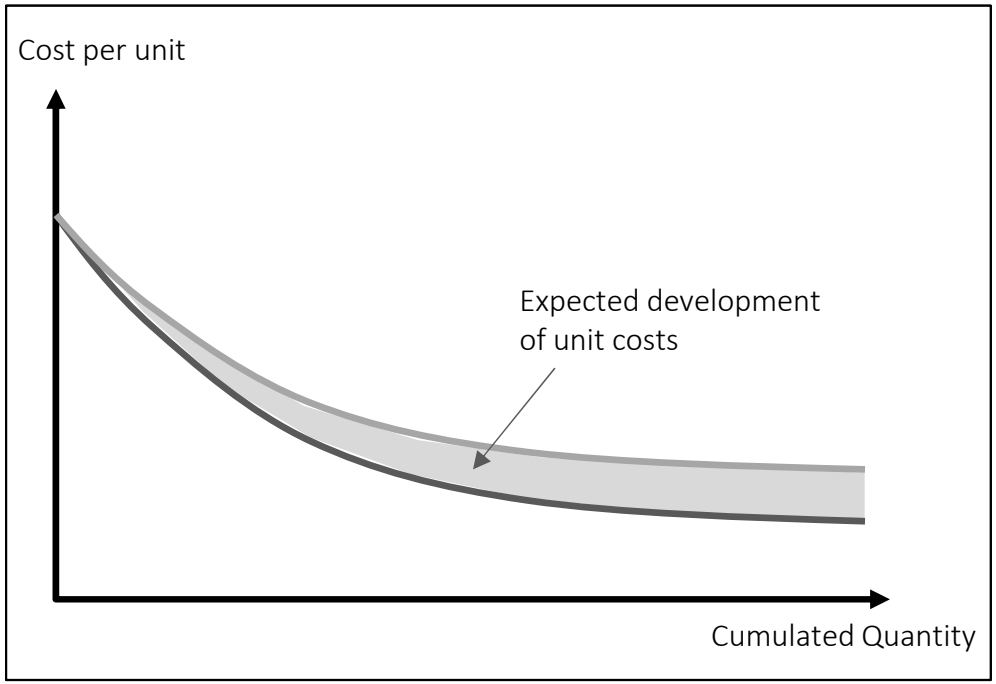
Reasons for the-winner-takes-it-all-effect: 2. Scaling

In physical or semi-physical goods, volume has another very important effect.

The learning curve was derived in multiple empirical studies. It shows that a duplication of the cumulated production quantity will allow a company to reduce its direct costs by 20-30%.

Question:
What are sources of these economies of scale?

Question:
What does that mean for competition in the case that one company manages to grow faster than the rest?



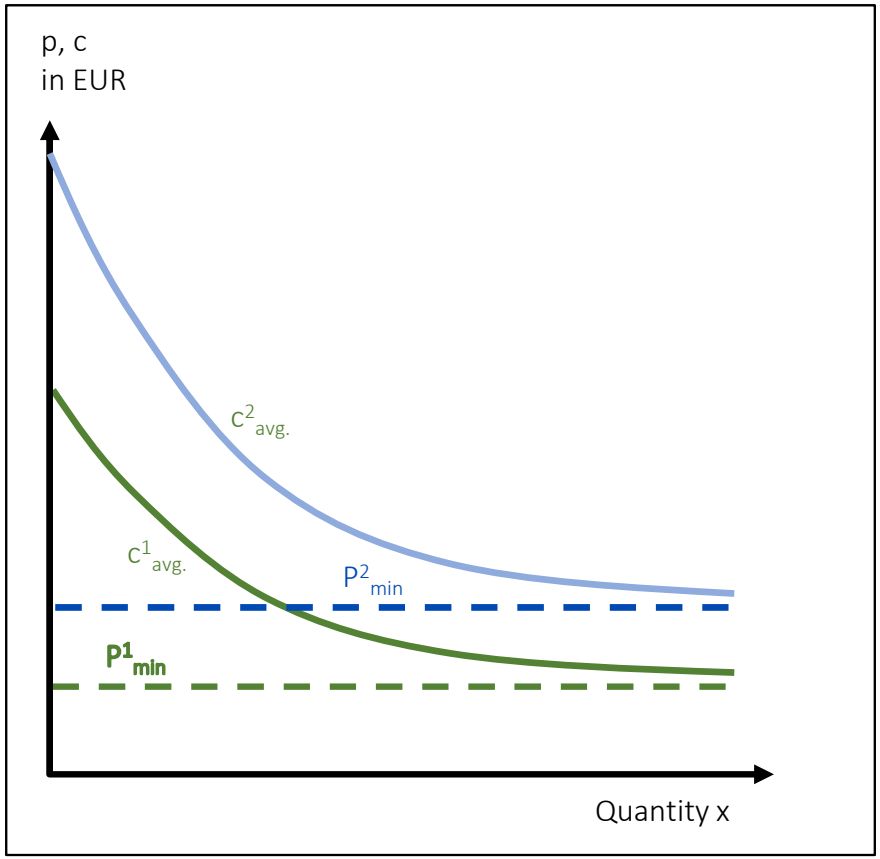
Reasons for the-winner-takes-it-all-effect: 2. Scaling

Technische Hochschule Rosenheim

The learning curve will change the direct cost of the products that are produced. A company with a higher volume has a lower price floor than a company which produces less.

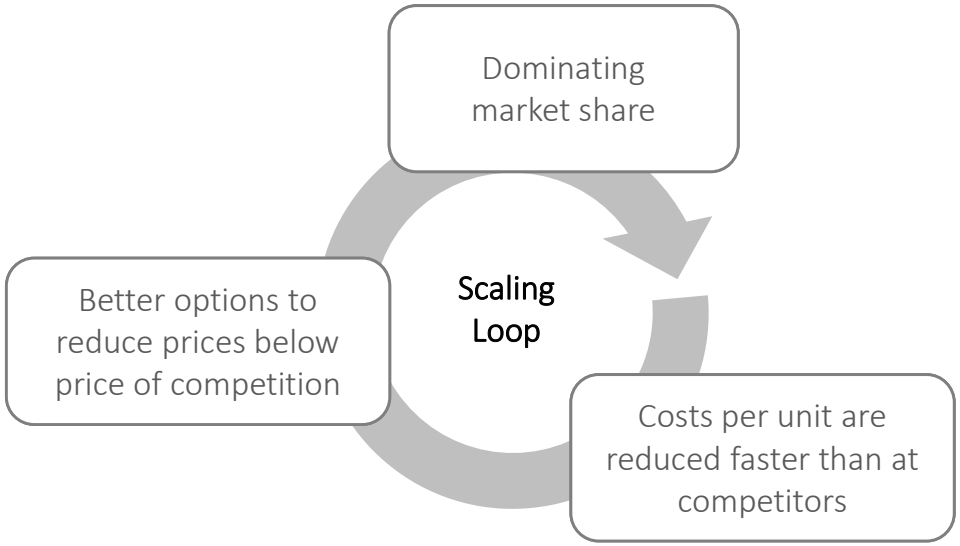
Other economies of scale add to this effect and give those companies a better position in price competition that manage to grow faster.

Question:
Is this effect positive for society / the user?



Reasons for the-winner-takes-it-all-effect: The Scaling Loop

The effects of fixed cost degression, learning curve and economies of scale, together with the importance of pricing strategies in digital markets, create a self-enforcing cycle: **The scaling loop.** It is one of the reasons why the market tipps to one competitor after a certain critical point.



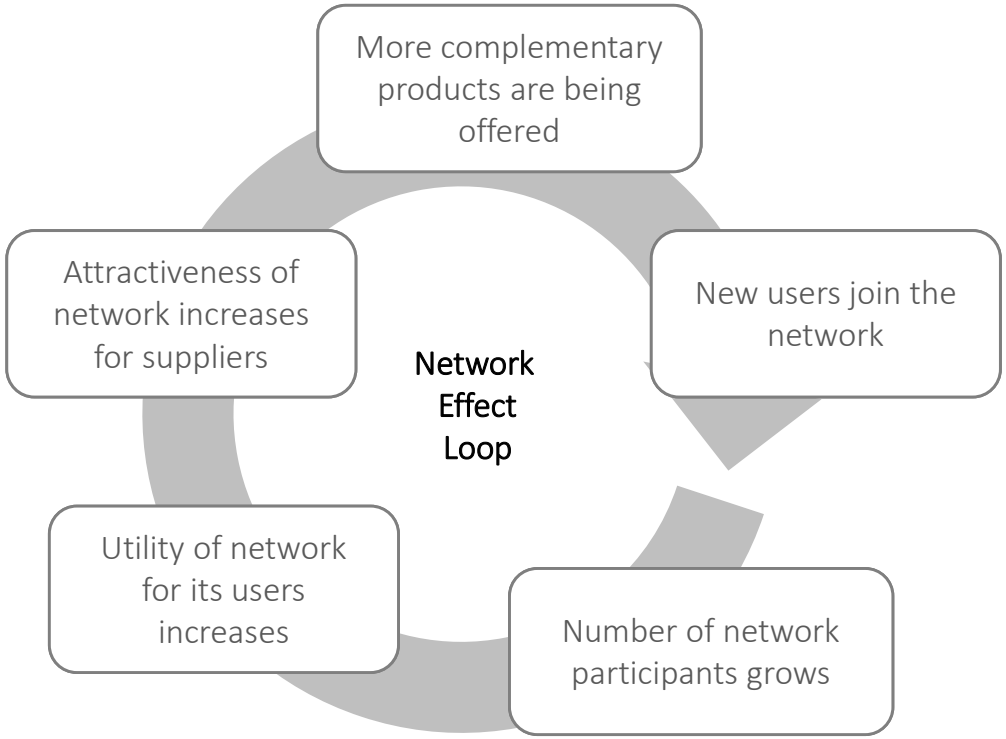
Reasons for the-winner-takes-it-all-effect: The Network Effect Loop

Technische Hochschule Rosenheim

Another self-enforcing effect is triggered if the underlying product has network effects.

In this case the faster growth of one network leads to direct (= demand side) and indirect (= supply side) network effects. These effects make the network more attractive to users and directly and indirectly lead to an increase in network growth (= **Network Effect Loop**)

Question:
Explain this loop on the example of Google search engine.



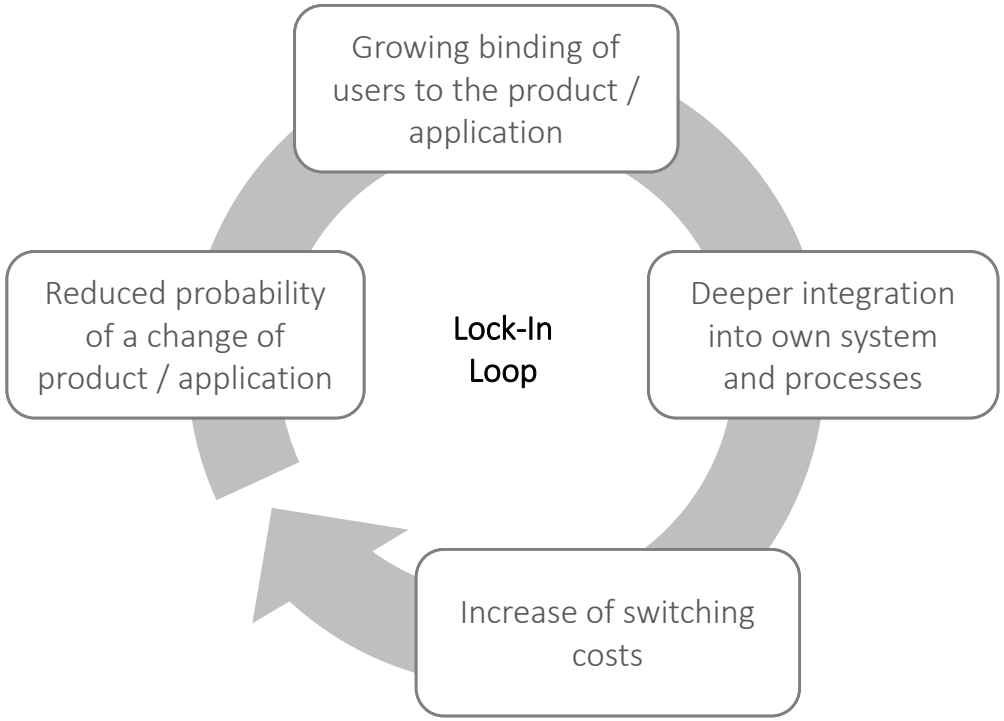
Reasons for the-winner-takes-it-all-effect: The Lock-In-Loop

Technische Hochschule Rosenheim

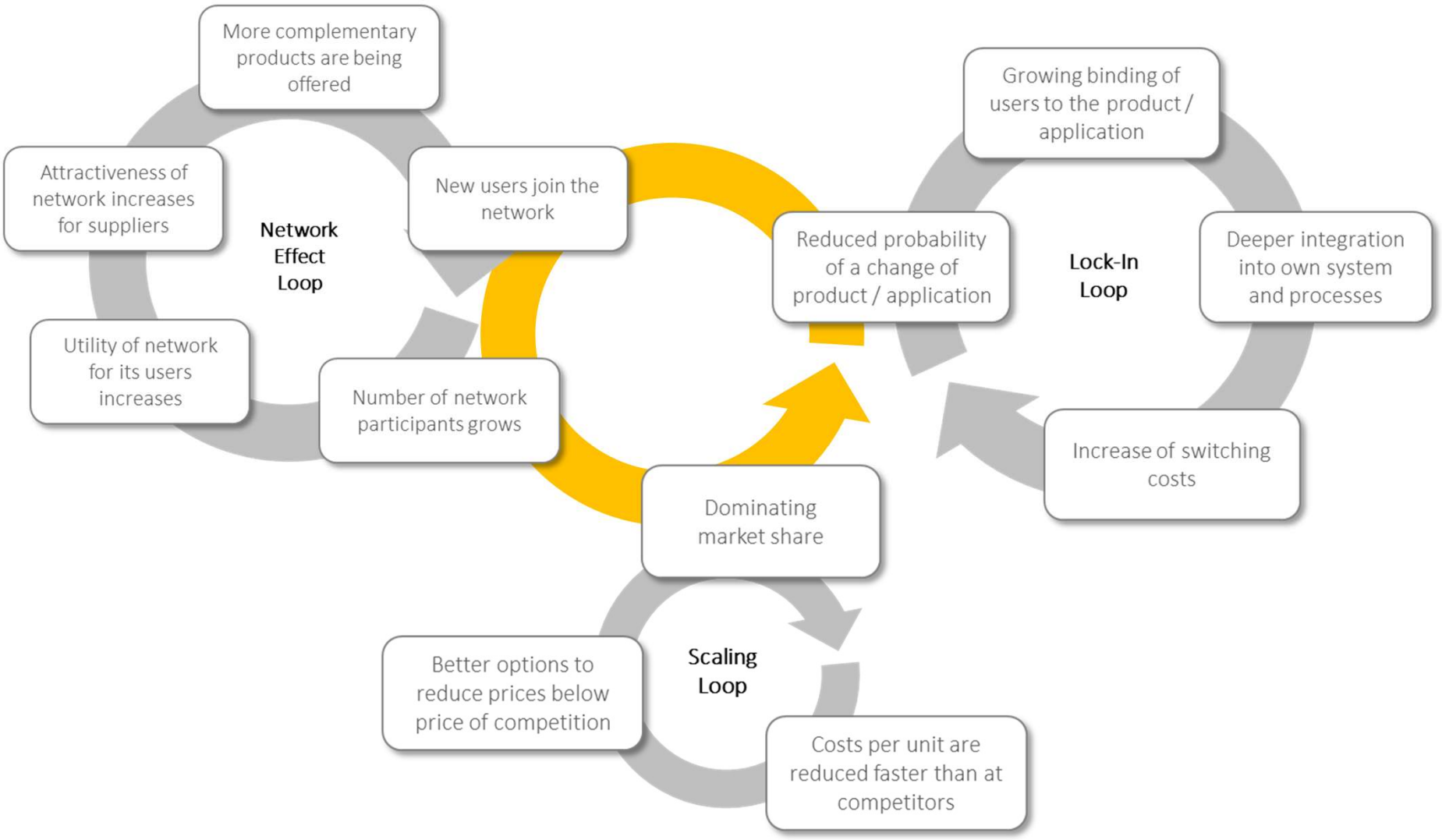
Especially in digital products and services lock-in-effects are critical. The are either directly built into the application or generated over time (= Lock-in-Loop).

If a consumer uses an application or product and does not expect to change this product or application at short notice, the use of the product will become regular.
With a regular use the product will step by step be integrated into other systems and processes.
This increases switching costs over time.
An increase in switching costs makes it even less probable that the product or application will be replaced.

Question:
Explain this loop on the example of a cloud-based Customer Relationship Management system.



Reasons for the-winner-takes-it-all-effect



The already in itself reinforcing loops also have a positive effect on each other. For example: If a software application develops a dominating market share, the probability of consumers to turn away from this market leader becomes lower. This will reduce the fluctuancy (= **Churn Rate**) of the network and therefore have a positive network effect again ….

The-winner-takes-it-all-effect: Quasi monopoly

Technische Hochschule Rosenheim

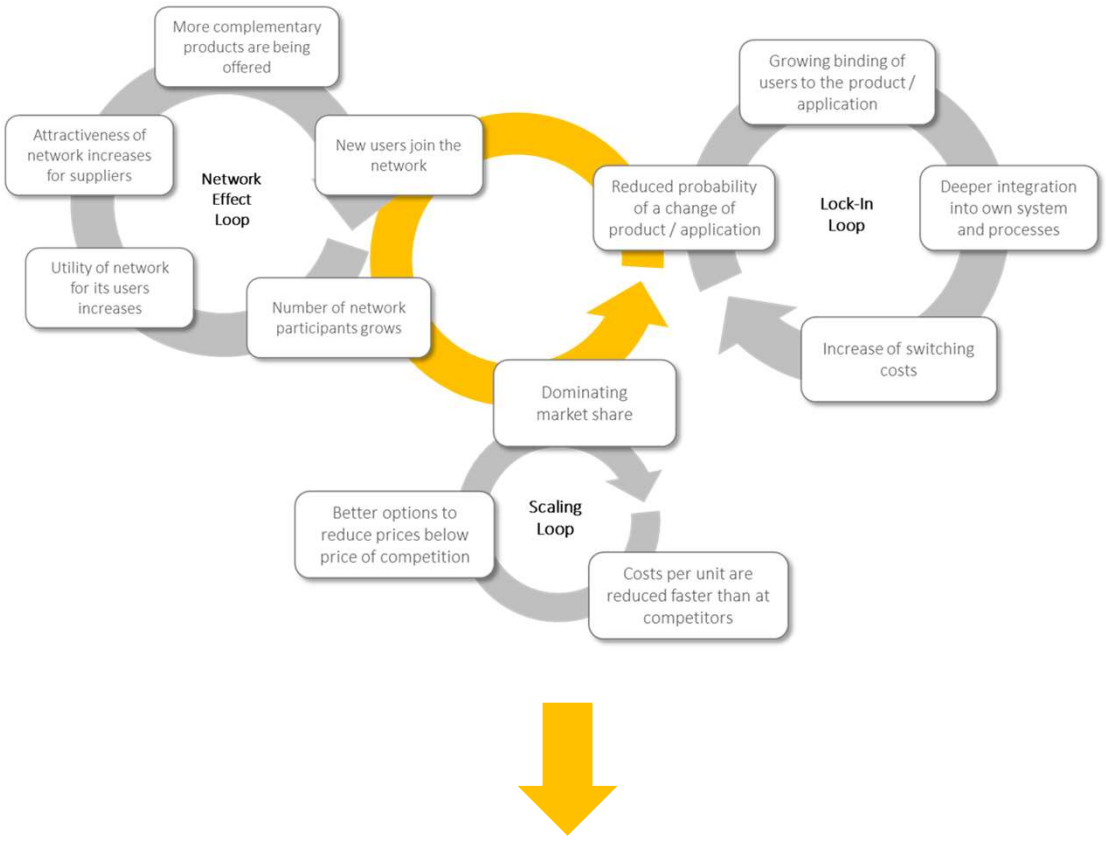
Theoretical models would usually predict that these markets will result in a monopoly. However, in real life the outcome frequently is a Quasi Monopoly:

- Very few but big suppliers (usually four or less)
- There are very high entry barriers which basically make it impossible for smaller companies to enter and compete. A newcomer would need to have the same size as the existing players.
- There is hardly any product differentiation in the market.

Contrary to a „real“ monopoly …

- There is usually no under-coverage for the product in the market
- There is not necessarily any welfare loss
- Pricing stays a competitive strategy
- Quasi-monopolists do not benefit from their position as monopolists would

Note: The danger in such situations is that the competitors engage in cartel agreements.



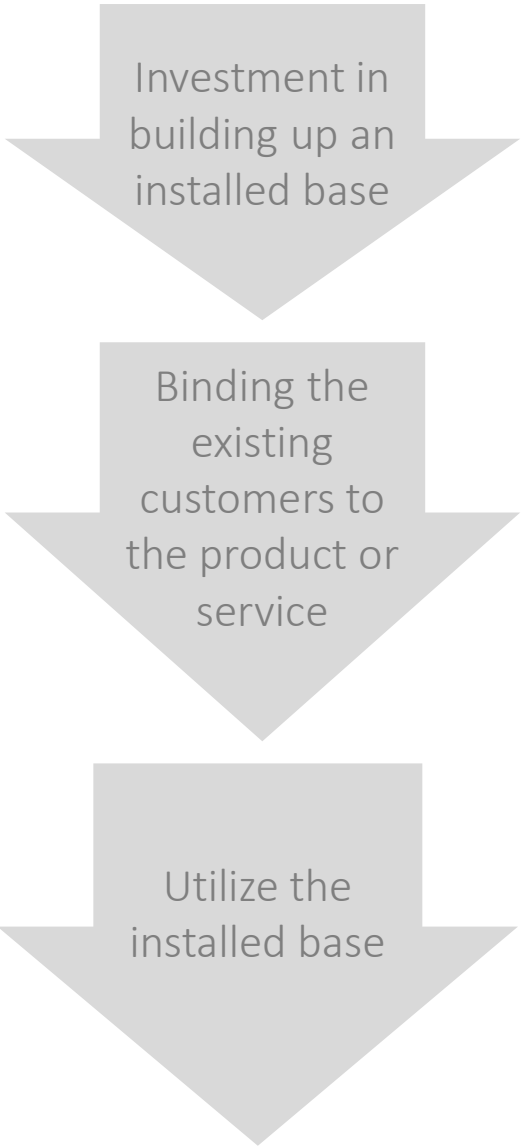
Frequent result: Quasi-Monopoly

Strategies for „The-winner-takes-it-all“ markets

What are strategies that companies take in such market constellations?

Question:
What are specific examples of concrete actions?

Typical strategic actions in a First Mover Strategy



- Try to be the first one in the market
- Build up an installed base quickly
- Build up entry barriers quickly
- Ideally: Establish the industry standard (proprietary technology)
- Specific pricing strategies like Follow-the-Free or Penetration.

- Signal to potential competitors that an entry is very risky due to the dominance of the existing player
- Try to reach the tipping-point / critical mass of the market before competitors enter
- Cross-Selling of complementary products
- Upselling (Follow-the-Free)
- Opening other revenue streams
- Business model innovation to leverage core competencies

Strategies for „The-winner-takes-it-all“ markets

Technische Hochschule Rosenheim

What are strategies that companies take in such market constellations?

Question:
What risks are imposed here?

Typical strategic actions in a First Mover Strategy

⇒ These strategies require a fast action = planning of market entrance is very critical
⇒ These actions are usually very expensive = a lot of capital is needed
⇒ These strategies are usually risky
… as the technology and market is still not established
… as competitors will watch and learn from own mistakes

Strategies for „The-winner-takes-it-all“ markets

Technische Hochschule Rosenheim

What are strategies that companies take in such market constellations?

Typical strategic actions in a First Mover Strategy

- Create lock-in-effects:

Lock in effect	Consequences	Switching costs
Contract regulations	Long notice rules, penalty payments for early terminations	Artificially created costs
Long-term products and system products	It is getting more difficult to replace individual components	Transaction costs
Process integration	A change of product would require a reorganisation project and would impose process risks.	Transaction costs
Data storage	A change of product would require a transfer of data and mappings / conversions….	Transaction costs
Specialized knowledge	It is hardly possible to find a comparable provider. A change would impose risks for the process.	Transaction costs
Product-specific trainings and knowledge pools	It will be very costly to educate and train users for a new system.	Training costs.

Strategies for „The-winner-takes-it-all“ markets

What are strategies that companies take in such market constellations?

Typical strategic actions in a Market Entrance Strategy:

- Option 1: Early follower
  - Try to get access to the market before a big installed base makes it more and more difficult
  - Not possible to benefit a lot from existing experiences by first-mover yet

- Option 2: Late follower
  - Use the mistakes that were made by the first mover
  - Develop a better product that fits client expectations better than first mover
  - Benefit from potential inertia of existing competitor = difficulty to adapt own product quickly
  - Provide change subsidies or incentives for users to switch over
  - Use technological leaps for market access, e.g. if an underlying technology needs to be replaced anyhow

The-winner-takes-it-all-markets - Summary

Technische Hochschule Rosenheim

- Because of their special characteristics digital business models frequently show a „the-winner-takes-it-all-effect“.
- In such markets, after an initial phase of balanced competition, one competitors tends to leave competition behind and wins a dominant market position. It makes it extremely difficult for new competitors to enter such a market and for existing smaller competitors to survice there.
- If such markets do not end in a monopoly, they frequently show the attributes of a quasi monopoly, where a very small number of big competitors share the market under difficult conditions (or engage in cartel agreements).
- The reason for this effect are three self-enforcing loops that are based on scale-effects, network-effects and lock-in-effects.
- There are First Mover Strategies and Market Entry Strategies that can be applied. In general these kind of markets are very capital intensive and risky.