TECHNISCHE UNIVERSITÄT WIEN
Vienna University of Technology

VO Unternehmensgründung - Entrepreneurship

SS 17: Unit „Feasibility Studies“

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Content

- From Idea to the Opportunity
- First Assessment of Ideas and Opportunities
- The Product Planning and Development Process
- The Entrepreneurial Strategy
- The Entrepreneurial Team

From Idea to the Opportunity

Feasibility Studies

Types of ideas

Imitative

- Acceptance of the product/service is approved
- Market data exists
- Competition is high

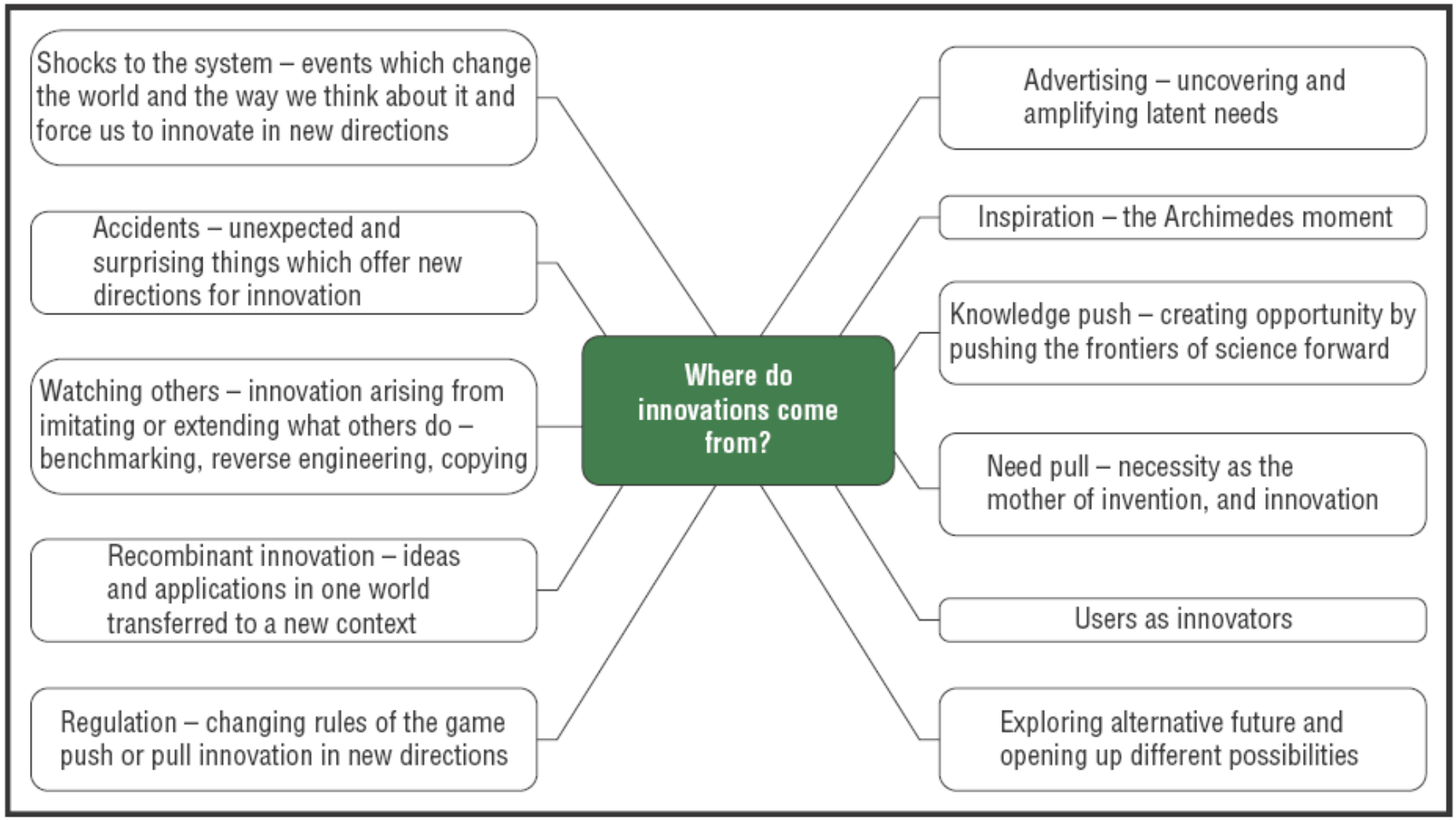
Improving

- Based on something known; advanced
- Experience and market data are only restricted helpful

Innovative

- Costs and risk is higher
- Growth potential is higher
- Chance to make higher benefits

Where do innovations come from? (Tidd & Bessant)

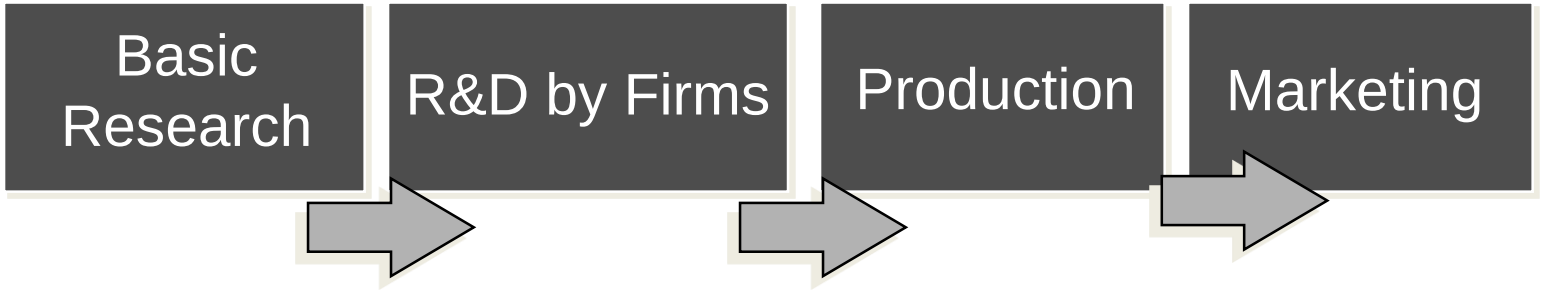


Search strategies? (Tidd & Bessant)

Table 5.5 Extending search strategies for innovation

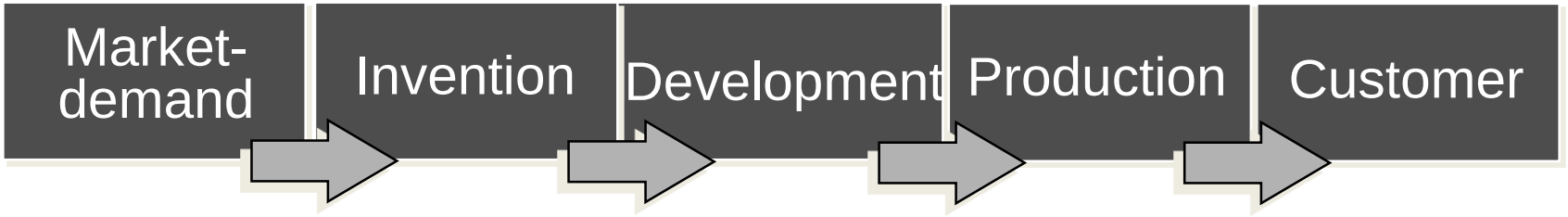
Search strategy	Mode of operation
Sending out scouts	Dispatch idea hunters to track down new innovation triggers
Exploring multiple futures	Use futures techniques to explore alternative possible futures; and then develop innovation options
Using the web	Harness the power of the web, through online communities, and virtual worlds, for example, to detect new trends
Working with active users	Team up with product and service users to see the ways in which they change and develop existing offerings
Deep diving	Study what people actually do, rather than what they say they do
Probe and learn	Use prototyping as a mechanism to explore emergent phenomena and act as boundary object to bring key stakeholders into the innovation process
Mobilize the mainstream	Bring mainstream actors into the product and service development process
Corporate venturing	Create and deploy venture units
Corporate entrepreneurship and intrapreneuring	Stimulate and nurture the entrepreneurial talent inside the organization
Use brokers and bridges	Cast the ideas net far and wide and connect with other industries
Deliberate diversity	Create diverse teams and a diverse workforce
Idea generators	Use creativity tools

Technology (Science) Push Innovations



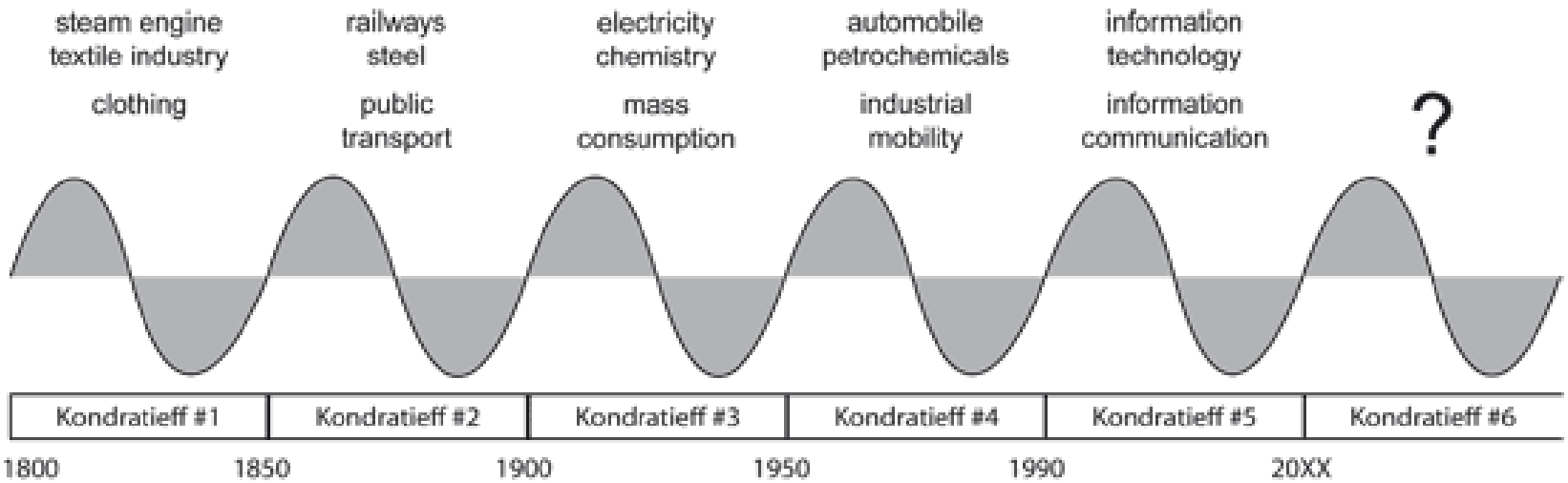
Examples: Nylon, Radar, Antibiotics, Cellular telephony, Photocopiers, Digital imaging, Integrated Circuits

Market Demand / Needs Pull

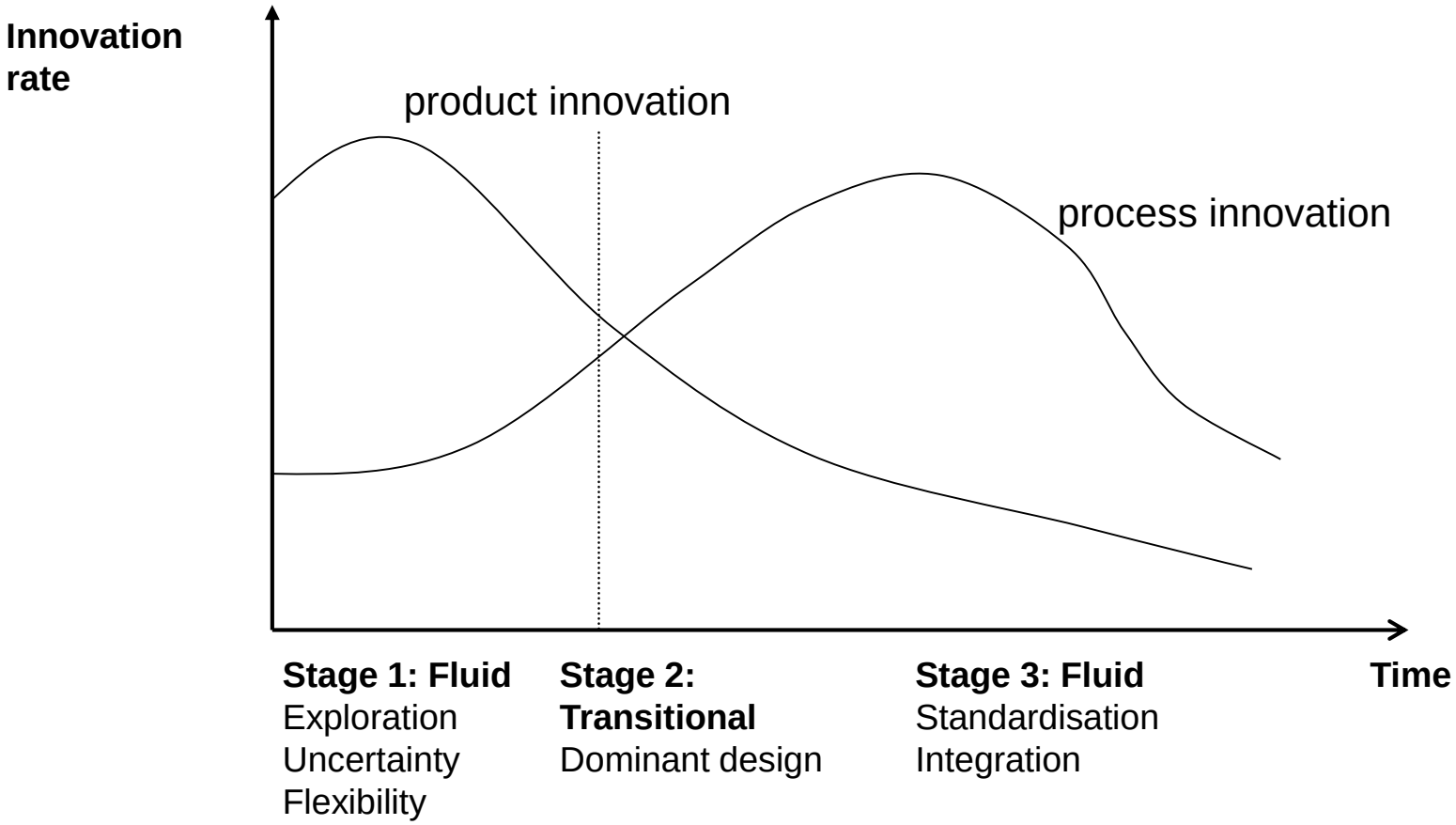


Examples: convenience food, low energy light bulbs, hybrid car, digital cameras, Linux ….

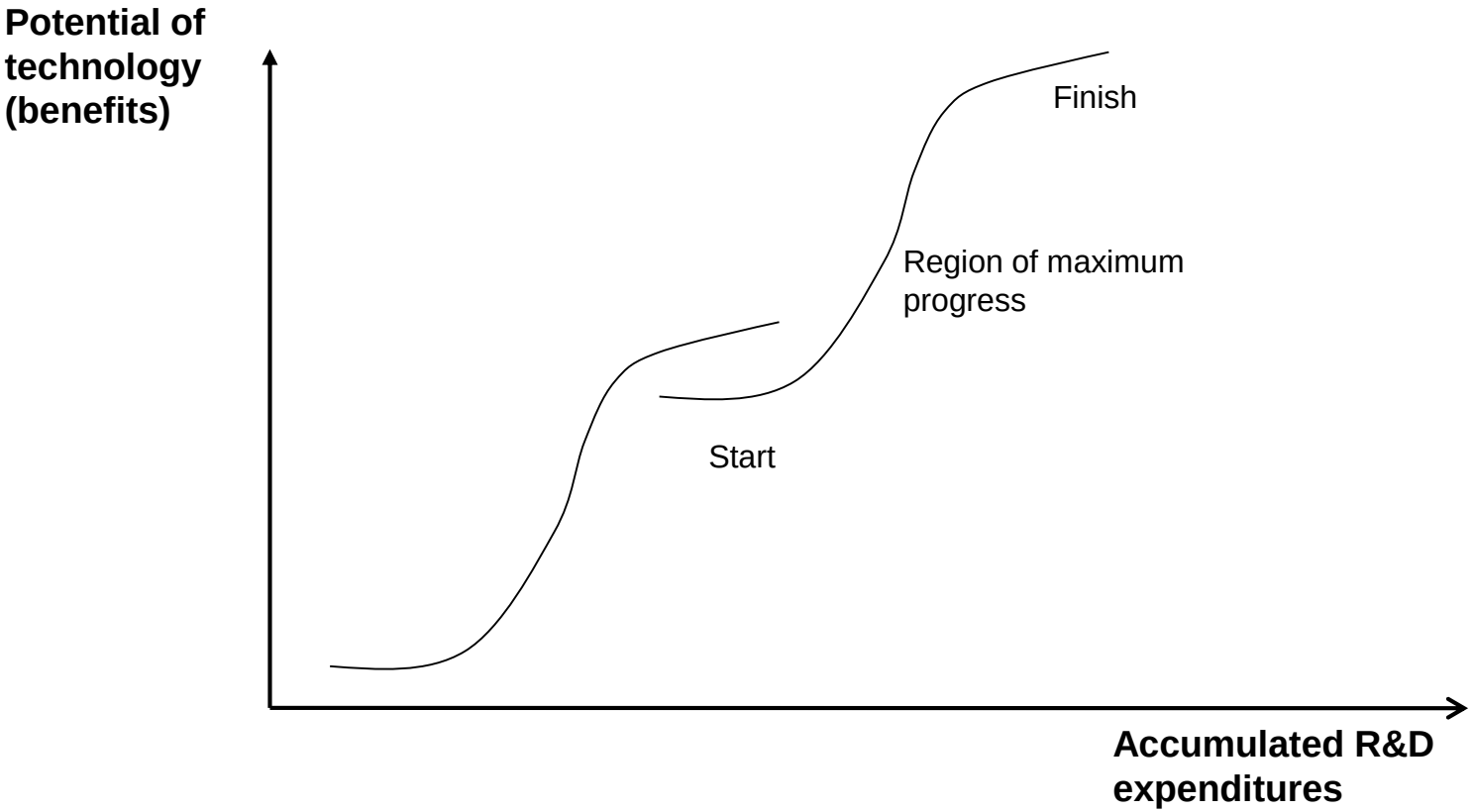
Kondratieff cycles: long waves in technological innovation



The model of Abernathy & Utterback (1975)



The S-curve model of Foster (1986)



Mega-Trends

- Green Trend
- Clean-Energy Trend
- Organic-Orientation Trend
- Economic Trend
- Social Trend
- Health Trend
- Web Trend
- …

Creativity techniques

- Mindmapping
- Brainstorming
- Brainwriting: Method 635
- Synektik
- *Bionik* (BIOlogie -> TechnIK)
- Morphological Grid
- Value analysis (ABC)
- Checklists

Morphological Analysis

Goal: Generation of unusual and new ideas for the problem solution by means of structured and systematic thinking, division of the problem in sub-problems, combination into new solutions

- Definition of the problem
- Split up into more specific problems
- Development of alternative solutions
- New combination into a unique solution

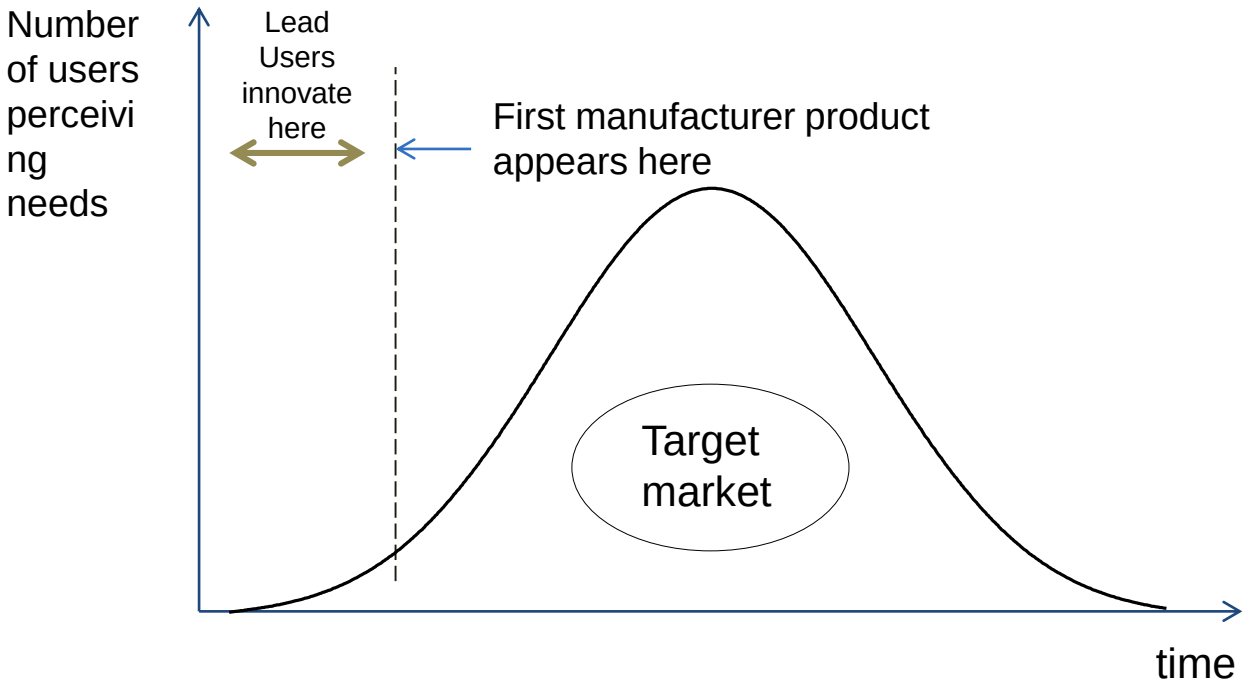
Beschreibung des Problems: Bsp. „Neuer Gartengrill“					
Problemelemente (Parameter)	**Lösungsmöglichkeiten**				
Fleischauflage	Auflage auf Rost	Auflage auf Draht	Spieß	Aufhängen auf Drähten	Klammern
Fleische zuführen	von Hand	Transport-band	Auswechselb. Halterung	Schütt-vorrichtung	Kurbel-gestänge
Hitze erzeugen	Kohle	Holzkohle	Strom	Gas	Sonnen-energie
usw.					

Checklists (A. Osborne)

A new idea is developed through a list of related issues or suggestions:

- Put to other uses? New ways to use as-is? Other uses of modified?
- Adapt? Is there anything else like this? What does this tell you? Is the past comparable?
- Modify? Give it a new angle? Alter the colour, sound, meaning, motion, and shape?
- Magnify? Can anything be added, time, frequency, height, length, strength? Can it be duplicated, multiplied or exaggerated?
- Minify? Can anything be taken away? Made smaller? Lowered? Shortened? Lightened? Omitted? Broken up?
- Substitute? Different ingredients used? Other material? Other processes? Other place? Other approach? Other tone of voice? Someone else?
- Rearrange? Swap components? Alter the pattern, sequence or layout? Change the pace or schedule? Transpose cause and effect?
- Reverse? Opposites? Backwards? Reverse roles? Change shoes? Turn tables? Turn other cheek? Transpose?
- Combine? Combine units, purposes, appeals or ideas? A blend, alloy, or an ensemble?

Lead User Method (von Hippel)



Identification of Lead Users:

1. Screening (questionnaire) (market population can easily be defined)
2. Snowballing/Pyramiding (in analog markets and heterogeneous markets)

Make products more simple …

- Problem of **overengineering** exists in many industries and was, for instance, the base of the development of the PC by Steve Jobs, established big firms (IBM) were not interested in producing smaller computers for the home market

- Potential of „bottom-of-the-pyramid“ markets

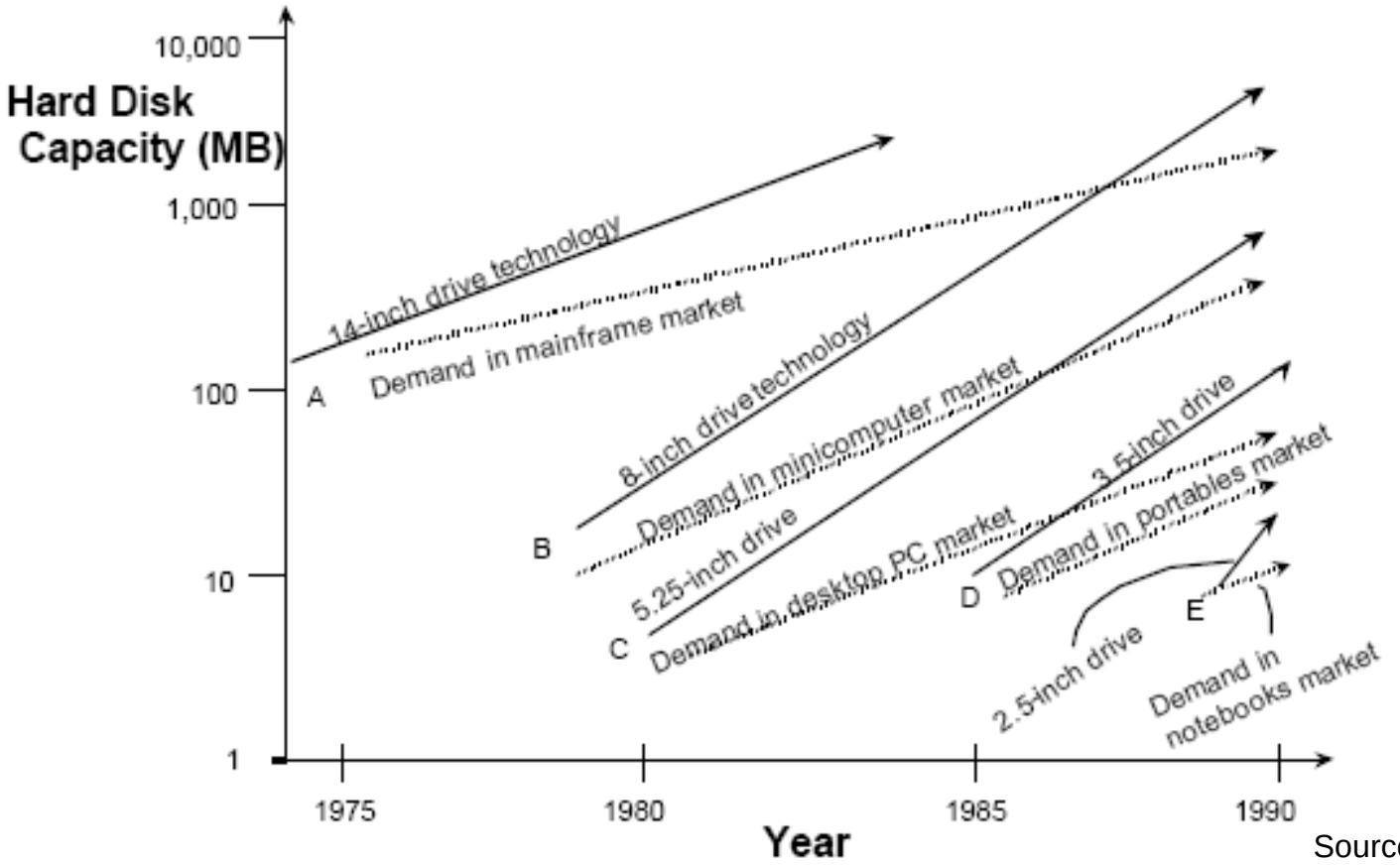
Recognising market niches

- Christensen (1997) deals with the phenomenon that large firms, often market leaders, are no longer among the market leaders after a new radical technology has substituted the established technology
- He shows empirically that large companies have often less incentives to invest in small market niches, in which, however, often new radical technologies are developed which then also can be used in the established markets
- Large, established firms are usually focused on large scale production, they do often not appreciate new emerging markets needs
- When faced with radical technology the very reasons the company was successful in the first place, becomes the reason it has difficulty to engage in new (technological) routines
- This offers huge opportunities for small firms

Christensen (1997): Disruputive technologies

- Christensen (1997) argues that firms are capable of engaging in radical technology, despite its destructive character, as long as the technology provides value to the existing customer. Christensen calls this type of technologies ‘sustaining’ (*sustaining* on the current consumer demands)
- Technologies which initially under-perform on the current performance metrics of the market (so called *disruptive technologies*) are not likely adopted by incumbents (e.g. via their market departments, users will valuate disruptive technologies as ‘too costly’ or ‘not what we want’, leading to under-investment from incumbent firms
- Christensen thus distinguishes:
  - „sustaining technologies“: improve the performance of established products
  - „disruptive technologies“: these technologies are only relevant for a small group of users in a market niche

Example: Development of Hard Disk



Source: Christensen (1997)

First Assessment of Ideas and Opportunities

Is there a market and how does it look like?

- Where is the market?
- How big is the market?
- What characteristics does it have?
- Who are the competitors?
  - How many?
  - How big?
  - How good are their products/services in comparison to ours?

Market Segmentation

Market Segmentation = Splitting the relevant market in sub-segments

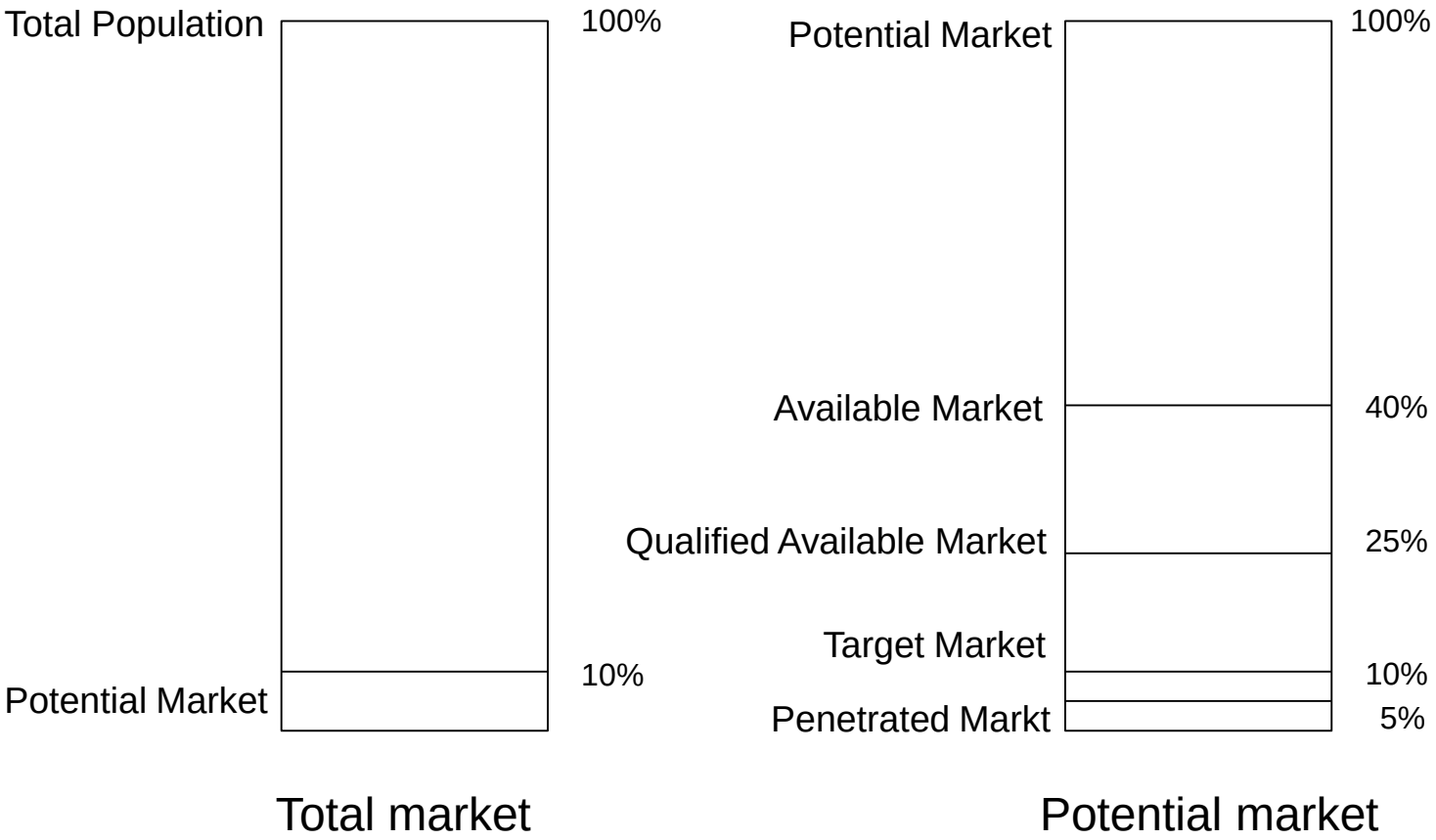
Choosing the target group in the consumer market

- Directly captured characteristics
- Indirectly derived characteristics

Number of consumers in the sub segment

Potential of demand has to be economic sustainable

Market Size


Total Population
100%
Potential Market
10%
Total market
Potential Market
100%
Available Market
40%
Qualified Available Market
25%
Target Market
10%
Penetrated Markt
5%
Potential market

Market for motorcycles

Total population: population of a country as registered

Potential market: people who have an interest to own a motorcycle, the higher the price, the lower the potential market

Available Market: additional import restrictions may reduce the potential market

Qualified market: further restriction of the market due to the necessity to have a driving licence, potential buyers

Served Market: target market of the company, in which motorcycles are offered, e.g. in Europe

Penetrated market: entire persons who already have bought a motorcycle

Further definitions

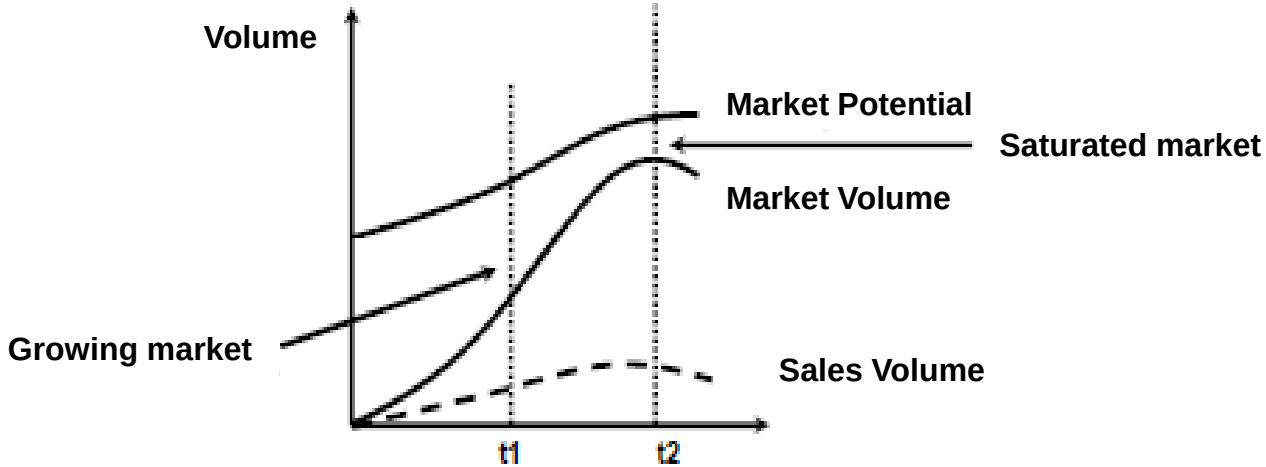
Market Potential: Upper limit of the market volume under the given economic conditions

Market Volume: Sales in a specific product class in terms of units or money in a given period = price x units

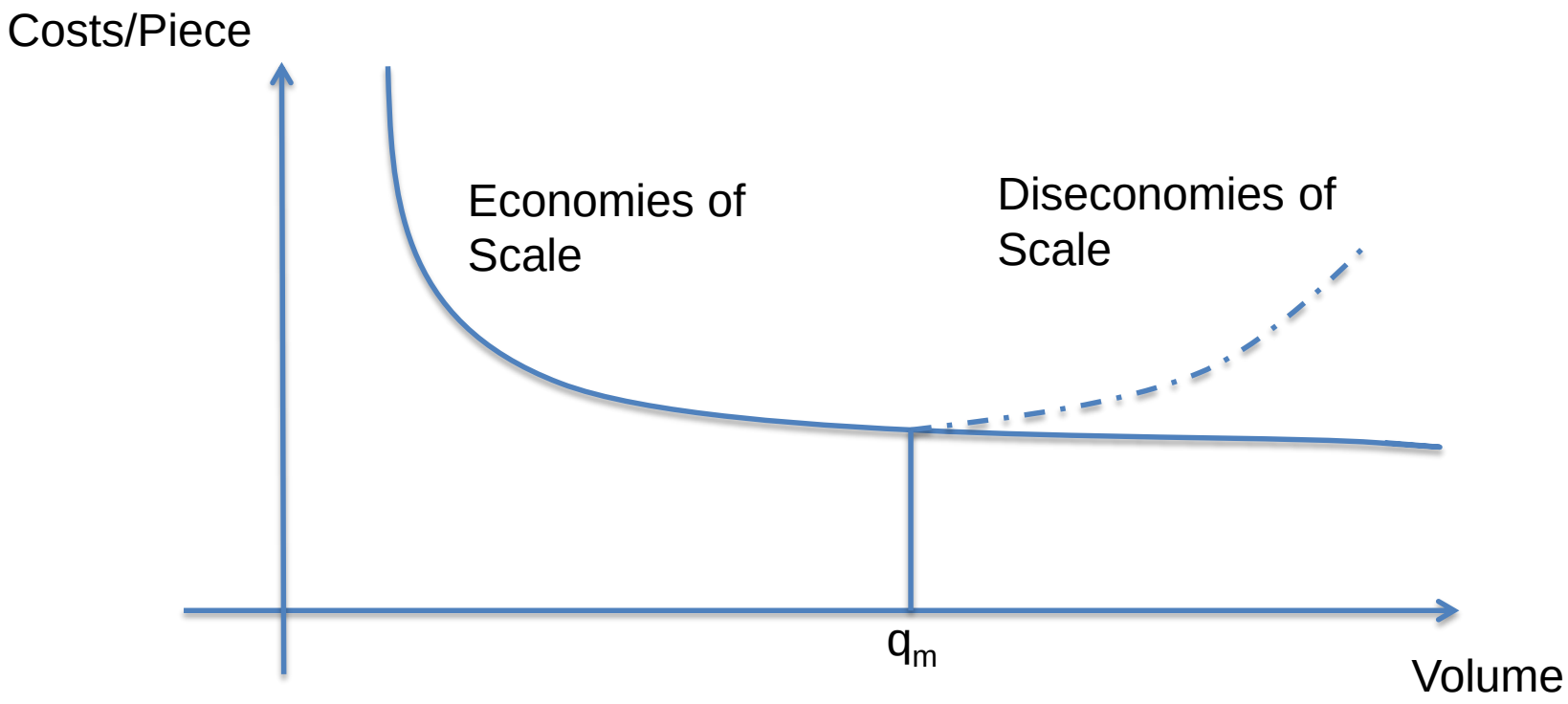
Market (Sales) Potential: Share of the market potential a specific company aims to achieve

Sales Volume: Total sales volume of a specific company

Market Share: percentage of total sales volume in relation to the market volume (sales volume/market volume)



Economies of Scale

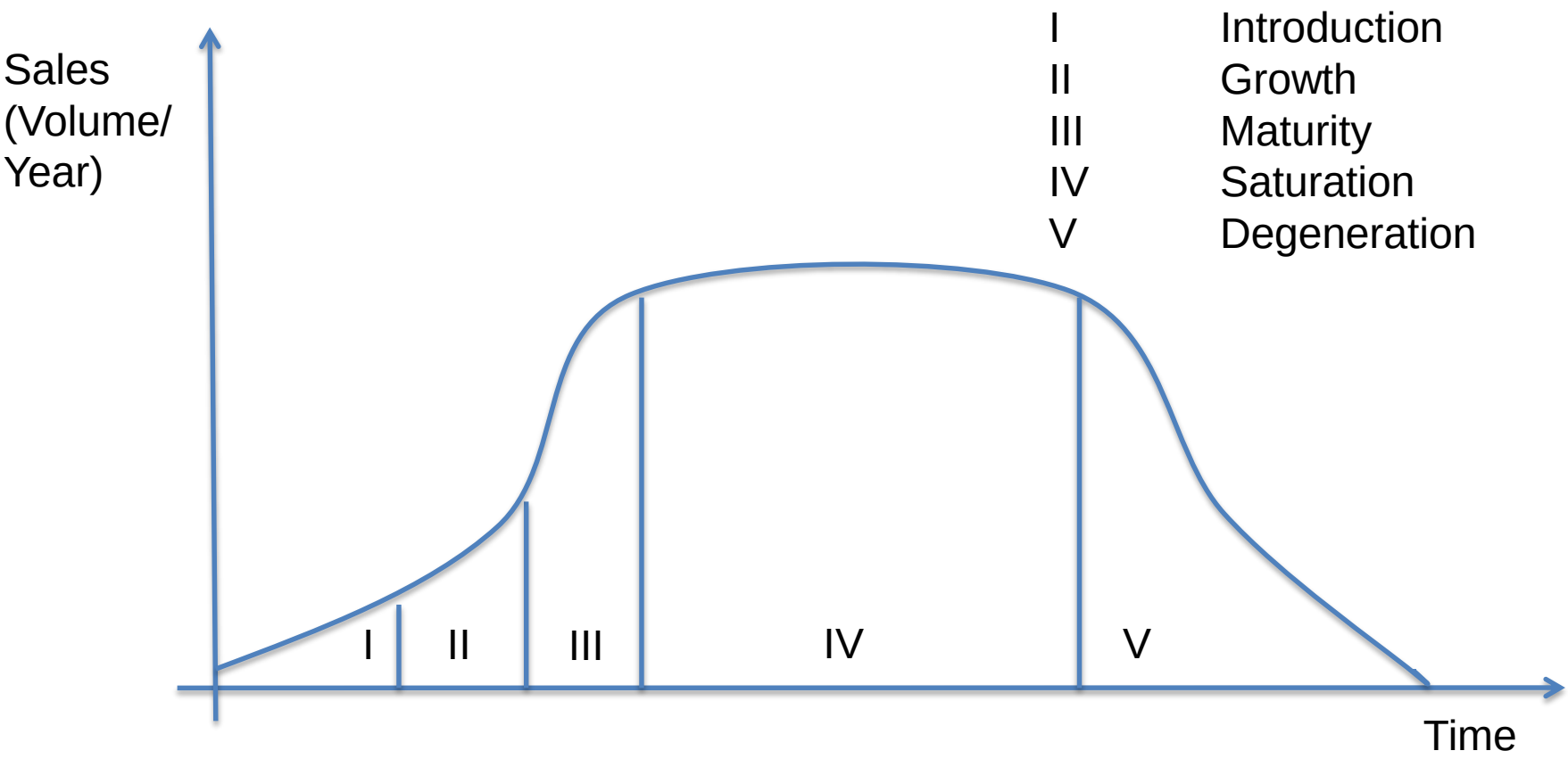


What‘s my market potential?

- Potential of the company
- Potential Sales= potential quantity of sales * price
- Potential yield = potential sales – costs

Important is a realistic forecast!

Product Life Cycle



The Product Planning and Development Process

Product Planning and Development Process

I: IDEA STAGE

- Idea
- Evaluation

II: CONCEPT STAGE

- Laboratory development
- Evaluation

III: PRODUCT DEVELOPMENT STAGE

- Pilot production run
- Evaluation

IV: TEST MARKETING STAGE

- Semicommercial plan trials
- Evaluation

Source: Hisrich et al.

Define Evaluation Criteria for each Stage:

- For Determining the Need for a New Product Idea, for instance:
  - Type of Need (emerging, future, continuing, declining …)
  - Timing of Need (frequency, position in the life cycle …)
  - Competing Ways to Satisfy Need (modifying present way …)
  - Perceived Benefit/Risks (utility to customer, buying motives …)
  - Price versus Performance Features (demand elasticity, …)
  - Market Size and Potential (market growth, trends …)
  - Availability of Customer Funds (customer income…)

- The determination of the market demand is the most important criterion of a new product idea!

Source: Hisrich et al.

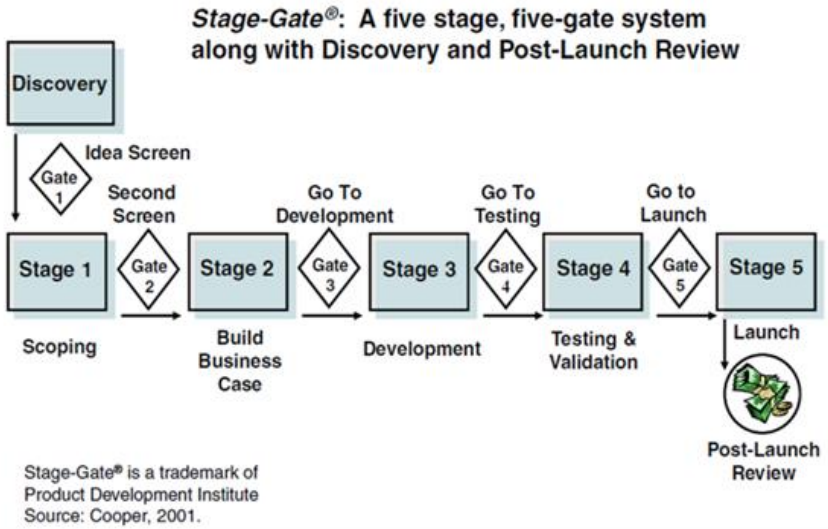
Analysing new product idea and competing products

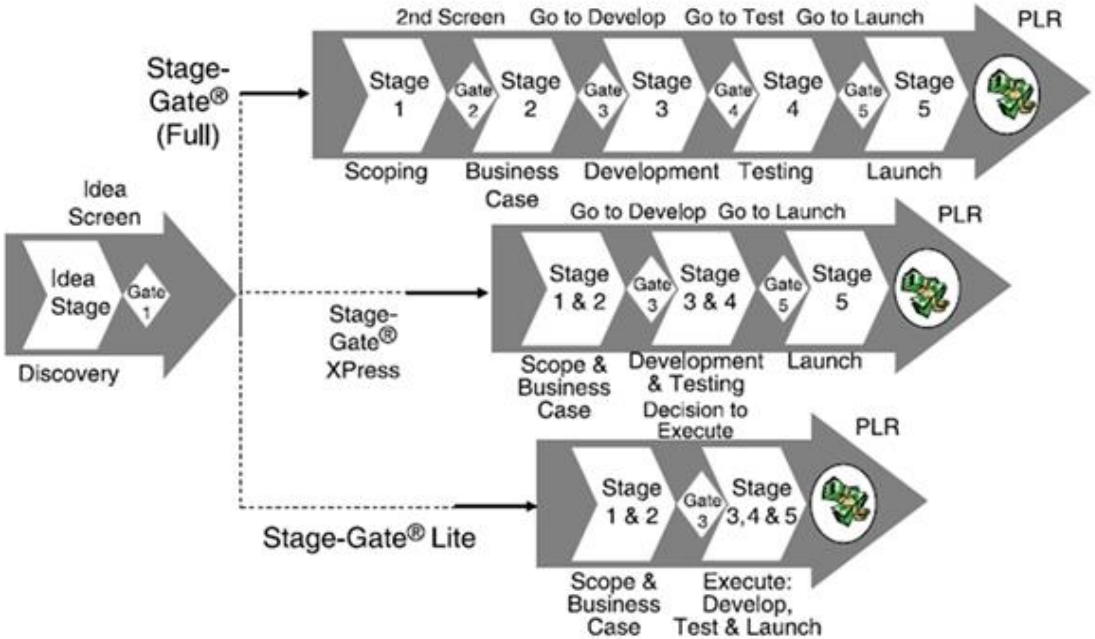
- How does the new product concepts compare with the competitive products in terms of quality and reliability?
- Is the product superior or deficient compared with products/services currently available in the market?
- Is this a good market opportunity for the venture?

	Competitor A	Competitor B	Competitor C
Product strategies			
Pricing strategies			
Distribution strategies			
Strengths & weaknesses			

Source: Hisrich et al.

Stage-Gate Model by Rob Cooper





Major new product projects go through the full five-stage process (top)
Moderate risk projects, including extensions, modification & improvements, use the XPress version (middle)
Sales-force & Marketing requests (very minor changes) use the Lite process (bottom)

Source: Cooper

Opportunity Assessment Plan

Is shorter than a business plan and

- focuses on the opportunity, not the venture
- has no computer-based spreadsheet
- is the base of making the decision to either act on the opportunity or wait for a better one

Opportunity Assessment Plan

Contents:

- Description of the product/service
- Market need for the product
- Competitive products available filling this need and their features
- Companies in the product market space
- Unique Selling Proposition
- Market growth, size and trends (and market research data)
- How does the product idea fit into your background and experience?
- What business skills do you have?
- What business skills are needed?

Source: Hisrich et al.

Information Sources

Industry and Market Information

- Plunkett
- Frost and Sullivan
- Euromonitor
- Gartner Group
- Gale Directory Library
- Trade Associations
- Population Statistics
- Forrester

Competitive Company and Product Information

- Dun&Bradstreet
- Standard & Poor's
- Business Source Complete

Public Sources and Support (AT)

- WKÖ
- FFG
- AWS

Entrepreneurial Strategy

Entrepreneurial strategy

- New entry: Entrepreneurs are offering
  - a new product to an established or new markets
  - an established product to a new market
- Thus, entrepreneurs have to generate a new entry opportunity
- They therefore use a window of opportunity, then the environment is favorable for entrepreneurs to exploit a new product or enter a new market
- Entrepreneurs have to develop a resource bundle that is valuable, rare and inimitable (Resource-based View)

Entry strategy for entrepreneurs: Pioneer strategy aiming to achieve First Mover Advantages (FMA)

- Successfully new entry requires that the entrepreneur‘s firm have an advantage over competitors
- FMA may deliver:
  - Cost Advantage
  - Less Competition
  - Possibilities for building strong networks
  - Better opportunities for customer satisfaction
  - Gain Experience

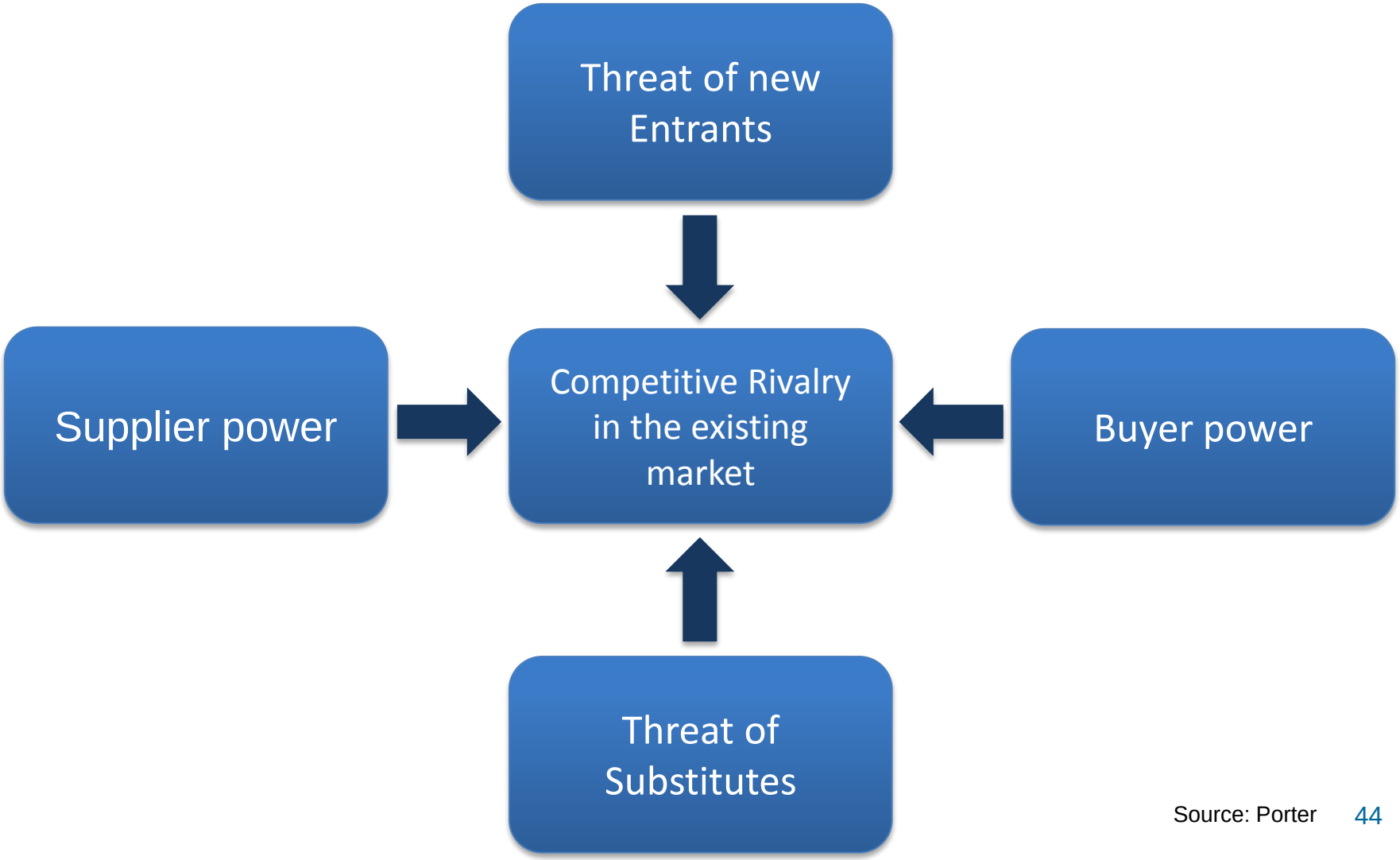
First Mover Disadvantages

- Uncertainty regarding the technology
- Uncertainty regarding demand
- Cost disadvantages
- Short term advantages disappear when competitors enter the market

Imitation strategy

- Involves copying the practices and ideas from other firms, whether those other firms are in the industry being entered or from related industries
- An imitation strategy cannot be rare and inimitable
- Me-too-strategy: copying ideas that already exist and aim to build an advantage through mirror variations

Competitive Analysis: Five Forces Analysis



Source: Porter

Market Characteristics I

- Consumer
  - Innovator Markets
  - Adaptors Market
- Supplier/Capacity
  - Supplier for all branches
  - Supplier specialized
  - Supply shortfalls
- Financing
  - Equity Capital
  - Debt Financing
  - Revenue Financing
  - Capital market
  - Venture Capital
  - Public aids

Market Characteristics II

- Competitive Climate
  - Information sharing
  - Economies of Scope
  - Cut-throat Research Funding
  - Economies of Scale
  - Cost competition
- Product/Components
  - Products and Components from one supplier
  - Seperation of markets for components and products
  - Short Product Life Cycles
  - Long PLC with distinct maturation and relaunch phase
  - MES is important
- Price policy
  - Highly divergent, cost oriented
  - Specific price policy
  - high cross price elasticity

Competitive strategy (Porter)

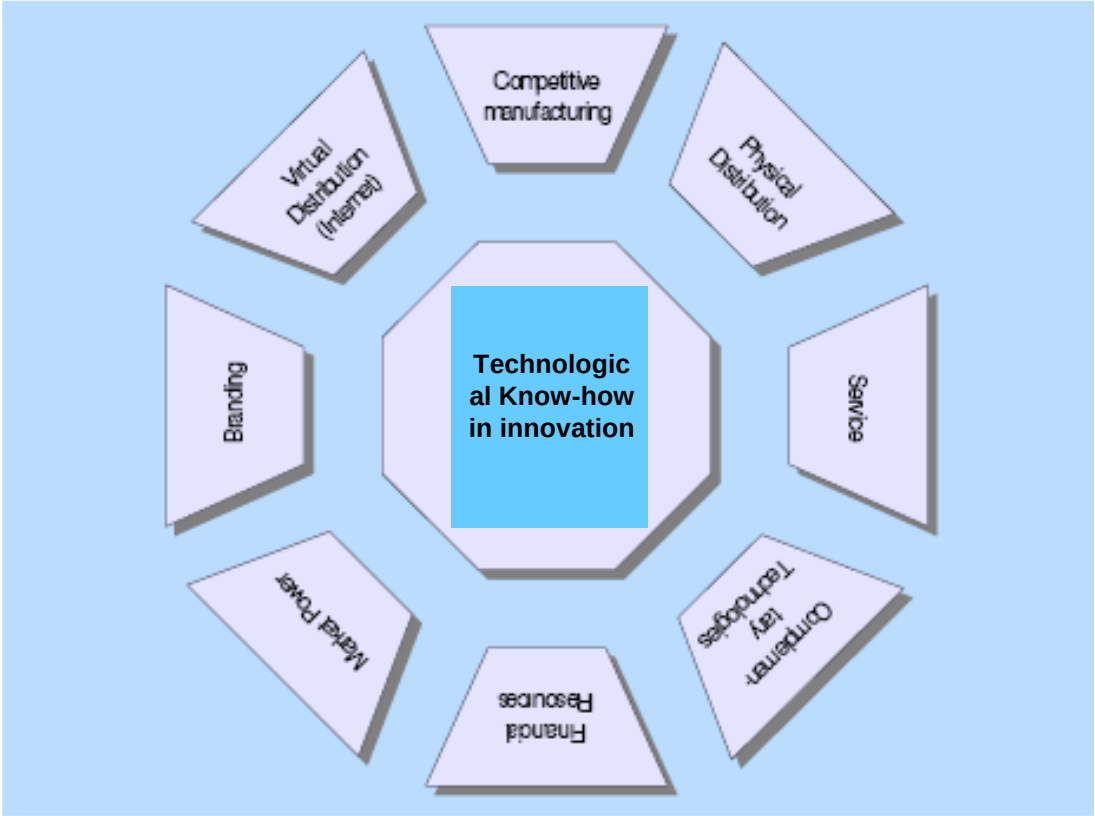
1. Cost leadership strategy

2. Differentiation strategy
   - innovation, brands, quality

3. Focus strategies

- More recent developments: Combination strategies - e.g. value innovation/Blue Ocean strategy (Kim & Mauborgne)

Teece: Complementary assets



Teece: Complementary assets

- Two factors are important, to realise innovation rents:
- Imitability: how easy can the technology be imitated?
- Complementary Assets: competences which are important to develop and introduce a new product on the market, e.g. production, marketing, sales network, service network, supporting technologies

Complementary assets: Who wins?

		Complementary assets	
		Freely available or unimportant	Tightly held and important
Imitability	High	Difficult to tell who wins	Incumbents with complementary assets likely to win
	Low	New entrants likely to win	Incumbents or new entrants with both assets (technology & complementary) wins

Source: Afuah (2003)

Appropriability and patents

- Appropriability: how well can new innovations be protected?
- Mechanisms for appropriability: patents, secrecy, continuous innovation
- Effectiveness of patents depends much on sector and the appropriability regimes: e.g. important for pharma or chemicals with highly codified knowledge and relatively easy reverse engineering
- Further options (Geroski 1995):
  - lead time and learning curve advantages (first to realise opportunities; early-mover advantages, scale economies in complementary assets)
  - secrecy (better suited for process than product innovations)
  - integrated industrial organisation (joint ventures; mergers)
  - embodied technology (“sell products, not ideas”)
  - Control of complementary assets

The business model

- Business Model … how you plan to make money
- Peter Drucker: „assumptions about what the company gets paid for“
- Assumption about the market, customers, their values, technologies and company‘s strengths
- Basic elements (e.g. Gassmann):
  1. Customer
  2. Value Proposition
  3. Value Chain
  4. Profit Mechanism

The Business Model Canvas

Designed for:

Designed by:

On:

Iteration:

Key Partners

Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

Key Activities

What Key Activities do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue streams?

Key Resources

What Key Resources do our Value Propositions require?
Our Distribution Channels? Customer Relationships?
Revenue Streams?

Value Propositions

What value do we deliver to the customer?
Which one of our customer's problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?

Customer Relationships

What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
Which ones have we established?
How are they integrated with the rest of our business model?
How costly are they?

Channels

Through which Channels do our Customer Segments want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How are we integrating them with customer routines?

1. Awareness
2. Evaluation
3. Purchase
4. Delivery
5. After-sales

Customer Segments

For whom are we creating value?
Who are our most important customers?

Mass Market
Niche Market
Segmented
Diversified
Multi-sided Platform

Cost Structure

What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?

Cost Driven (focus on cost structure, low price value proposition, maximum automation, extensive outsourcing)
Value Driven (focus on value creation, premium value proposition)

Fixed Costs (salaries, rents, utilities)
Variable costs
Economies of scale
Economies of scope

Revenue Streams

For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

Asset sale
Usage fee
Subscription Fees
Lending/Renting/Leasing
Licensing
Brokerage fees
Advertising

Fixed Price
List Price
Product Dimension dependent
Customer segment dependent
Volume dependent

Negotiation (bargaining)
Yield Management
Real-time Market

www.businessmodelgeneration.com

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Selected Business Models

Add-on	Additional charging for extras, basis product plus add-ons	Ryan Air, SAP, Dell
Fractionalized Ownership	Shared use, shared ownership, sell partial use of something	Time Sharing, HomeBuy, NetJets
Guaranteed Availability	Customers buys availability (e.g. tool availability), often in combination with pay per use	Hilti, OTIS, Schindler
Freemium	Choose between a free basis and paid premium service	LinkedIn, Sykpe, Dropbox, gmx
Hidden Revenue	Seek alternative sources, e.g. by advertising	Facebook, Twitter, Slideshare, Metro newspapers
Open Source	A community creates a free solution, indirect returns are generated by products and services that build on a OS solution	Linux, Wikipedia, mondoBIOTECH, Human Genom Project, OSCAR
Pay per Use	Specific usage of a service or product by the customer is metered and charged; Pay per click (in internet)	Rolls Royce, Car2Go
Razor and Blade	The basic product is offered at a bargain price below cost or even for free, additional products needed are priced higher.	Gillette, Nespresso, Standard Oil
Rent instead of Buy	Pay for the temporary right to use, e.g. Rent per minute	Car2go, avis
Revenue Sharing	Individuals or forms work together and share resulting revenues, someone operates a platform	App downloads, Apple app store

Source: Gassmann

Legal protection of ideas

See Unit „Patents“

The Team

What skills do I need?

Hard Skills

- Knowledge of the market
- Project Management
- Business Planning

Soft Skills

- Problem Solving
- Motivation
- Creativity and Openness to new ideas

Founding alone vs team

Alone

+ Freedom of scope
+ Lower costs (only one wage for the founder)
+ no risk of interpersonal conflicts

- whole responsibility
- limited financial possibilities
- only liability
- no compensatory in case of a drop out
- less opportunities for division of labor

Founding alone vs team

Team

+ shared responsibility
+ Division of work
+ Substitution in case of drop out
+ Advanced financing options
+ shared liabilities
+ higher performance possible

- limited freedom of scope
- risk of interpersonal conflicts
- higher costs (more wages for founders)

Entrepreneurial Partnering

- for administration
- for manufacturing
- for marketing and distribution
- for internationalisation

by means of

- Contracts
- Franchising
- Joint Ventures
- Licensing