



Disruptive Innovation Platform Business Models

February 2024

Dejan Juric

Course topics

Innovation in Existing Organizations: This module explores tactics how to ensure (potentially disruptive) innovation can happen within existing organizations and how to practically execute such

Platform Business Models: This module covers new platform-based business models and their disruptive potential.

Platform Business Models

Course overview: Platform Business Models

Course Title: Disruptive Innovation: Platform Business Models

Course Description:

This course will explore the key concepts and strategies behind platform business models. The course will cover topics such as network effects, platform economics, platform design, and strategies for emerging platforms. Participants will learn the fundamentals on how to design and implement successful platform business models, and will analyze case studies of successful platform businesses.

Course Objectives:

- To understand the key concepts and principles of platform business models
- To learn how to design and implement successful platform business models
- To analyze case studies of successful platform businesses and learn from their strategies and best practices

Platform Business Models - Agenda

- 1. Introduction to Platform Business Models**
- 2. Platform Disruption**
- 3. Platform Architecture**
- 4. Platform Openness**
- 5. Igniting platforms**
- 6. Case study / Group work**

Resources

- Strategic Decisions for Multisided Platforms
<https://sloanreview.mit.edu/article/strategic-decisions-for-multisided-platforms/>
- How Amazon turned small businesses into “day traders”
<https://www.semafor.com/article/01/25/2023/how-amazon-turned-small-businesses-into-day-traders>
- Shopify and the Power of Platforms <https://stratechery.com/2019/shopify-and-the-power-of-platforms/>
- Shopify Universal Search
<https://searchengineland.com/shopify-is-testing-a-new-universal-search-feature-389739>

Books

- Platform Revolution - Parker, Van Alstyne, Choudary

1 Introduction to Platform Business Models

Platform Business Models

What are platform-based business models?

- Platforms have become an integral part of our (digital) life and have changed various aspects:
 - How we live, consume
 - How we make money
 - How we interact with each other
- Examples:
 - News consumption: Reddit, Youtube, Twitter,
 - Social interactions: Facebook, Whatsapp, Instagram, but also Tinder or OKCupid
 - Entertainment: Youtube, Tiktok
 - Shopping: Amazon, eBay
 - Transportation: UBER
 - Travel: AirBnB
 - Food: JustEat/Lieferando

Platform Business Models are disrupting many industries

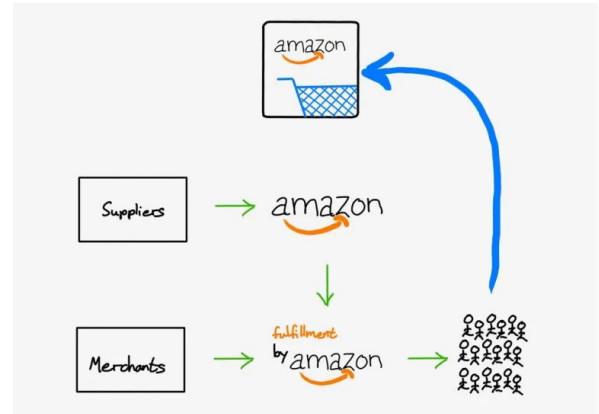
- **Commerce:** Amazon has significantly changed how merchants are selling their products and which role they play
- **Transportation:** In many locations, UBER has become so big that it was able to replace traditional taxi businesses
- **Travel:** AirBnB has become a major, if not the largest, accommodation provider

How do platforms change the structure of the business landscape?

- 1. They tap into or create new sources of supply**
 - a. Creating supply from actors, who were previously only sources of demand (e.g., Youtube with creators, UBER with drivers)
 - b. By de-linking ownership from the assets: sharing assets with others, when they would be idle otherwise
- 2. They enable re-intermediation**
 - a. While digital advances have led to dis-intermediation of inefficient actors, platforms are re-introducing more a potentially more efficient intermediation providing additional benefits. E.g., automated tooling, social feedbacks and reputational information (like on AirBnB)
- 3. Market aggregation**
 - a. Centralization of previously dispersed market participants
 - i. Sellers receive a potentially much larger customer base access
 - ii. Customers can choose from a significantly larger pool of products

Amazon: Turning small businesses into “day traders”

- Amazon, when it operates as marketplace with third-party (3P) sellers, does not only offer the access to the marketplace these merchants, but also shipping, logistics, in some cases even financing
- Amazon's impact on merchants is so big, that they adapt to Amazon's needs and basically design their business around Amazon
- Most businesses focus solely on Amazon and are laser-focused on improving their positioning in product search
- As a consequence, while one would assume, these are businesses that just expanded to distribute their products also on Amazon, it appears that a large majority basically only exists because of Amazon
- But they also can only exist with Amazon as platform and are in a rather big dependency



How Amazon turned small businesses into day traders

<https://www.semafor.com/article/01/25/2023/how-amazon-turned-small-businesses-into-day-traders>

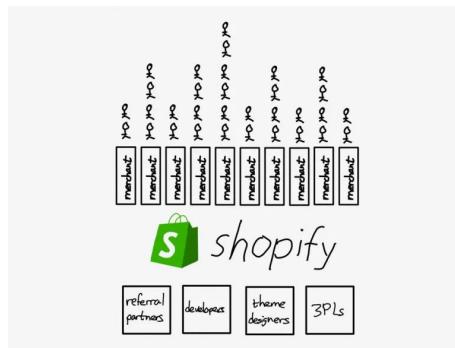
Amazon's Trickle-Down Monopoly

<https://datasociety.net/library/amazons-trickle-down-monopoly/>

https://datasociety.net/wp-content/uploads/2023/01/Weigel_Trickle-Down-Monopoly_01252023.pdf

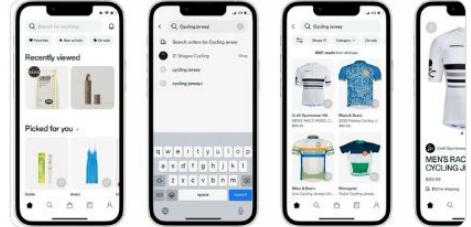
Example: Shopify

- Actually did not start / act like a platform
- Starting to integrate more of their value chain, including providing 3rd-party logistics services
- In their newest updates suggesting, they might start to act like a platform towards consumers with their universal search functionality



Glenn Gabe
@glenngabe · Follow 

A slippery slope for Shopify... It's in limiting testing now. How will it rank e-commerce retailers? And opens the doors to ads from merchants. Will be interesting to follow -> Shopify now allows customers to search for items across all Shopify merchants marketplacepulse.com/articles/shopi...



2:44 PM · Nov 21, 2022 

[Read the full conversation on Twitter](#)

24 Reply Copy link [Read 6 replies](#)

<https://stratechery.com/2019/shopify-and-the-power-of-platforms/>
<https://searchengineland.com/shopify-is-testing-a-new-universal-search-feature-389739>

What do all these platform-based businesses have in common?

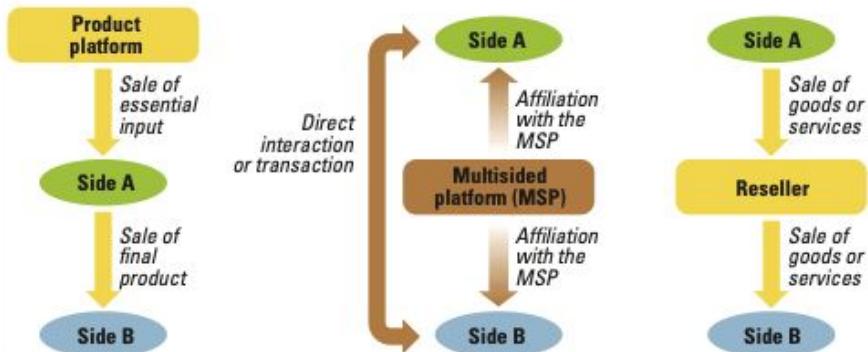
They don't own or produce any of the assets they are offering:

- UBER does not own a single car
- Flixbus does not own any busses
- Facebook does not create original content
- AirBnB does not own any room or house
- Shopify does not own any products
- Lieferando does not own any restaurants
- ...

What is a platform-based business model?

Multi-sided platforms:

1. Each group of participants (“side”) is a customer of the multi-sided platform in some meaningful way
2. The multi-sided platform enables a direct interaction between the sides



- **Product platforms:** Side B is not affiliated with the platform
- **Reseller:** Side B has no direct interaction with Side A

-> Important feature of multi-sided platforms: **indirect network effects**

What are network effects?

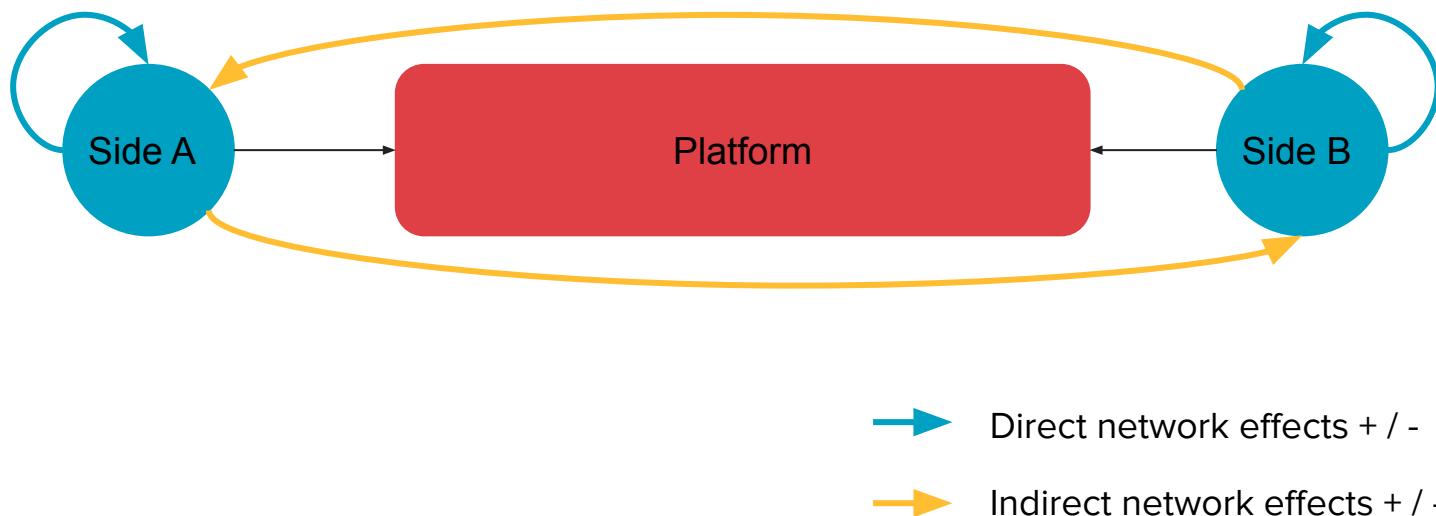
Direct network effects:

- Participants on one side of the network have an impact on the **same side** of the network
- Example: More Facebook users lead to positive effects on other Facebook users

Indirect network effects:

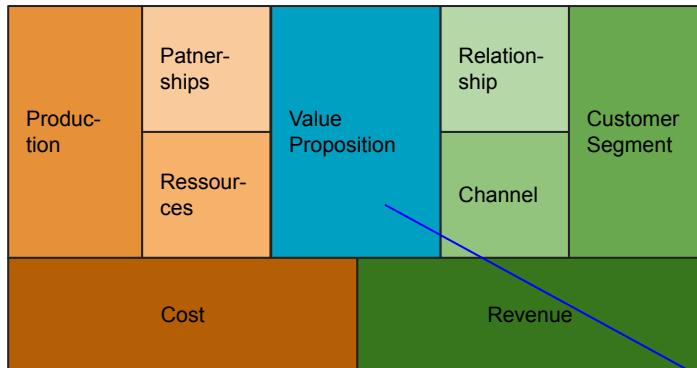
- Participants on one side of the network have an impact on the **other side** of the network
- Example: Having more UBER drivers has a positive effect on the passengers

Network effects can occur on the same or between different sides and can have positive or negative effects

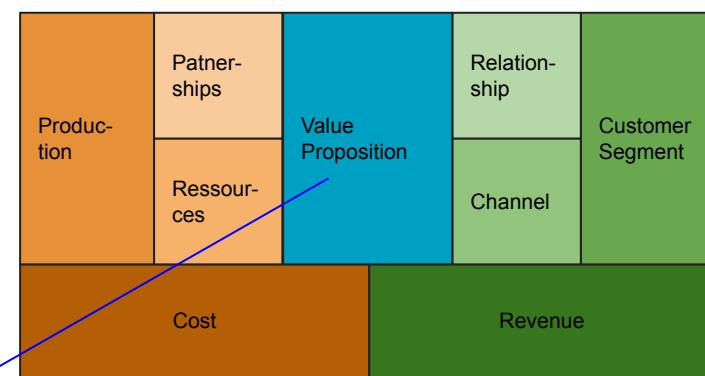


Platform business models are more complex than single side models

Business Model for demand



Business Model for supply



One main factor of the platform's value proposition for one side is the increase in number and quality of participants on the other side



This leads to a chicken-egg problem that is hard to overcome



The go-to-market strategy is one of the most crucial factors for the successful implementation of a platform.

Indirect network effect: main driver for success of multi-sided platforms

- Inherent chicken and egg problem: How do you convince one side to join without the other?
- If cracked, this effect is a great barrier to entry for competitors and can help reaching a dominant market position

Examples:

- Would you join a social network without users?
- Buying on an e-commerce platform without merchants selling anything?
- Renting apartments on a platform without any apartments?

2 Platform Disruption

Platform Business Models

How do platforms create value?

- Platforms act merely as intermediaries
- But they do create economic value to the individual participants
- Value creation occurs by:
 - Reducing search costs
 - Reducing transaction costs
- Search costs:
 - Are incurred before the different sides interact
 - One-sided search cost reduction: the platform helps one side to gain access to the other side
 - Two-sided search cost reduction: typically means the reduction in information asymmetry between both sides
- Transaction costs: are incurred during the specific transaction (after any search has occurred)
 - Example: Payment platforms

UBER - disrupting the taxi industry

- UBER: simply providing an online location where riders and drivers can come together
- No cars, no employees, but a very ambitious vision: “You can have everything within 5 minutes”
- Financed with huge amounts of venture capital, which allowed them to
 - grow very quickly
 - undercut existing transportation providers on price
- Consequence: Putting vast amounts of taxi driver and companies out of business
 - Or the drivers embracing UBER as well, because they don’t have any alternative

Digital disruption

“Software is eating the world” -
Marc Andreessen, 2011

Phase 1: Efficient pipelines eat inefficient pipelines

- Software and digital innovation revamping traditional businesses by creating highly efficient online system for distributing goods and services
- Traditional media companies were the first to suffer from it, and had to embrace the new technologies
- Retail was also heavily disrupted by online services like Amazon (initially with Books)

Phase 2: Platforms eat pipelines

- Next step of disruption
- First the platforms started to disrupt established industries
- In the meantime we can observe, how many businesses try to establish platform components themselves

Platform disruption

- With platforms, the Internet is not only distribution channel, but acts as a creation infrastructure and coordination mechanism
- Platforms can leverage external ecosystems to create value in new ways and enjoy two significant economic advantages over traditional businesses:
 - **Superior marginal economics of production and distribution:** Adding a room at AirBnB costs almost nothing, adding a room at Hilton requires significant investments
 - **Ability to rapidly scale thanks to network effects:** With positive network effects, higher production leads to higher consumption, and vice versa

Firms that continue to compete on the basis of resource that are owned by internally are finding it increasingly difficult to compete with the platforms

Platform disruption: impact on value creation, value consumption and quality control

Just through the advantages of platforms, they are able to outgrow traditional businesses and would lead to disruption. However, they have a more profound impact: they are disrupting businesses in many other ways!

- **Reconfiguring value creation to tap new sources of supply**
 - Example: Wikipedia removed existing hurdles and provided the tools to let every volunteer contribute with their knowledge
- **Reconfiguring value consumption by enabling new forms of consumer behavior**
 - Consumers can suddenly use products and services in unimaginable ways
 - Examples: we sit into a stranger's car, rent out our spare bedroom for tourists, offer our car when it's not in use
- **Reconfiguring quality control through community-driven curation**
 - New platforms initially struggle with quality and reliability compared to traditional competitors
 - Strong curation is then needed, to ensure the content, goods and services are of high quality
 - Over time, the platforms build up their capabilities and through that gain reliability and sufficient quality to compete with traditional competitors

Structural impact of platform disruption

Platform businesses are also structurally transforming the business landscape in three specific ways:

- **De-linking assets from value:**
 - By delinking ownership from the value, the asset can be employed more efficiently
 - Example: MRI machines, owned by a hospital, but only used e.g., 40% of the time, can be time-shared with others to increase the utilization
- **Re-intermediation:**
 - Initial hypothesis: digitalization will lead to disintermediation
 - Observation from platforms: they re-intermediated markets acting as new intermediaries providing better, often automated tools and systems for offering goods and services to participants on the platform
- **Market aggregation:**
 - Some markets have been unorganized and inefficient
 - Aggregating participants in a central standardized way creates huge efficiencies and unlocks value towards platform participants, that had to locally deal with the inefficiencies
 - Example: Alibaba providing global access to a plethora of producers

Platform Disruption - Summary

- Platform outcome pipeline businesses because of superior marginal economics and the positive value produced by positive network effects. That's why they are able to grow faster and take up leading positions in their industries.
- Platforms are also disrupting businesses in other ways: They are reconfiguring value creation by tapping new sources of supply, ad reconfiguring consumption by enabling new consumer behaviour.
- Structural changes in many industries can already be observed induced by re-intermediation, separation of ownership and control, and market aggregation.

3 Platform Architecture

Platform Business Models

Platform architecture

- As we have seen, platforms either decrease search costs or transaction costs
- However, building an effective platform depends on a variety of factors and is no easy feat
- Let's look at elements required for an effective platforms design

Interactions on platforms

- Platforms connect agents of at least two sides for the exchange of three things:
 - a. Information
 - b. Goods or services
 - c. Some form of currency

Agents on platforms exchange the following

Exchange of information:

- Every platform interaction starts with the exchange of information.
- This information enables the parties to decide whether, and how, to engage in any further exchange.
- This exchange takes place through the platform itself

Exchange of goods or services:

- As a result of the information exchange, the participants can decide to exchange goods or services.
- This can occur on the platform (e.g., photos on Instagram), or also completely outside of the platform.
- Each item exchanged among platform users is referred to as **value unit**

Exchange of currency

- When exchanging goods or services, they are paid for using some form of currency
- There are various types of currency: money, attention, fame, influence, reputation, and other
- Exchange of currency can take place on the platform, even when the goods or services are exchanged outside (e.g., UBER or AirBnB)

Goal of a platform: facilitate the core interaction

- Connect agents of several sides and enable them to engage in the three forms of exchange
- The platform provides the infrastructure and the tools to facilitate these exchanges
- Normally, the platform is built around a **core interaction**. And the design of a platform should start with the design of this core interaction

Core interaction:

- A core interaction is the single most important form of activity that takes place on a platform
- It involves three key components:
 - The participants
 - The value unit
 - The filter
- **The fundamental purpose of the platform is to facilitate that core interaction**

Participants + Value Unit + Filter -> Core Interaction

Participants

- Producers: creating value
- Consumers: consuming value
- Same user may play a different role in different interactions (e.g., be a host and a guest on AirBNB)
- Different users can play the same role (e.g., individuals and media companies can publish on Youtube)

Value Unit

- Item exchange between platform users
- Have a crucial role in the workings of a platform
- In most cases, platform don't create value units
- Examples: listing on AirBnB or eBay, video on Youtube, tweet on Twitter

Filter

- Algorithm used by the platform to choose which value unit to deliver to which participant
- Allows differentiation between high- and low-quality units
- Well-designed filter ensures that only relevant and valuable value units are received by users
- Example: a search query, Instagram/Tiktok feed, youtube video recommendation

How to design platforms? How to ensure core interactions occur in significant numbers?

Three key functions must be done by platforms to encourage high volume of valuable core interactions

- **Pull:** The platform must pull the producers and consumers to the platform, which enables interactions among them
- **Facilitate:** It must facilitate their interactions by providing them with tools and rules to connect and encourage valuable exchange
- **Match:** It must match producers and consumers effectively by using information about each to connect them in ways they will find mutually rewarding

All three functions must be performed well if the platform is to succeed.

Pull: bringing in consumers

Challenge #1: Create attention to bring the customers to the platform

- Need to overcome the chicken-and-egg problem
- User will only join, if the platforms provides value, but a platform won't have value unless it has users
- Most platforms never come beyond this point

Challenge #2: Keeping the interest of users who visit or sign up for the platform

- Reason: value of a platform originates from active users and not from the size of the user base per se
- Facebook found, that the users only found it useful after connecting with a minimum number of users
- Feedback loop can be used to encourage users to keep coming back, by analyzing their interest and showing them the most valuable value units
 - Example: Amazon's recommendation system ("customers also bought ...")
- Multi-user feedback loop: delivers activity from a producer to relevant consumers, whose activity is fed back to the producer
 - Example: Facebook's news feed - status update followed by feedback via likes and comments

Facilitate: provide tools and rules to foster value creation and exchange

- Platforms don't control value creation; they build and provide the infrastructure to facilitate value creation and exchange
- Make it as easy as possible to create valuable goods and services
- Reducing barriers to usage
- Examples:
 - Instagram allows you to put filters on pictures, no need for external software
 - Apple and Google provide extensive developer tools through their respective programs to encourage and assist developers in the creation of apps

Match: bring together the right, i.e., most relevant users to each other

- Successful platform create efficiencies by matching the right users with one another
- This allows the participants to exchange the most relevant goods or services
- It is accomplished by using date about:
 - Producers
 - Consumers
 - The value units created
 - The goods and services to be exchanged
- The more data the platform has, better algorithms can be employed, which can lead to better filters, which in turn lead to more rewarding matches between producers and consumers
- Platforms need an explicit data acquisition strategy, even going so far as to actually acquire data
- Examples: logging in with Facebook

4 Platform Openness

External Developers

Platform Business Models

Openness - developer participation

While platforms start with a core interaction, over time they typically expand to include other kinds of interactions which create additional value, oftentimes created by external developers.

Platforms have typically three types of developers:

- Core developers: they develop the core platform and are typically employed by the platform
- Extension developers: add features and value to the platform and enhance its functionality
 - Examples: App developers for iOS, but also professional providers of auxiliary services like photographs for AirBnB
- Data aggregators: they enhance the matching function of the platform by adding data from multiple sources
 - E.g., when you post on Facebook that you are travelling to New York, they might collect that data and provide it to an advertising agency, who will know what kind of advertising to show

Excursion: What is an API?

Application Programming Interface (API): A standardized way to interact with a computer program

- Old programming concept, which has gained public recognition with Internet-based models
- Allows programs to access or other programs and interact with them

There are complete businesses built around APIs:

- Example: Stripe offers simple, API-based payment service integration

Platforms can allow external developers to extend the functionality via APIs

Shopify App Store

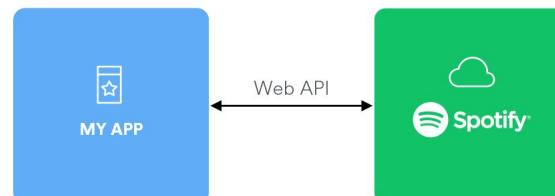
The screenshot shows the Shopify App Store interface. At the top, there's a search bar with placeholder text "Search apps, guides, and more". Below it, a section titled "Popular with merchants in Germany" displays five app cards:

- Post & DHL Shipping (official)**: 4.5 ★ (134) • Free to install. Excellence. Simply delivered.
- Order Printer Pro: Invoice App**: 4.9 ★ (802) • Free plan available. Print and auto-deliver invoices, packing slips, quotes & more.
- Trust Badges Bear**: 4.9 ★ (1,199) • Free. Ultimate Trust Badges: Highlight secure checkout & payments.
- Judge.me AliExpress Reviews**: 4.9 ★ (475) • Free. Import reviews from AliExpress for your dropshipping products.
- Spocket - US & EU Dropshipping**: 4.7 ★ (3,616) • Free plan available. Premium Dropshipping apps. AliExpress, Alibaba, Clothing, Fashion.

WeChat (Weixin) apps



Spotify APIs



Twitter API

The screenshot shows the Twitter Developer Platform. At the top, there's a header with the Twitter logo and "Developer Platform". Below it, a black navigation bar contains the text "Documentation". The main content area is titled "Twitter API v2". To the right, there's a sidebar with the text "New and more detailed data objects". The background of the main content area shows a blurred screenshot of a code editor displaying JSON-like API response data.

What to open and what to own?

Main question: What is the amount of value created by an app?

- If the app has the potential to become a platform on its own.

Scenario 1: App has the potential to become a powerful platform on its own

- Buy the app
- Or seek to replace it with an app you control

Scenario 2: If many extension developers reinvent the same functionality

- If there is widespread acceptance by platform users, seek to acquire the functionality and make it available as API

5 Igniting Platforms

Platform Business Models

Launching a new platform is hard, because it typically faces the chicken and egg problem

- In traditional businesses, push strategies are typically employed (and oftentimes sufficient) to ignite the business
 - Push strategies: conventional marketing methods such as advertising and public relations
- Successful platforms however typically employ pull strategies, which are designed to encourage virality and are more important to platforms

How Paypal started



- Founded by Peter Thiel and Max Levchin, they created a service to accept payment via email and built a company around it
- They realized that they had to grow extremely fast, and that they had to overcome the challenge of serving a two-sided market (chicken-and-egg problem)
- Especially for payment, the indirect network effects are very important and the chicken-and-egg problem is particularly acute and obvious: without sellers accepting it, no buyers will adopt it; and without buyers using it, no seller will invest to accept it
- PayPal's approach: new customers got \$10 for signing up, and the existing ones got \$10 for referrals
 - Growth went exponential, acquiring a new customer cost them \$20
 - They reached 7% to 10% daily growth and up to 100 million users
- Another realization: they needed *user commitment*, instead of only *user acquisition*, so they designed the incentives such that users would immediately use their service and participate in the platform
 - User experienced the positive value at least once when they signed up

External network strategy using eBay

- Paypal realized, that its service was gaining popularity on eBay as a payment tool (2000)
- Paypal focused the marketing efforts towards enabling payment on eBay with many different techniques
 - One of them: they employed an automated software tool (a bot) to buy goods on eBay and then insist on paying for these transactions with Paypal, thereby artificially increasing demand for Paypal as payment options
 - Sellers realized the demand is there and signed up for the PayPal service and put up PayPal icons in their profiles to indicate this payment option
 - Within 3 months their user base went from 100'000 to 1 million
- eBay tried to counter PayPal's success by building up their own competing payment method (Billpoint) and aggressively pushing it to all sellers on eBay
- Through the already ignited network effects PayPal continued its growth trajectory
- In 2002 eBay gave up on Billpoint and acquired PayPal for \$1.4 billion in stock

Igniting the TWINT mobile payment system in Switzerland

- **Start as P2P system:** It was intentionally designed as a peer-to-peer payment system between private individuals, to focus only on direct network effects and not deal with the merchant side from the start
 - Allowed us to attract two major banks UBS and Zürcher Kantonalbank as first mobile payment issuers
- **1st merchant segment: Simple shops or vending machines without card acceptance, replacing cash**
 - Farmer shops (quite widespread in Switzerland) until then only accepted cash, and oftentimes were self-service
 - Vending machines had no card acceptance, and we implemented a simple SMS-based solution
- **2nd segment: digital channels in mobile apps**
 - Entering credit card information back then was very cumbersome. We attracted first apps to incorporate our payment solution

TWINT: Push to the broad merchant base

- **3rd segment: leveraging the position as leading payment acquirer in Switzerland**
 - Online acceptance: Some traction with early adopters (mostly key account)
 - Broad rollout with opt-in campaign for existing credit card acquiring customers; merchants had to check a box to enable TWINT as payment option
 -
 -
- **4th segment: enabling TWINT at stationary points of sales on the payment terminal**
 - Opt-out campaign to all merchants already having a card acquiring contract
 - QR code for TWINT payments was automatically enabled after 30 days

We managed to employ something like a external network strategy by piggybacking on our company's already existing network

TWINT takeaway: igniting the network effects

Step 1: Focus on positive direct network effects

- Send money to your friend when having lunch
- Pay for the Swiss eBay equivalent using TWINT
- Request payment from someone who owes you money

-> No need for (large) merchant base to already provide value

Step 2: Extend with indirect network effects

- Leverage existing merchant acquiring network to push out payment solution
- Instant acceptance of payment solution with a large merchant base
- Quickly gained traction because of significantly simpler usage

-> Leveraging existing networks to piggyback and quickly build up the merchant side

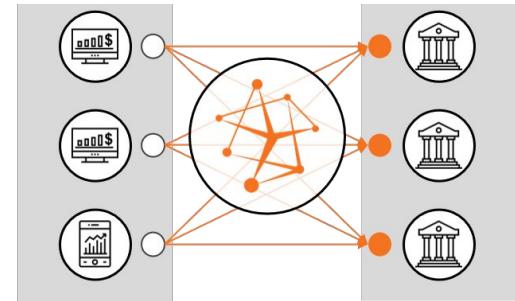
b.Link - igniting the multi-sided platform with banks and software providers

Step 1: Get banks interested

- Status quo: huge overhead for each banking connection (bilateral agreements), no standardization, risk of regulation
- Appeal of new platform: access to all platforms, direct network effects (multibanking?)

Step 2: Get third-party software providers interested

- Status quo: unbearable to work together with restrictive and non-standardized banks, no API sense from banks
- Appeal: Gain access to all banks at once, standardized interfaces



b.Link - the setup of this B2B platform with large companies as participants

The start: pre-project involving all parties, to design and evaluate the platform

- Simple first use cases: account information access and payment initiation
- All parties actively involved:
 - Banks: weekly 2 to 4 hour workshop covering all aspects relevant for the platform
 - Third-party software providers: monthly fixed workshops, ad-hoc involvement
- Goal: step-wise normalization of standardized bank access
 - Initially, banks wanted to just have their own interfaces reused
 - Afterwards: agreement on standardized API specification across all banks
- Side-remark: there was no budget

The implementation:

- “Letter of intent” from all participating banks
- Getting the budget then was no problem

Strategies for platforms for beating the chicken-and-egg dilemma (1/3)

1. **Follow-the-rabbit strategy:** Use a non-platform approach to users and producers and, once you have a large user base, open up your platform to producers themselves, instead of being the intermediary
 - a. Amazon started as a successful online retailer. Later, with a thriving consumer base, they converted themselves to a platform allowing producers to join
2. **The external network strategy (or piggyback strategy):** connect with an existing external user base from a different platform to spread the platform's value units to attract the users to the platform
 - a. PayPal with eBay, TWINT with the card acquiring merchant base, AirBnB on Craigslist
3. **The seeding strategy:** Create value to one set of potential users. Once these are attracted to the platform, other sets of users who want to engage with them will follow.
 - a. Android offered \$5m in prizes for the first app developers to build Android apps
 - b. Dating services simulate traction by creating fake profiles and conversations
 - c. The founders of Reddit would post links to content they found interesting themselves
 - d. On Quora the founders asked questions and also gave the answers

Strategies for platforms for beating the chicken-and-egg dilemma (2/3)

4. **The marquee strategy:** provide special incentives to attract key members onto your platform
 - a. If you are a producer of a game console, you will want to have e.g., Electronic Arts (EA) to provide games for your platform. So you give them special incentives to join.
 - b. In 2009 Swiss post was promoting their digital mail-delivery service. To entice households in very rural areas to adopt it, they gave them free iPads to try out the service, thereby eliminating the need for physical delivery
5. **The single-side strategy:** Create a business around products or services that benefit a single set of users. Then later convert the business into a platform by attracting a second set of users
 - a. OpenTable: started as a pure booking management system for restaurants; no guest were needed. With a large pool of restaurants they opened themselves up for consumers
6. **The producer evangelism strategy:** Design the platform to attract producers, who will convince their customers to become users of the platform
 - a. Crowdfunding platforms (like Kickstarter) target creators with the tools to bring consumers to the platform

Strategies for platforms for beating the chicken-and-egg dilemma (3/3)

7. **The big-bang adoption strategy:** Use a more traditional push approach to attract a high volume of interest to your platform
 - a. Tinder in 2012 achieved initial success during frat parties, where all guests had to install the app when entering the party. The instantly reached critical mass in a small contained location during the live party
 - b. Twitter invested \$11'000 in 2007 to appear on a giant screen at SXSW interactive film festival and ignited users to live tweet, which would then appear on the screen.
8. **The micromarket strategy:** Start in a tiny market which already contains members who are engaging with each other
 - a. Facebook started by targeting individual universities as micromarkets, starting with Harvard. It built up a user base on every campus they expanded to.

Viral growth

- Viral growth is a pull-based mechanism based on encouraging users to spread the word about the platform to other potential users. It's one of the most powerful growth mechanisms
- It can complement any of the launch strategies seen so far and accelerate the speed of a platform's expansion

What is necessary start the process of viral growth for platforms?

- The sender: will share self-created value units to get social feedback for fun, fame, fulfillment, ...
- The value unit: it must be a spreadable value unit, like a Tiktok video discussed on Facebook
- The external network: leveraging an existing platform
- The recipient: somebody who will find a received value unit relevant, interesting, useful, entertaining, or otherwise valuable. If it's intriguing, the recipient will spread the value unit further

6 Case Study

Platform Business Models

Platform - Group Breakout Session

- Get together in groups of 5 people
- Pick one of the platforms with high-level case studies
- Analyze
 - The platform's architecture
 - How it ignited its growth
 - How open it is
- Prepare a brief presentation of the key points and findings to the class (5 minutes max) with subsequent brief discussion

Case Study - Coursera

Coursera was founded in 2012 by Daphne Koller and Andrew Ng as an online learning platform that offers courses and degrees from top universities and institutions around the world. The platform allows anyone with an internet connection to access high-quality educational content and earn credentials to improve their career prospects. Coursera's go-to-market strategy involves partnering with universities and other institutions to offer a wide range of courses and degrees, as well as focusing on affordability and accessibility.

To build its content library, Coursera initially focused on partnering with top universities and institutions such as Stanford, Yale, and the University of Pennsylvania. By offering courses and degrees from these prestigious institutions, Coursera was able to attract a large and diverse user base. As the platform grew, Coursera expanded its content offerings to include courses and degrees in a variety of subjects, including computer science, business, and healthcare.

To make its courses and degrees more affordable and accessible, Coursera has implemented several strategies. First, the platform offers many courses for free, allowing anyone to access high-quality educational content regardless of their financial situation. For users who want to earn a credential, Coursera offers paid courses and degrees that are often significantly cheaper than traditional on-campus programs. Additionally, Coursera has implemented a robust scholarship and financial aid program to further reduce the cost of education for those in need.

Overall, Coursera's go-to-market strategy has focused on partnering with top universities and institutions to offer a wide range of courses and degrees while also focusing on affordability and accessibility. By leveraging technology to bring high-quality education to anyone with an internet connection, Coursera has disrupted the traditional higher education industry and become a leader in the online learning space.

Case Study - Upwork

Upwork is a global freelancing platform that was founded in 2015 as a result of a merger between Elance and oDesk. The platform allows businesses to hire freelancers for a variety of tasks, including web development, graphic design, writing, and marketing. Upwork's go-to-market strategy involves focusing on the flexibility and cost-effectiveness of hiring freelancers, as well as providing tools and resources to improve the freelancer-client relationship.

To build its user base and establish itself as a leader in the freelancing industry, Upwork has focused on providing a wide range of freelance services and tools. The platform allows businesses to quickly and easily post job listings and hire freelancers from around the world. Upwork also offers tools like time tracking and invoicing to help businesses manage their projects and payments.

To attract freelancers to its platform, Upwork has focused on providing a flexible and low-cost alternative to traditional employment. Freelancers can set their own rates and work on their own schedule, providing greater control and autonomy over their work. Additionally, Upwork has implemented a robust feedback and rating system to help freelancers build their reputation and credibility.

To support the freelancer-client relationship, Upwork has invested in several initiatives. The platform provides a messaging system that allows freelancers and clients to communicate easily and efficiently. Upwork also offers a dispute resolution system to help resolve conflicts between freelancers and clients. Additionally, Upwork provides resources and support to help freelancers improve their skills and increase their earning potential.

Overall, Upwork's go-to-market strategy has focused on providing a flexible and cost-effective platform for hiring freelancers, as well as providing tools and resources to improve the freelancer-client relationship. By leveraging technology to connect businesses with skilled freelancers from around the world, Upwork has disrupted the traditional employment model and become a leading player in the gig economy.

Case Study - Amazon

Amazon was founded in 1994 by Jeff Bezos as an online marketplace that initially sold books. The platform has since expanded to offer a wide range of products and services, including electronics, clothing, groceries, and cloud computing. Amazon's go-to-market strategy involves focusing on customer experience, selection, and convenience, as well as investing heavily in technology and infrastructure.

To build its customer base and expand its product offerings, Amazon has focused on providing a seamless and convenient shopping experience. The platform allows customers to quickly and easily search for products, read reviews, and make purchases, with many items available for same-day or next-day delivery. Amazon has also implemented features like one-click purchasing and personalized recommendations to further streamline the shopping process and increase customer satisfaction.

To ensure a wide selection of products, Amazon has implemented several strategies. First, the platform allows third-party sellers to offer their products alongside Amazon's own offerings, providing customers with access to a vast and diverse array of products. Additionally, Amazon has invested in several initiatives to increase product availability and reduce delivery times, such as building massive fulfillment centers and developing drone delivery technology.

To support its platform and infrastructure, Amazon has invested heavily in technology and innovation. The company has developed its own cloud computing platform, Amazon Web Services (AWS), which has become a dominant force in the industry. Additionally, Amazon has invested in artificial intelligence, robotics, and other emerging technologies to improve its operations and provide new services to customers.

Overall, Amazon's go-to-market strategy has focused on providing a seamless and convenient shopping experience, offering a wide selection of products, and investing heavily in technology and infrastructure. By focusing on customer experience and continuously innovating, Amazon has become one of the most successful and influential companies in the world. However, the company has also faced criticism over issues such as worker treatment and antitrust concerns.

Case Study - Etsy

Etsy is an online marketplace that was founded in 2005 to provide a platform for independent artists and creators to sell their handmade and vintage goods. The platform has since expanded to include a wide range of products, including clothing, jewelry, home decor, and digital downloads. Etsy's go-to-market strategy involves focusing on the unique and personal nature of its products, as well as providing a platform that supports small businesses and promotes sustainability.

To build its user base and attract buyers to its platform, Etsy has focused on providing a curated selection of unique and personalized products. The platform allows sellers to create their own online storefronts and showcase their products with high-quality images and detailed descriptions. Etsy has also implemented a robust search and discovery system that allows buyers to quickly and easily find the products they are looking for.

To support its sellers and promote sustainability, Etsy has implemented several initiatives. The platform encourages sellers to use environmentally friendly materials and packaging, and offers resources and support to help sellers improve their sustainability practices. Additionally, Etsy has implemented a program called Etsy Wholesale that allows sellers to partner with retailers and expand their reach.

To differentiate itself from other online marketplaces, Etsy has also focused on building a strong brand identity. The platform has developed a reputation for supporting small businesses and promoting creativity and individuality. Etsy has also implemented several marketing and advertising initiatives, including partnerships with influencers and social media campaigns, to further promote its brand and attract buyers to its platform.

Overall, Etsy's go-to-market strategy has focused on providing a curated selection of unique and personalized products, supporting small businesses and promoting sustainability, and building a strong brand identity. By focusing on the personal and creative nature of its products and providing a platform that supports small businesses, Etsy has become a leading player in the e-commerce industry. However, the platform has faced criticism over issues such as counterfeit goods and seller fees.

Q&A

Platform Business Models



INNOVATION MANAGEMENT AND NEW PRODUCT DEVELOPMENT

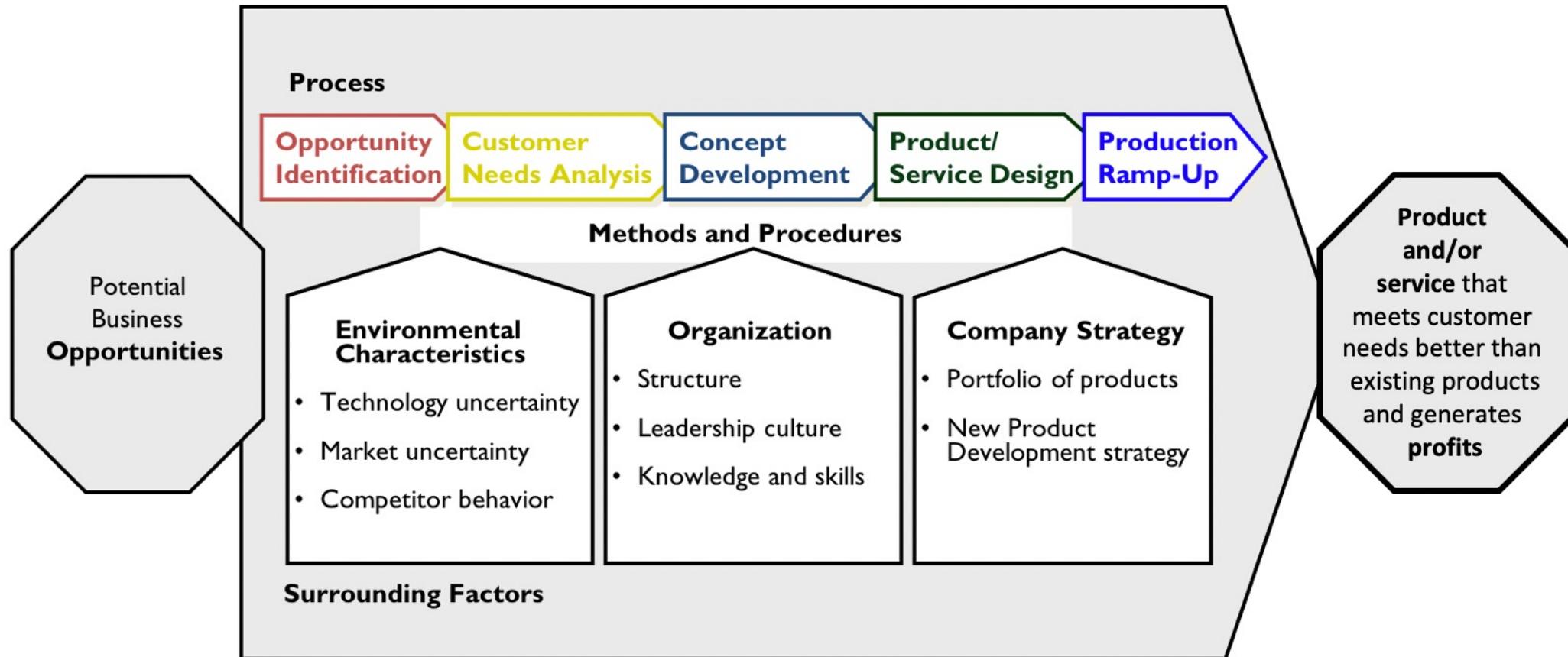
Jochen Schlapp

NORMA Group Associate Professor of
Operations & Technology Management
Frankfurt School of Finance & Management
Adickesallee 32-34
60322 Frankfurt am Main, Germany
j.schlapp@fs.de

The Innovation Process



Frankfurt School



How to Generate Innovative Concepts

Idea: A thought or suggestion as to a possible course of action
(Oxford Dictionary of Contemporary English)

What part of this definition is important for a firm?

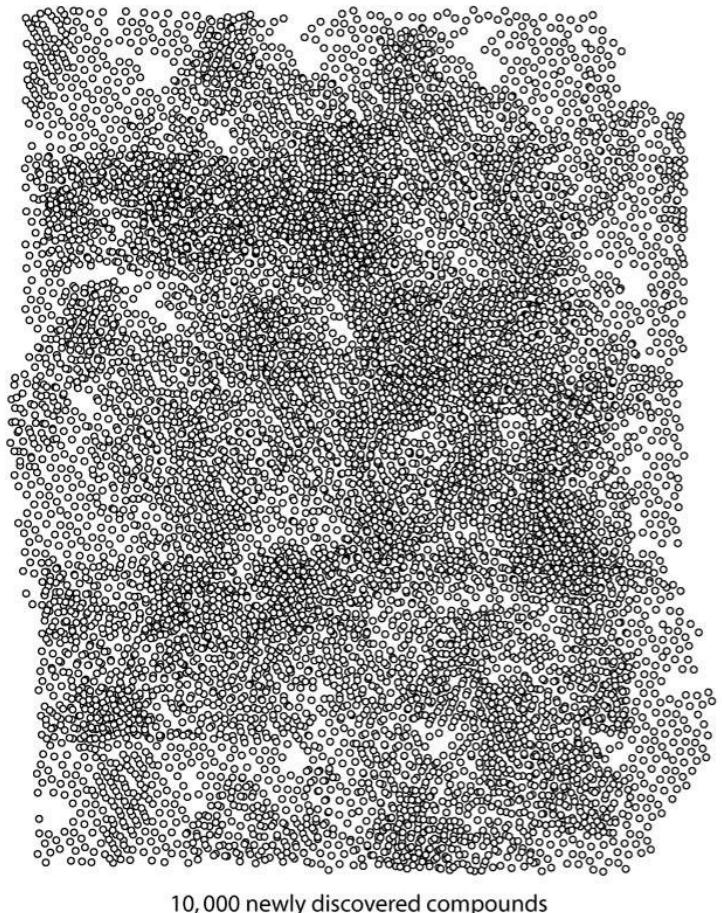
- Per se, the thought is irrelevant
- The firm cares about the **course of action**, and ultimately, the **outcome**

Innovation Contest

How to Design a Contest

Valuing Variety

Many Concepts – One Outcome



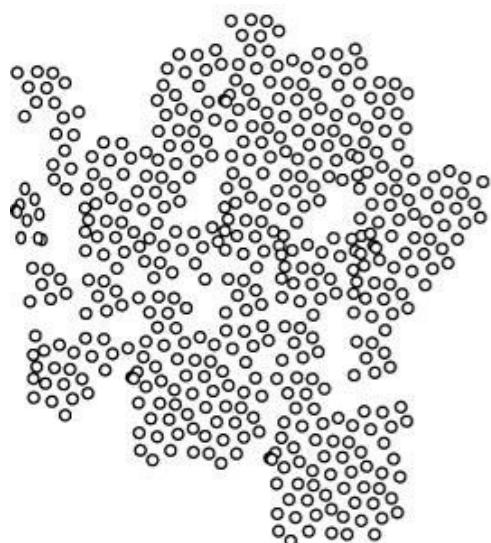
8-12 years
\$500 million - \$1 billion



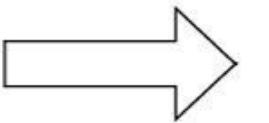
The Pharma Industry

1 new drug

Many Concepts – One Outcome



500 "pitches"



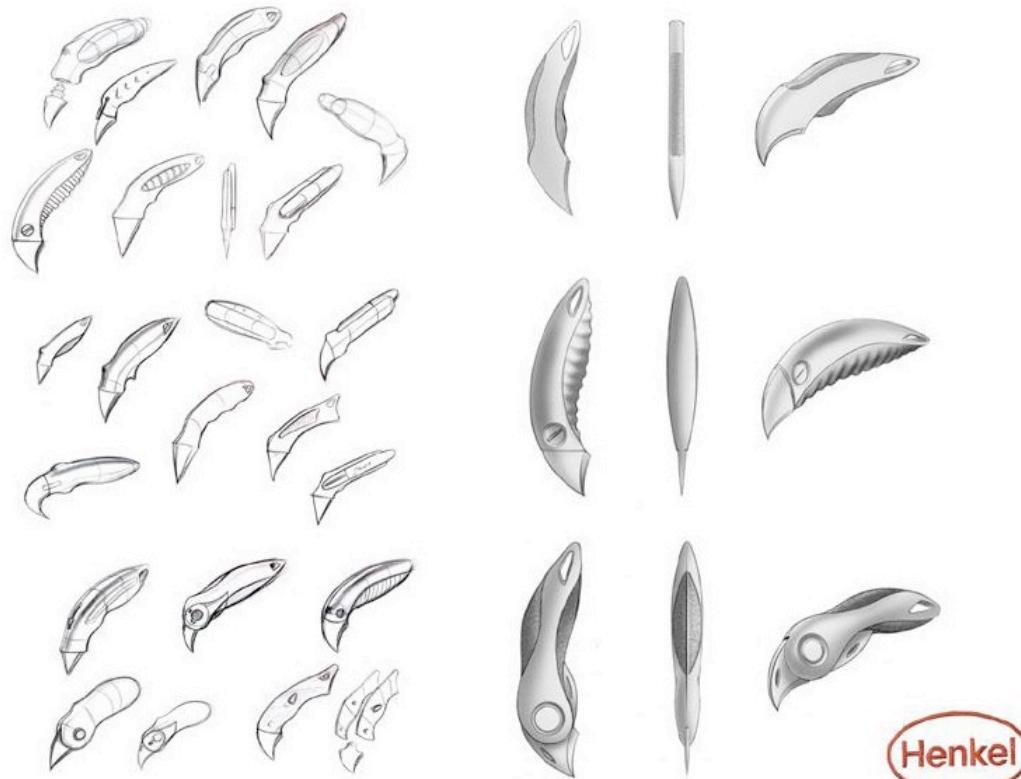
3-5 years
\$50-200 million

The Movie Industry



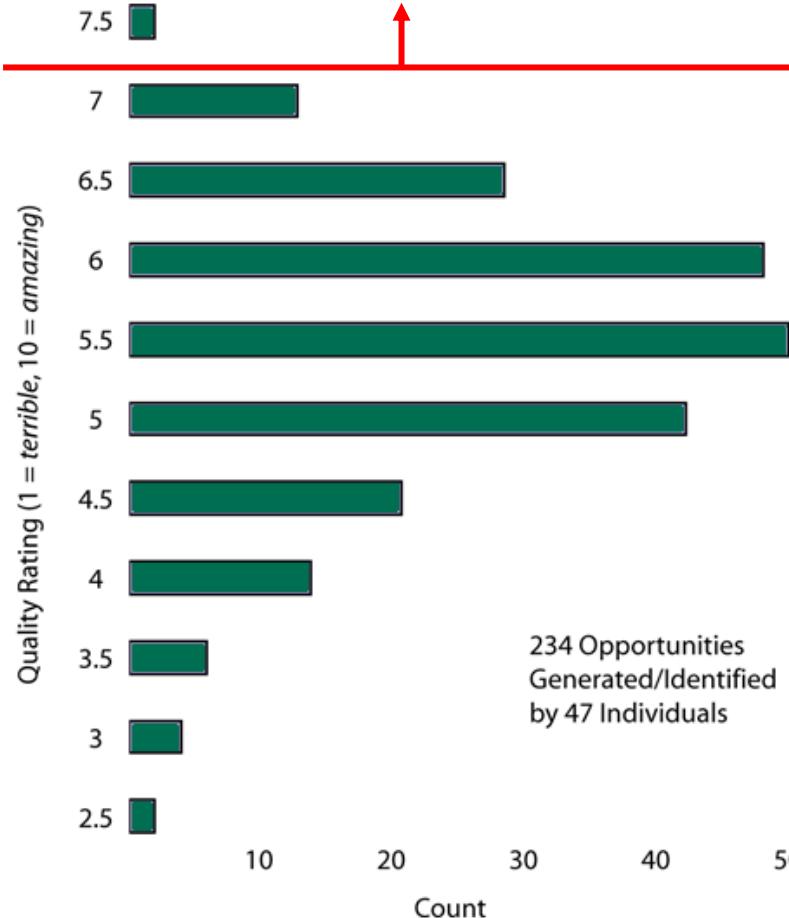
1 new feature film

Many Concepts – One Outcome



The Tooling Industry

Innovation is a Search Process



1. The higher the **mean quality**, the higher the chances of a hit
2. The **more trials**, the higher the chances of a hit
3. The larger the **variance of idea quality**, the higher the chances of a hit
4. The better the **idea selection quality**, the higher the chances of a hit

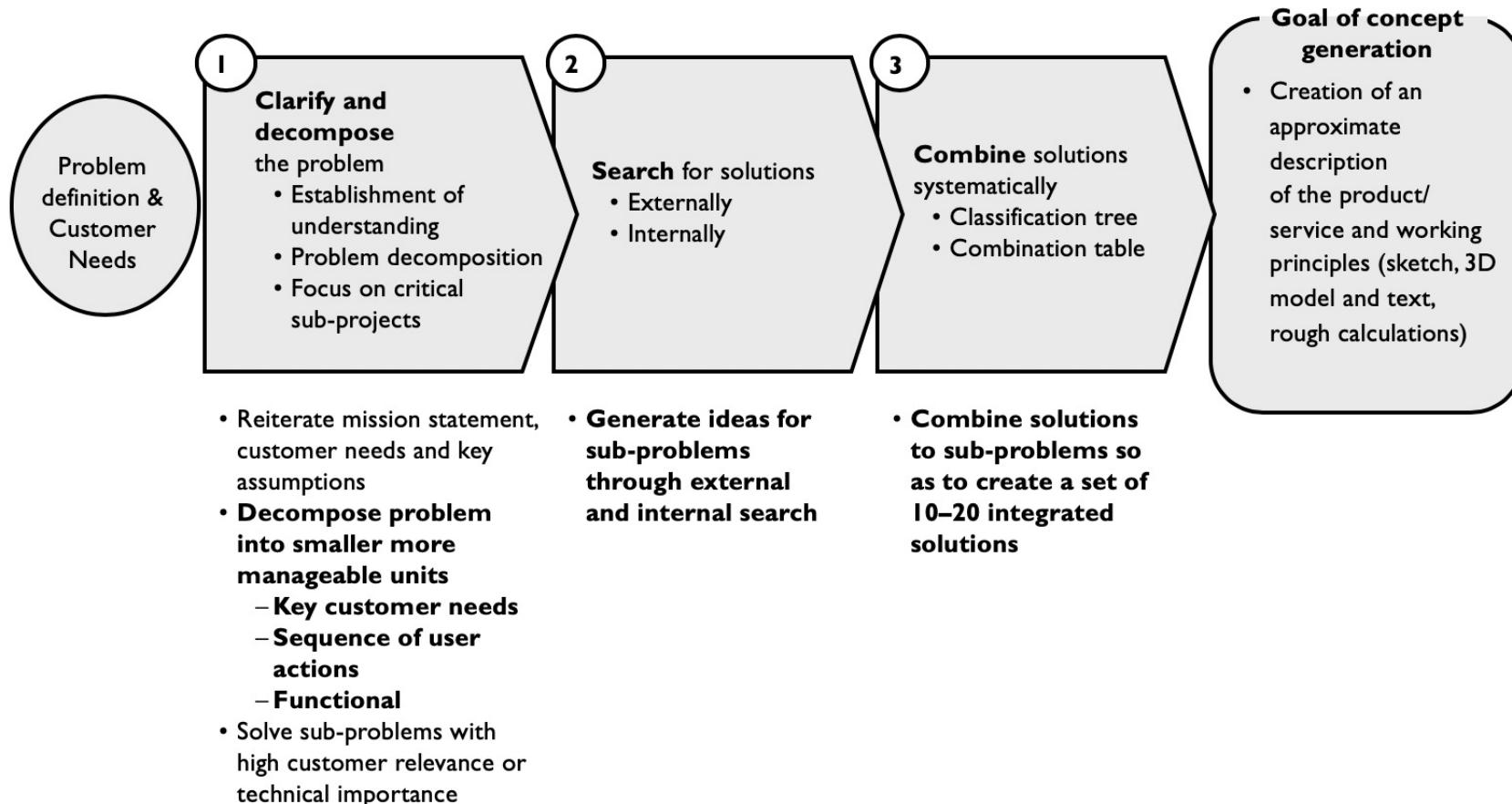
Innovation is a Search Process



1. The better the **knowledge**, the higher the chances of a hit
2. The **more trials**, the higher the chances of a hit
3. The larger the **search space covered**, the higher the chances of a hit
4. The better the **detection method** for having found a good solution, the higher the chances of a hit

A Systematic Search

The Concept Generation Process



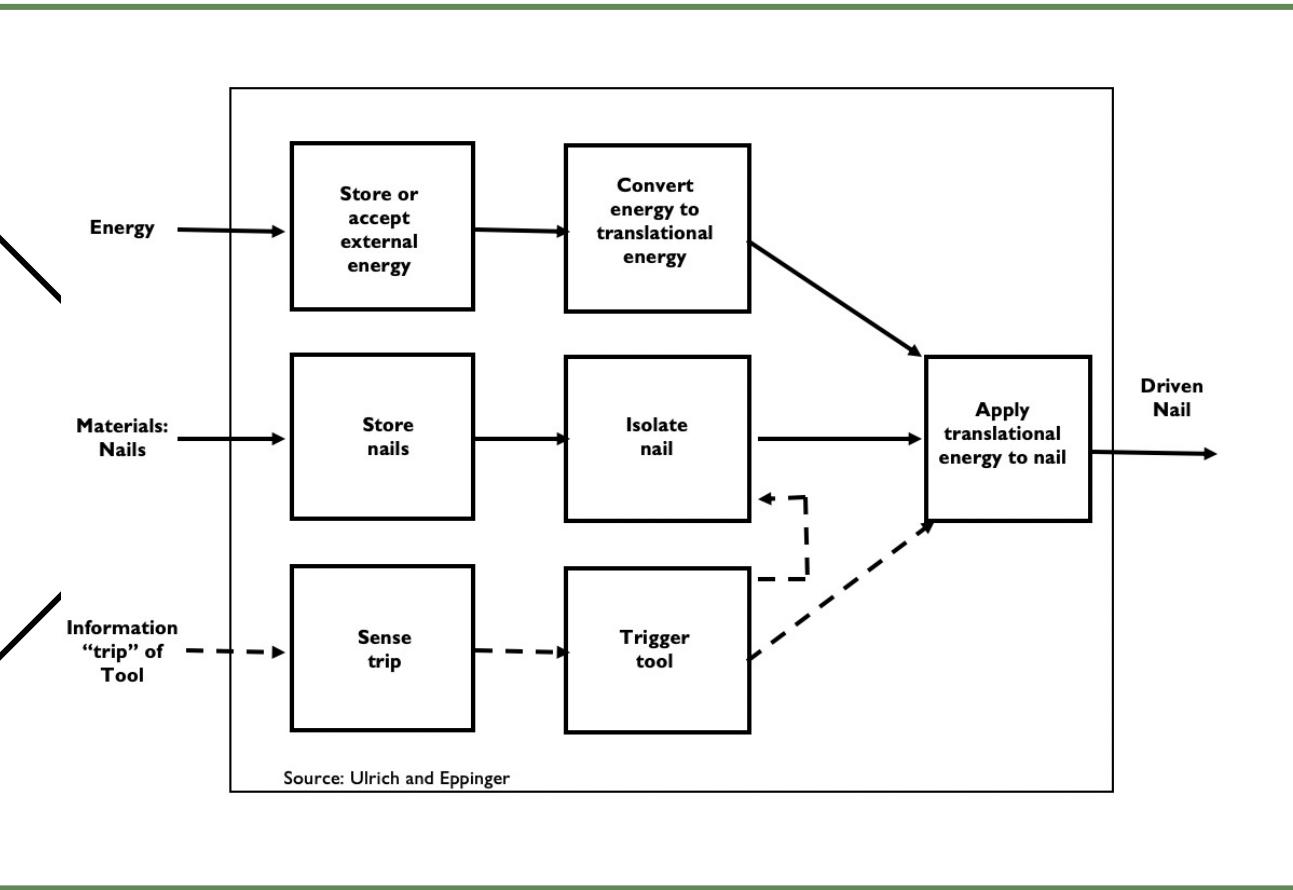
Important Aspects of Functional Decomposition

- Decompose Energy, Materials, and Information flows
- Describe functional elements without implying technology
- Start with an existing product or one example of product to be developed
- Create alternatives since diagram may not be unique



Important Aspects of Functional Decomposition

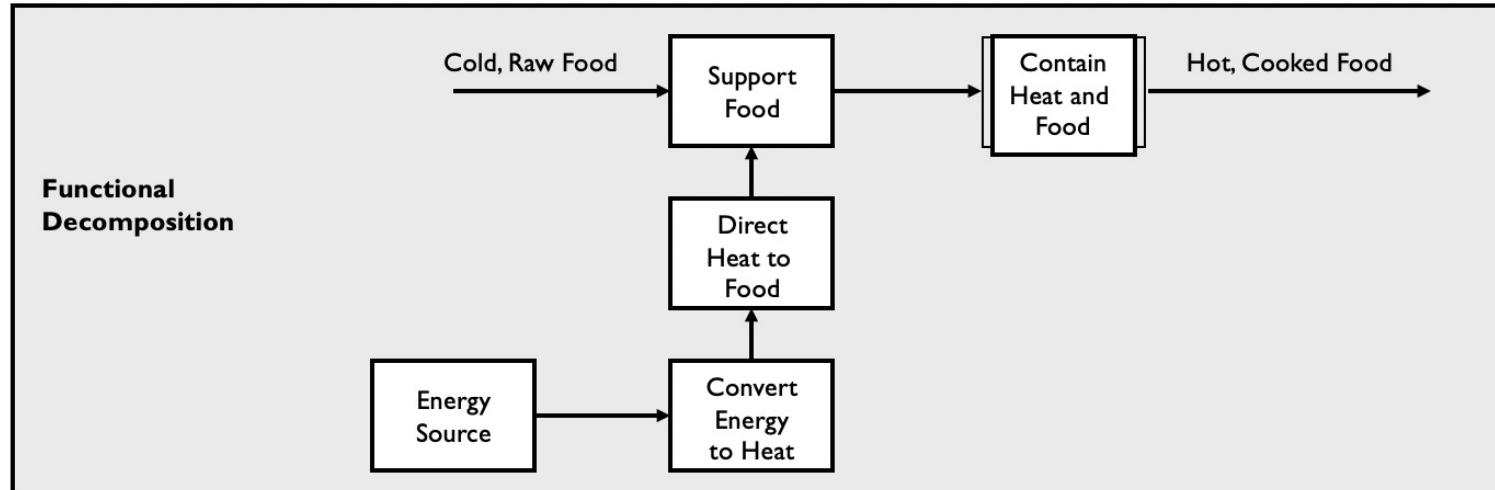
- Decompose **Energy, Materials, and Information flows**
- Describe functional elements without implying technology
- Start with an existing product or one example of product to be developed
- Create alternatives since diagram may not be unique



Decomposition of Usage



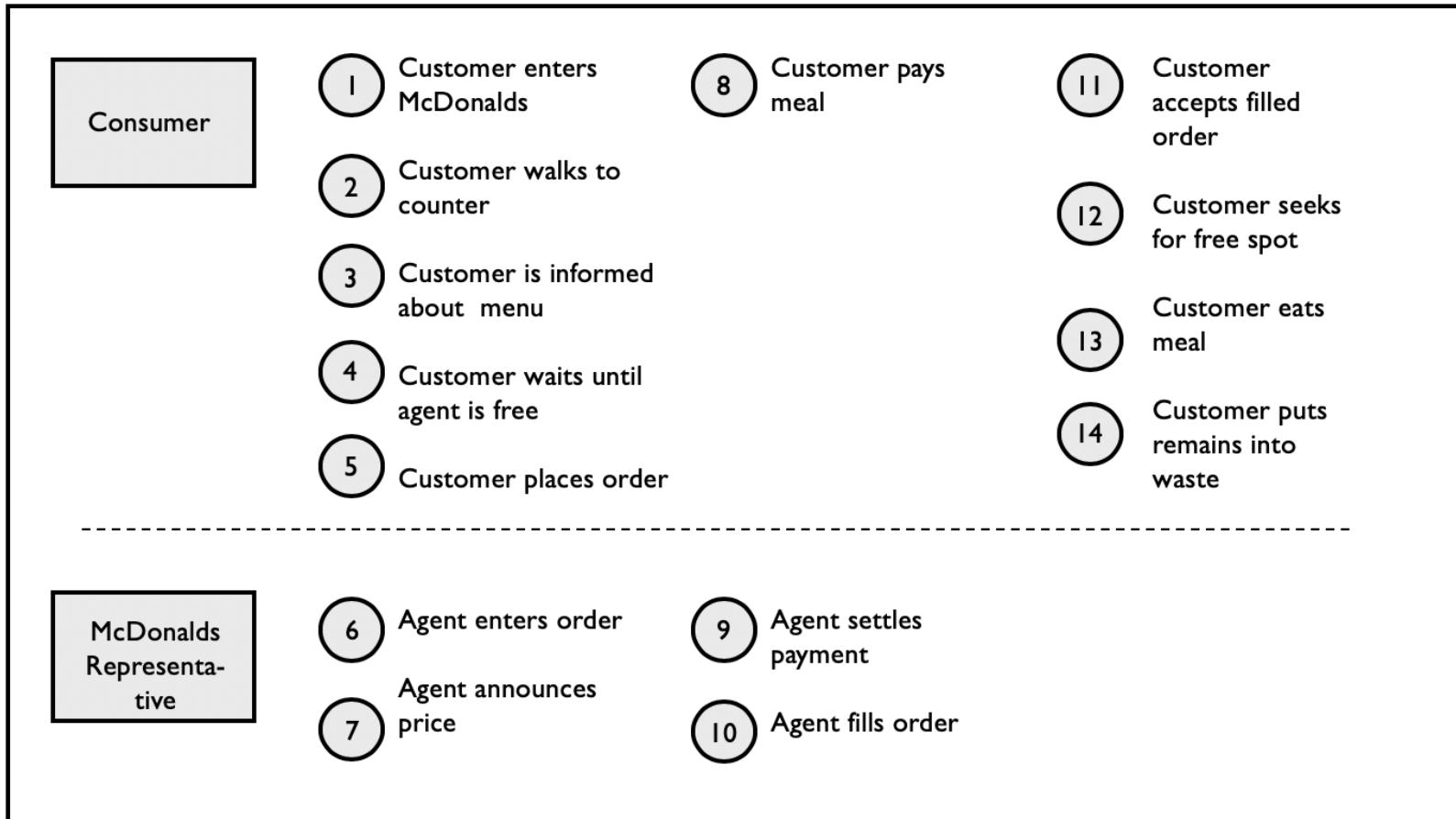
Frankfurt School



Decomposition of Actors and Actions



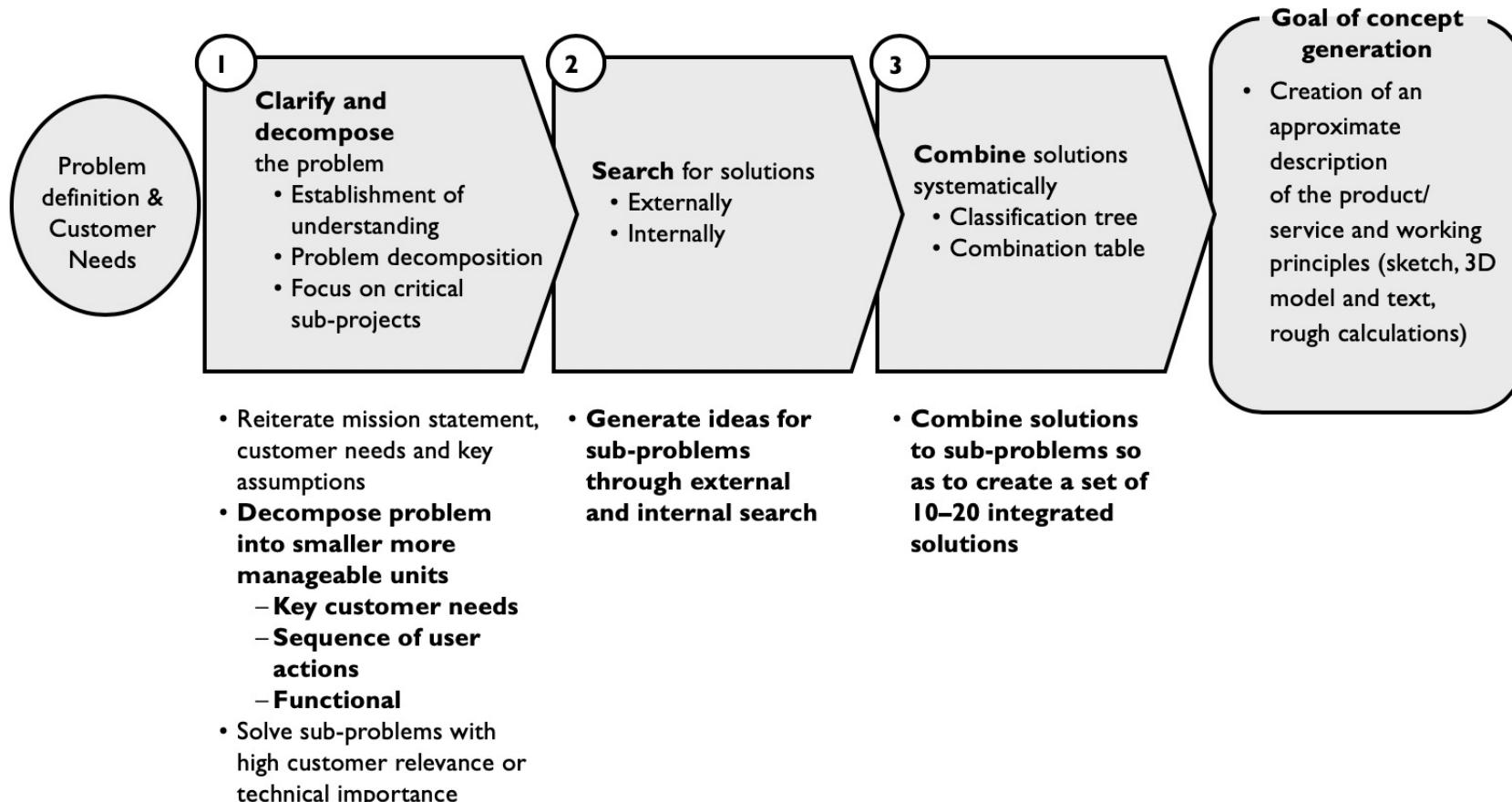
Frankfurt School



Understanding Customer Needs: Samsung's Masterpiece



The Concept Generation Process



How Functional Decomposition Leads to New Solution Concepts

Process

- Work individually on segments of the problem
- Convene for group session
 - Create many ideas through analogies, wish and wonder, related stimuli
 - Suspend judgment
 - Communicate through graphics
- Reiterate if necessary



Process

- Work individually on segments of the problem
- Convene for group session
 - Create many ideas through analogies, wish and wonder, related stimuli
 - Suspend judgment
 - Communicate through graphics
- Reiterate if necessary

Solutions to Subproblem of Storing or Accepting Energy

- Self-regulating chemical reaction emitting high-pressure gas
- Carbide (as for lanterns)
- Combusting sawdust from job site
- Gun powder
- Sodium azide (air bag explosive)
- Fuel-air combustion (butane, propane, acetylene, etc.)
- Compressed air (in tank or from compressor)

Solutions to Subproblem of Applying Translational Energy to Nail

Single impact





“The whole business starts with ideas, and we’re convinced that ideas come out of an environment of supportive conflict, which is synonymous with appropriate friction.”

Michael Eisner (CEO Walt Disney), 2000

Managing supportive conflict:

- Every second Friday, Walt Disney's CEO Michael Eisner reserved three hours of his precious time for ideation and novel ideas
- During that time, any employee could present an idea to the CEO on a first come, first served basis
- Ideas could relate to any aspect of the company
- When the CEO hit the gong, the employee had to leave without any further discussion

"The company benefits because they get thousands of good ideas from their employees, some of which are developed into feature films."

"And the employees benefit because they know they have the freedom to submit ideas that will be listened to. Even if their idea is "gonged," they celebrate it and learn from it." (Bill Capodagli, 2010)

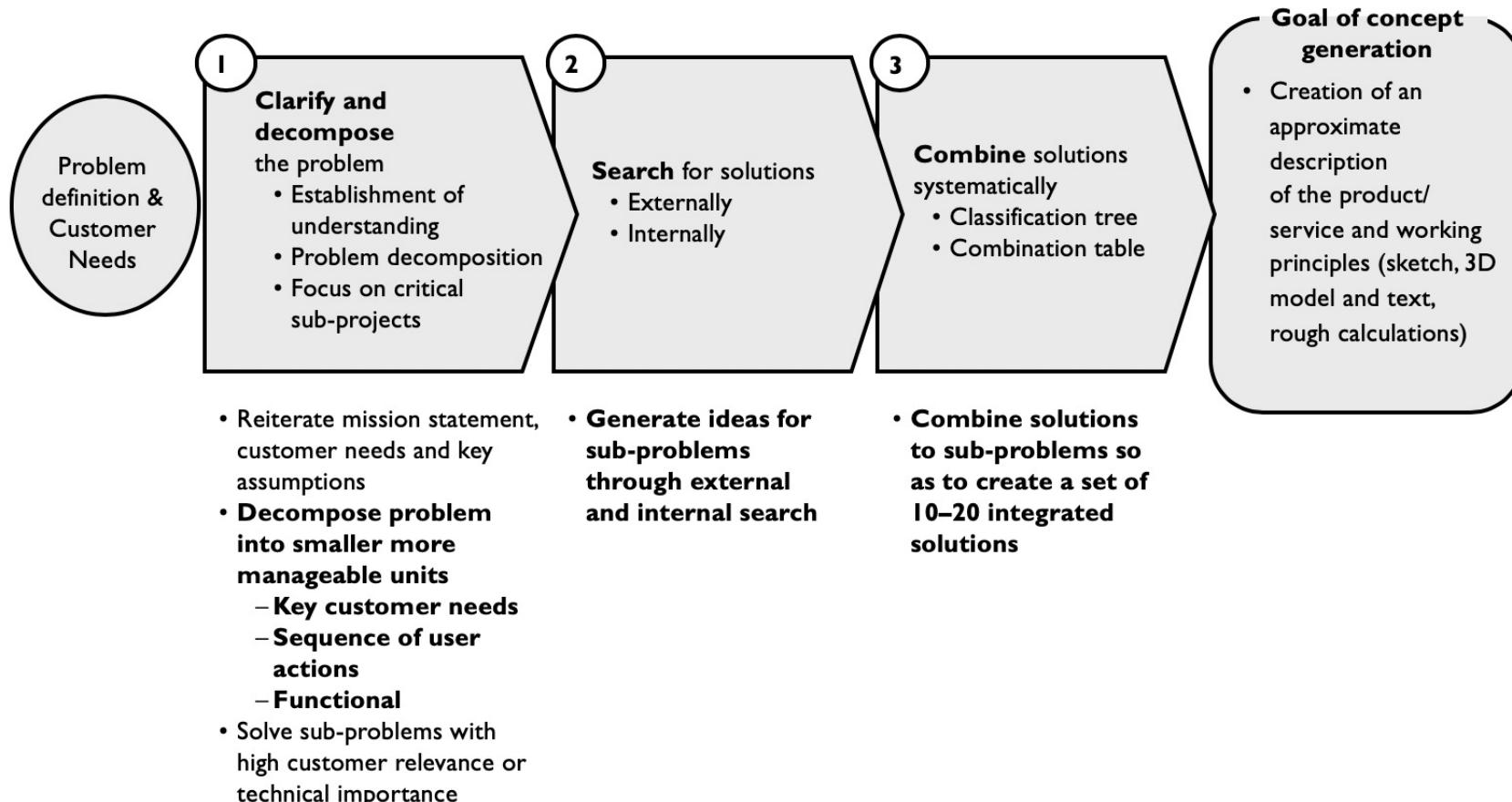
Disney's Gong Show is so successful because every employee is treated equal:

“There is no pecking order. All of a sudden it gets really creative.”

Ideas that originated from the Gong Show:

- Hercules
- The Little Mermaid
- Pocahontas
- Focus on computer-animated movies

The Concept Generation Process



Selecting the Best Concepts: Classification Trees

Process

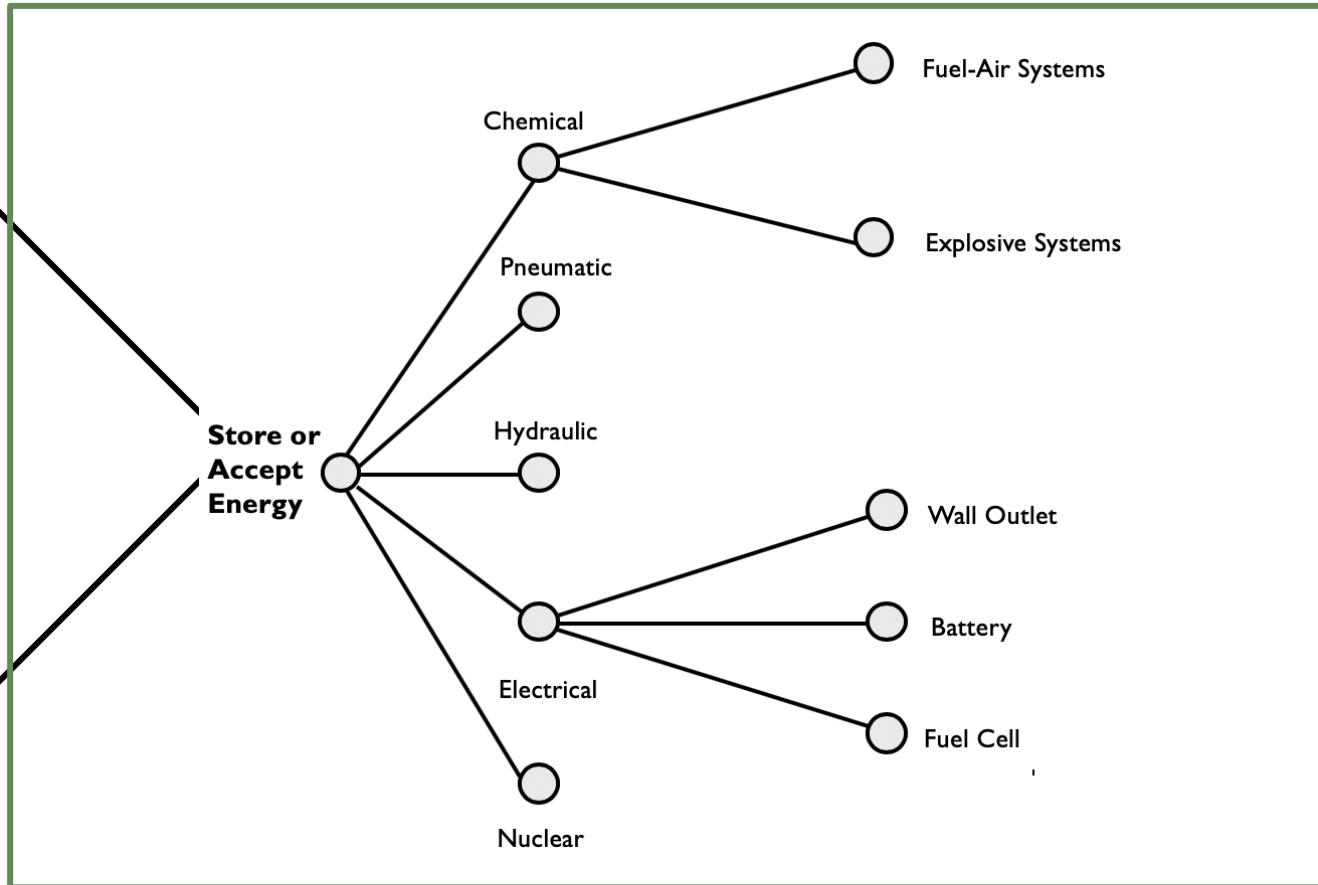
- Organize all ideas into hierarchy
- Prune less promising branches
- Segment tree to allow for independent work
- Allocate time resources
- Redesign problem decomposition for critical branches



Selecting the Best Concepts: Classification Trees

Process

- Organize all ideas into hierarchy
- Prune less promising branches
- Segment tree to allow for independent work
- Allocate time resources
- Redesign problem decomposition for critical branches



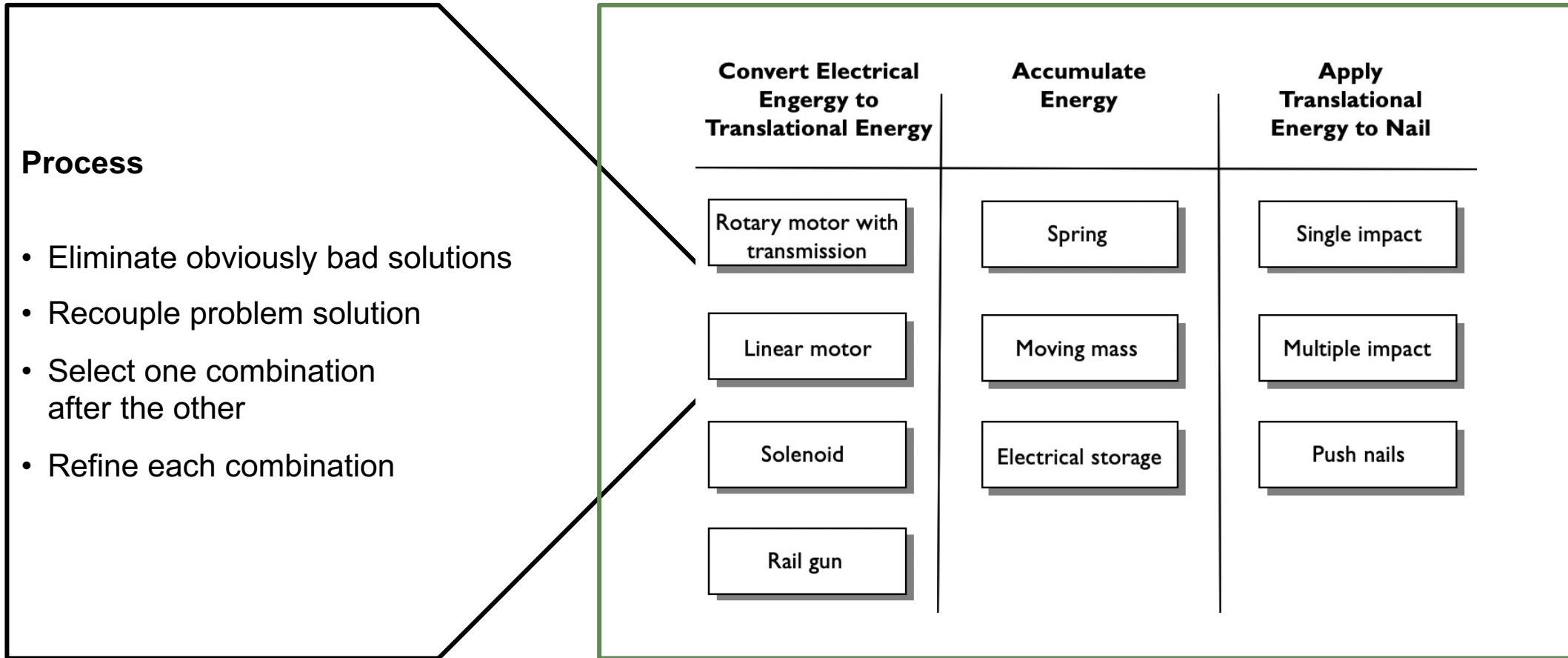
Selecting the Best Concepts: Combination Tables

Process

- Eliminate obviously bad solutions
- Recouple problem solution
- Select one combination after the other
- Refine each combination



Selecting the Best Concepts: Combination Tables



Teams or Individuals?

The Lone Inventor Paradigm: Myth or Reality?

“Our species is the only creative species, and it has only one creative instrument, the individual mind, and spirit of a man. Nothing was ever created by two men. There are no good collaborations, whether in music, in art, in poetry, in mathematics, in philosophy. Once the miracle of creation has taken place, the group can build and extend it, but the group never invents anything. The precociousness lies in the lonely mind of a man.“

John Steinbeck, East of Eden, 1952

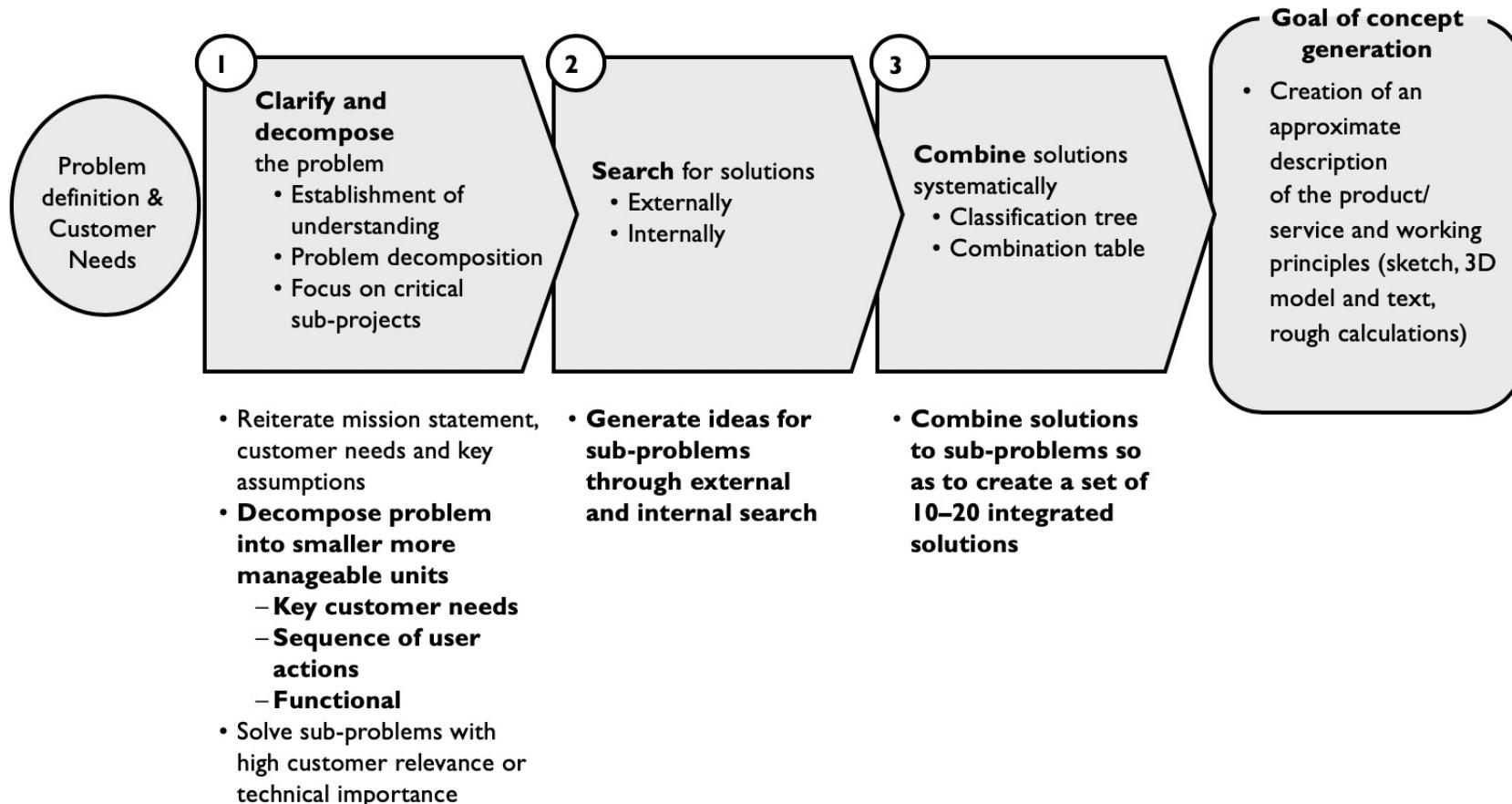
The features of the product decide:

- **Teams are superior when it comes to innovation tasks that are „decomposable“**
 - Modular products
 - Tasks that require diverse expertise
- **Individuals perform better when it comes to “holistic” innovations**
 - Highly integral products
 - Design innovations

**What process measures could the
FS mensa implement to improve
customer experience?**

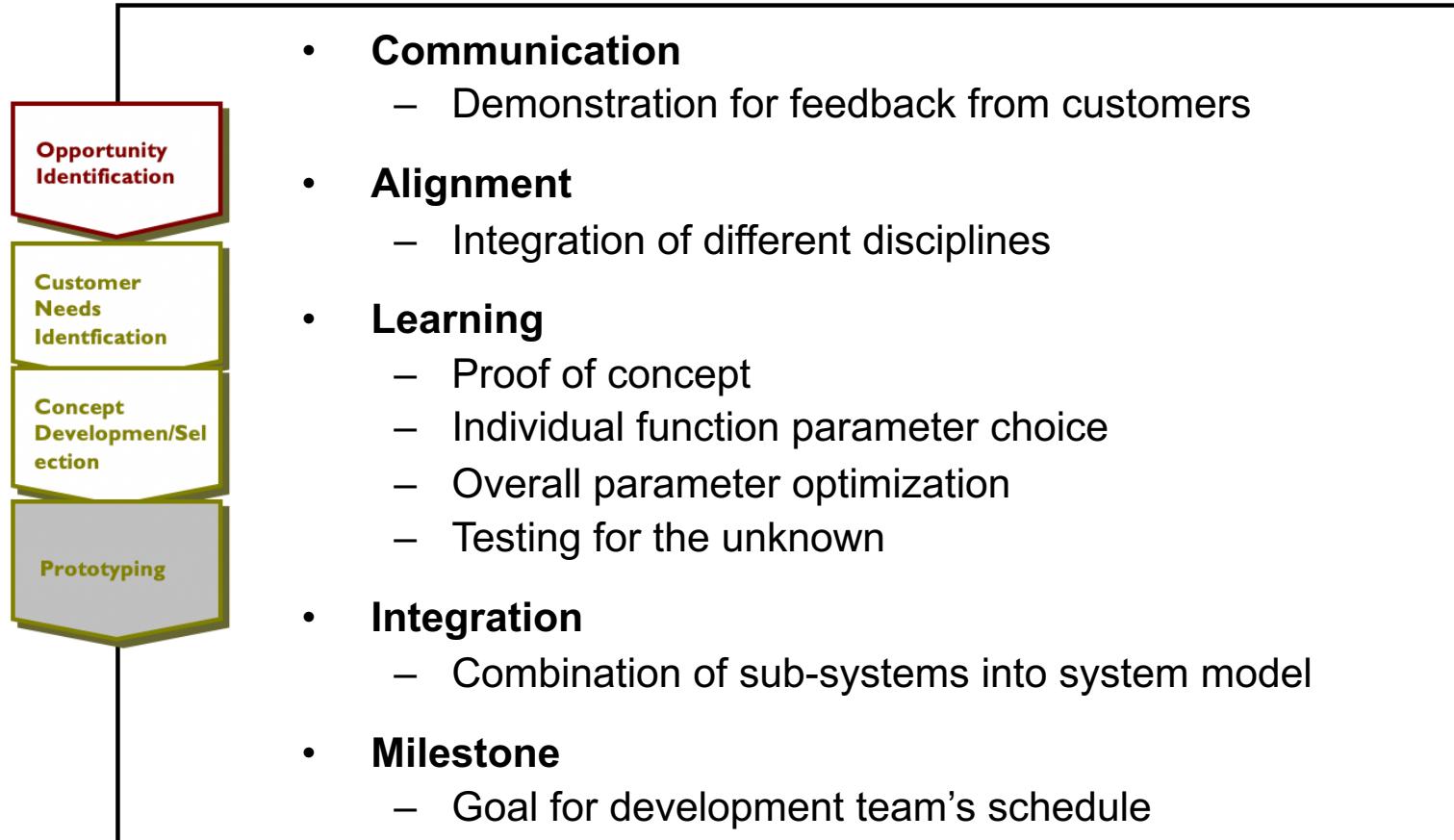
Concept Development: Mastering Uncertainty

The Concept Generation Process

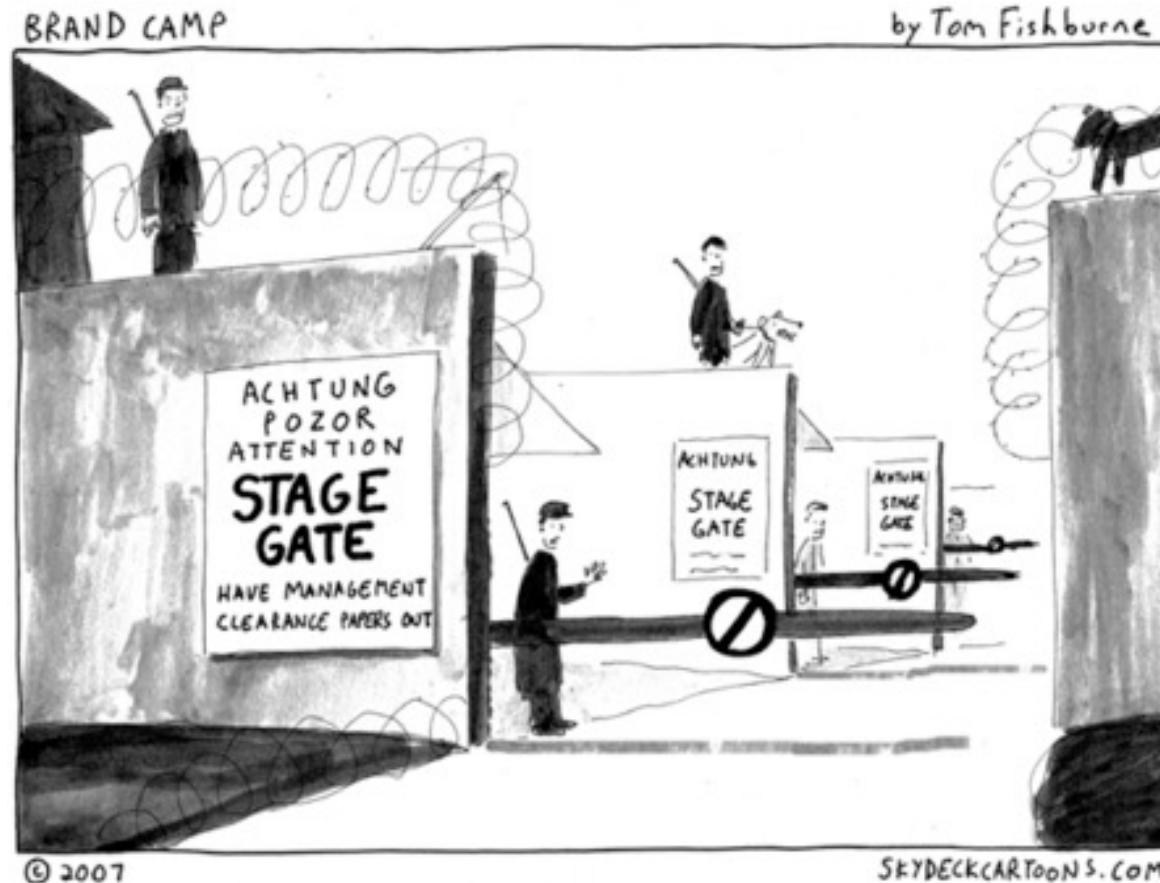


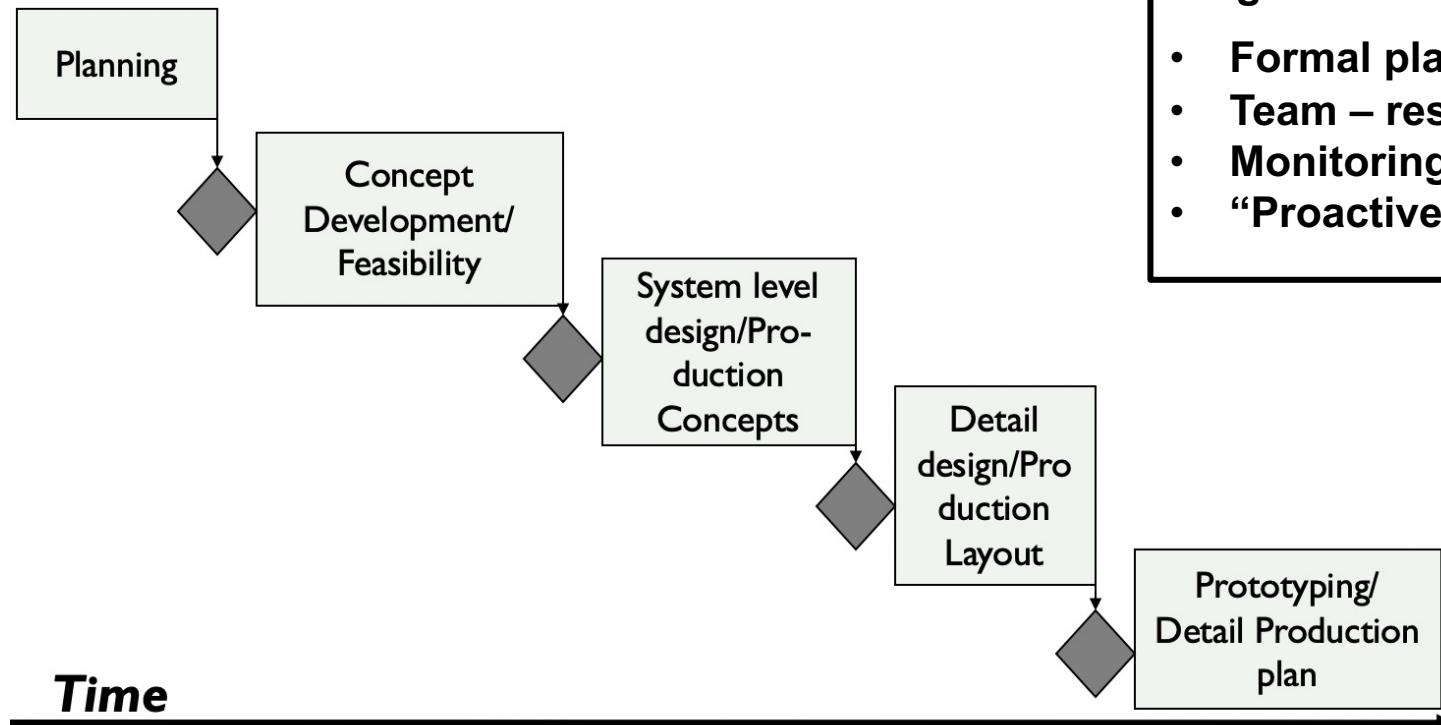
Mastermind

**What are the similarities and
differences between “Mastermind”
and a typical innovation process?**



Managing the Innovation Process: The Idea of a Stage-Gate-Process





Stage-Gate-Process

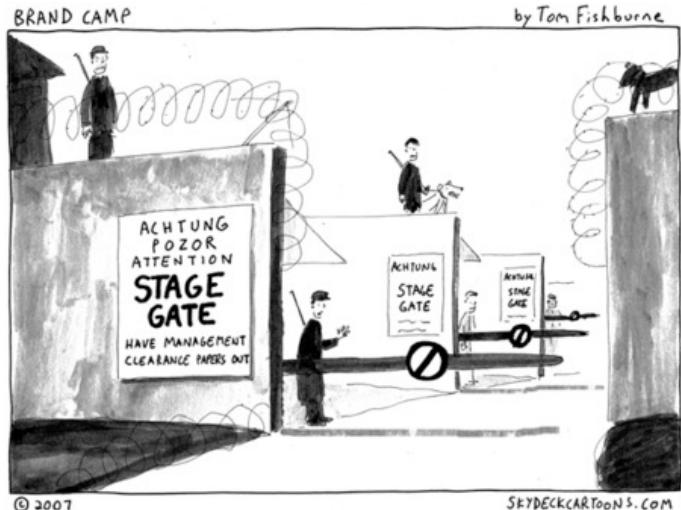
- Formal plan for tasks
- Team – responsibility assignment
- Monitoring performance metrics
- “Proactive” vs. “reactive” culture

The Role of Uncertainty on Project Management

Certainties
(Knowns)

**Identifiable
Uncertainties**
(Known unknowns)

**Unidentifiable
Uncertainties**
(Unknown unknowns)



Managing a Truly Novel Project

How was the Vol de Nuit project managed?

How would you manage it?

How was the Vol de Nuit project managed?



Frankfurt School

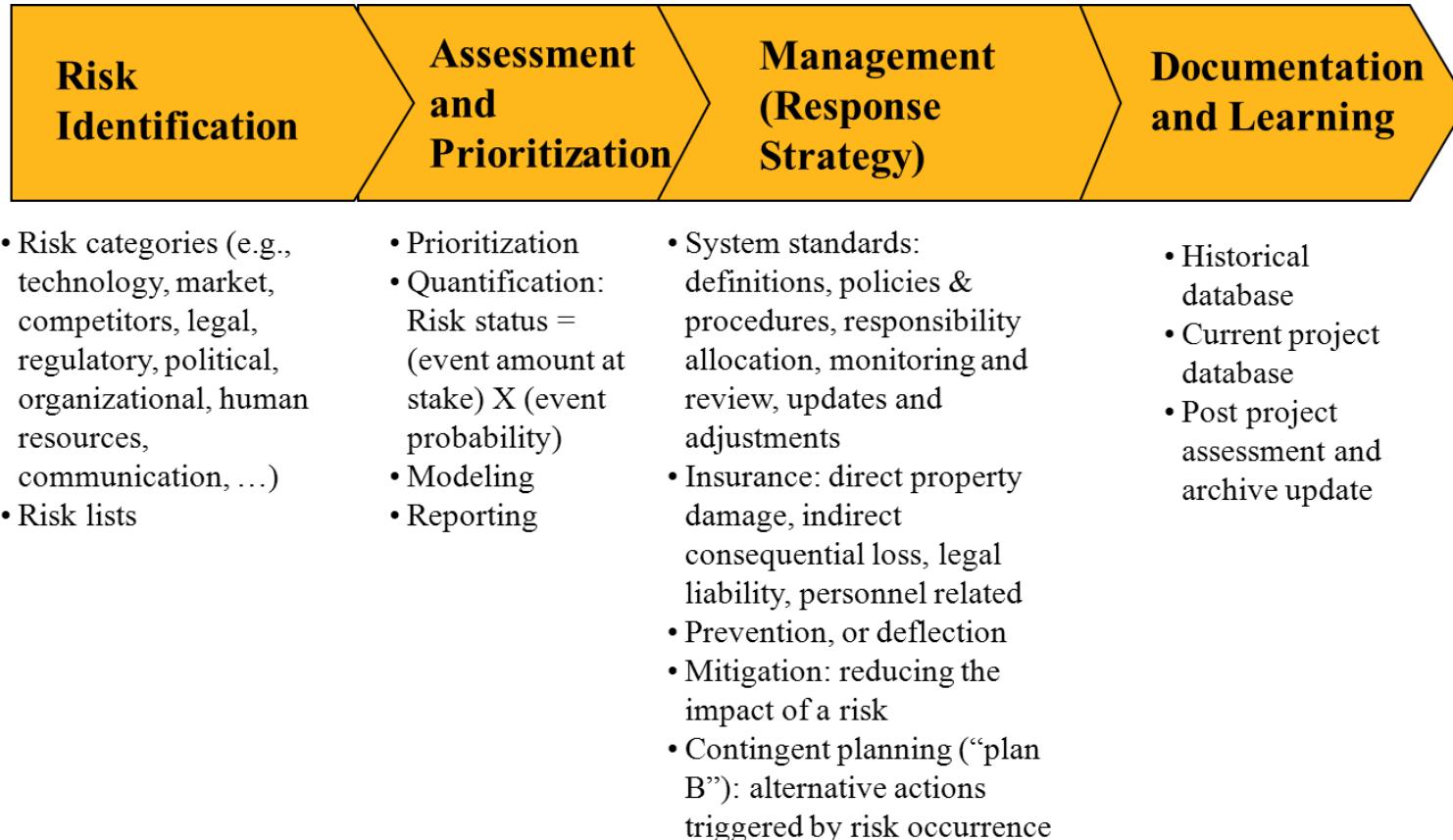
Planning & Control

People/Team Mgmt

Knowledge Mgmt

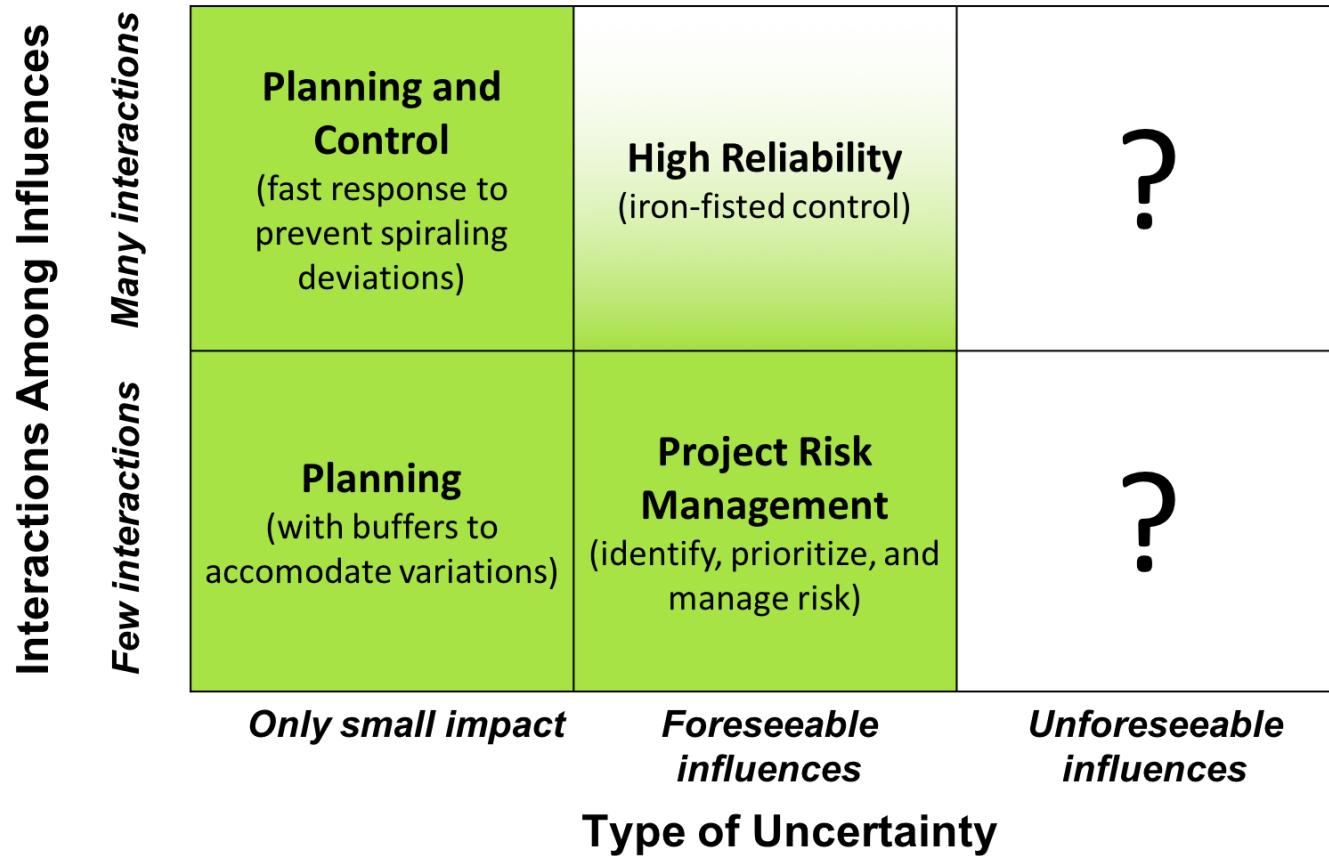
Coordination & Stakeholders

The Standard Approach to Managing Risk

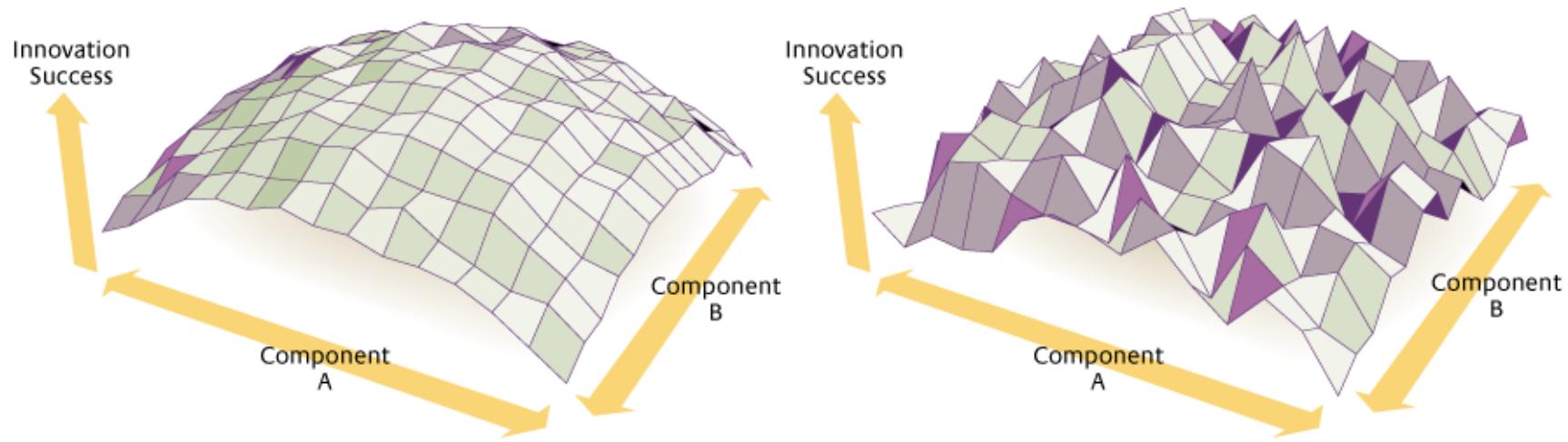


- Risk lists give **false confidence** that all risks have been addressed
- **Detailed plans** become the objective rather than being a tool to reach the objective
- Project management personnel is chosen for **planning experience**, not learning and flexibility
- Stakeholder relationships and contracts require an objective utilizing a specific path
- Stakeholders interpret **inevitable changes** as lack of reliability if not dishonesty

Managing Uncertainty and Complexity



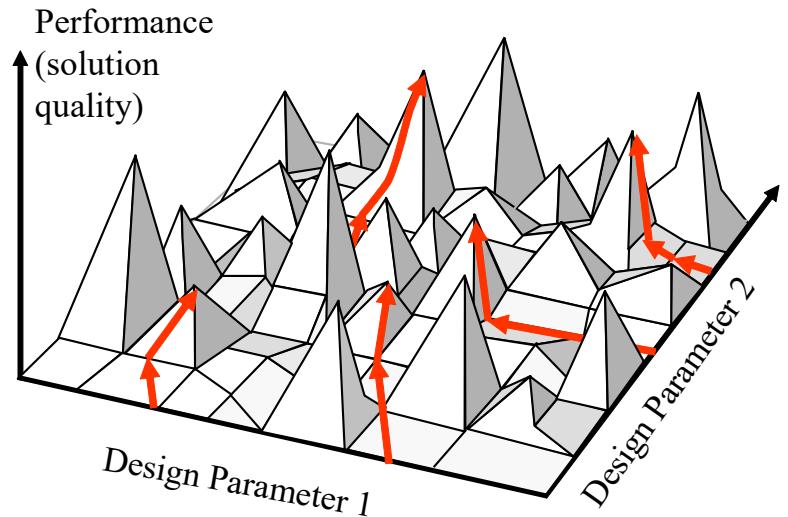
Searching a Rugged Landscape



How to search?

- Selectionism
- Learning (trial-and-error)

Selectionism: Parallel Search for Success



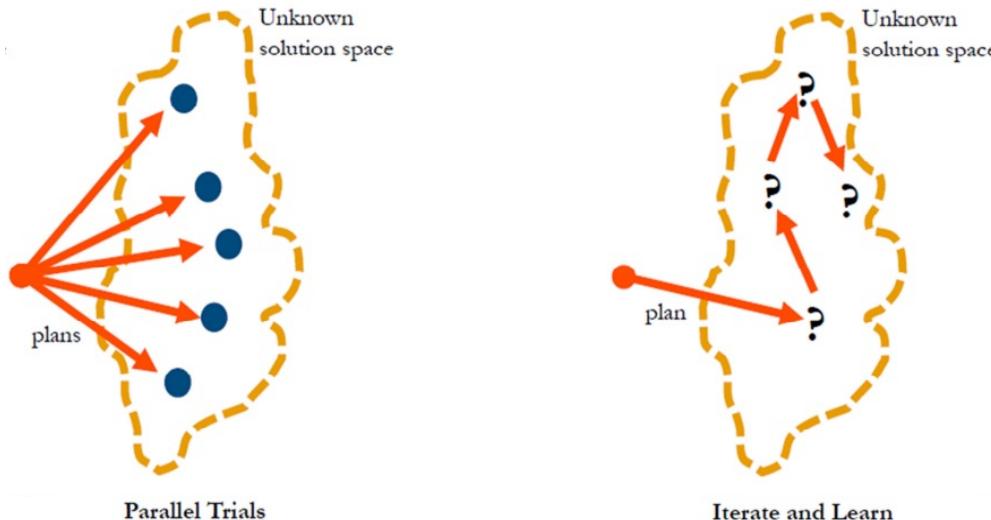
Initiate many **parallel trials**,
and hope that **one of them** will
get it right.

- **Creating a variety of different solutions**
- **The more complex the system is, the more important it becomes to try multiple different solutions**
- **Pursuing improvement of the solution that one has may lead into a competence trap by settling on a solution that is subsequently shown to be inferior**
- **Generating variety needs to be balanced by ex post selection**
- **Variety, however, must not be unlimited. Rather, the options must fall within a feasible and practical space**

The Challenges of Selectionism

- Costs may be prohibitively high
- If launches visible in the market, they may have a negative impact on the image of the organization
- An appropriate project manager needs to oversee a multitude of parallel projects and be able to “juggle many balls” at the same time
 - Converging too early can be risky
 - “Pulling the plug” of least successful teams not easy in big organizations

Experimentation and Iterative Learning



Emphasis on **experimenting** and **adjusting** the project on the basis of new information (Trial-and-Error learning).

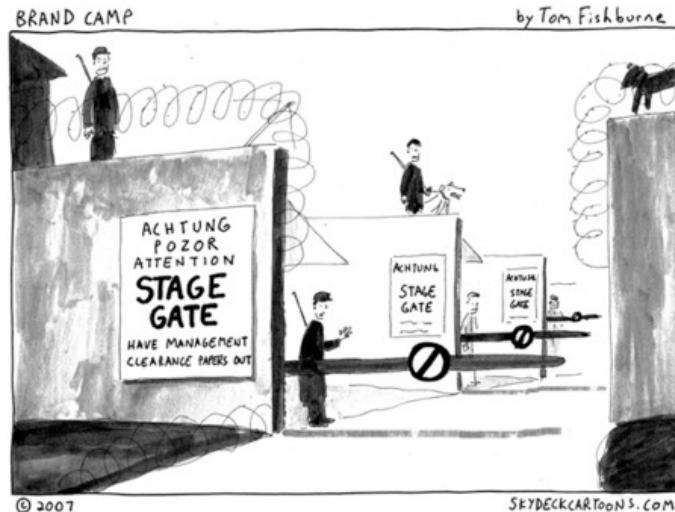
The Challenges of Sequential Experimentation

- **Most managers feel very uncomfortable with the idea of extensive experimentation**
- **Validates that there is no specific plan in place**
- **Consumes a lot of resources without demonstrating results. In fact, often it demonstrates failures.**
- **And failure is never associated with high capability!**

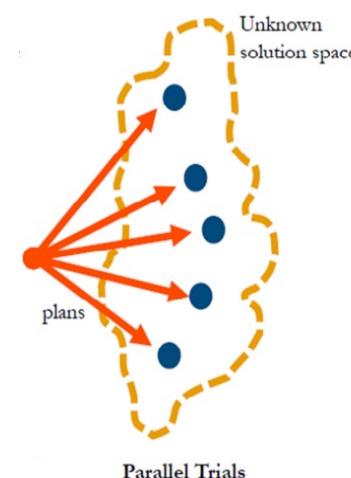
		Cost of Repeated Trial and Error Learning	
		low	high
Cost of Parallel Trials	high	Learning <ul style="list-style-type: none">• One effort with major adjustments over time• E.g., Flexible start-up companies can change project definition• Sun Microsystems Java (originally “Oak”) project	Right the first time <ul style="list-style-type: none">• Plan comprehensively• Leave “design buffers” to adapt• E.g., Boeing 777 (the first prototype was sold commercially)
	low	Parallel Trials and learning <ul style="list-style-type: none">• “Ecology” of small experiments that evolve• E.g., internet auctions and automated markets• MTV program trials on air	Parallel Trials (cost of time crucial) <ul style="list-style-type: none">• E.g., “product churning” in Japanese consumer electronics in the early 1990s• Microsoft’s pursuit of multiple operating systems in the 1980s

**Was uncertainty properly managed
in the Vol de Nuit project?**

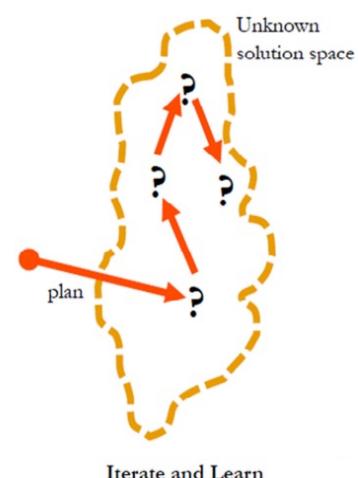
Certainties (Knowns)



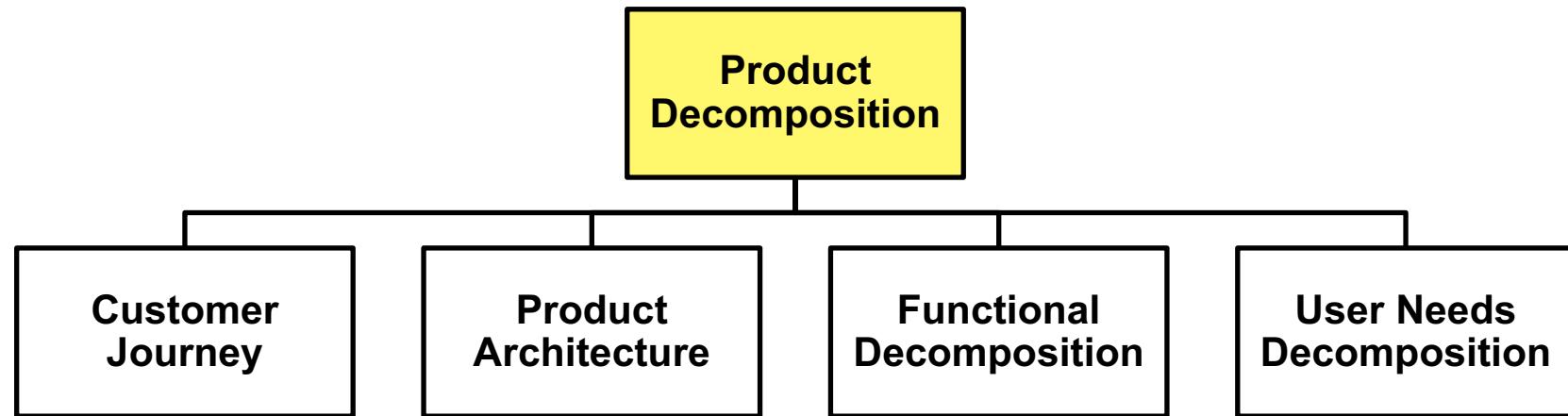
Identifiable Uncertainties (Known unknowns)



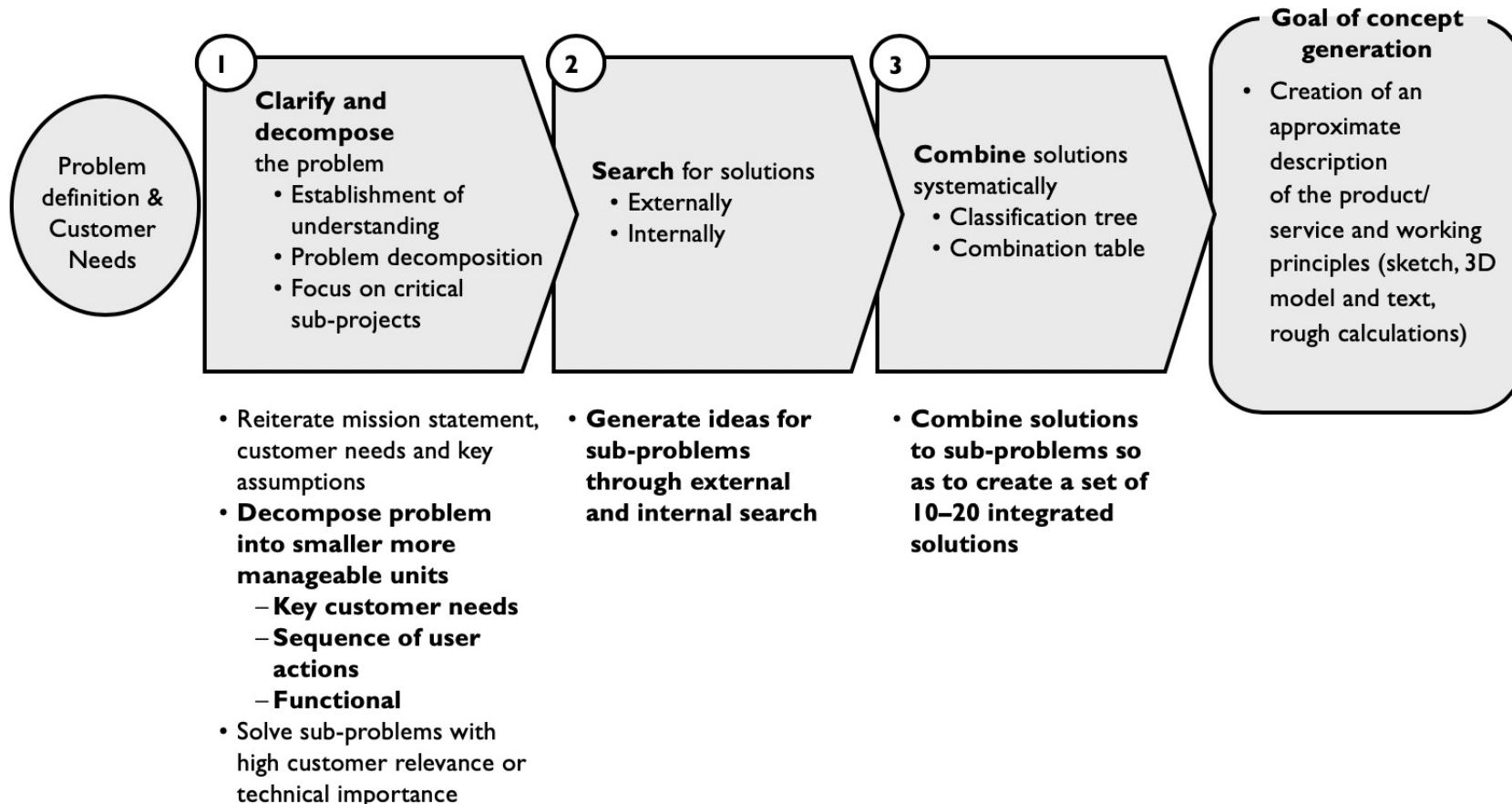
Unidentifiable Uncertainties (Unknown unknowns)



Detecting Uncertainty Early



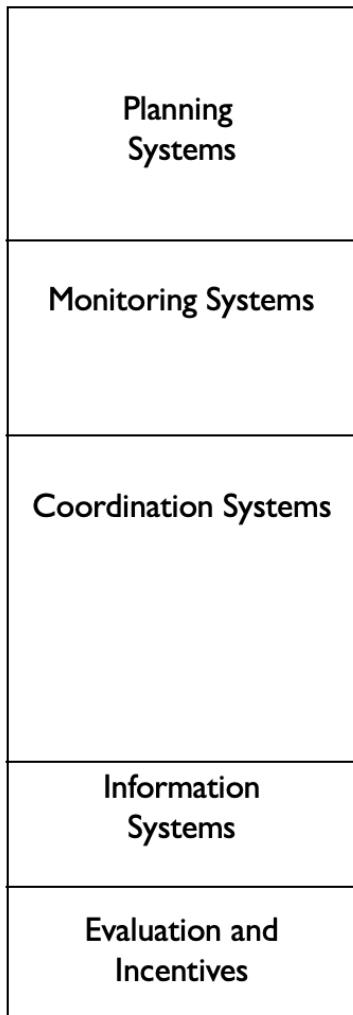
The Concept Generation Process



Learning is Crucial



Adjusting the Management Approach



Planned Projects

- Plan tasks and targets
- Work structure and defined responsibilities
- Use buffers and simulation to manage risk
- Target achievement
- Progress tracking (e.g., % complete, or deliverables)
- Fulfillment of deliverables
- Coordination via work structure in hierarchy
- MBE (management by exception)
- Little decision power necessary
- Planned information: progress, deliverables, actual outcomes of events
- Target fulfillment
- Measurement of output

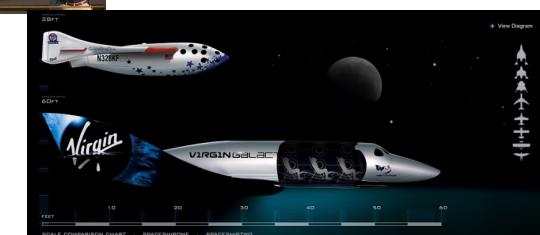
Learning Projects

- Overall vision, intermediate targets
- Tasks to learn
- Rapid turnaround of experiments to learn
- Track “experimentation”
- What has been learned?
- What problem to solve next?
- Dynamic and less formal
- Long-term trust-based relationships handle changes
- Decision power to change approach or targets
- Higher problem solving necessary
- Richer, unstructured information exchange and mutual adjustment
- Upward incentives on output
- “Process quality” incentives

Original Moon Landing:
Creativity would have been limited if planned strictly



X-Prize:
Creativity was dramatically boosted through stronger cost focus



Thank you very much!



DISRUPTIVE BUSINESS MODELS

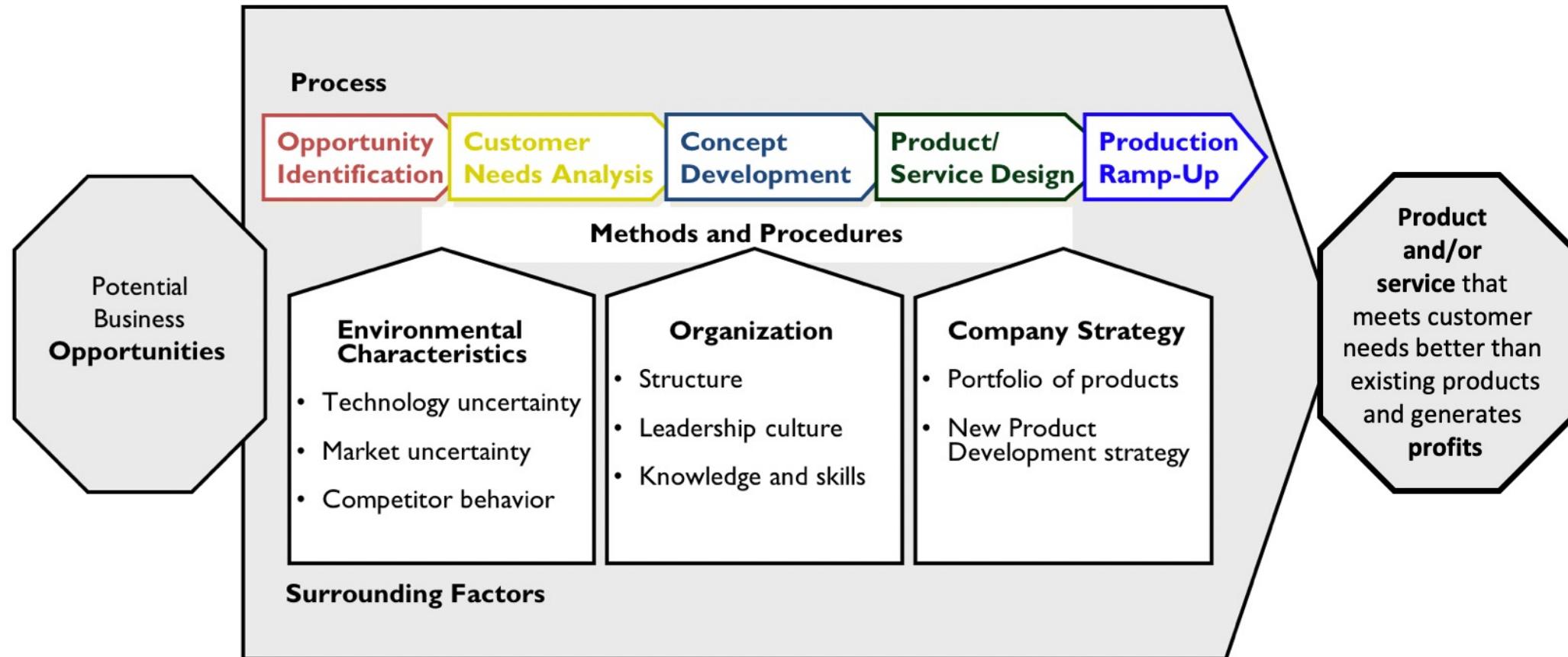
Jochen Schlapp

NORMA Group Associate Professor of
Operations & Technology Management
Frankfurt School of Finance & Management
Adickesallee 32-34
60322 Frankfurt am Main, Germany
j.schlapp@fs.de

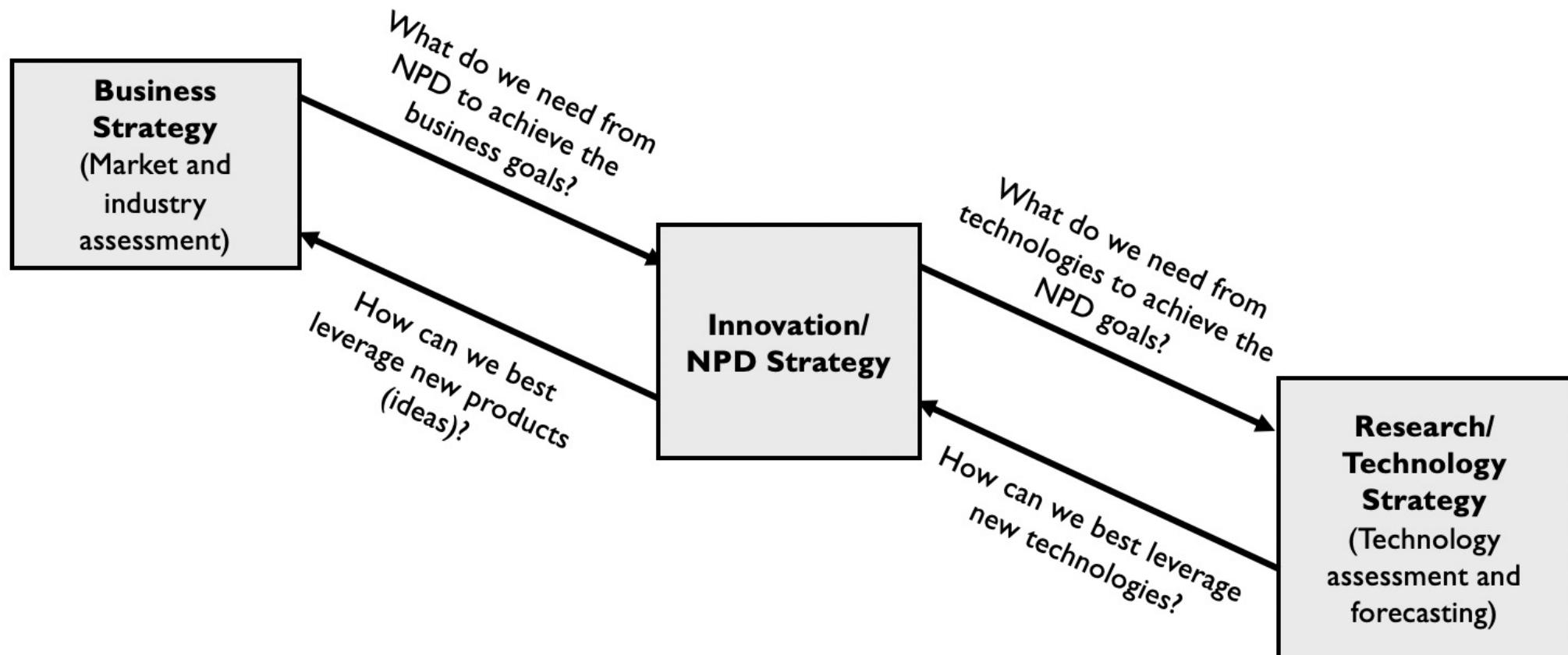
The Innovation Process



Frankfurt School



The Strategy and Purpose of Innovation



1. Product Innovation

Introduction of a new good or service

2. Process Innovation

Implementation of a new production or service process

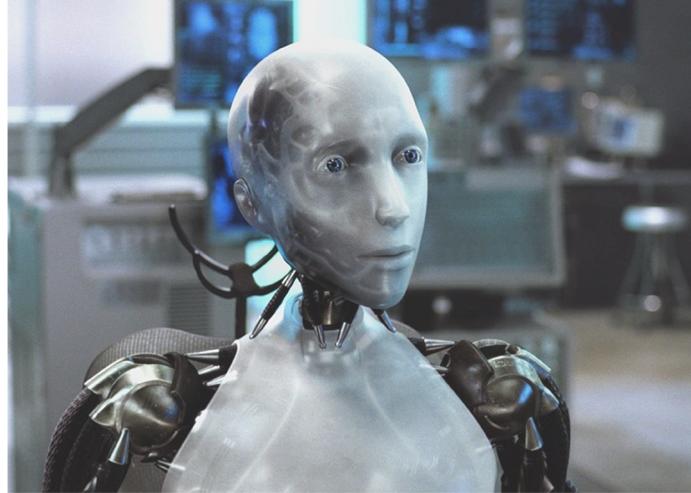
3. Business Model Innovation

Programmatic changes to existing business model

CREATING NEW BUSINESS MODELS

**How will autonomous reasoning
change existing business models?**

Autonomous Reasoning: An Emerging Business Model Ecosystem



**What would be the „perfect world“
for the given business model?**

**Is that „perfect world“
approachable?**

**(Think about demand, internal processes, partners, competitors, and
information requirements)**

Dissecting Business Models

What a Business Model is, and what it is Not?

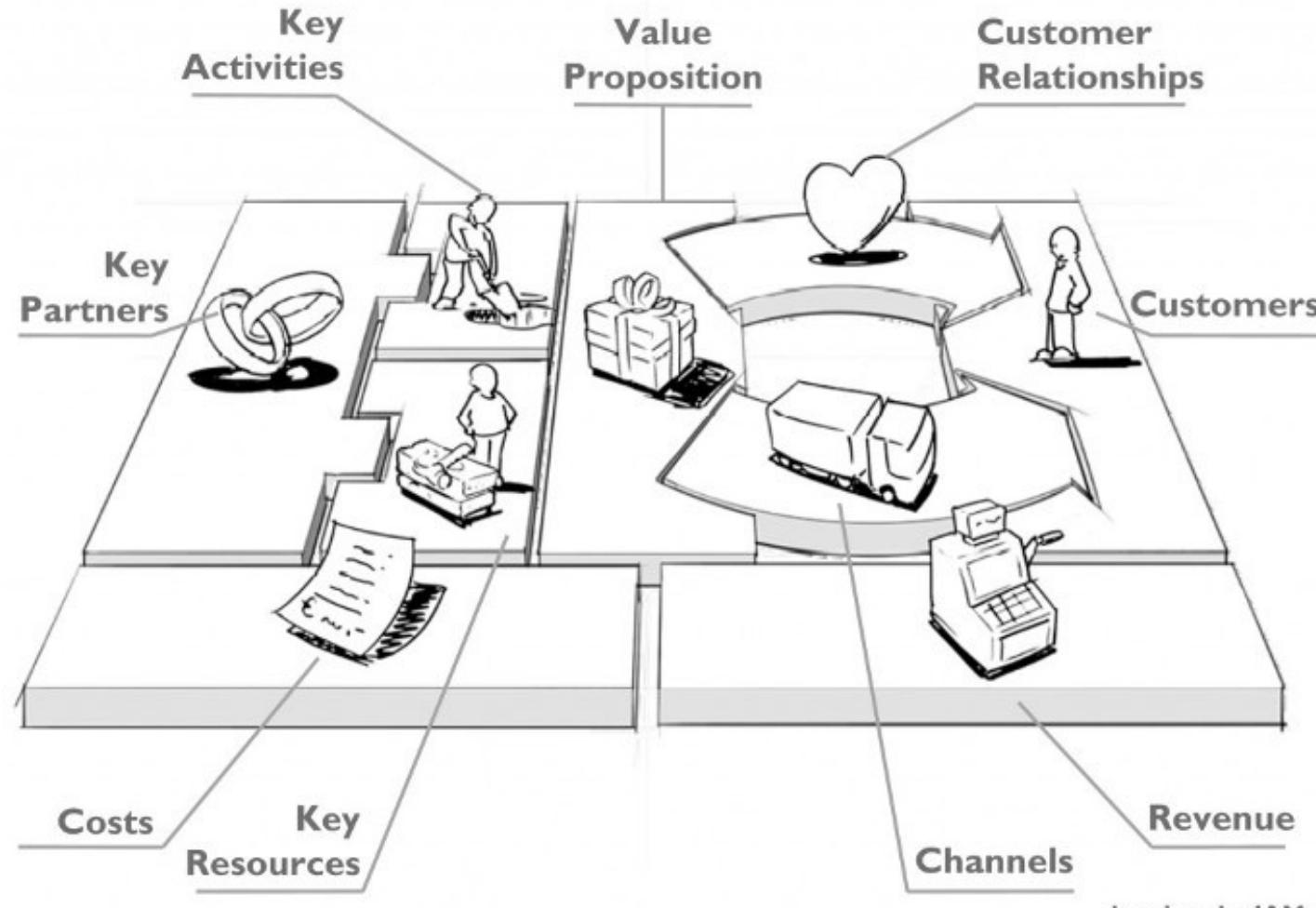
What it is:

- Activities AND
- Organizational units AND
- Their relations and linkages

What it is not:

- Business strategy OR
- Product and market characteristics OR
- Technology OR
- Activities OR
- Any combination of the above

Business Model Canvas



1. Value Proposition

- What is the core benefit that you deliver?
- What problem do you solve?
- What is your USP and how do you stand out from the competition?

2. Customer Segments

- Who is going to buy your product?
- How often do customers buy with you?

1. Key Activities

- Which business activities are necessary for delivering the value proposition?

2. Key Partners

- Who do you need to partner with to deliver your core benefit?

3. Key Resources

- Which resources (talent, know-how, technology, equipment, money, infrastructure) are essential for your value proposition?

4. Channels

- How do you sell to customers?
- How do you communicate with customers?

5. Customer Relationship

- How do you find your customers?
- How do you build and maintain a relationship with your customers?

1. Revenue Structure

- How do you generate revenues?

2. Cost Structure

- How do key activities, resources, and partners contribute to your cost?
- Which costs are fixed, which are variable?
- Which costs are customer-related?

Information Risk

- Consequence of uncertainty
- Decision making without sufficient information

Incentive Alignment Risk

- Conflicts between parties that need to collaborate to create value
- Incentives trigger actions that clash with the broader interest of the firm



ThyssenKrupp Elevator Americas

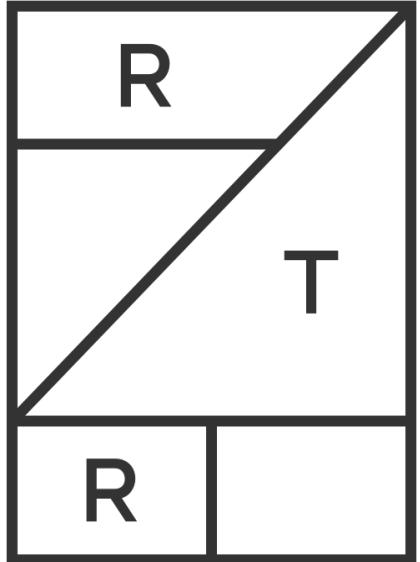
Elevator Sales



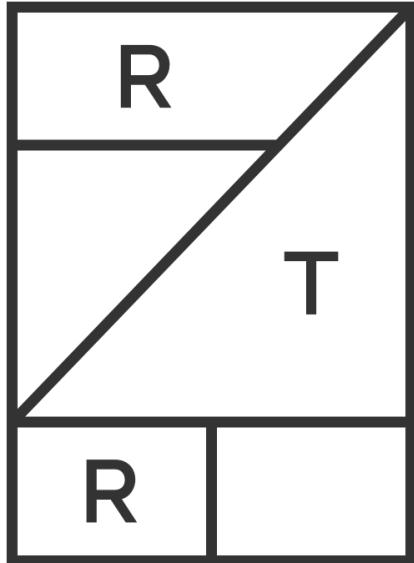
Maintenance Service



Rent The Runway



- Rent the Runway gives users access to **high fashion** without any of the headaches. There's no need to scour 20 different stores, worry about a piece selling out, or stress over when you'll wear an investment dress again.
- We buy pieces directly from top designers and then offer **rentals at just 10% of retail prices**.
 - Rentals run \$50 to \$200 for a 4/8-night loan
 - You get a **back-up size** absolutely free, so there's no need to worry about fit
 - Returning your dress back to RTR is not only easy, it's absolutely free! Just drop your dress in our handy, pre-paid envelope



- Founded in 2009
- Until 2016 online store only, now 5+ physical shops
- Previous VC valuation above \$1bn; went public in Oct. 2021

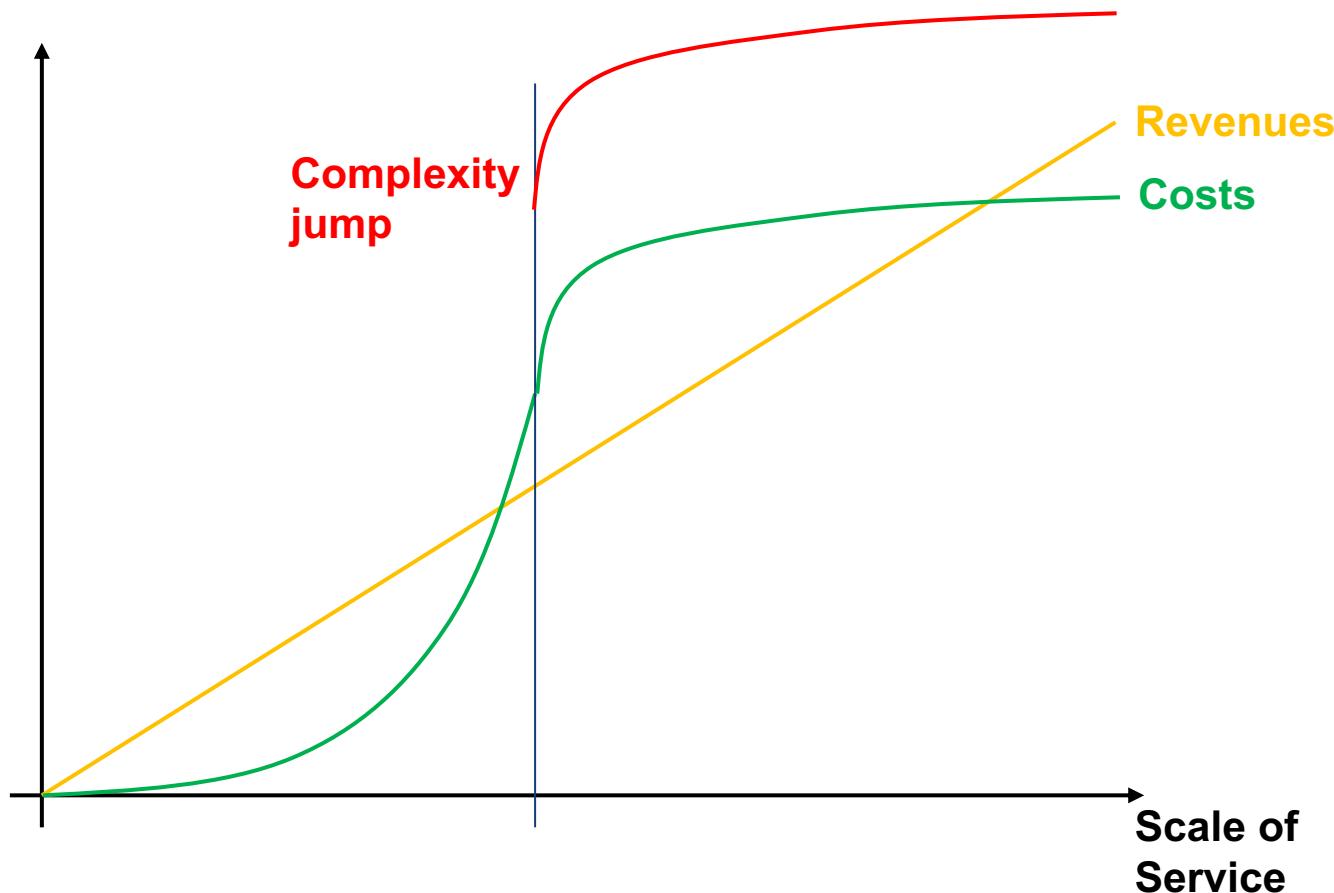


Does that make sense?

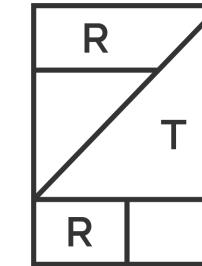
Think about:

- Demand
- Product portfolio
- Processes
- Pricing

Baumol's Cost Curse



Victims of complexity



wework

A Similar Fate?



Frankfurt School



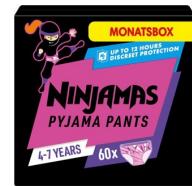
Pampers Harmonie Windeln

28,99 €



Pampers Feuchte Tücher Coconut

28,99 €



Pampers Ninjamas Pyjama Pants

50,99 €



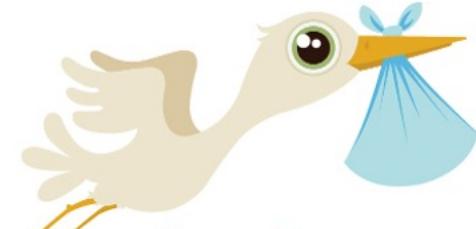
Tommee Tippee Sensitive-Schnuller

11,99 € 12,32 €



Junior 21 Kinderschläger 26,95 € 29,95 €	Club T-Shirt Damen - Flieder, Dunkelgrau 34,95 € 45,00 €	Beast 100 (300g) Turnierschläger 199,95 € 219,95 €	Ripcord 100 (280g) Turnierschläger 159,95 € 179,95 €

Struggling with Scaling



windeln.de



Disruptive Innovation

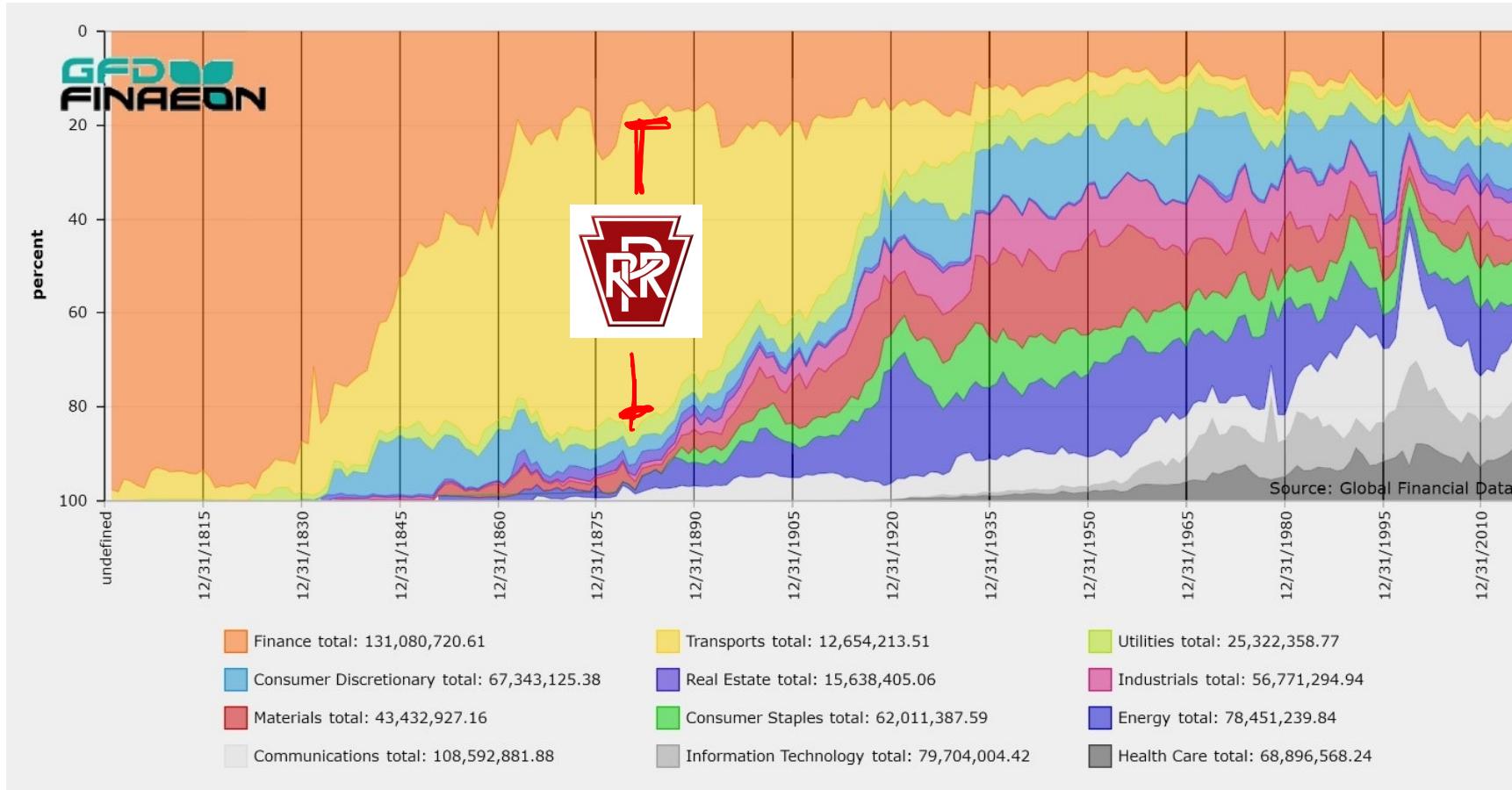
What is your Recommendation for PWM?



The Largest Victim of Disruption

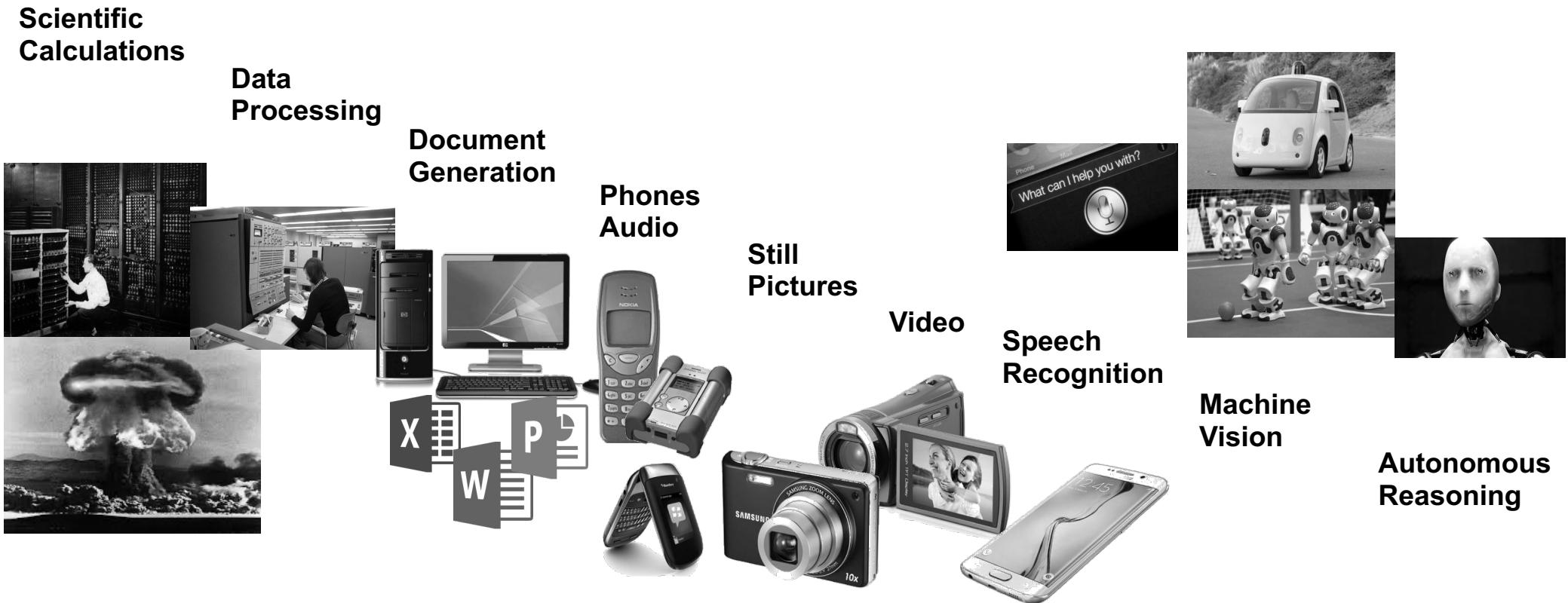


The Largest Victim of Disruption



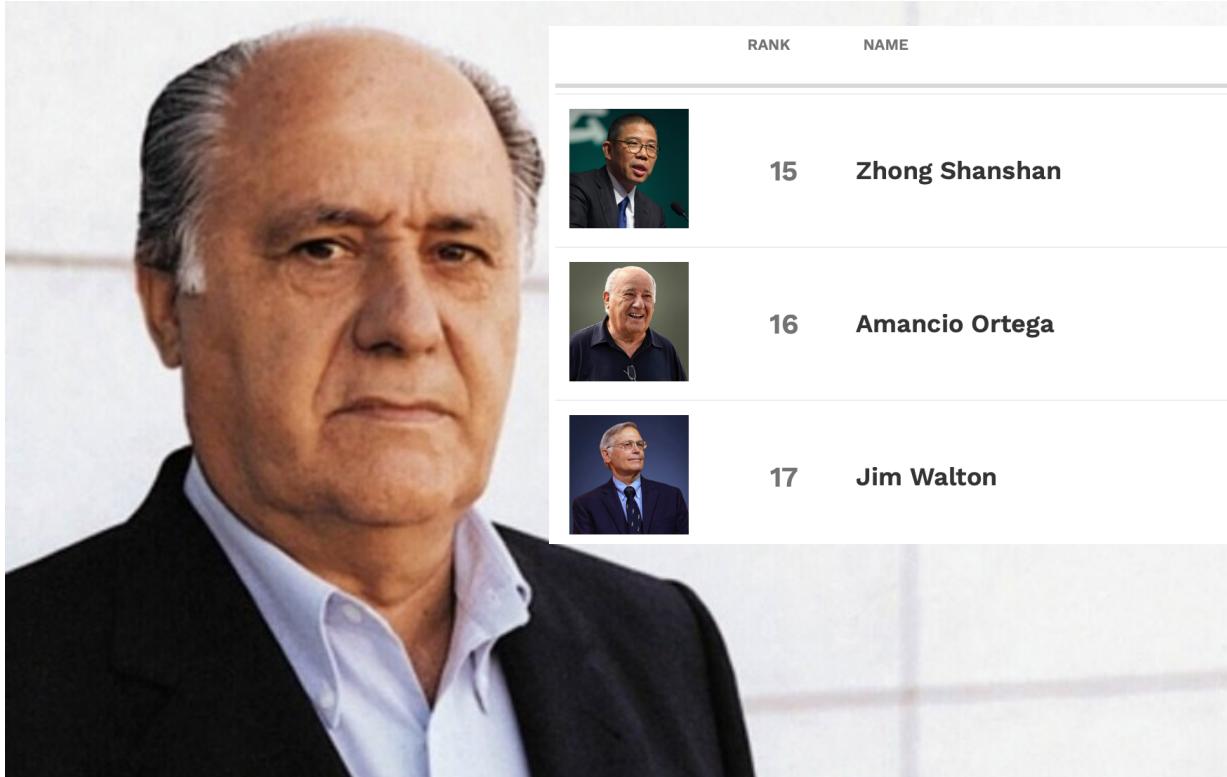
Was PRR really disrupted?

Disruptive Innovation: Coming from Afar



Zara

The Story of Amancio Ortega



RANK	NAME	NET WORTH	CHANGE	AGE	SOURCE
15	Zhong Shanshan	\$68.4 B	▼ \$1,3 B -1.88%	68	beverages, pharmaceuticals
16	Amancio Ortega	\$68.4 B	▼ \$320 M -0.47%	86	Zara
17	Jim Walton	\$61.8 B	▼ \$30 M -0.05%	74	Walmart

What Defines Zara's Business Model?

Think about:

- (a) Zara's vision
- (b) Zara's target segment
- (c) Zara's product offering
- (d) Zara's way of doing business



What a Business Model is, and what it is Not?

What it is:

- Activities AND
- Organizational units AND
- Their relations and linkages

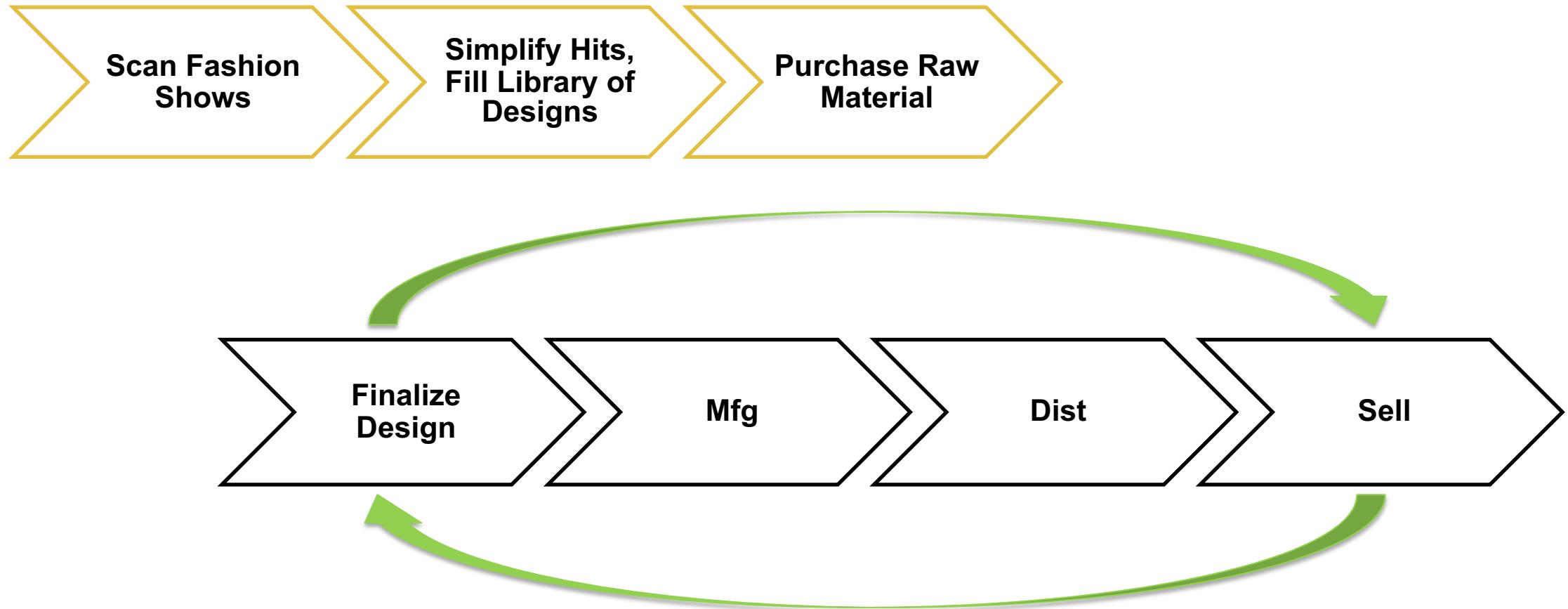
What it is not:

- Business strategy OR
- Product and market characteristics OR
- Technology OR
- Activities OR
- Any combination of the above

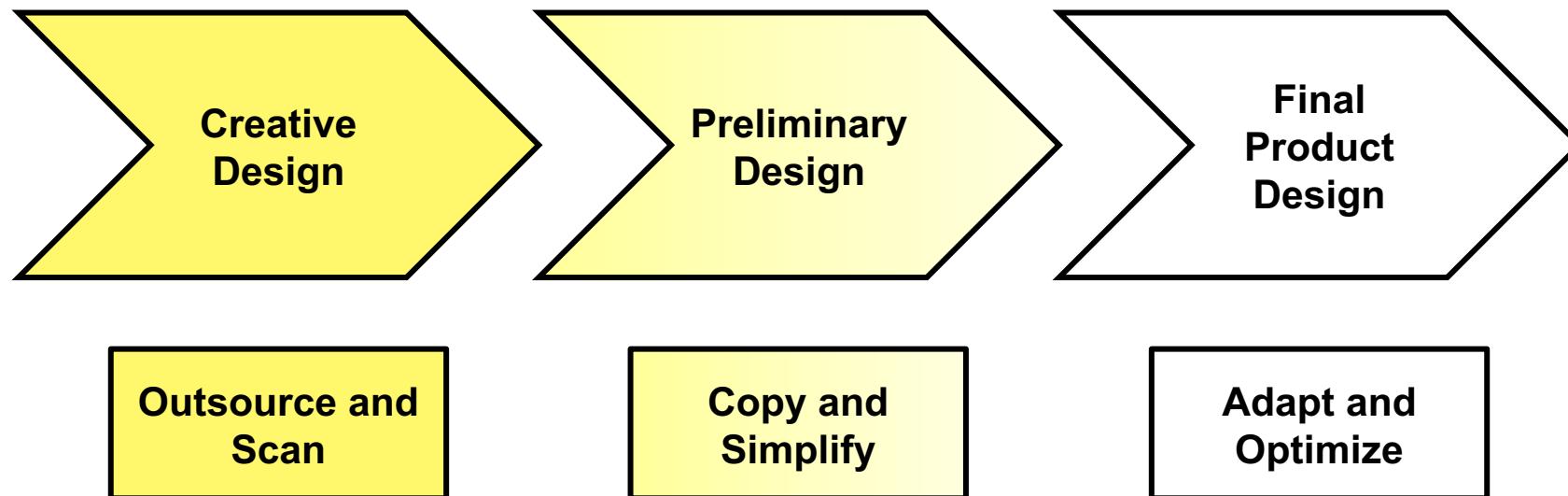
In Zara's case: Supply Chain AND Managerial Relations

Why is profitability low when margins are high?

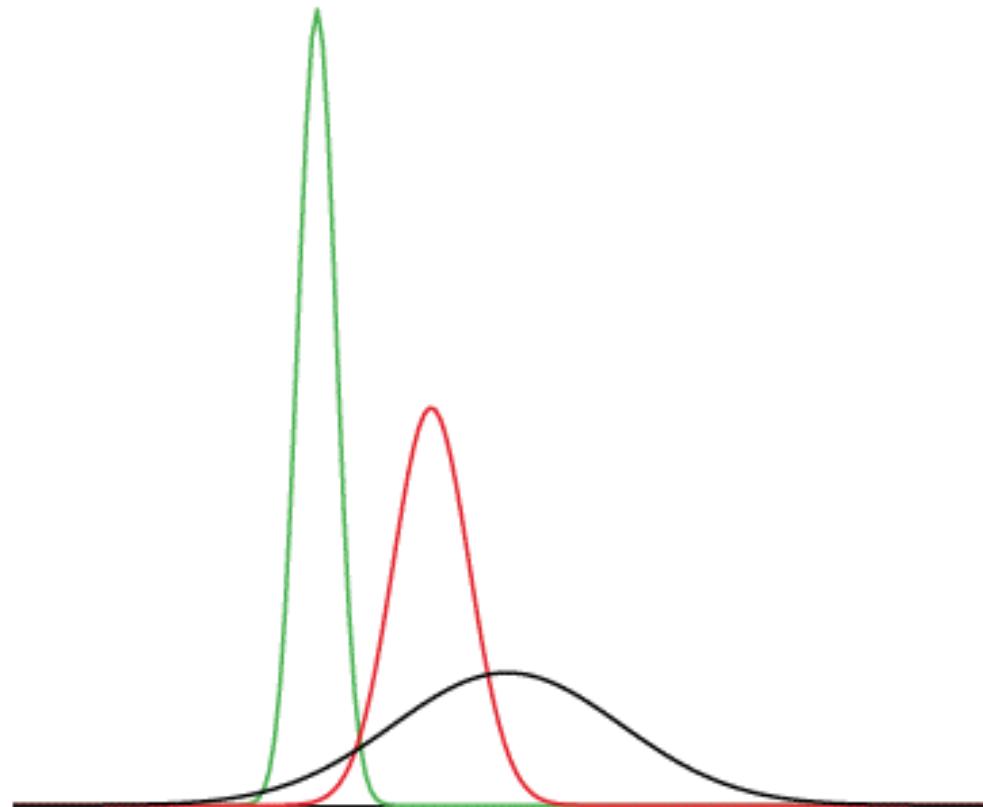
Zara's Supply Process



Zara's Design Process



Minimizing uncertainty maximizes profitability





Zara uses a simple business model.
So why did Zara not have competitors for a long time?

What a Business Model is, and what it is Not?

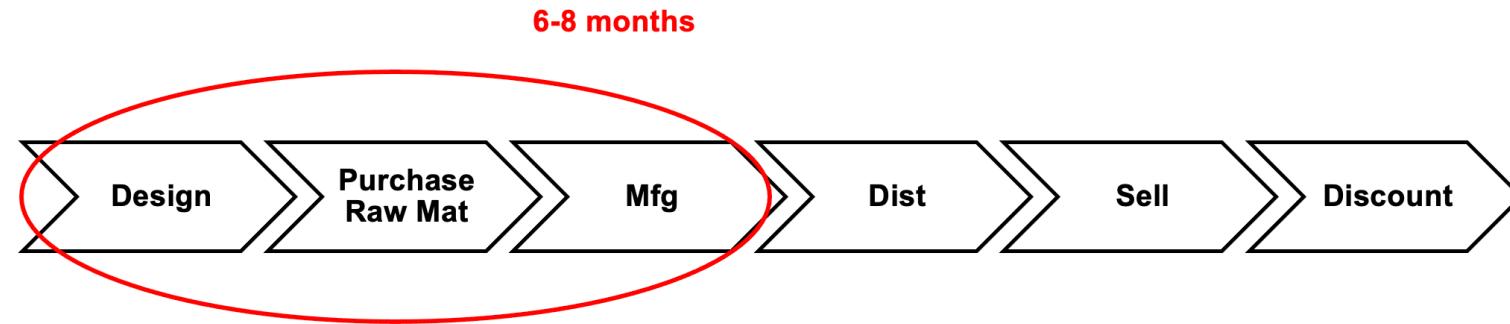
What it is:

- Activities AND
- Organizational units AND
- Their relations and linkages

What it is not:

- Business strategy OR
- Product and market characteristics OR
- Technology OR
- Activities OR
- Any combination of the above

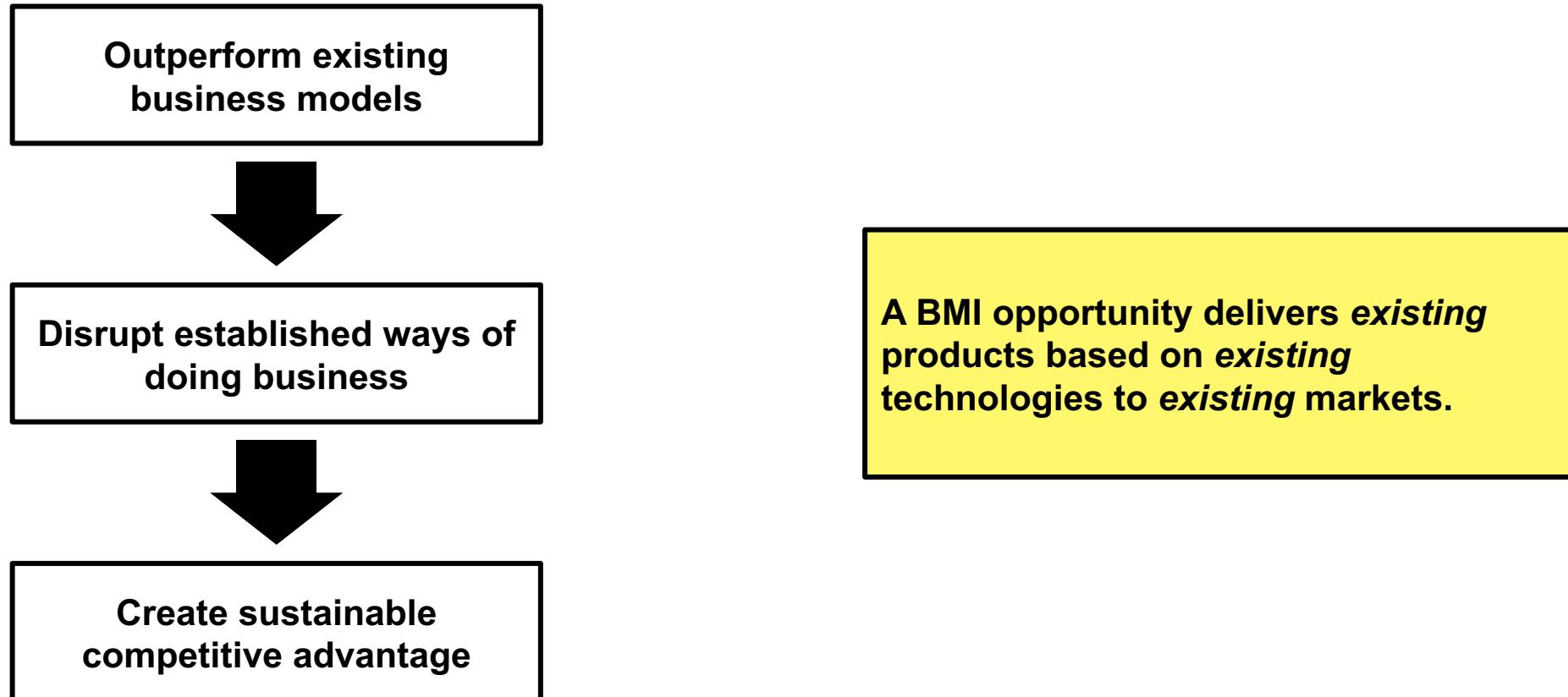
In Zara's case: Supply Chain AND Managerial Relations



Shorten pre-distribution phase to less than 48 hours

- Produce in Germany (shorten delivery lead time)
- Keep significant inventory for all relevant raw materials in all combinations (production flexibility)
- Invest in high-tech machinery and equipment
- Invest in highly skilled workers

Guiding Business Model Innovation



A **Business Model Innovation** changes a company's existing business model such that information and/or incentive alignment **risks** are significantly **reduced**.

Practical guide to identify weaknesses in the business model:

1. **What** decisions are made in the business model?
2. **When** are decisions made?
3. **Who** makes the decisions?
4. **Why** are decisions made?

Rethink What the Business is About



Frankfurt School

Balance focus with flexibility



Reduce the number of decisions



Hedge decisions against one another



Rethink the Timing and Sequence of Decisions

Delay decisions as long as possible

ZARA



Change the sequence of decisions



Split key decisions into smaller pieces to obtain early information



Rethink the Allocation of Decision Rights

Transfer decision rights to the best-informed decision-maker



ZARA

Transfer decision-making to the party best able to tolerate the decision's consequences



Move the costs of the decision to the party that benefits the most



Change the revenue model to align incentives



Replace short-term relationships with long-term partnerships



Integrate



Innovating Processes

1. Product Innovation

Introduction of a new good or service

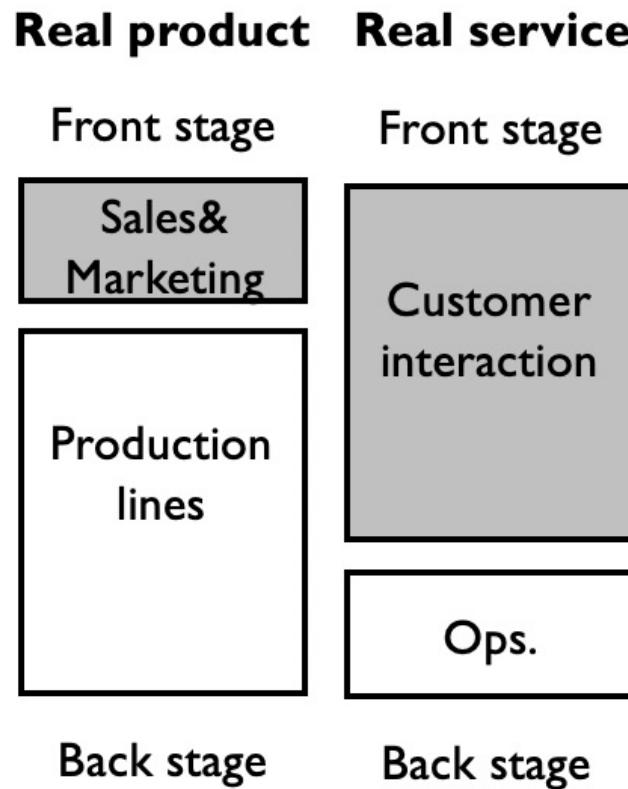
2. Process Innovation

Implementation of a new production or service process

3. Business Model Innovation

Programmatic changes to existing business model

What makes a Service?



What is Product? What is Service?



Front stage?

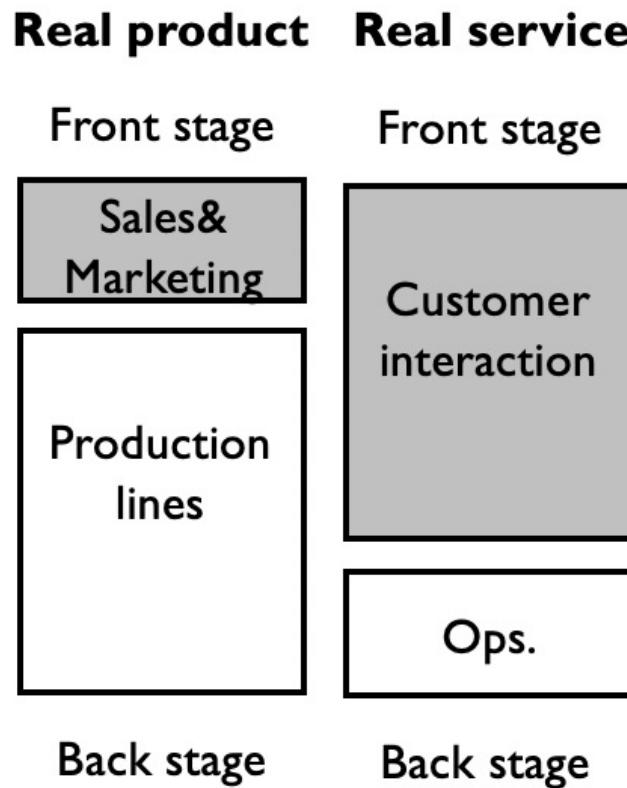
Back stage?

What is Product? What is Service?



Front stage?

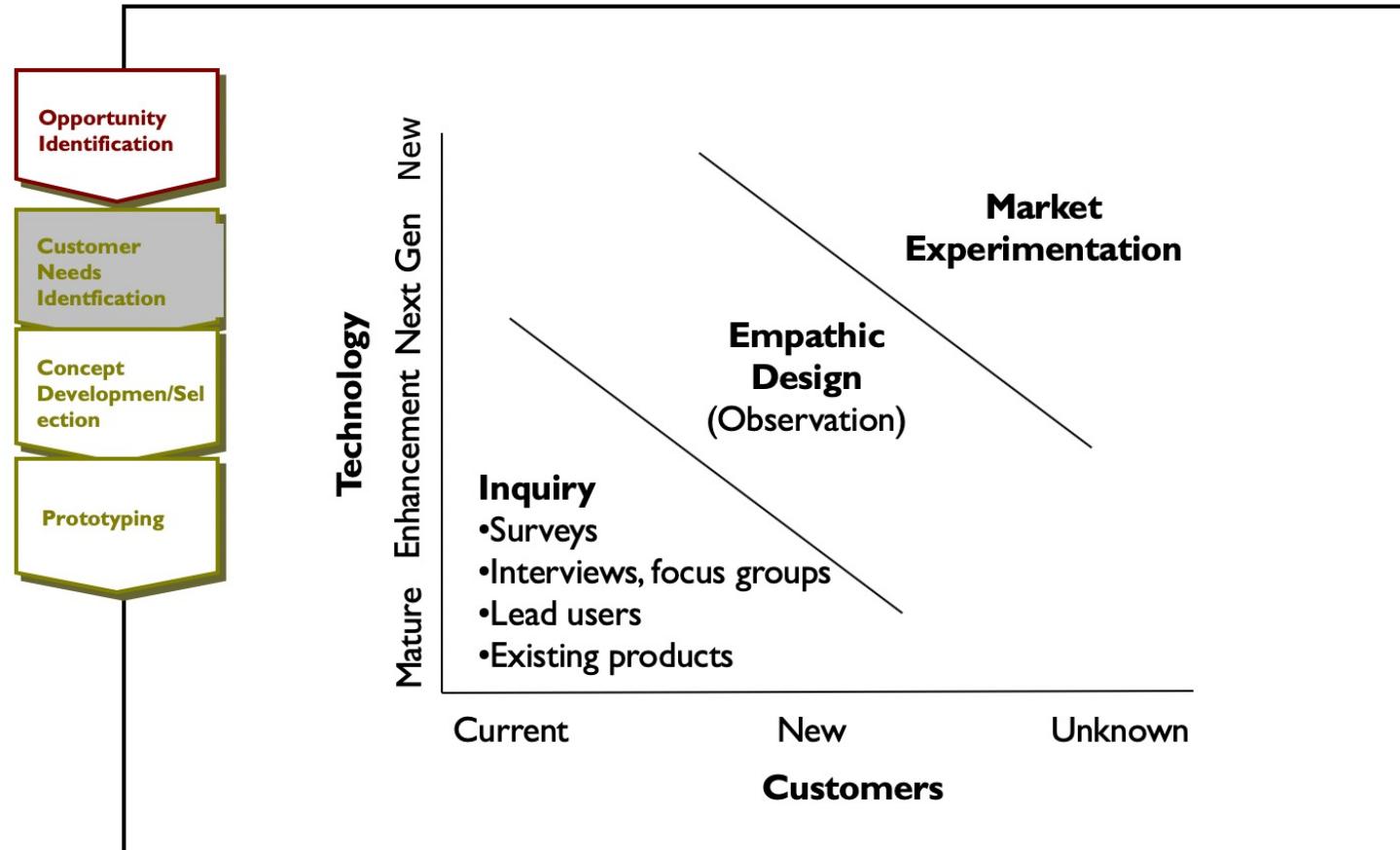
Back stage?



Front stage is the creation of a Customer Experience

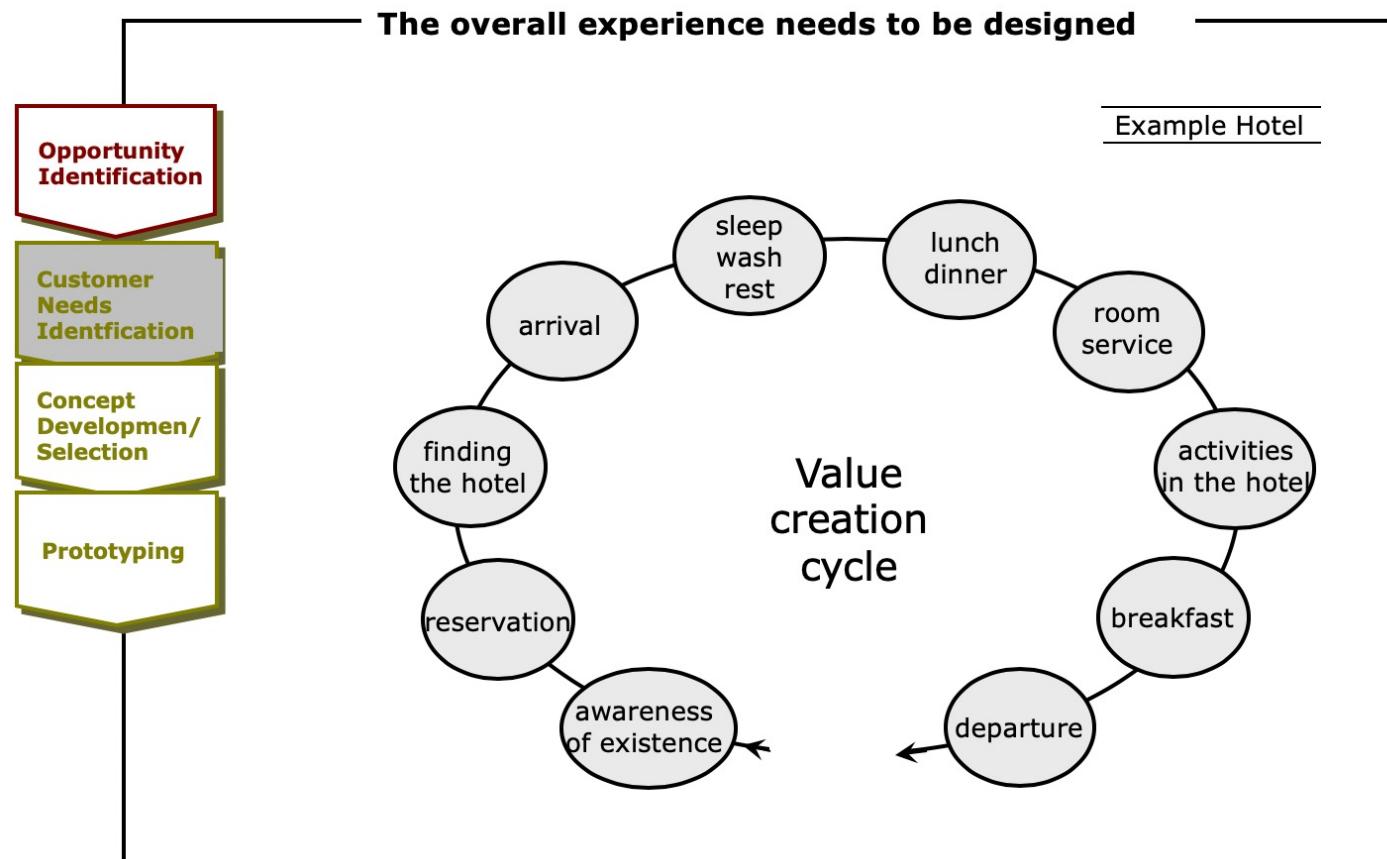
- Customer is part of the experience creation (i.e., production time becomes critical)
- Staff is part of the experience creation
- Company must take holistic responsibility

Eliciting Customer Needs



The Value Creation Cycle

The Value Creation Cycle



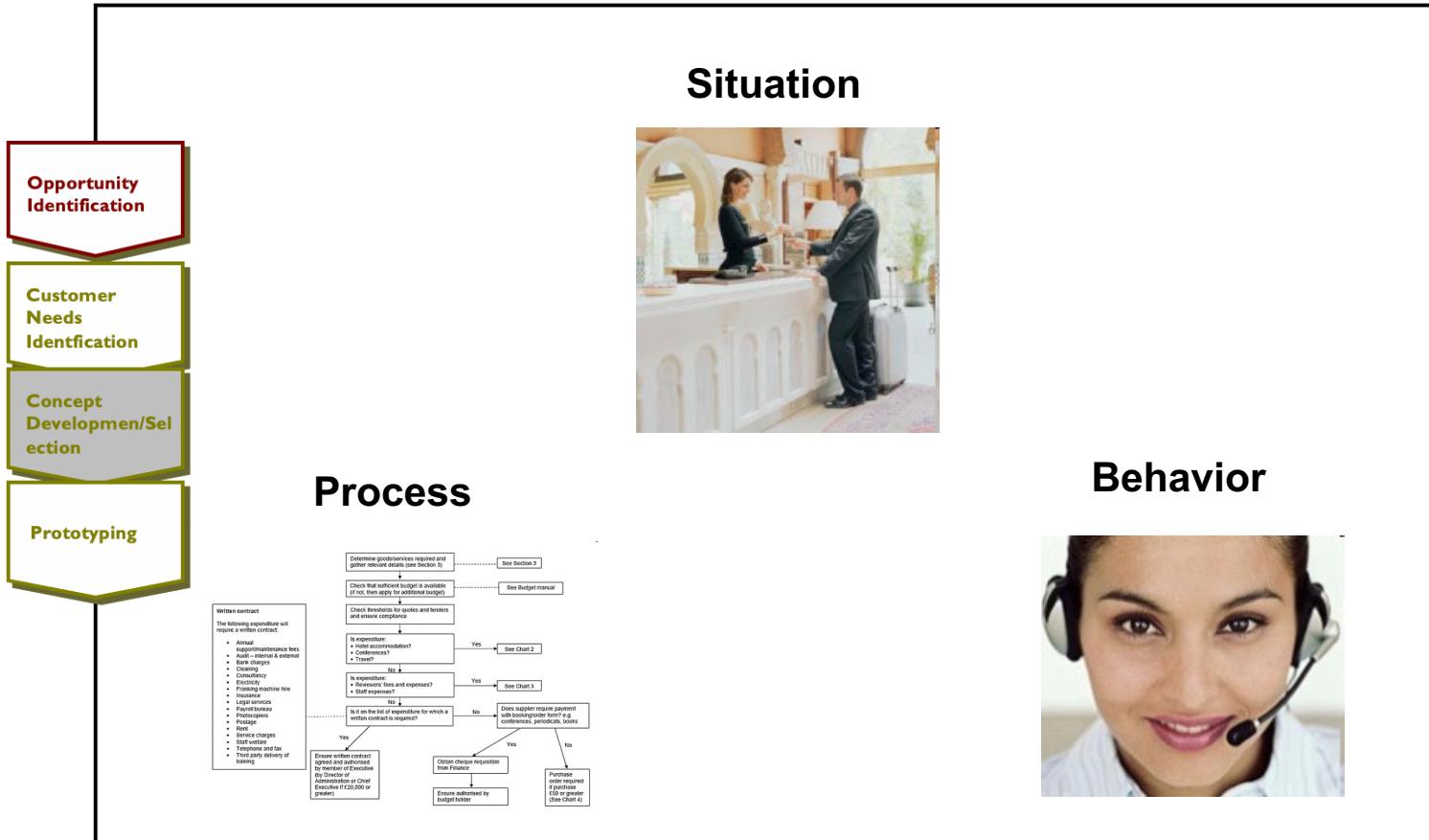
**Develop the value creation cycle
for a hospital waiting area**

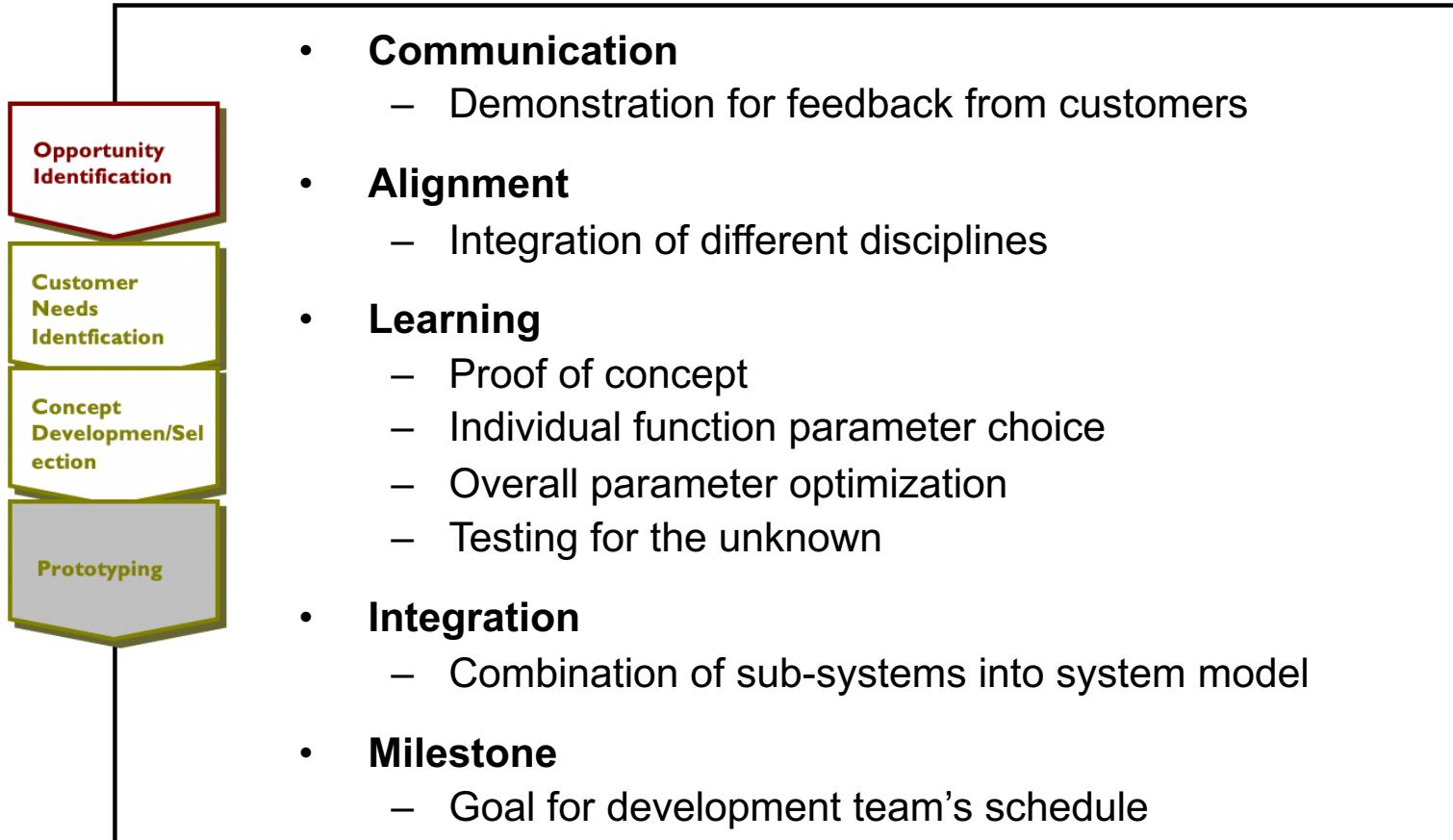
Any ideas for improvement?

A Hospital Waiting Area



Results of a Value Creation Cycle





Digitization at DBS Bank

- Singapore based bank offering the full portfolio of financial services (consumer & institutional banking, capital markets, private banking, SME & corporate banking)
- Founded in 1968 by the government of Singapore to finance Singaporean companies
- Largest bank in Southeast Asia (33,000 employees, >12m customers)
- 2022 revenues (profits) of 16.5 (8.2) bn SGD
- Focus on („new“) Asian market
- Leader in digital banking services

OUR ACHIEVEMENTS

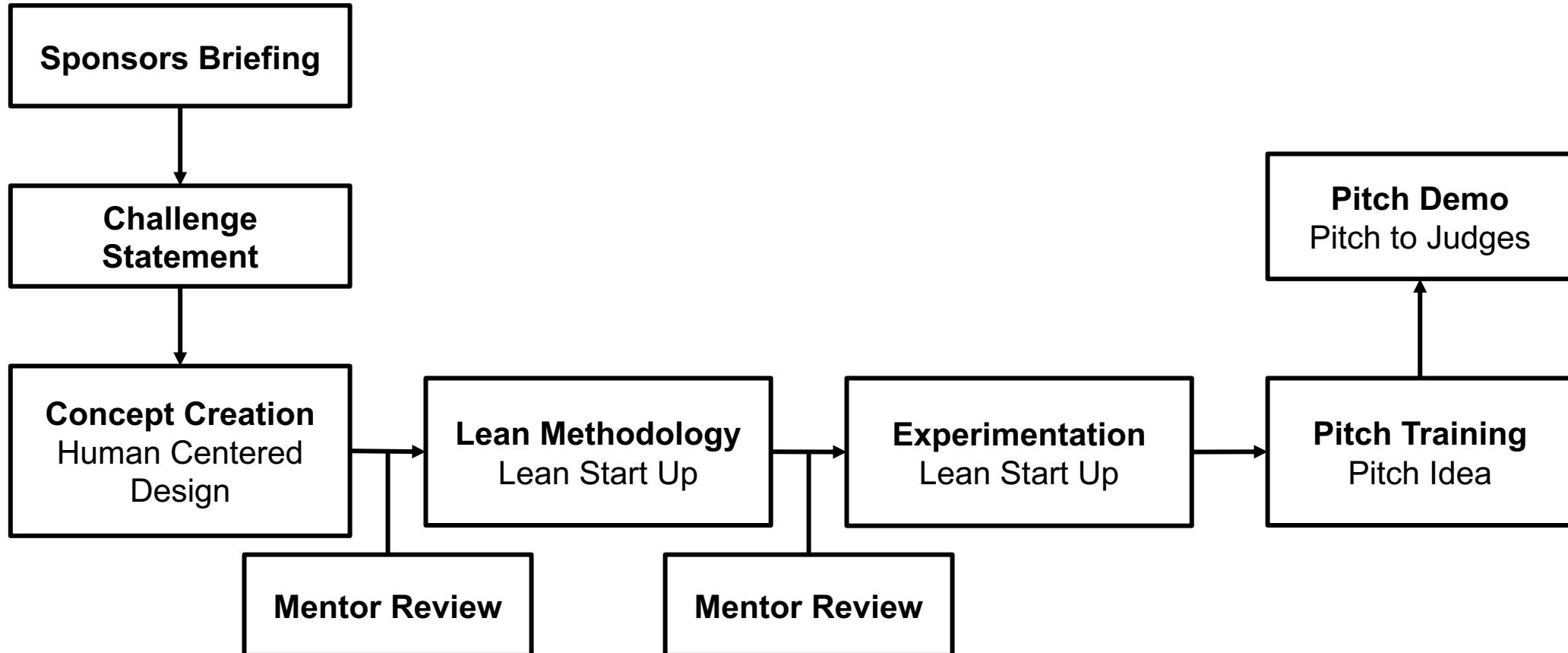
2021 saw DBS bag a record number of global accolades, including many first-time wins. Global wins included “World’s Best Bank” and “World’s Best Digital Bank” from Euromoney, “Global Bank of the Year” and the global award for “Most Innovative in Digital Banking” from Financial Times publication The Banker, and “World’s Safest Commercial Bank” from New York-based Global Finance.

-  World's Best Bank
-  World's Best Digital Bank
-  Global Bank of the Year

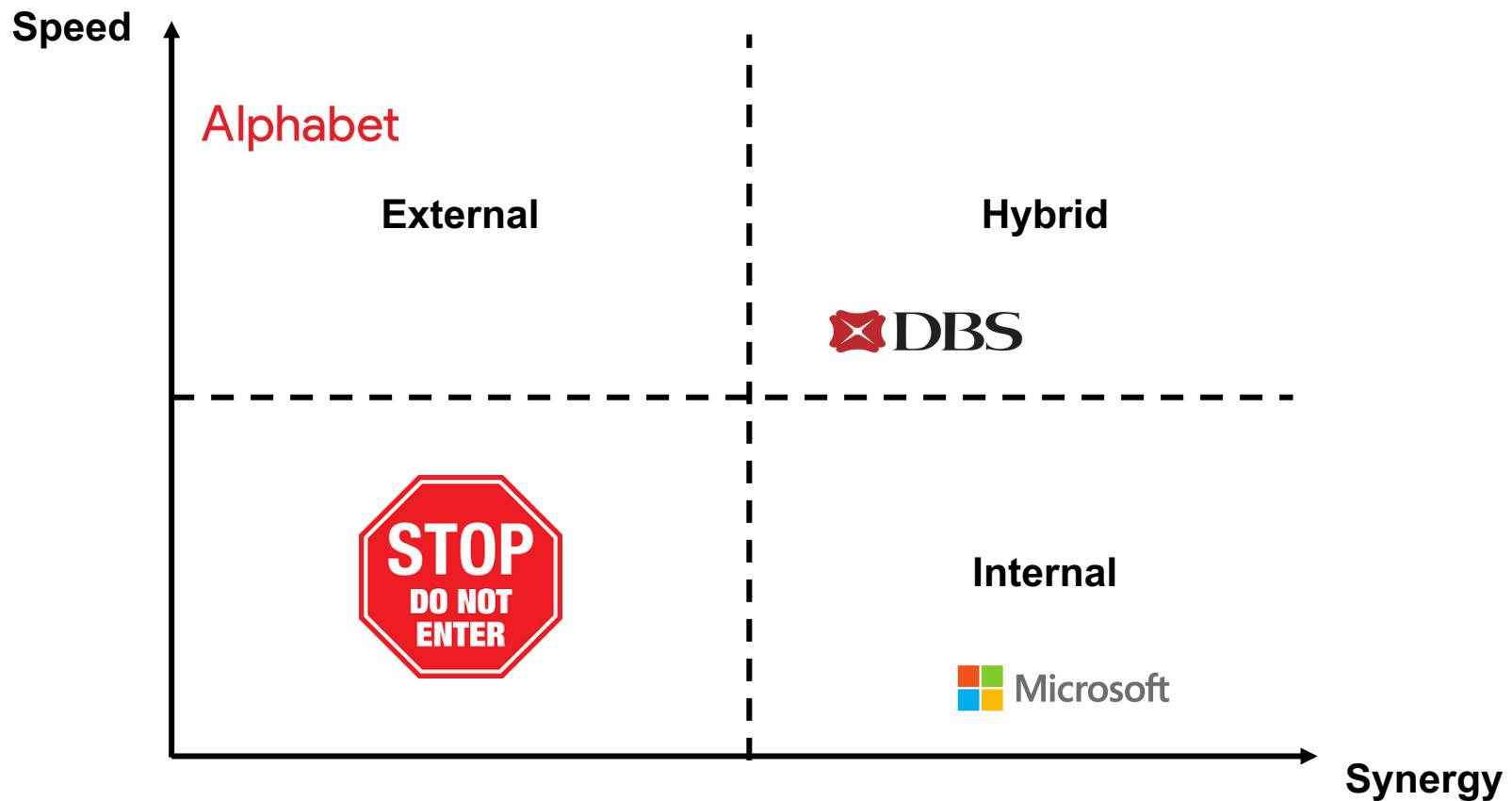


The Challenge: A Sustainable Digital Transformation

- In late 2013, DBS Bank initiated the Digital Mindset Program
- Initial pilot projects have been a great success
- Two key challenges:
 1. How to get **involvement** of the entire organization for the digital transformation?
 2. How to make sure that the digital mindset becomes part of DBS' **DNA**?



A Hybrid Approach

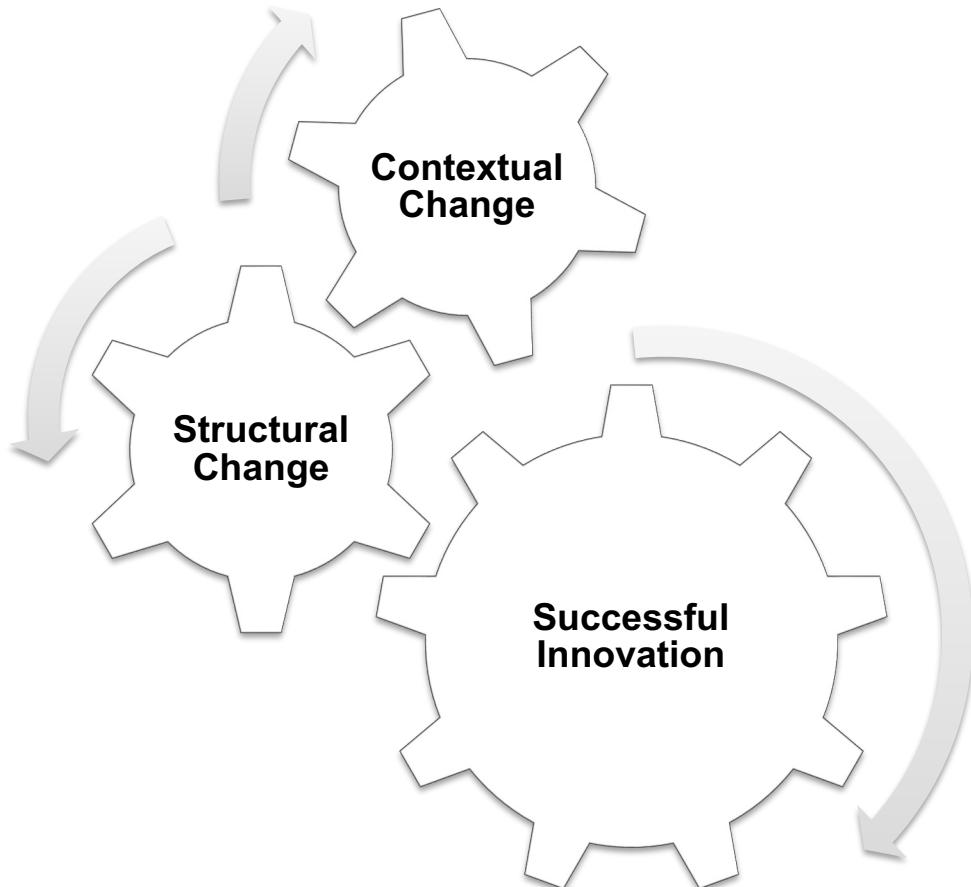




-  **paperless**
-  **signatureless**
-  **branchless**

“At DBS, we have spent the last three years intently pursuing a digital agenda. At the heart of this is our belief that with the rapid changes upon our industry, we need to transform the bank, and turn it into a 22,000-person fintech.”

Piyush Gupta, CEO, Aug 2016



Digital **transformation** involves two sets of organizational change mechanisms:

- **Structural** organizational change
- **Contextual** organizational change

Structural change: Creation of Digibank

- Provide **legitimacy** for digital transformation inside the organization
- Source to **develop** new capabilities and competencies

Contextual change: Hackathons (change in mind-set)

- Facilitating **gradual shift** in organizational practice throughout the organization

Thank you very much!



DISRUPTIVE BUSINESS MODELS

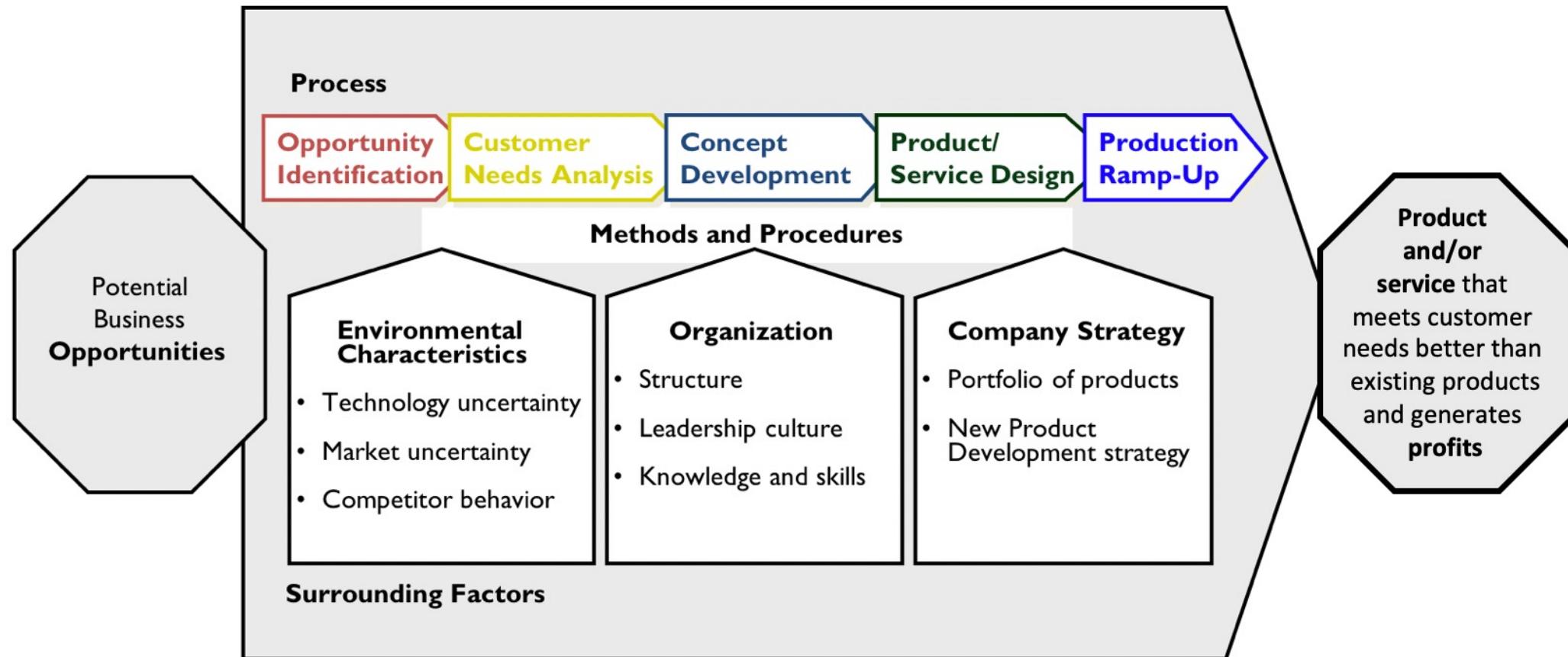
Jochen Schlapp

NORMA Group Associate Professor of
Operations & Technology Management
Frankfurt School of Finance & Management
Adickesallee 32-34
60322 Frankfurt am Main, Germany
j.schlapp@fs.de

The Development Process



Frankfurt School

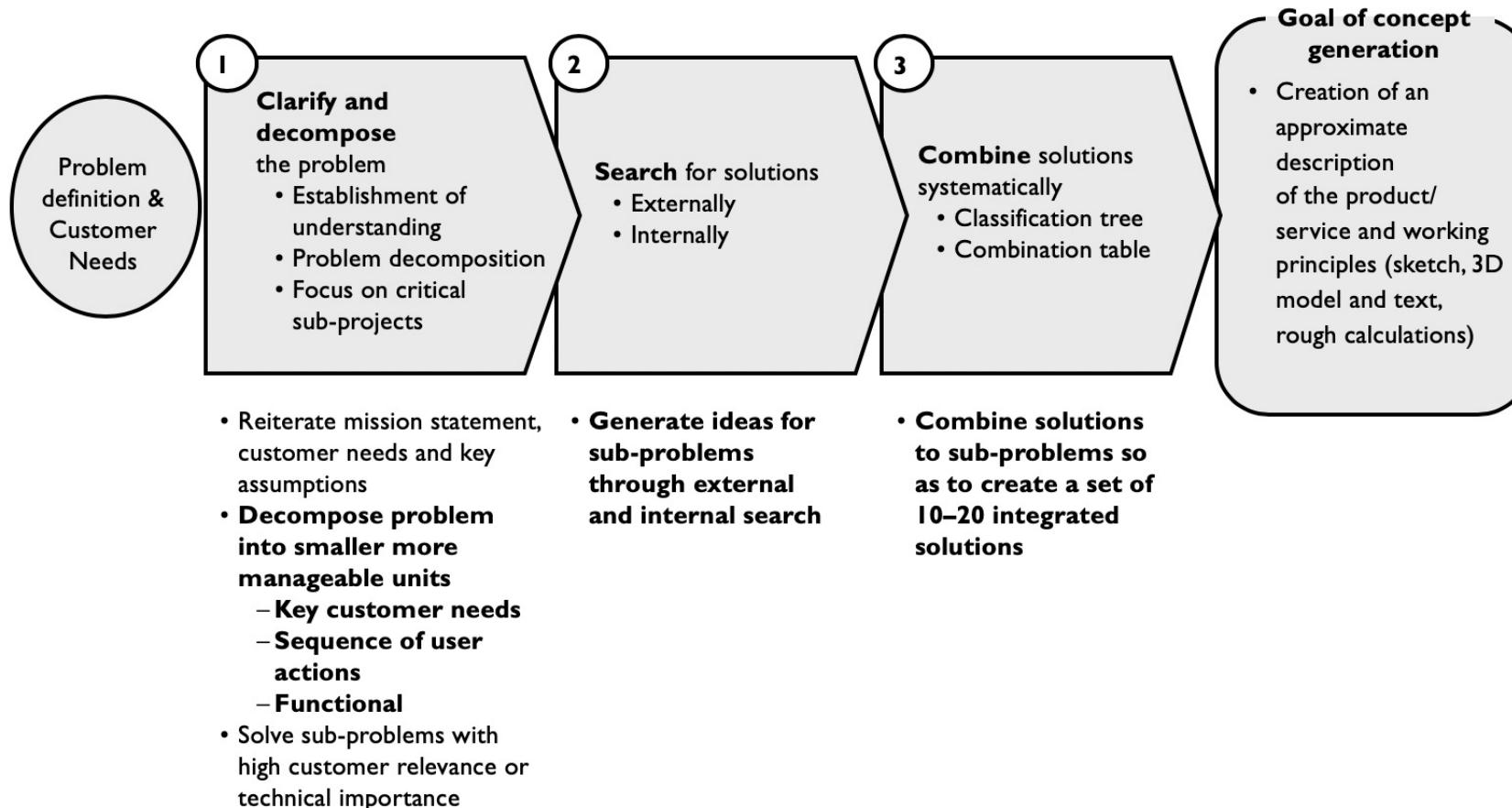


Composing Innovation Portfolios

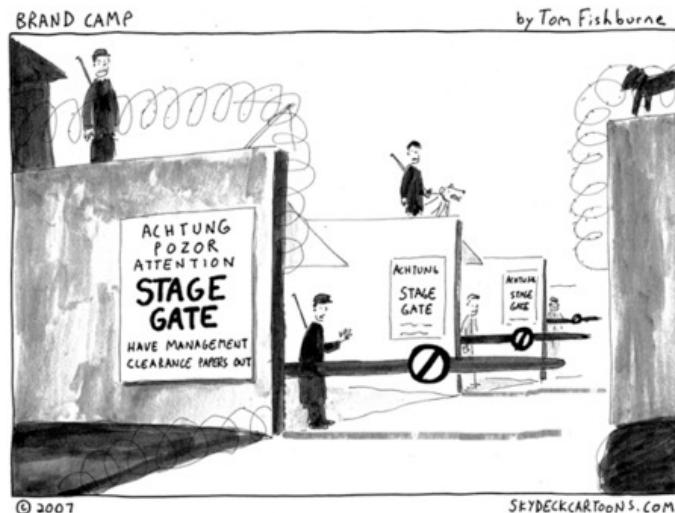
The Concept Generation Process



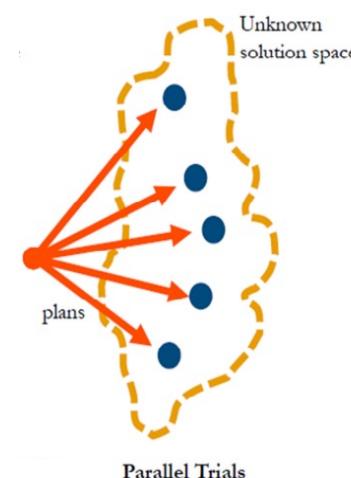
Frankfurt School



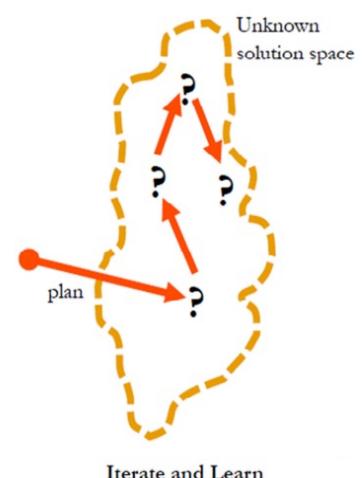
Certainties
(Knowns)

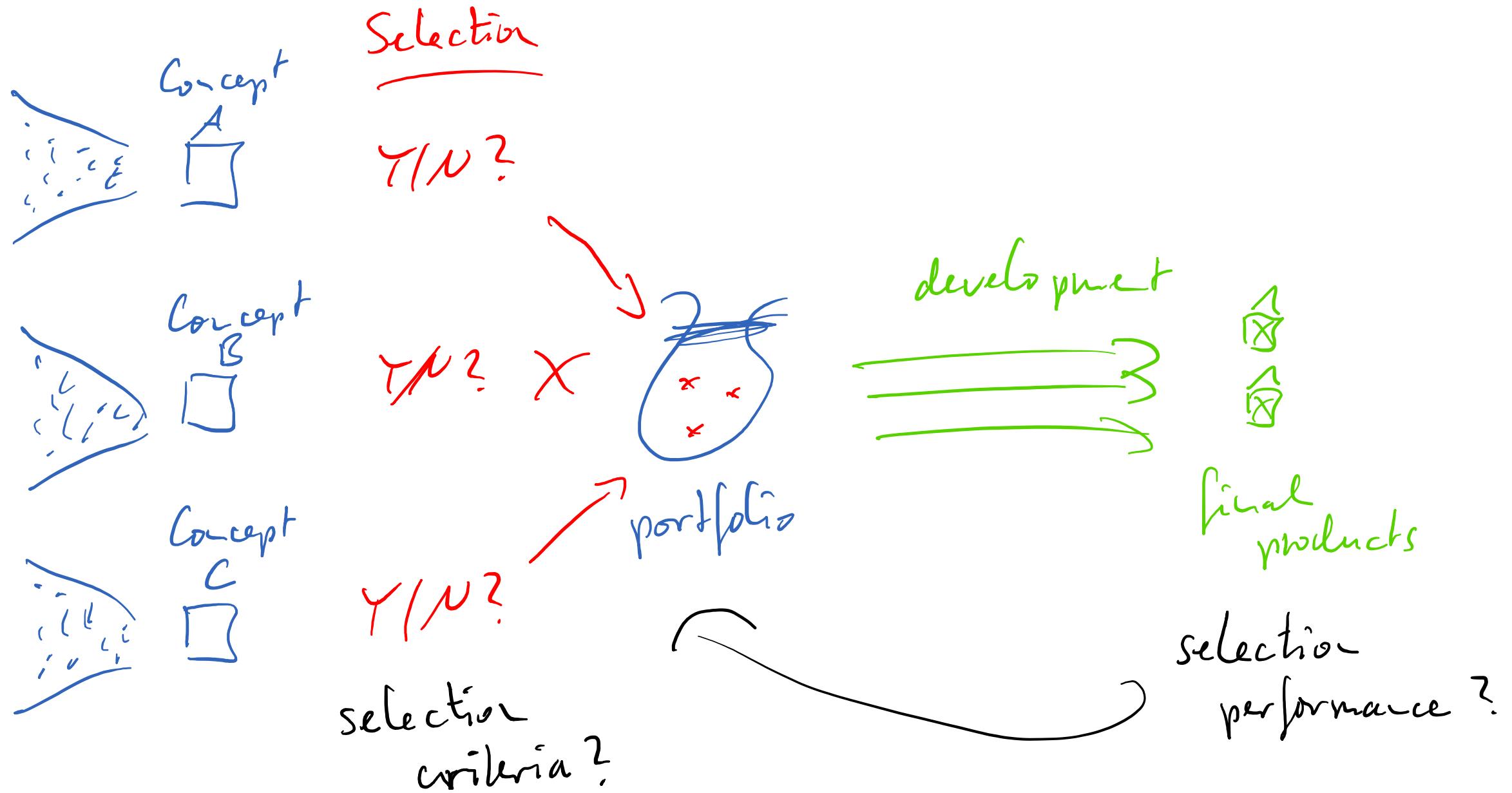


Identifiable Uncertainties
(Known unknowns)



Unidentifiable Uncertainties
(Unknown unknowns)





The Shark Tank

What project criteria would you consider when planning to invest in an innovation opportunity?

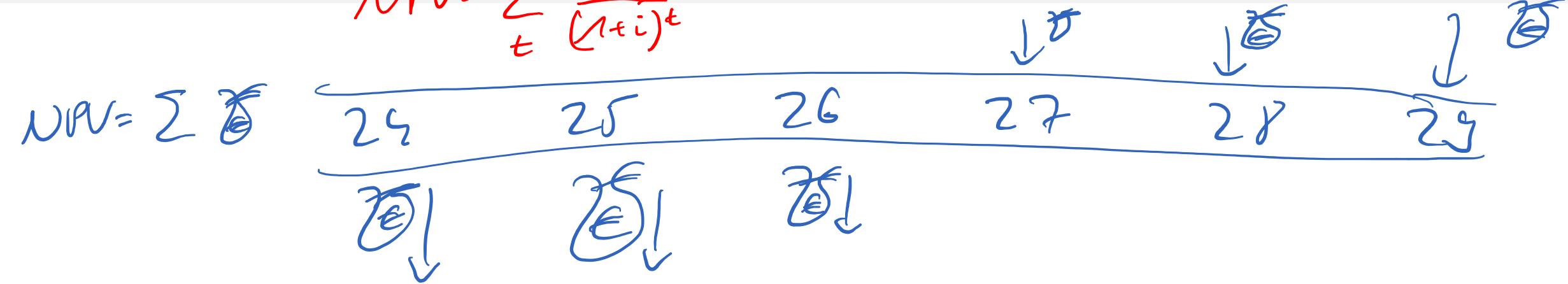
- financial criteria: NPV, cost structures, margin
 - project team: leadership, capabilities
 - target market, market share, unique selling point
 - slate of the project, now and in the future, What is the plan?
+ existing firm portfolio
 - competition
 - required resources, talent needed
 - created value: sustainability, social
 - riskiness of project: regulatory risk, weaknesses, tech risk, market risk, cost risk
 - scalability
 - opportunity cost
- relation to company strategy ①
- relationship to existing business:
synergies, cannibalization ②
- fit to my own skills,
competences
- living: break even, live until profitability

The NPV Fallacy



Frankfurt School

$$NPV = \sum_t \frac{P_t}{(1+i)^t}$$



- interest rate : uncertainty , result of portfolio composition
- projection : errors
- NPV of not doing the innovation ?
- favors incremental innovation
- no valuation of strategic position at the end
- no valuation of option value

What is Wrong with Using NPV?

Alternatively: Who is more beautiful?

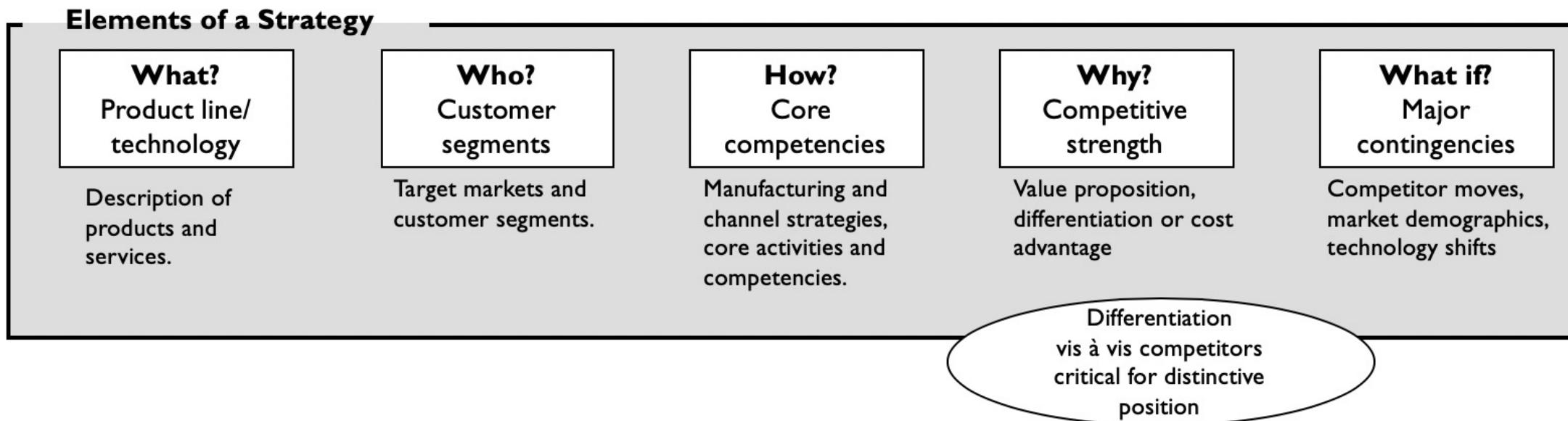


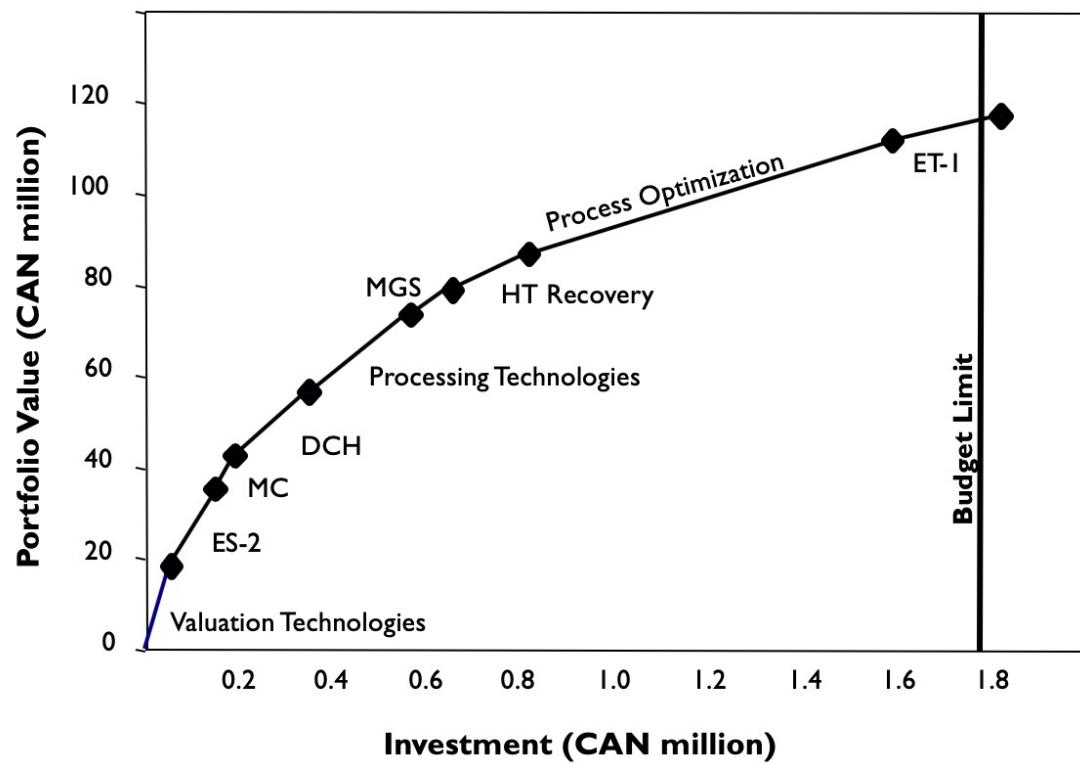
		Beauty				
		--	-	0	+	++
Hairline	Eyebrows	<input type="radio"/>				
		<input type="radio"/>				
Nosewidth		<input type="radio"/>				
Forehead		<input type="radio"/>				
Mouthwidth		<input type="radio"/>				
Facial Hair		<input type="radio"/>				
AVERAGE		<input type="radio"/>				

World is not a linear combination of separable factors!

Innovation Portfolio Features

We need a Portfolio Strategy





Limits of ROI Logic

- Lack of risk evaluation
- Lack of investment deviation/timing
- No check of strategic fit

Need:
Multi-attribute Decision Theory



Selection criterion type	Quantitative measure	Dimensionless Measure (Low=1, High=5)	Importance Weight (%)	Score
Payoff	<ul style="list-style-type: none"> NPV Market share Revenues 	3	30%	0.9
Investment	<ul style="list-style-type: none"> Annual/Total R&D project cost Time to completion 	2	10%	0.2
Risk	<ul style="list-style-type: none"> Probability of market success Probability of technical success Exposure in case of failure 	1	40%	0.4
Strategic fit	<ul style="list-style-type: none"> Competitive impact of technologies Support of technology for business strategy 	5	10%	0.5
Constraints/ Time	<ul style="list-style-type: none"> Acquisition of competences Financial restrictions 	4	10%	0.4
Total score				2.4

Required:
Managing the Portfolio of Projects!

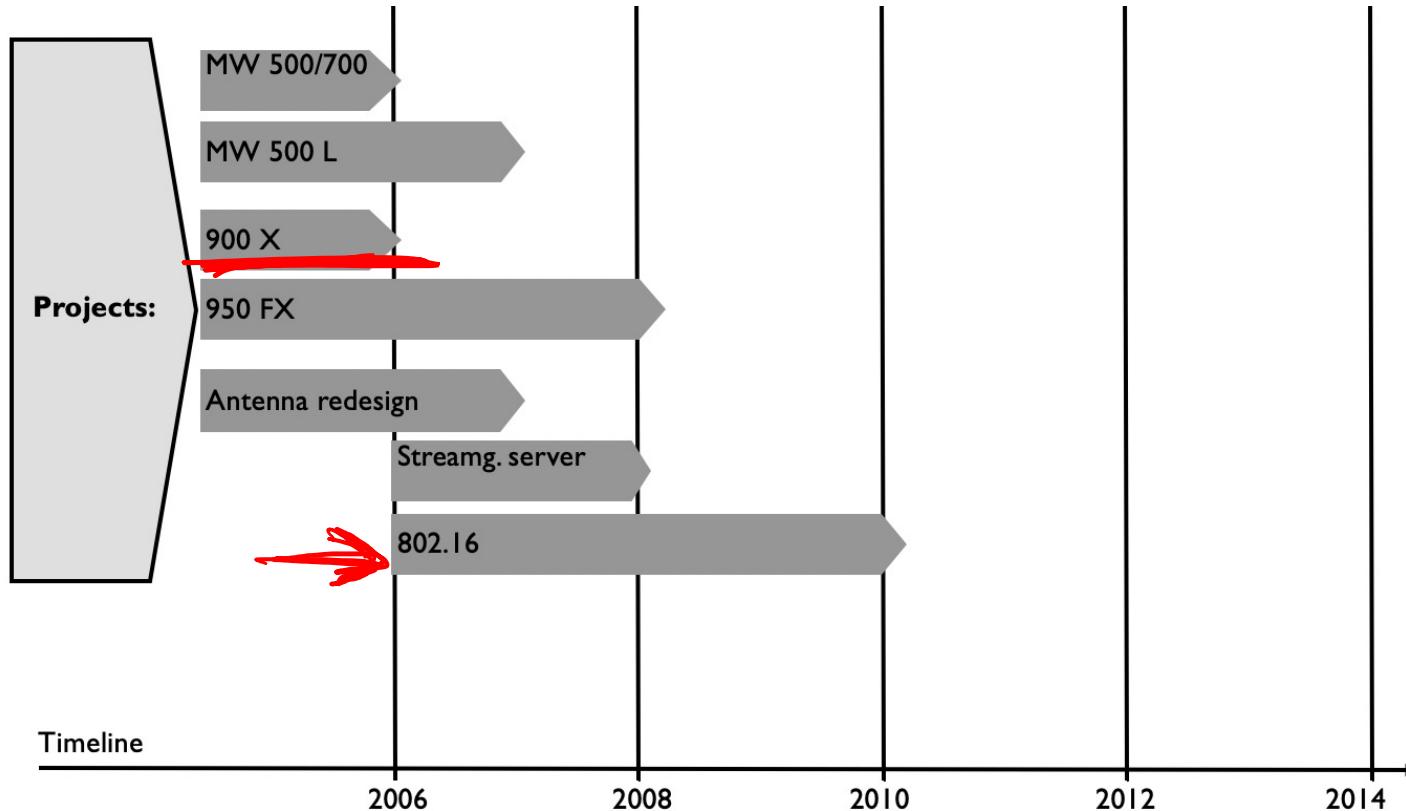
Limits of Scoring Cards

- Interdependence not considered appropriately
 - Direct interactions not considered (mutual enabling or damaging effects on technology or market side)
- Projects are substitutes in market segments
- Projects compete for the same scarce resource pool
- Inherent political nature of 'importance weights'
- Assumptions of linearity in selection criteria not realistic

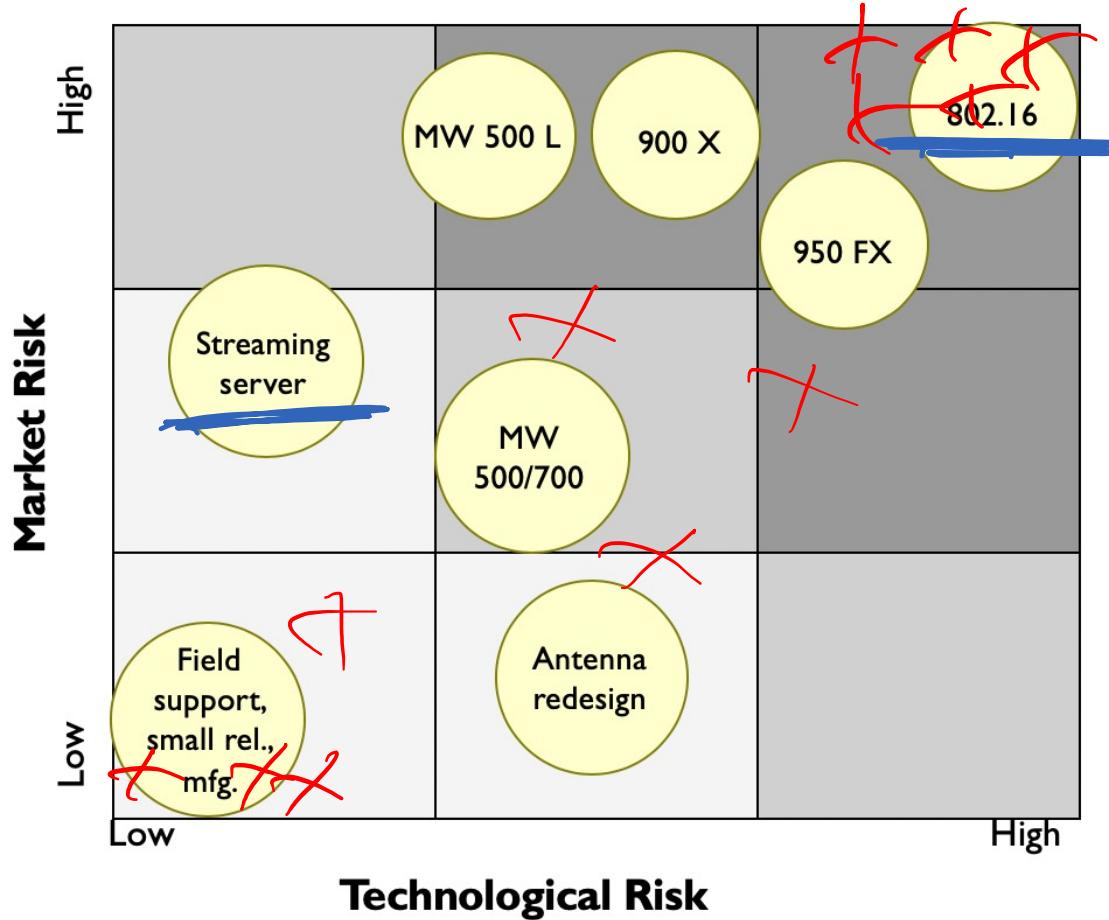
What constitutes a successful innovation portfolio?



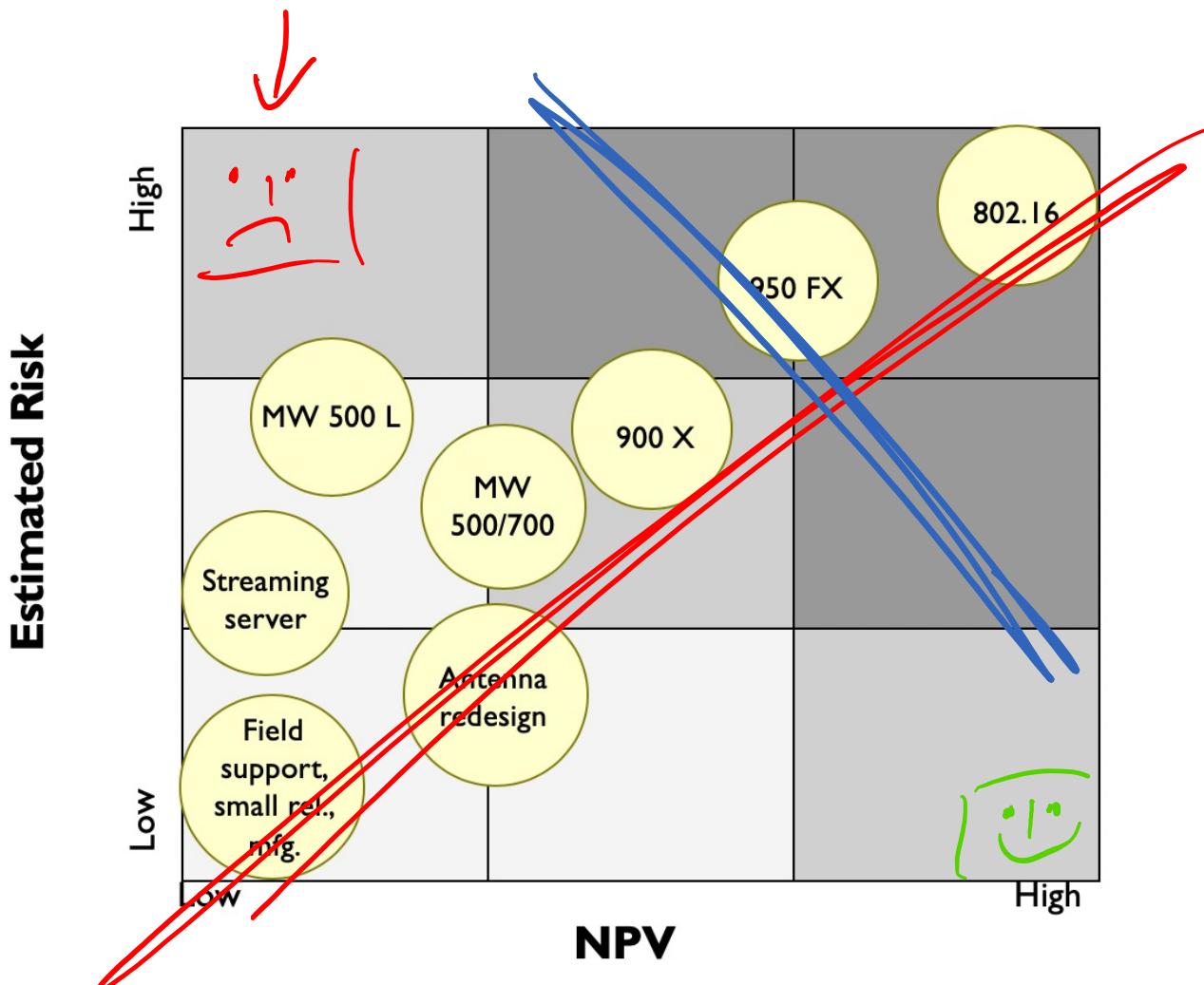
Development & Technology Roadmaps



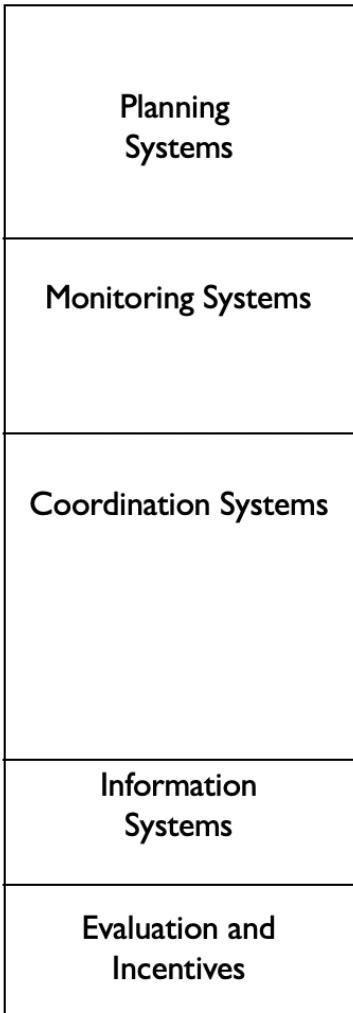
Assessment of Portfolio Risk



Assessment of Portfolio Risk



Adjusting the Management Approach



Planned Projects

- Plan tasks and targets
- Work structure and defined responsibilities
- Use buffers and simulation to manage risk
- Target achievement
- Progress tracking (e.g., % complete, or deliverables)
- Fulfillment of deliverables
- Coordination via work structure in hierarchy
- MBE (management by exception)
- Little decision power necessary
- Planned information: progress, deliverables, actual outcomes of events
- Target fulfillment
- Measurement of output

Learning Projects

- Overall vision, intermediate targets
- Tasks to learn
- Rapid turnaround of experiments to learn
- Track “experimentation”
- What has been learned?
- What problem to solve next?
- Dynamic and less formal
- Long-term trust-based relationships handle changes
- Decision power to change approach or targets
- Higher problem solving necessary
- Richer, unstructured information exchange and mutual adjustment
- Upward incentives on output
- “Process quality” incentives

“Keep all your eggs in one basket but watch that basket closely.”

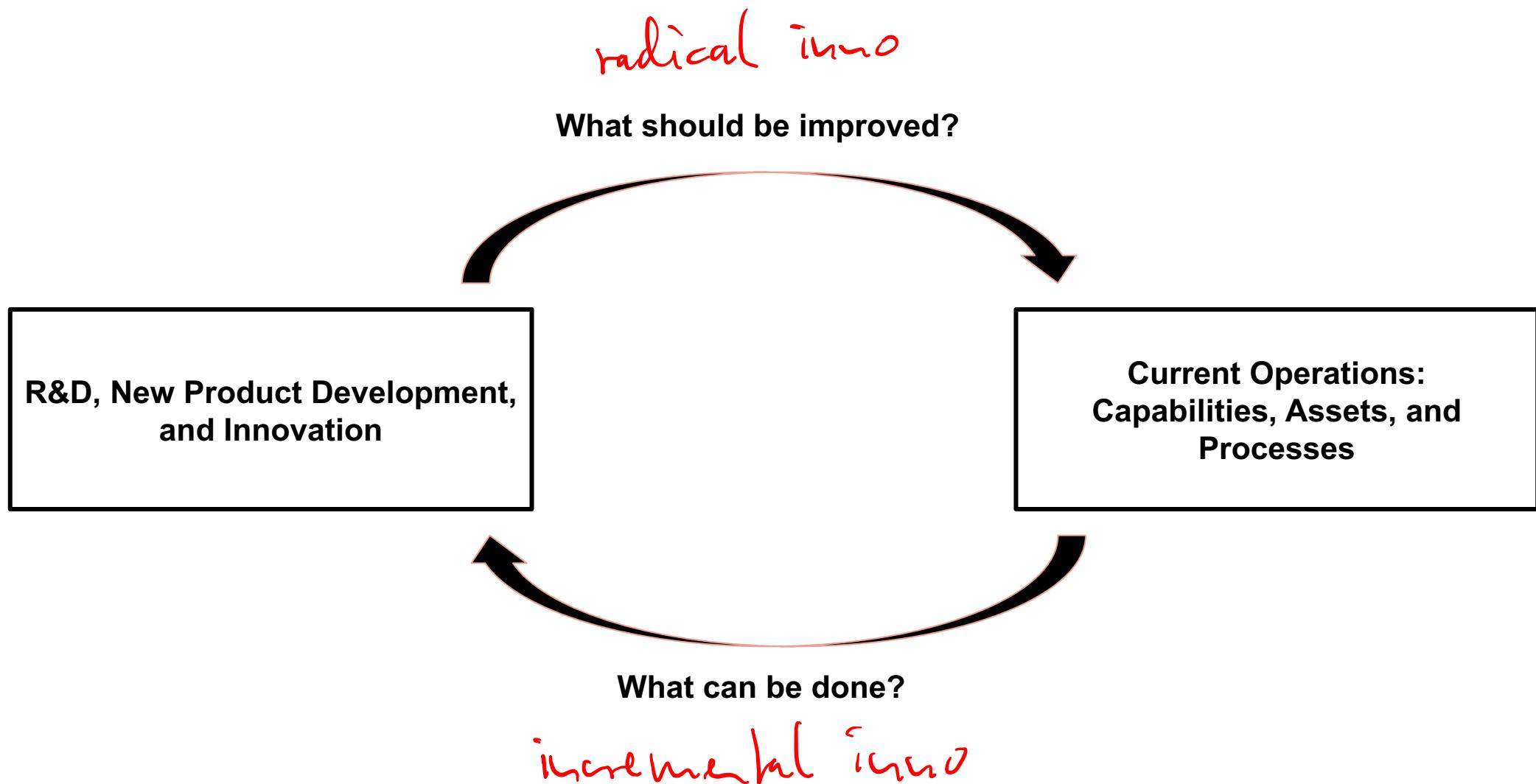
Warren Buffett



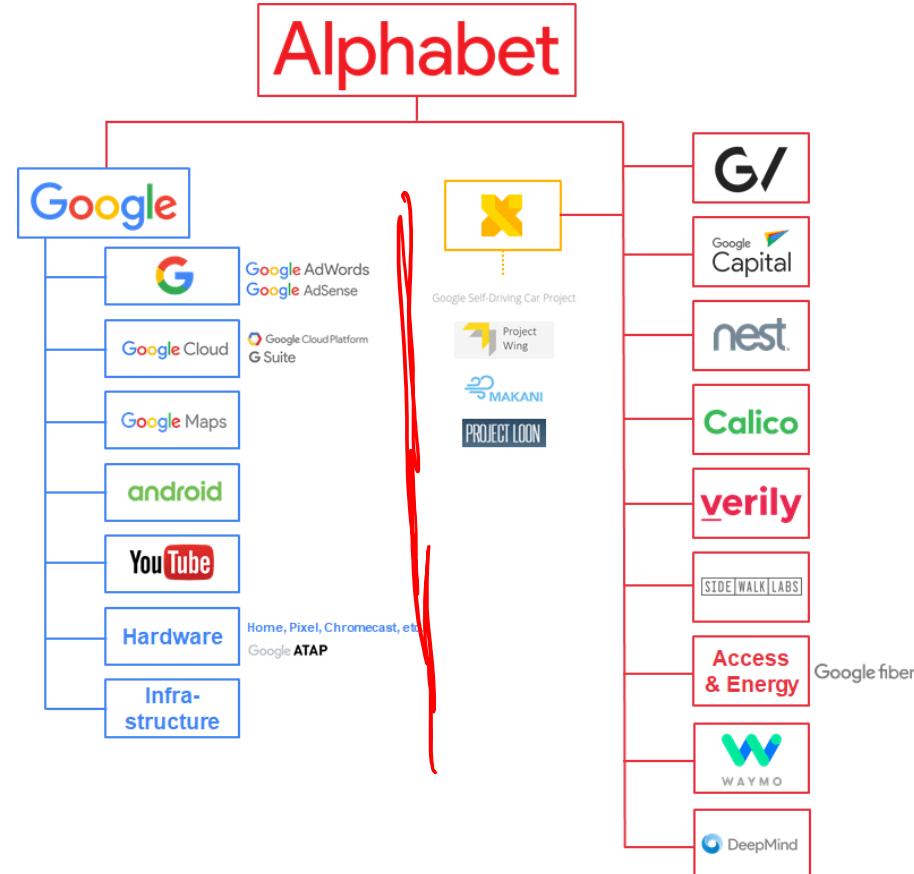
Is there a decline of innovation?

Do firms nowadays have a stronger tendency to prefer less innovative projects over more risky ones?

Breaking the Cycle of Incrementality



Why did Alphabet Separate its most Aspirational Business Units?



The Process of Portfolio Building



- 1. The process of arriving at a decision**
- 2. Top-down rationale**
- 3. Strategy deployment: top-down AND bottom-up**

Process

- Define team roles
- Info gathering (detailed sub-problems vs. the whole)
- Organize info patterns:
Frameworks vs. Intuition
- Keep gathering info
- Iterate from detail to strategic and back
- Check decision at macro level

Complexity Reduction

- Levels of aggregation (~20 projects)
- Settle on core view and use other portfolios as supporting input
- Drive with key objectives that you want to achieve

Repeated Interaction and Trust

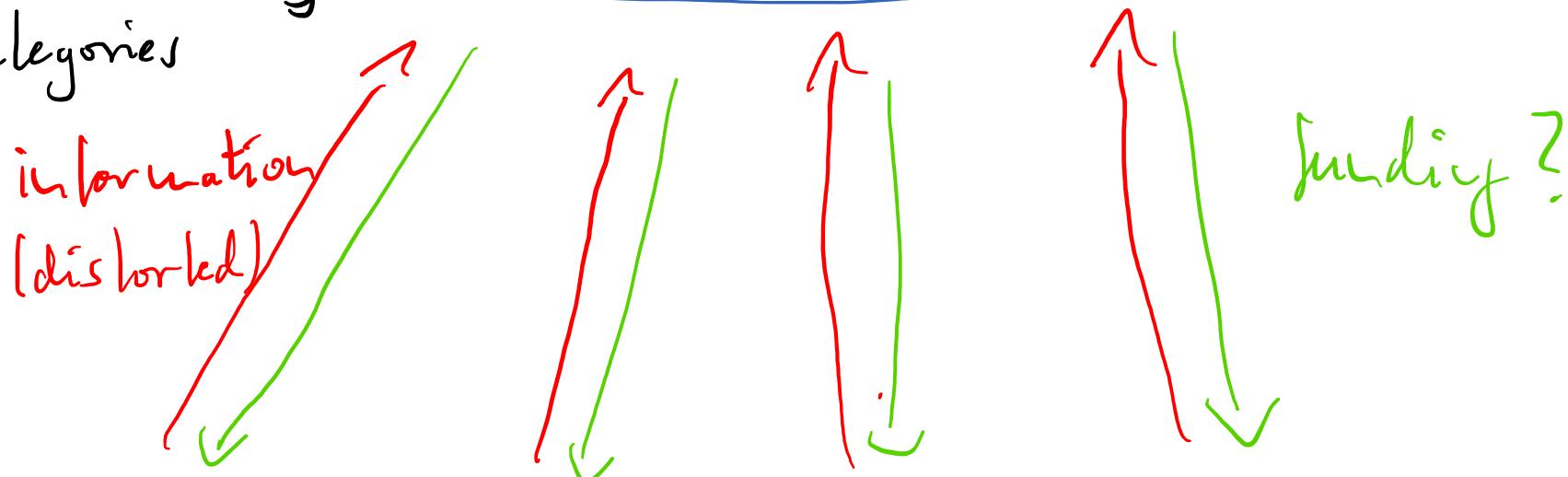
- Dialogue: Listen to all sources of info
- Put different viewpoints on the table

Gathering Accurate Information

→ shared incentives

- standards
- incentives / motivation
- anonymous proposal
- accountability
- categories

R&D investment board
(senior mgmt)



1

team

2

team

3

4

...

uncertainty: hide behind it



competition

“How do you make good decisions, in a high-risk, technically complex business when the information you need to make those decisions comes largely from the project champions who are competing against one another for resources?”

Sharpe & Keelin (1998)

“Figures don’t lie, but liars can figure.”

“What I care about is whether people convince me that this portfolio supports my overall business plan. The portfolio is a discussion tool to get us on the same page.”

- Argumentation is predominantly bottom-up (What are good projects?)
- There is no algorithm that leads to the “best” portfolio. Actually, there is no best portfolio.

- Not all strategic imperatives can be fulfilled: additional **prioritization** decisions are needed.
- Strategy leaves multiple possible paths, portfolio choice **emphasizes some directions** over others.
- Therefore, strategy is not only passively “translated” but actively “**enacted**” and “filled with life”.
 - initiative taking from the bottom: key source of innovations
 - bottom up feedback, initiative and dialogue, in which top down “first cut” must be modified
 - responsibility of first line management!
- As this is complex and not “automatable” in methods, start building **intuition** of how to do it.

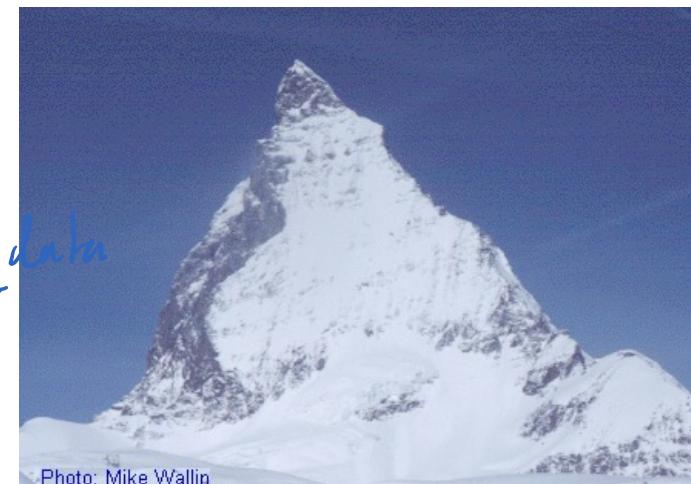
Performance Measurement in Innovation

Mission: Climb the Matterhorn and develop a detailed map and ground analysis of the summit, to prepare the construction of an automated meteorological station.

Additional Information: The Matterhorn is 4478m high and is located above Zermatt, Switzerland, in the middle of one of the Alps' most spectacular mountain ranges; this range also contains two peaks over 4,500m, the Monte Rosa and the Dome. Guides and helicopter tours can be booked at the tourist center on the church square.

- Legally + info (detailed)*
- Task:** Plan the cartographic mission.
- get the map & analysis in line
in budget
1. What targets do you set? → rely on experts
 2. How does your plan look like? → use historical data
→ use helicopters
 3. How do you evaluate performance? → balance probes
→ analyze and redo

↳ get the map
↳ need justification for failure



Mission: Climb the Karakoram range and develop a detailed map and ground analysis of the summit, to prepare the construction of an automated meteorological station.

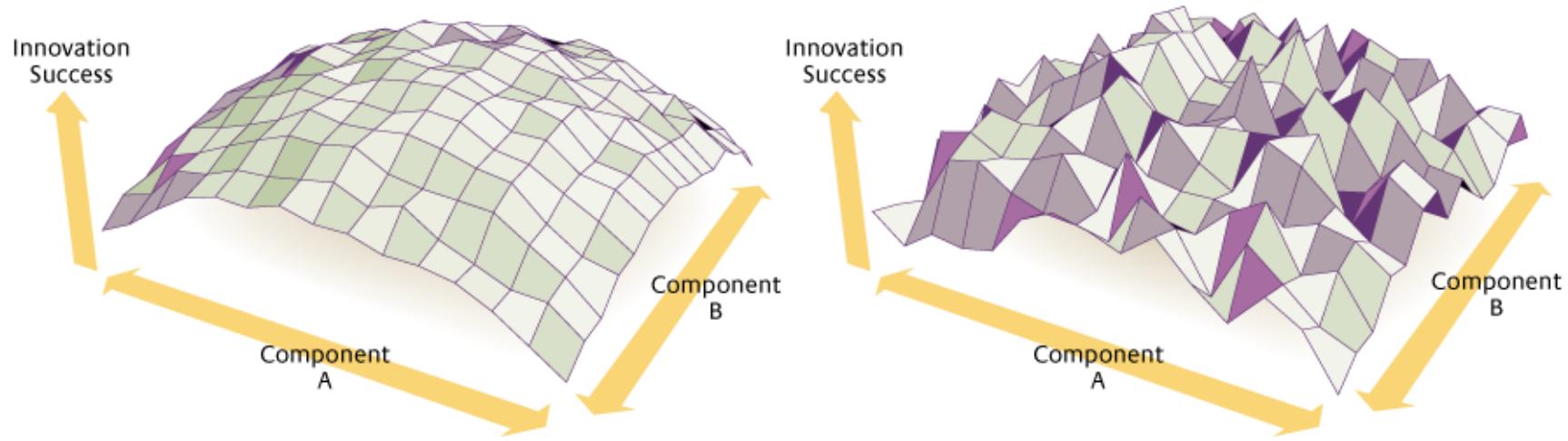
Additional Information: The Karakoram range is the southern continuation of the Hindu Kush and is separated from the Himalaya by one river valley. It contains the K2 (the second highest peak in the world), but also several peaks above 7,000m that have no name and have not been climbed. The Karakoram range is located in Northern Pakistan at the border to China, in territory that is claimed both by Pakistan and China. No detailed map is available. No weather forecast is available, and while the exact geographic position and height (7318m) of the mountain are known from GPS analyses, no established route to the location is known.

Task: Plan the cartographic mission.
get some initial info/map - no injuries
→ get the cap in line & in budget - be safe
materials used (politically)

1. What targets do you set?
 - satellite pictures
 2. How does your plan look like?
 - need sherpas & experts
 3. How do you evaluate performance?
 - initiate base camp
 - first outpost
 - second outpost → figure out a route (if it exists)
- ↳ learnings, progress
info for next try
control over process



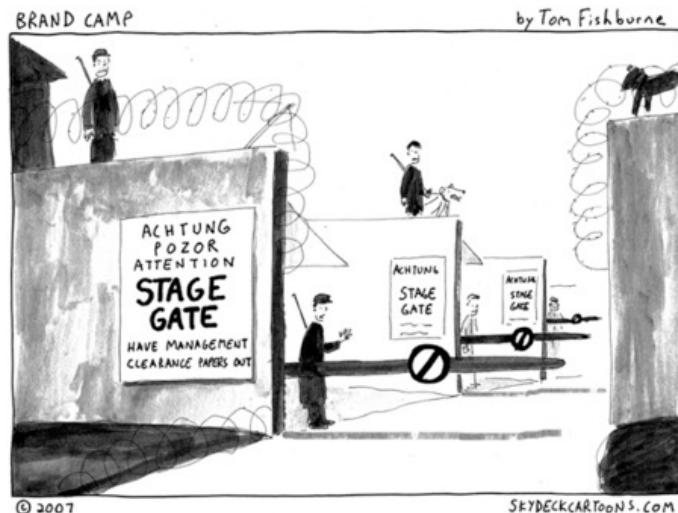
Searching a Rugged Landscape



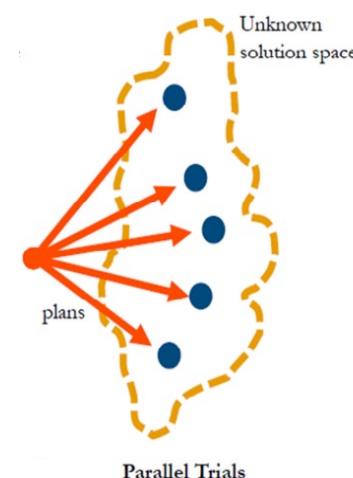
How to search?

- Selectionism
- Learning (trial-and-error)

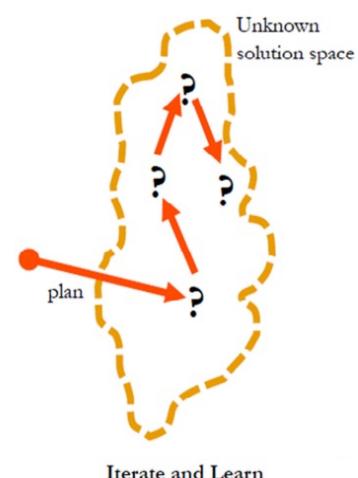
Certainties
(Knowns)



**Identifiable
Uncertainties**
(Known unknowns)

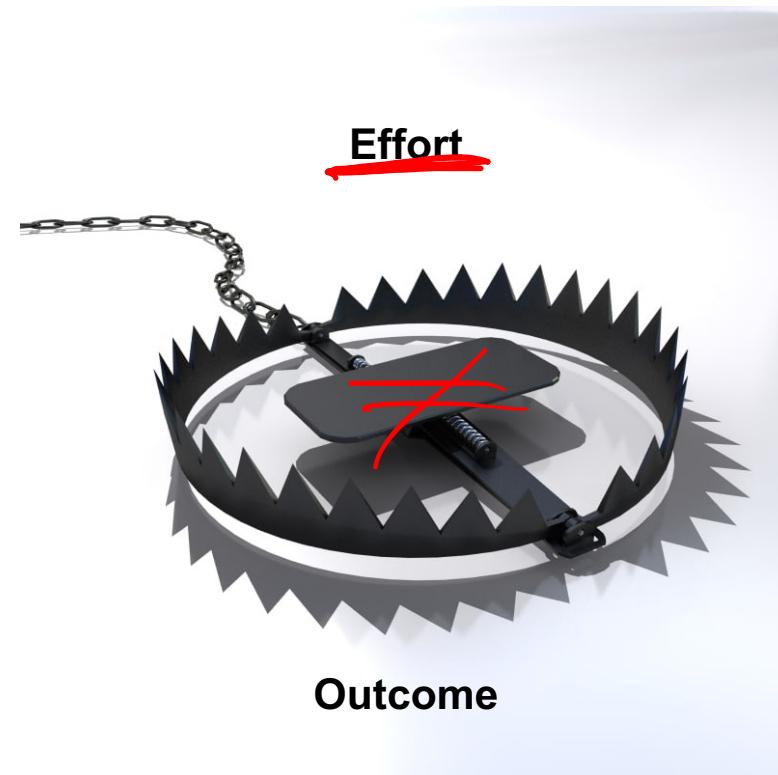


**Unidentifiable
Uncertainties**
(Unknown unknowns)



The challenges of Performance Measurement in R&D

- **Uncertainty:** Disconnect between effort and outcome
- **Long time frames until success is known:** Disconnect between effort and outcome
- **Benefits may accrue to multiple parties:** Disconnect between effort and outcome
- **Effort levels are unobservable:** Disconnect between effort and outcome



“The fundamental purpose of performance measures is to encourage behavior that achieves the goals of the organization.”

Christoph Loch & Staffan Tapper

In innovation, any **performance measurement system** must provide:

- 1. Strategic alignment
- 2. Appreciation of effort
- 3. Rewards for process control
- 4. Valuation of new knowledge

Thank you very much!



Disruptive Innovation Innovation in Existing Organizations

February 2024

Dejan Juric

Course topics

Innovation in Existing Organizations: This module explores tactics how to ensure (potentially disruptive) innovation can happen within existing organizations and how to practically execute such

Platform Business Models: This module covers new platform-based business models and their disruptive potential.

Innovation in Existing Organizations

In this lecture: How does innovation happen in existing organizations

Course Title: Disruptive Innovation: Innovating within Existing Organizations

Course Description:

The course aims to equip students with the theoretical and practical knowledge necessary to drive innovation in established organizations. It explores the challenges and opportunities of disruptive innovation within existing organizations, and the strategies for overcoming them. The course will use case studies and practical examples to illustrate successful approaches how to navigate the roadblocks which can arise.

Learning Objectives:

- You know which pitfalls and problems can occur when doing innovation in established organizations
- You have learned strategies and approaches, how to deal with adversity in existing organizations
- You have received a practical understanding of possible problems when innovating and how to overcome them

Innovation in Existing Organizations - Agenda

- 1. Introduction**
- 2. Why innovation is hard**
- 3. Practice / group work: Innovation experience**
- 4. Product Development (Intermezzo)**
- 5. Innovation Culture**
- 6. Corporate Innovation Framework - Practical example**
- 7. Case study / group assignment**

Resources/reading material

Speech by Clay Christensen on jobs to be done (5 mins): <https://www.youtube.com/watch?v=sfGtw2C95Ms>

Disruptive Innovation (German): <https://www.youtube.com/watch?v=aOv36VFoarg>

Why companies to innovation theater instead of actual innovation

<https://hbr.org/2019/10/why-companies-do-innovation-theater-instead-of-actual-innovation>

Want better ideas? Go to Crazytown:

<https://medium.com/designing-atlassian/want-better-ideas-go-to-crazytown-48f9f793922f>

Books:

- Innovator's Dilemma - Clayton M. Christensen
- Running Lean - Ash Maurya

1 Introduction

Innovation in Existing
Organizations

Who am I?

Dejan Juric

- Chief Product Officer @ MiNDNET
- Various roles in Strategy, Innovation and Product Management primarily in Fintech and Digital Health
- Degree in Computer Science (with focus on Distributed Systems) from ETH Zurich
- Founded startups, but also worked in large organizations
- Startup Mentor @ Tenity (F10), START, ...



My way through innovation

ETH zürich

 **UBS**

BCG BOSTON
CONSULTING
GROUP



 **Lola**

 **GNPL**



 **TWINT**

 **Bitcoin
Suisse**

 **BANXWARE**

Worldline

 **SIX**
Payment Services

 **MiNDNET**
E-HEALTH SOLUTIONS

Klimpr: Mobile Payments (2013-2014)

- Founded a peer-to-peer and merchant mobile payment system in Switzerland
- Went live with 1000+ active users
- Got in trouble with the Swiss regulator (FINMA) around which license is needed

Failed payment startup led to being hired by larger company

Startups halfen um...

Klimpr gibt Kampf Gegen Grossbanken Auf

by Fintechnews Switzerland / September 21, 2015



Talente zu finden!



Nach Tapit wird nun auch die mobile Bezahlösung Klimpr P2P eingestampft. Den Nutzern wurde vor einer Woche mitgeteilt, dass der Service per 1ten Oktober eingestellt wird. Guthaben müssen per Ende Oktober abgezogen werden. Damit überlässt Klimpr das Feld Paymit, P2P Migros und Twint.

Klimpr



Das Unternehmen schreibt in ihrem Blog:

"Vor etwas mehr als einem Jahr haben wir den verstaubten Bankprodukten den Kampf angesagt und mit Klimpr die einfachste Lösung für Zahlungen im Freundeskreis lanciert. In der Zwischenzeit ist einiges passiert und wir haben von ganz grossen Playern Konkurrenz bekommen, was es uns zunehmend schwierig macht in diesem Marktumfeld bestehen zu können"

Weiter fügen Sie auch die regulatorische Schwierigkeiten an:

"Darüberhinaus sind die regulatorischen Auflagen so gross geworden, dass es nicht mehr opportun ist, P2P Zahlungen weiterhin anzubieten."



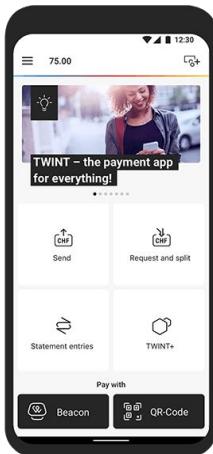
Hinter Klimpr sind die Gründer Adrian Kyburz, Dejan Juric, Raffaele Sandrini (v.l.n.r.)

Es ist sehr Schade, dass damit wohl ein weiteres innovatives Fintech Startup verschwindet. Allerdings ist es auch logisch. Es hat in der Schweiz kaum Platz für mehr als drei mobile Bezahlösungen. Und die grossen wie Apple Pay, FacebookMessengerPayment, SamsungPay und GooglePay kommen ja erst noch.

Mal schauen wie lange es die mobile P2P Bezahllösung Mobino noch macht. Das Startup ist zwar sehr innovativ, leidet jedoch wie Klimpr

Joined SIX Payment Services (now Worldline) to build up the Swiss mobile payment system. TWINT!

- Started simple as peer-to-peer mobile payment app
- Now more than 30 participating banks
- More than 5M active users in Switzerland (9M inhabitants!)



 PostFinance TWINT PostFinance AG 4.6 ★	 Prepaid TWINT & andere Banken TWINT AG 4.6 ★	 Raiffeisen TWINT Raiffeisen Schweiz Genossenschaft 4.8 ★
 UBS TWINT UBS AG 4.7 ★	 ZKB TWINT Zürcher Kantonalbank 4.8 ★	 Credit Suisse TWINT Credit Suisse Group AG 4.7 ★
 LUKB TWINT Lucerner Kantonalbank AG 4.7 ★	 Migros Bank TWINT Migros Bank AG 4.7 ★	 SGKB TWINT St.Galler Kantonalbank 4.7 ★
 BEKB TWINT BEKB i BCBE 4.8 ★	 TKB TWINT Thurgauer Kantonalbank 4.7 ★	 BCV TWINT Banque Cantonale Vaudoise 4.8 ★
 SZKB TWINT Schwyzer Kantonalbank 4.7 ★	 BLKB TWINT Basellandschaftliche Kantonalbank 4.7 ★	 Valiant TWINT Valiant Bank 4.7 ★
 GKB TWINT Gräubündner Kantonalbank 4.9 ★	 AKB TWINT Aargauische Kantonalbank 4.8 ★	 FKB TWINT Banque Cantonale de Fribourg 4.8 ★
 Baloise TWINT Baloise Versicherung AG 4.6 ★	 BCGE Twint Banque Cantonale de Genève 4.7 ★	 UKB TWINT Ulmer Kantonalbank 4.8 ★
 AEK TWINT - mobil bezahlen AEK BANK 1826 4.8 ★	 ZugerKB TWINT Zuger Kantonalbank 4.9 ★	 Swissquote TWINT Swissquote Mobile 4.6 ★
 WKB TWINT Banque Cantonale du Valais 4.8 ★	 BCN TWINT Banque Cantonale Neuchâteloise 4.8 ★	 OKB TWINT Obwaldner Kantonalbank 4.8 ★
 SHKB TWINT Schaffhauser Kantonalbank 4.6 ★	 GLKB TWINT Glarner Kantonalbank 4.7 ★	 NKB TWINT Nidwaldner Kantonalbank 4.7 ★

SIX Payment Services (now Worldline)

Worldline



Head Innovation at SIX Payment Services

- My task: “*Bring me something big! You have 12 months!*”

Plethora of exciting innovation initiatives:

- Leading the whole innovation management
- Various exciting innovation projects and initiatives (some examples to follow later)
- Initiated Open Banking for Switzerland (b.Link) as major platform to enable open access to bank account data. Live now!

b.Link: Open Banking in Switzerland

- Unlike the EU with PSD2, Switzerland has no regulation for open bank access
- Market-driven initiative to launch open banking in Switzerland with SIX as the central standardized platform
- Started with base use cases around account transaction access and payments, in the meantime expanded to wealth management (Open Wealth <https://openwealth.ch/>)

Why bLink?

Efficiently scale innovative partnerships and new API-based business models through standardization.

 **A single interface**
to SIX instead of many proprietary interfaces between platform participants

 **A single agreement**
instead of many individual agreements between platform participants

 **A single admission test**
instead of many individual tests between participants

Our participants



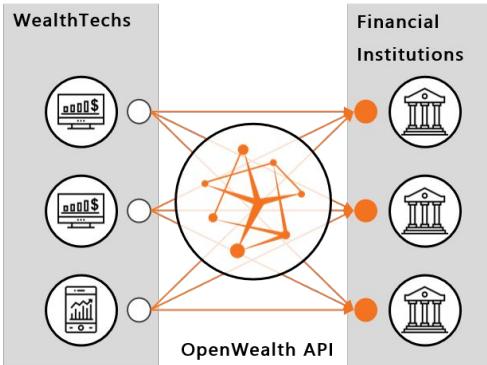
Open Wealth: further innovation enabled thanks to centralized open banking platform



B2B Users
EAM
Family Office
...

Customers
Private Banking Customer
Affluent Retail Customer

In collaboration with
 SWISS FINTECH INNOVATIONS



An industry community with the goal to define, maintain and operationalize the global API standard for wealth management use cases



A community of OpenWealth certified WealthTechs.



A community of Financial Institutions that is using the same API standard according to OpenWealth guidelines.



Known semantic based on established industry standards (ISO20022, FIX)



Standardized security and consent handling for reusable and secure strong customer authentication.



Knowledge for best practice implementation and API capabilities



Regulatory & Compliance framework compliant with the OpenWealth connectivity

Orchestrated by
 synpulse solve evolve

Financial Institutions



Bitcoin Suisse - largest Swiss crypto broker

- Initiated digital transformation for scaling
- Combining the exciting new crypto world with the requirements of regulators towards financial services companies
- Setting up a complete target operating model and revamping the whole IT landscape and infrastructure



(Image: Bitcoin Suisse)

Thursday, 12 January 2023 11:49

Bitcoin Suisse Now Has Banking
IT. Is a License Next?

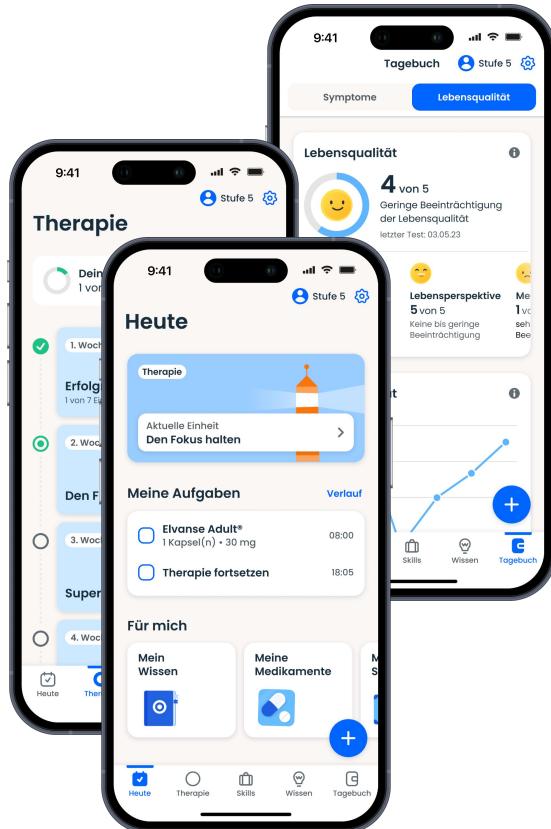
Lending Startup

- Validated a plethora of Lending-related approaches, among other: cross-border mortgages, digital consumer lending, SME lending
- Settled on digital lending for growing e-commerce SMEs
- Built up a digital lending startup for SMEs with first customers who were financed with small amounts (MVP)
- Joined Banxware, a German Embedded Lending Startup, as Head of Product



Digital Mental Health at MiNDNET

MiNDNET
E-HEALTH SOLUTIONS



Goals for this course: Give you a headstart for Innovation

- No matter where you will stand, you should be able to understand the problems / difficulties and tensions between existing organizations and potentially disruptive innovations
- Learn approaches how to overcome obstacles and set yourself up for success
- Leverage my experience with the theoretical foundations you learned before

“Doing the
things right”

vs

“Doing the
right things.”

Important: Please don't hesitate to ask questions!

2 Why innovation is hard

Innovation in Existing
Organizations

What is the goal of (most) businesses?

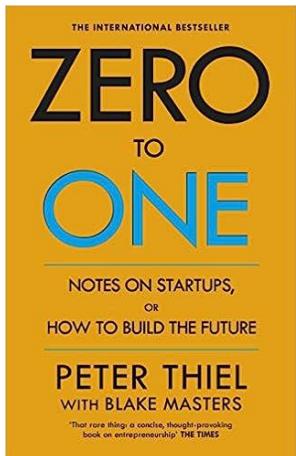
Goals of businesses

- Generate positive shareholder value: profit, revenue, share price, ...
- Serve the customers
- Build up and sustain competitive advantage compared to competitors -> become #1

How they do it:

- Put resources to work, which create value for the customers
- Have an organization with the right processes and the right people in place, to accomplish this

Zero to One - Blake Masters and Peter Thiel



To go from zero to one is to bring something into existence and therefore is the essence of true innovation

- “Monopoly is the condition of every successful business.”
- “Customers won’t care about any particular technology unless it solves a particular problem in a superior way. And if you can’t monopolize a unique solution for a small market, you’ll be stuck with vicious competition.”
- “Most of a tech company’s value will come at least 10 to 15 years in the future.”
- “the single most powerful pattern I have noticed is that successful people find value in unexpected places, and they do this by thinking about business from first principles instead of formulas.”
- “The best projects are likely to be overlooked, not trumpeted by a crowd; the best problems to work on are often the ones nobody else even tries to solve.”
- “The most successful companies make the core progression—to first dominate a specific niche and then scale to adjacent markets—a part of their founding narrative.”

How is innovation done in companies?

Typically, there is very little space for innovation:

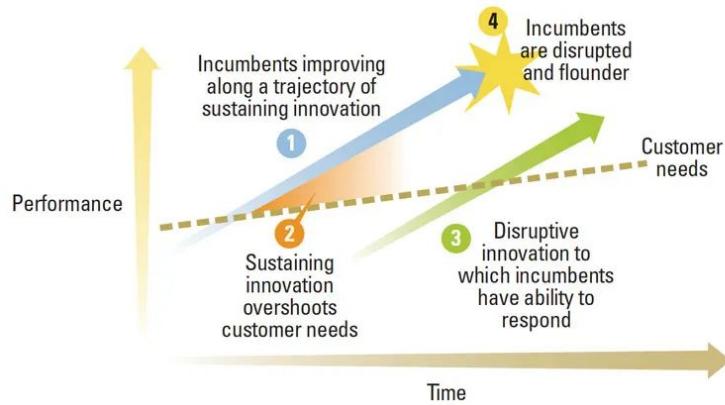
- Strict goals focusing on 1 year (or at best 3 years) results
- Focus on existing products and customers
- Attempts to innovate are stopped before they could show any value
- Typically, no structures in place to systematically make it happen

How it still happens:

- “Random”, by chance
- Initiated by very motivated employees
- Forced by outside demand, e.g., from customers
- Forced by competitors

Innovator's Dilemma

Successful, outstanding companies can do everything "right" and still lose their market leadership – or even fail – as new, unexpected competitors rise and take over the market



THE CLASSIC BESTSELLER

"Absolutely brilliant. Clayton Christensen provides an insightful analysis of changing technology and its importance to a company's future success."

—Michael R. Bloomberg, founder, Bloomberg Financial Markets, and mayor of New York City

THE Innovator's Dilemma

The Revolutionary
Book That Will Change the
Way You Do Business



CLAYTON M. CHRISTENSEN

WITH A NEW PREFACE

Innovator's dilemma: 5 key principles the successful companies recognized and harnessed while losing companies chose to ignore or fight

1. **Resource dependence:** Current customers drive a company's use of resources. They effectively control the resource allocation in well-run companies.
2. **Small markets struggle to impact** an incumbent's large market. Large companies need large growth opportunities, not small ones.
3. **Disruptive technologies have fluid futures**, as in, it is impossible to know what they will disrupt once matured. The ultimate use is unknowable in advance and therefore failure is an intrinsic step towards success.
4. **Incumbent organizations' value** is more than simply their workers, it includes their processes and core capabilities which drive their efforts. But these are the exact disabilities when confronted with disruption.
5. **Technology supply may not equal market demand.** The attributes that make disruptive technologies unattractive in established markets are often the ones that have the greatest value in emerging markets

How to overcome them!

1. They **develop the disruptive technology with the "right" customers**. Not necessarily their current customer set.
2. They place the disruptive technology into an **autonomous organization that can be rewarded with small wins** and small customer sets.
3. They **fail early and inexpensively** to find the right market for a disruptive technology. The markets were typically identified through an iterative process of trial, learning and trial again.
4. They allow the disruption organization to **utilize all of the company's resources** when needed but are careful to make sure the processes and values were not those of the company.
5. When commercializing disruptive technologies, they **found or developed new markets**, that **valued the attributes** of the disruptive products, rather than searching for technological breakthroughs to appeal to the existing mainstream markets.

1 Develop the new technology with the “right” customers

Existing customers of a large payment company

- Medium to large-size merchants
- Dedicated payment terminals at point of sales
- Online card acceptance

Our focus customer types with the new mobile payments system

- Peer-to-peer payment between private individuals (to break up the two-sided platform problem)
- Merchants which did not have a digital payment solution (because they were not attractive) -> physical QR code for farmer shops



2 Create dedicated small teams

Teams must be excited about small wins:

- Staff a team separately, if possible get the people out of their existing teams

Practical example of a win: First merchant contract signed with a small shop

- Very low expected volume
- Simple solution
- At that point the solution was not scalable at all

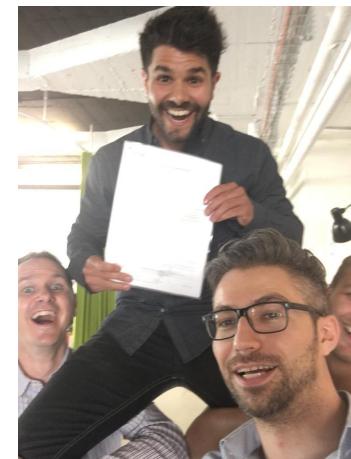
Result: The excitement ignited the team to work even harder!

First payment use case: Hofladen



Hofladen Meier

First merchant contract signed



3 Plan to fail early and inexpensively

- Make low-resolution prototypes
- Validate relentlessly to really build the right thing (not necessarily to built the thing right just yet!)
- Search for the perfect market, where your solution sticks and hits the nerve (-> product market fit!)

4 Selectively utilize the resources of the existing organization

- You can and should leverage existing expertise and existing resources from the existing organization, but only to the extent it benefits you.
- Be very careful not to utilize the parts, which will slow you down
- Typical things you will want to use:
 - Access to experts (e.g., lawyers, accountants, ...)
 - Money / budgets
 - Customer base (but typically, this will not be very successful at the start)
 - Distribution channels
- Things you typically do not want to utilize (but you have to analyze it properly)
 - Existing processes
 - Existing systems (if they slow you down)
 - Success metrics
 - If applicable, existing policies (e.g., compliance in financial services)

5 Find or develop new markets that value the attributes of the disruptive product

Example: data-driven revenue-based lending for small and medium-sized businesses

- Existing financing for SMEs with some harsh pre-filtering requirements, basically not providing access to debt-based financing to some specific segments of SMEs
 - At least 3 years of operations
 - Steady business shown with annual accounts (P&L and balance sheet)
 - Requires collateral, personal guarantees and is based on credit history
 - But if given, provided with relatively low interest rates
- Data-driven revenue-based lending for SMEs:
 - Targeting a segment which can be very young (6 months+), but shows positive revenue growth
 - Requires full data disclosure (Shopify, bank accounts, ...) and continuous access
 - Repayment as percentage of revenues, with a fixed upfront fee instead of interest
 - No guarantees or collateral, only a pledge on future revenues

This new market effectively did not exist until recently, and for existing lenders it's not appealing

3 Practice / Group Work

Your Innovation Experience

Innovation in Existing
Organizations

Group Session - Why innovation is hard!

- Assemble in groups of 5
- Share among the group your experiences where:
 - Companies had trouble innovating
 - Companies were disrupted
 - Companies were able to successfully innovate
- Discuss these examples in light of the innovator's dilemma
- Present your key findings/experiences in a 5 minute presentation to the class

4 Product Development

How to build innovative products

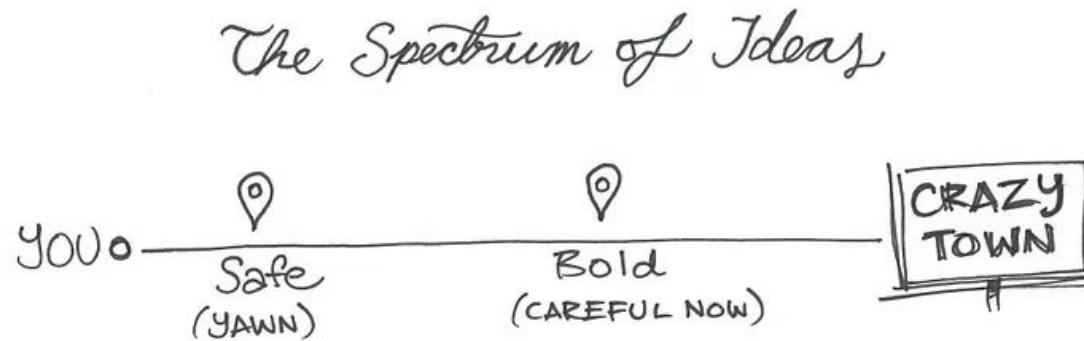
Innovation in Existing
Organizations

General example: Most existing organizations have a strong focus on feasibility, not desirability and viability, and will find ways why not to do things

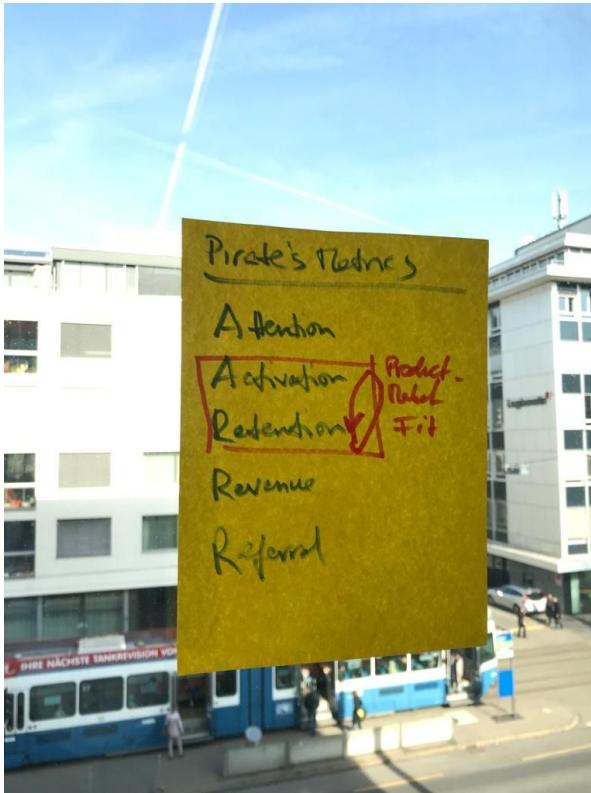
- Desirable: People will love it and recommend it
- Viable: We can make a positive business out of it
- Feasible: We can build and service it



Therefore, sometimes going crazy is actually easier than taking baby steps



Intermezzo: Pirate's metrics for Product Market Fit!



Which metrics are the ones we should be focusing on?

Pirate's Metrics

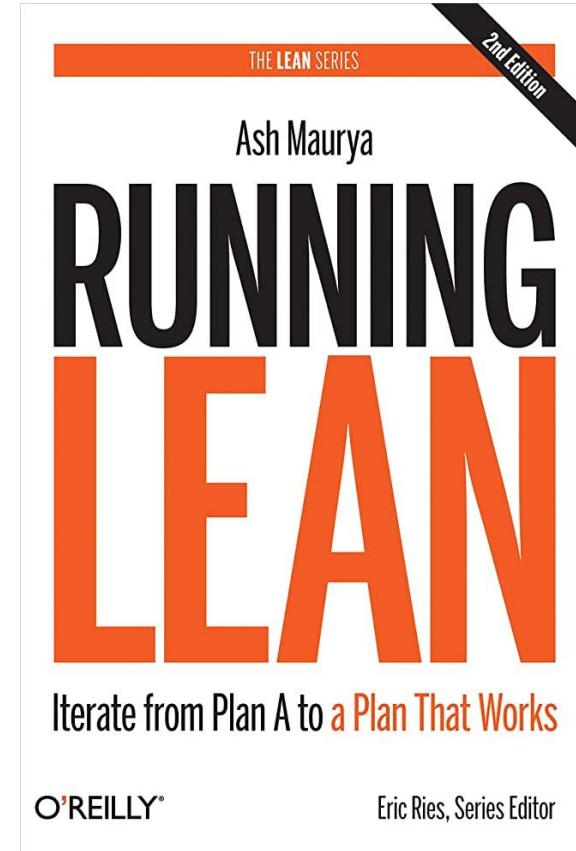
- Attention
- Activation
- Retention
- Revenue
- Referral

Product Market Fit

How to validate a product?

In a nutshell:

1. Document a Plan A: Create a Lean Canvas
2. Identify the riskiest parts of your plan
3. Systematically test your plan:
 - a. Understand the problem
 - b. Define the solution
 - c. Validate qualitatively
 - d. Verify quantitatively



The Lean Canvas

Designed for:

Startup Name

Designed by:

Name1, Name2, ...

Date:

DD/MM/YYYY

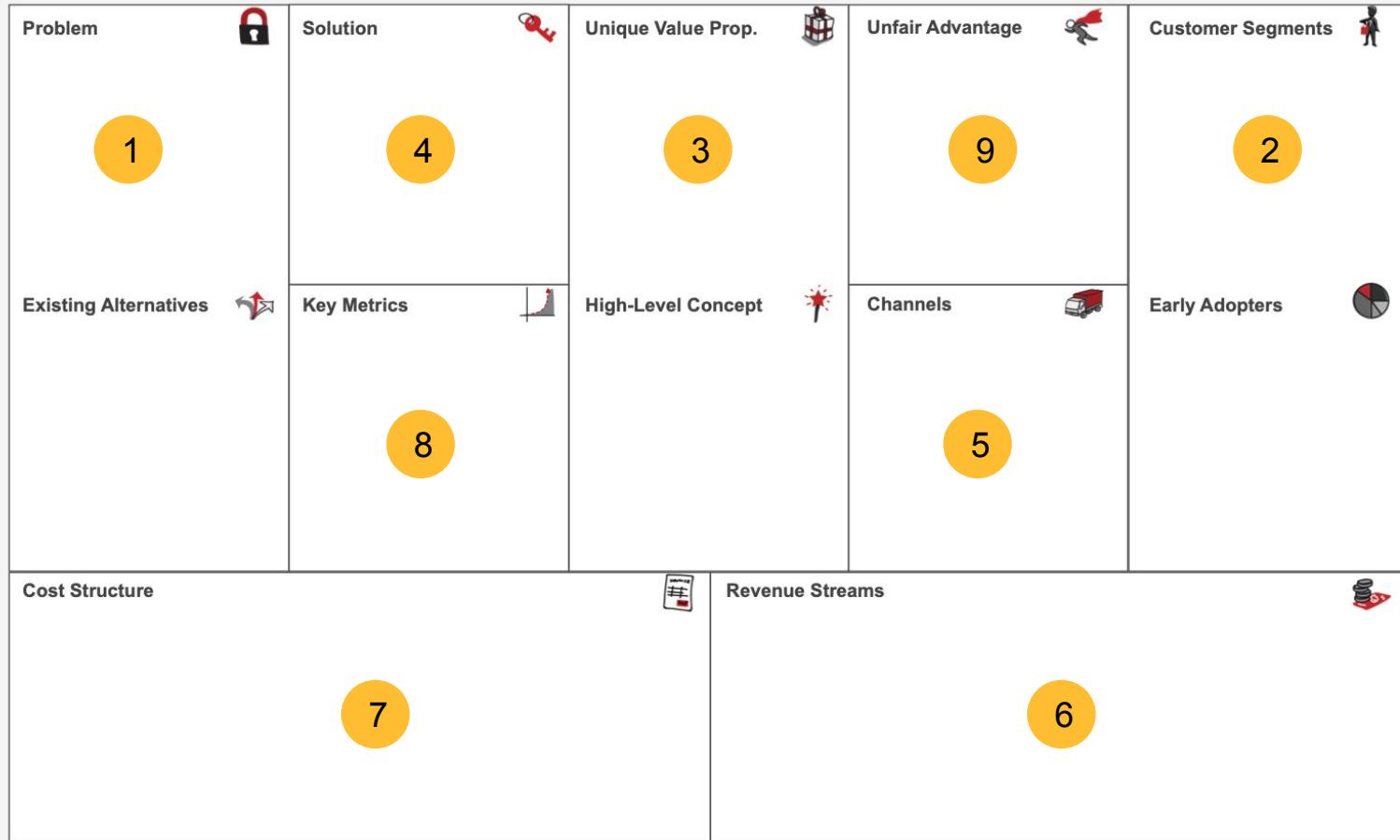
Version:

X.Y

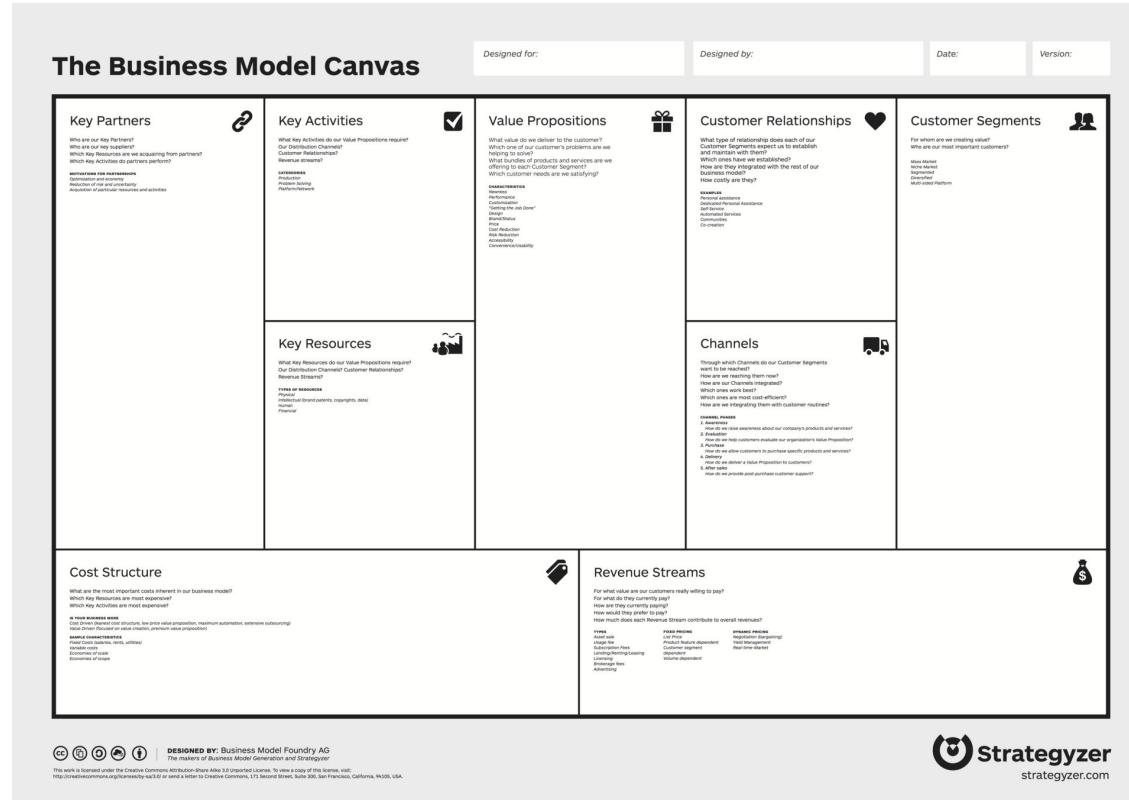
Problem		Solution		Unique Value Prop.		Unfair Advantage		Customer Segments		
Top 3 problems		Top 3 features		Single, clear and compelling message that states why you are different and worth buying		Can't be easily copied or bought		Target Customers		
Existing Alternatives		Key Metrics		High-Level Concept		Channels		Early Adopters		
List how these problems are solved today.		Key activities you measure		List your X for Y analogy (e.g. YouTube = Flickr for videos)		Path to customers		List the characteristics of your ideal customers.		
Cost Structure						Revenue Streams				
List your fixed and variable costs. Customer acquisition costs Distribution costs Hosting People Etc.						List your sources of revenue. Revenue Model Life Time Value Revenue Gross Margin				

Lean Canvas is adapted from The Business Model Canvas (www.businessmodelgeneration.com/canvas). PowerPoint implementation by: Neos Chronos Limited (<https://neoschronos.com>). License: CC BY-SA 3.0

The Lean Canvas



Business Model Canvas



Example: Prototyping mobile payments on payment terminals

2016



2023



[Demo Video](#)



2 months of research “defeated”
by one real customer in
simulated chat bot

First SME Financing in May '22

Financing amount at £967 with a 3% (£29) fee based on expected repayment over a period of slightly over 3 months with forecasted 5% monthly growth in revenues and repayment as 18% of revenues until the total amount of financing plus fee of £996 is repaid, by the end of every month.

	Start	Month 1	Month 2	Month 3	Month 4	Total
Financing	967					
Fee	3%					
Fee	29.01					
Assumed growth		5%	5%	5%	5%	
Revenues	1'625.81	1'707.10	1'792.46	1'882.08	1'976.18	
Repayment capacity	18%	307.28	322.64	338.77	355.71	1'324.41
Amount outstanding	996.01	688.73	366.09	27.32	-	
Repayment		-307.28	-322.64	-338.77	-27.32	-996.01

The screenshot shows the GNPL website homepage. At the top right are links for 'About GNPL', 'How it works', 'Get cash now!', and 'Log in'. Below this is a section titled 'We finance your growth!' with the subtext 'Extend your runway with non-dilutive financing. Unlock the cash trapped in your future revenues already today.' It features two buttons: 'Get cash now!' and 'Schedule a call'. To the right is a screenshot of a dashboard showing various financial and growth metrics. Below this is a section titled 'Grow your business on your terms with GNPL!' with the subtext 'Everything you need to make your business grow faster!'. At the bottom are four service cards: 'Non-dilutive capital' (described as getting capital for growth without diluting existing shareholders), 'Fast payout' (described as getting a financing decision within minutes and receiving cash within 24 hours), 'Payback from revenue' (described as paying back financing from future revenues), and 'Grow your business' (described as using financing to accelerate business growth).

Shopify

Collaborator access

5 Innovation Culture

Innovation in Existing
Organizations

Why is culture important?

“Culture eats strategy for breakfast!” - Peter Drucker

How to ignite change? Have the right people!



“Doing the
things right”

vs

“Doing the
right things”

Innovation Theater - The urge to “appear innovative”

- As organizations grow, they begin to prioritize process over product
- This makes them slow, steady, and impedes innovation
- Their typical reaction:
 - 1. Consultants! 2. Reorganization!
 - Innovation activities resulting in Innovation Theater: Hackathons, design thinking classes, innovation workshops, ...)
 - Realization that existing processes and metrics are optimizing execution (“doing the things right”) but are obstacles for innovation. Then they start changing the processes. But without an overall innovation strategy, this is *process theater*
- All these efforts are innovation dead ends. They typically do not deliver any measurable impact.

Large organization lack shared beliefs, validated principles, tactics, techniques, procedures, organization, budget etc. to explain how and where innovation will be applied and its relationship to the rapid delivery of new product.

<https://hbr.org/2019/10/why-companies-do-innovation-theater-instead-of-actual-innovation>

Is innovation theater generally bad?

Not necessarily! Use “Innovation Theater” to your advantage:

- **Leverage the awareness and drive** about innovation to quickly deliver results and establish a working innovation practice. The internal practice will likely be smaller than starting from scratch.
- Being perceived as innovative also outside of your organization can make it **easier to hire the right people.**
- Leverage the focus on innovation to actually **get approvals for budgets**

Common pitfalls in innovation theater environments

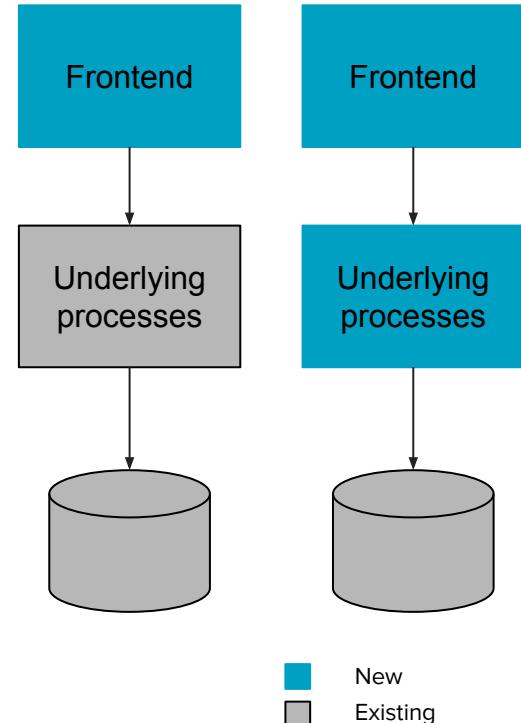
- Innovation could get a backlash from the existing organization, which sees innovation as not contributing to the business but only leeching from their resources and being allowed to do the “cool” stuff, while the organization is always fighting for simple things (e.g., budgets, ...)
- Always assess, whether you are following the innovation goals or playing into the theater
- You might attract the wrong people (internal and external): those who want to be part of it to appear innovative, not the ones who want to actually do it
- When collaborating with a company employing innovation theater, you might actually be on a dead-end track, without realizing it
- Innovations are only done on the surface, not fundamentally. You have put lipstick on a pig. This can even have negative effects on customer perception

Example: digital onboarding for business customers

Digital self-onboarding for business customers of a payment acquirer

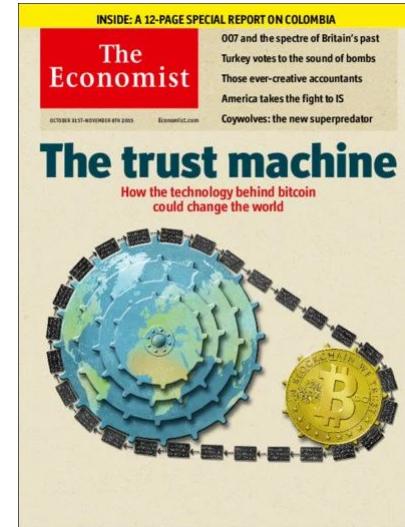
- Old approach: paper-based manual process, took approximately 2 weeks to complete
- But we needed a digital onboarding for a digital product
- Self-onboarding released after some time
- I tried the self-onboarding myself:
 - After 1 week: Asked sales, what's going on
 - After 2 weeks: Got in touch with risk & compliance
 - Turns out: risk did not check my application yet, it was just stuck in the regular review process

Takeaway: Look at any product innovation holistically, don't just put a nice frontend



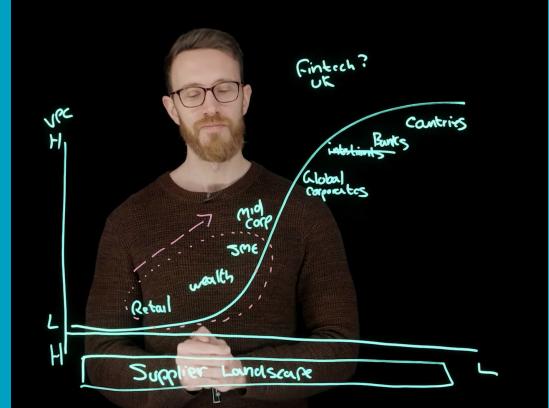
Use “buzzword” topics, to prepare yourself for the future

- There are sometimes topics, which quickly gain popularity and appear on the radar of decision makers
- My experience: they will come and say “What are we doing in topic X? We should be doing something about X!”
- Use that as opportunity to understand how desirable and viable that particular topic is, but also, what the surrounding consequences might be!



Fintech is only 1% finished

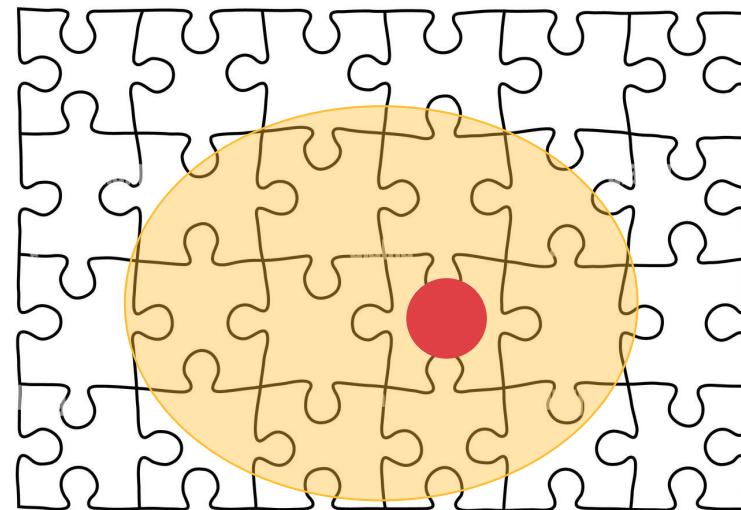
<https://www.youtube.com/watch?v=u20nD9wBVJo>



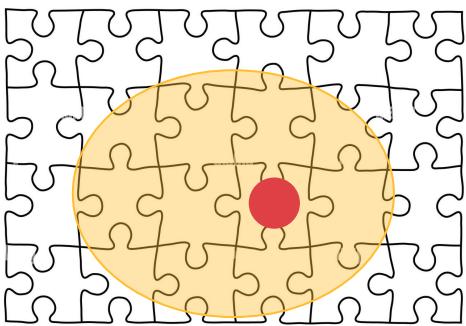
Where is the missing 99%? And how can we get there?

Example: <XML>

```
<note>
<to>Tove</to>
<from>Jani</from>
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
</note>
```



Other example: Crypto industry with very particular needs



- 1 ETH = 1'000'000'000'000'000'000 Wei
- 24/7
- Buy Bitcoin for Ethereum

These “buzz” topics allow to lay the foundation for the future!

6 Corporate Innovation Framework

Case Study

Innovation in Existing
Organizations

Overview: Practical corporate innovation framework

Setup: Financial services company

- 1000+ employees
- Different business divisions across payments, securities trading, financial information, interbanking infrastructure

Strategically: develop and realize medium to long-term innovation for the whole organization

Operationally: set up as decentralized organization with dedicated staff to manage all innovations from the initial idea gathering to the actual implementation

What are innovations? What is expected?

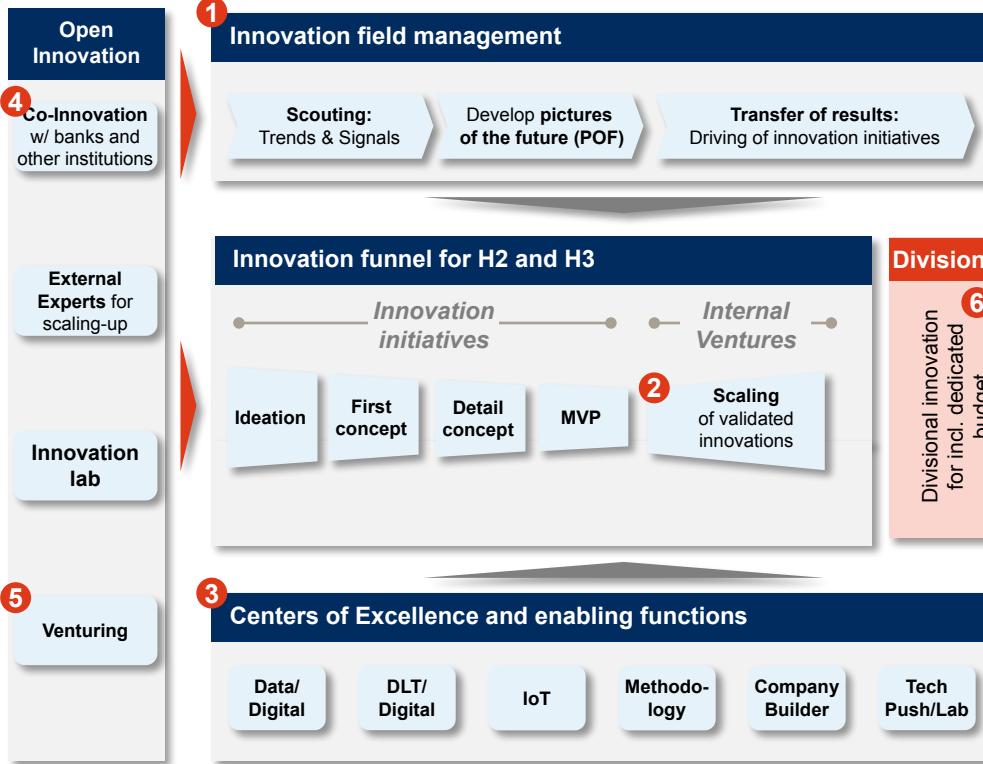
Sustainably increase the competitiveness and strengthen the offering towards and with market participants.

Innovation = Marketable new service offering

- Create added value for clients
- Ensure commercial success

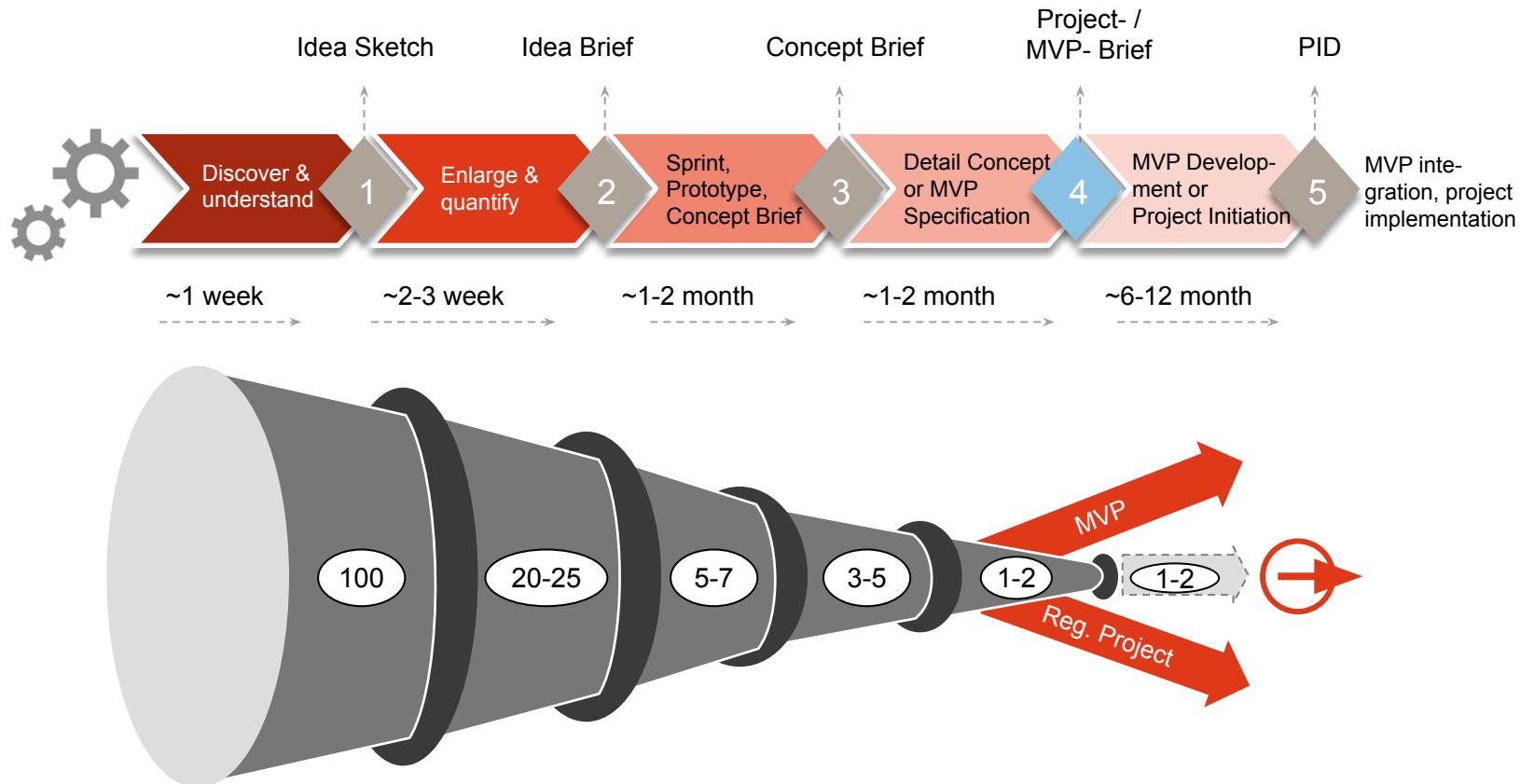
Innovations must be in line with the overall strategy and can either be offered by market-facing business divisions to external clients or by shared service divisions (e.g., IT) to internal clients

A complete innovation landscape

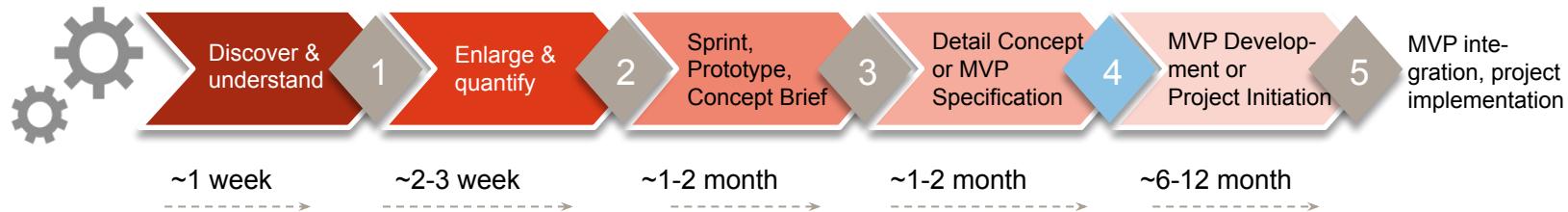


- Dedicated **management of Innovation fields** to identify gaps and initiate innovation initiatives based of POFs
- Scaling** after Gate 4/5 based on intrapreneurship model (e.g. governance incentives, participation)
- Centers of Excellence and company building** to support innovation initiatives, internal ventures, divisions, and invested start-ups
- Co-innovation** and constant dialogue with external stakeholders
- Direct investments into relevant **start-ups** for breakthrough innovations
- Defined interfaces with divisions; ring-fenced budgets for divisional innovations

The innovation funnel



Innovation system: overall innovation system



5 stage gates innovation process

- Starting from idea scouting to actual implementation
- Each gate adds complexity and more resources
- Clear path / transition from Innovation to Product Management / Market business unit

Organization

- Innovation Committee
- Innovation Manager

Phase 1: Discover and understand

Main activities: typically ~1 week

- Active and passive search for ideas by innovation managers and other employees
- Preparation of a structured description of the idea
- Triage based on defined criteria for innovation

Gate criteria Gate 1:

- Focus: Idea/opportunity is clearly formulated and matches definition of innovation

Gate document: Idea Sketch (1 pager), which allows first idea assessment by Innovation Manager

Funding: Innovation Budget

Governance:

- Decision body: Innovation committee
- Responsible: Innovation Manager



Phase 2: Enlarge and quantify

Main activities: typically ~2-3 weeks

- Staging innovation workshops
- Collaboration with experts and “enlarging” the idea
- Description of idea based on elements of business model
- Assessment of potential revenues and costs

Gate criteria Gate 2:

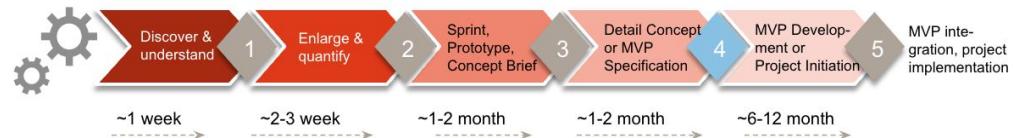
- Focus: Strategy
- Management sponsor: Assigned to idea

Gate document: Idea Brief (3-pager) based on a simple template

Funding: Innovation Budget

Governance:

- Decision body: Innovation committee
- Responsible: Innovation Manager



Phase 3: Develop prototype or detailed concept

Main activities: typically ~1-2 months

- Detailing of the idea, e.g., through innovation sprints or innovation workshops
- Initial development of a simple prototype, i.e., mock-up ideally with client involvement
- Assignment of the respective business unit
- Onboarding of “idea entrepreneur” to drive the topic forward

Gate criteria Gate 3:

- Focus: Desirability & Viability
- Management sponsor: Confirmed by manager after gate 3

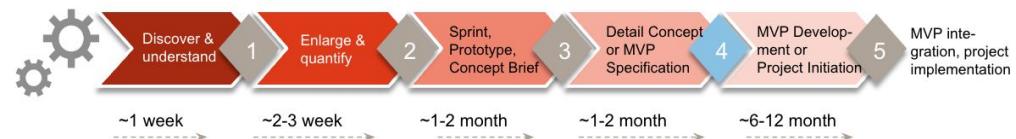
Gate document: Concept brief (max. 8-pager) based on a simple template

- Plus: Additional “pitch” document as result of the phase (e.g., innovation sprint)

Funding: Innovation Budget

Governance:

- Decision body: Innovation committee (or management if it
- Responsible: Innovation Manager



Phase 4: Detail and test concept

Main activities: typically ~1-2 months

- Ramping-up of project management
- Obtaining client feedback and refinement of concept
- Preparation of further development of prototype
- Planning of project initiation phase (incl. Cost estimate)

Gate criteria Gate 4:

- Focus: Client appetite, if handed over to the business units, or type of idea if potential MVP

Gate document: Project brief (official document of the organization) or MVP brief

Funding: Innovation Budget

Governance:

- Decision body: Innovation committee (and advisory board for consultation)
- Responsible: Innovation Manager



Phase 5: Develop MVP

Main activities: typically ~6 months

- Develop minimum viable product in iterations
- Continuous validation of solution with customer
- Contract with at least one paying client
- Preparation for implementation project if MVP phase successful

Gate criteria Gate 5:

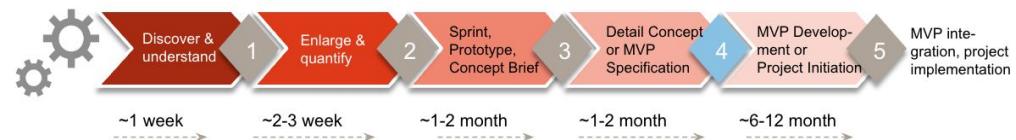
- Business case

Gate document: Project Initiation Document or Mandate

Funding: Innovation Budget (if MVP), general project budget otherwise

Governance:

- Decision body: Innovation committee or Business unit management
- Responsible: MVP team, business PM or IM



4 most relevant dimensions of innovation in existing organisations

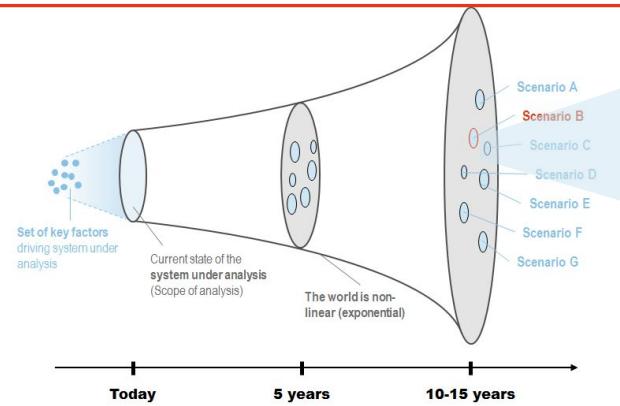
For a successful innovation approach in existing organisations 4 dimensions are of special importance

Ensure strategic alignment of innovation	Ensure proper staffing	Clear Scale Up process	Smooth interaction between the areas (esp. Tech and Biz)
<p>A clear strategic guidance in the form of innovation fields (top-down approach) from 'most likely future':</p> <ul style="list-style-type: none">• Where should we search for potential innovations?• What do we have to do in innovation?• Which initiatives are needed / should be prioritized?	<p>A portfolio and resource management ensuring that dedicated resources are available for innovation projects to ensure the projects can be executed.</p> <p>It must be avoided that the necessary resources are not available or are underqualified (this is only innovation). The core team must be involved 100%.</p>	<p>In the case of a promising innovation approach clear processes and guidance is necessary how late stages should be managed</p> <ul style="list-style-type: none">- in particular, how to run 'Lean start-up'-type of scaling and- re-integration into the company (Divisions)	<p>A frictionless alignment between the different areas to ensure the relevant input at the right time. Especially between the tech and business areas to ensure that the new innovation approaches are thought holistically.</p>

Picture of the future as an approach for companywide strategic alignment:
Goal is to develop crisp visualizations on potential futures of innovation fields

Developing future scenarios can build a starting point for identifying the right searchfields for further innovation.

Conceptual framework



Immediate outcome

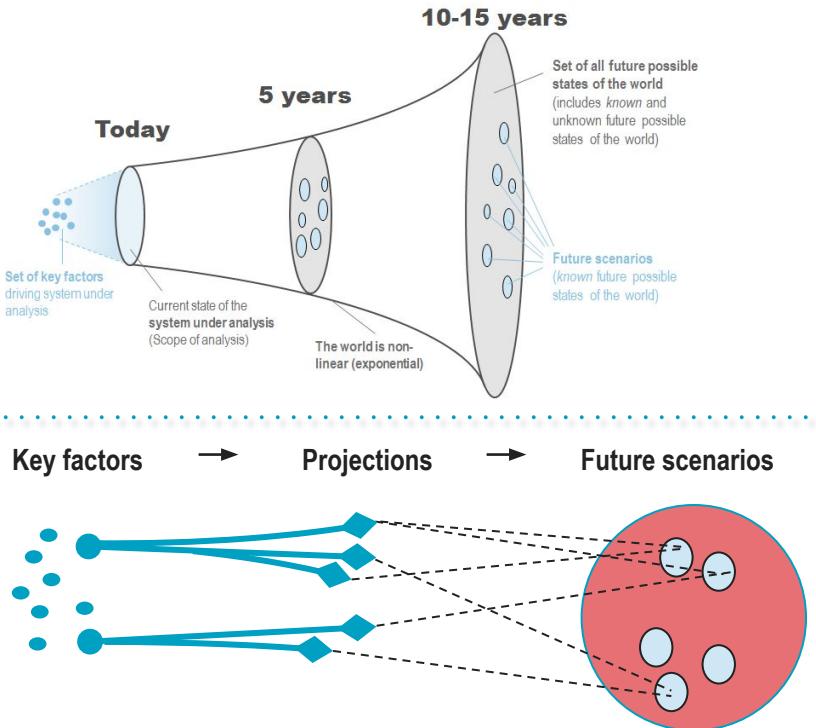


- Companywide approach
- Involvement of **external experts** (Diversity, outside-in views)
- Different **time horizons**: 5 years for strategic alignment of (long term) explorative innovation, 10 years for gaining Thought Leadership
- Trends, extrapolations and interdependencies backed by **facts & figures** (Data room)

- **Crisp, tangible visualizations**
- **Starting point for discussions**: Long-term role of the company, challenges, gaps
- Material for **internal and external communication**

Conceptual framework for a Picture of the future approach

Terminology



Factors: describes a variable whose variation leads to a variation in the system under analysis; it describes the drivers of the future development / evolution of the system under analysis. For ease of usage, factors are classified in four categories (PEST): political, economic, social, and technological.

Key factors: describes a subset of the 'factors' which has been identified as particularly relevant.

Only 10-15 factors should be selected to avoid that people focus later analysis on their 'preferred' factors rather than on the 'most relevant' factors

Selection criteria:

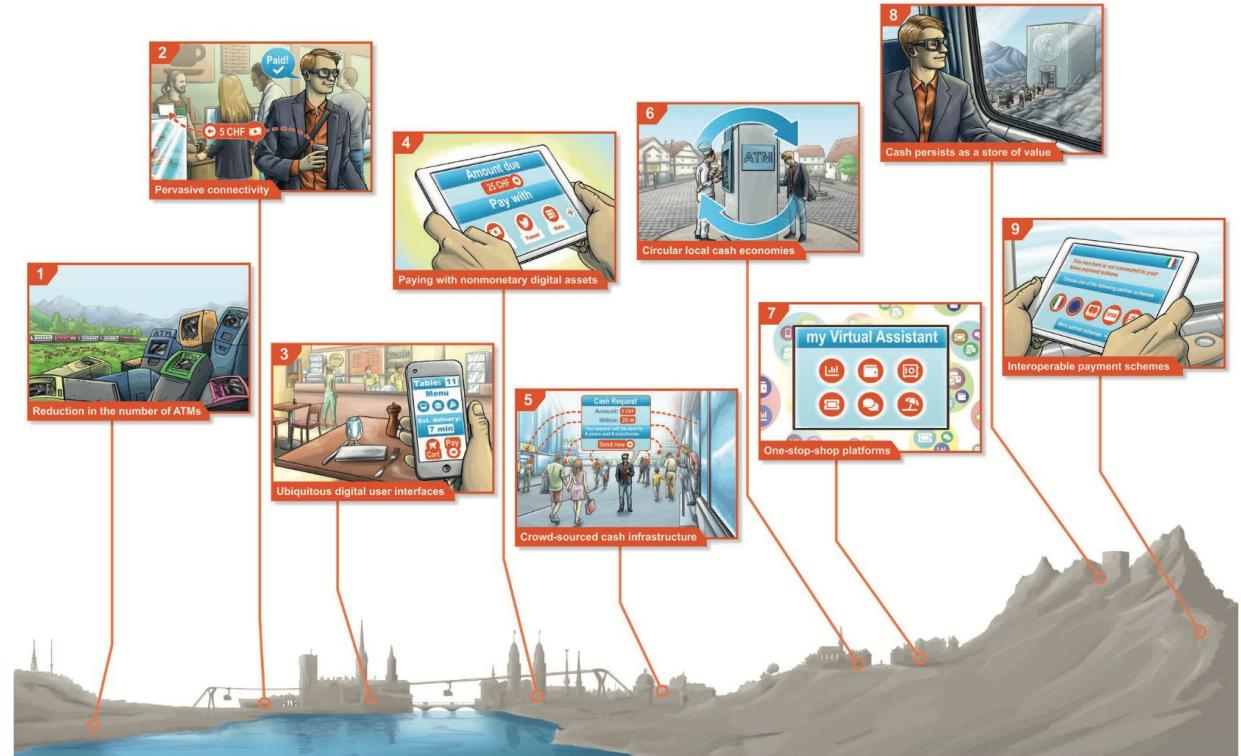
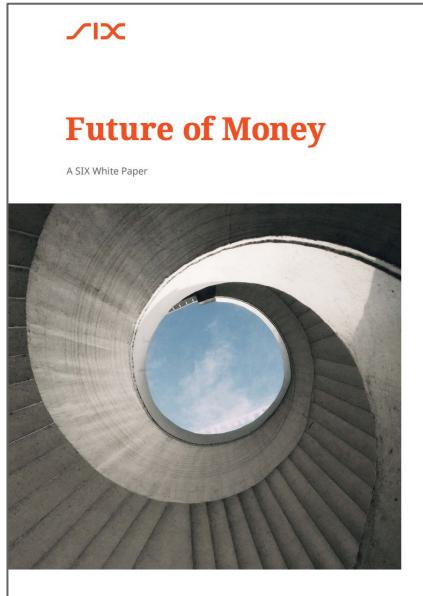
- how much the factor can impact the financial sector;
- how much the factor explains other factors;
- how much of the factor is explained by other factors.

Projection: describes a possible future development of a factor; each factor has at least one projection; each projection has a certain probability of occurrence

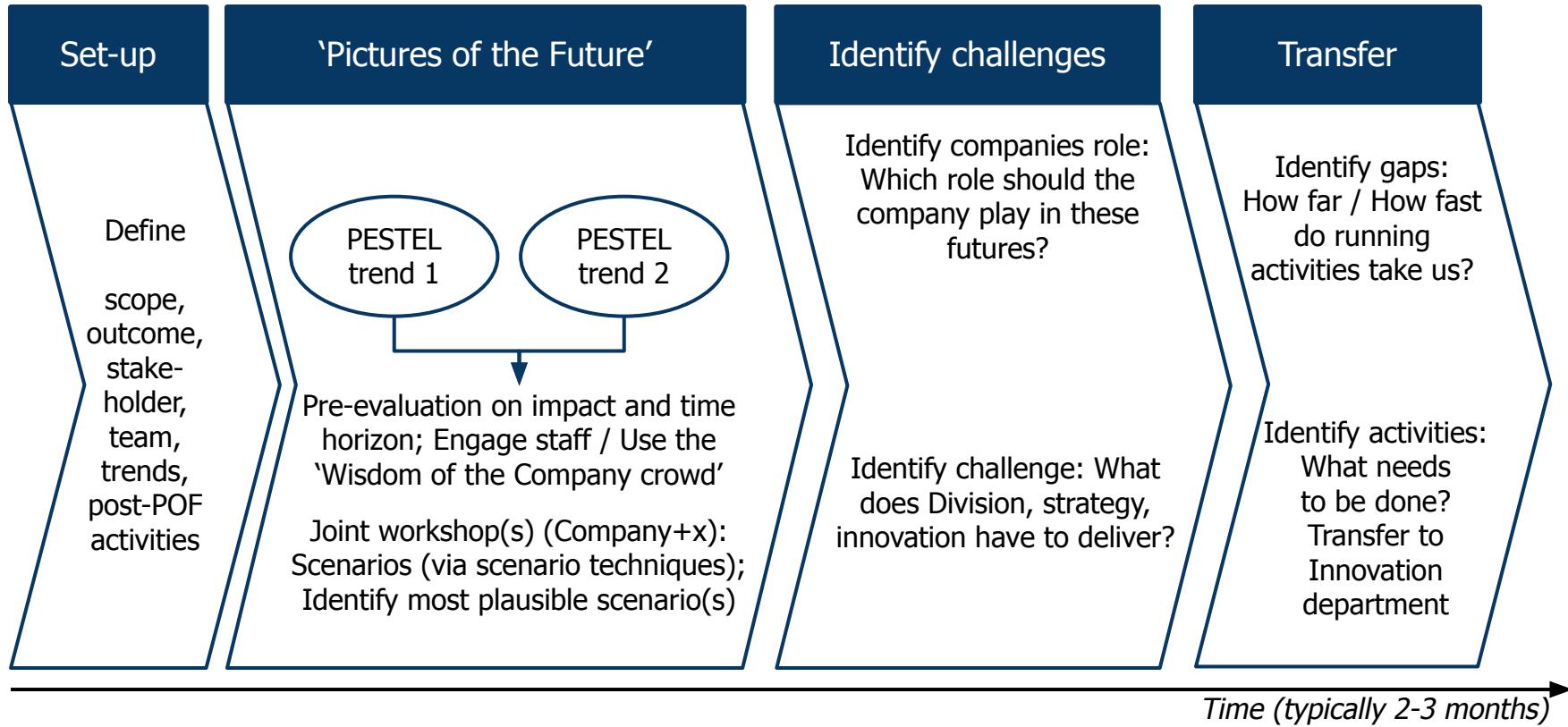
Future scenario: describes the outcome obtained by combining (one of the) projections of all factors; only internally-consistent projections are combined

Pictures of the Future (PoFs): 1-3 most relevant future scenarios

Example: The Future of Money

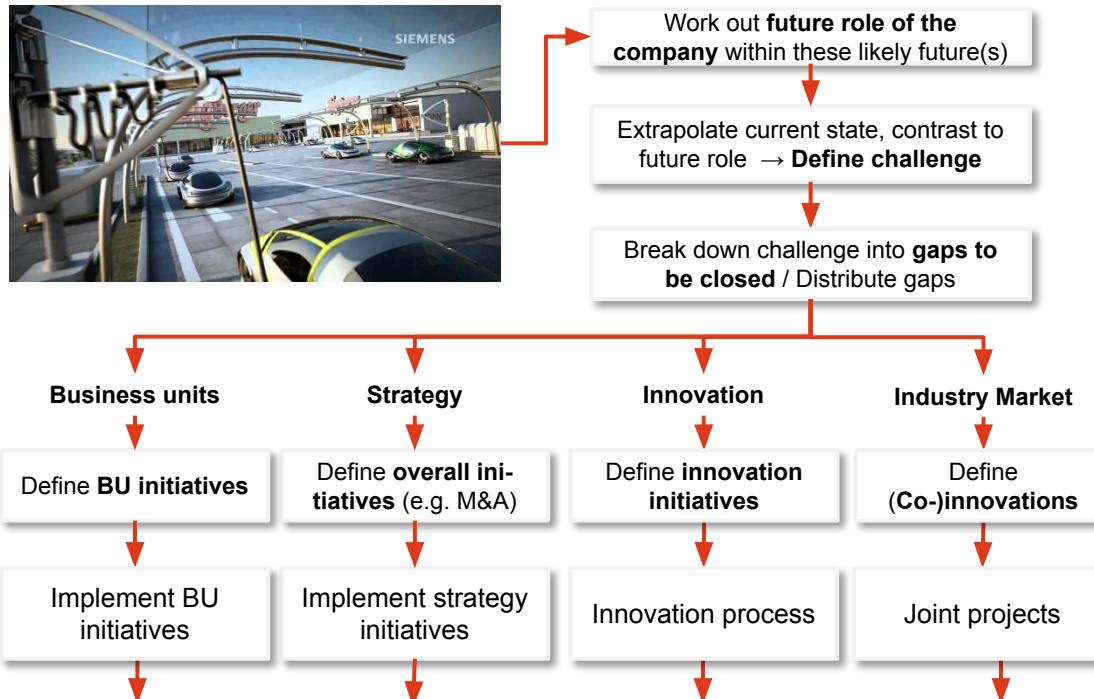


Pictures of the Future: Overall process



Evaluating pictures of the future will identify strategic gaps – close linkage with strategy process crucial

Translating results of POF process into initiatives



Benefits

Cross-functional process will identify gaps to be closed, resulting in:

- **Innovation initiatives** to be funneled into the Innovation process
 - **Strategic initiatives** at business unit and group level
- Additional benefits
- Insights for the **future of overall market**
 - **Search corridors** for technology and start-up scouting
 - **Topics for (open) co-innovation** with partners and customers
 - **Stories / vehicles for internal and external communication** – supporting thought leadership and innovation culture

“Pictures of the Future” Realistic, high touch scenarios of a possible future (developed via solid scenario technique)



Siemens – Electromobility



NEC – Smart cities



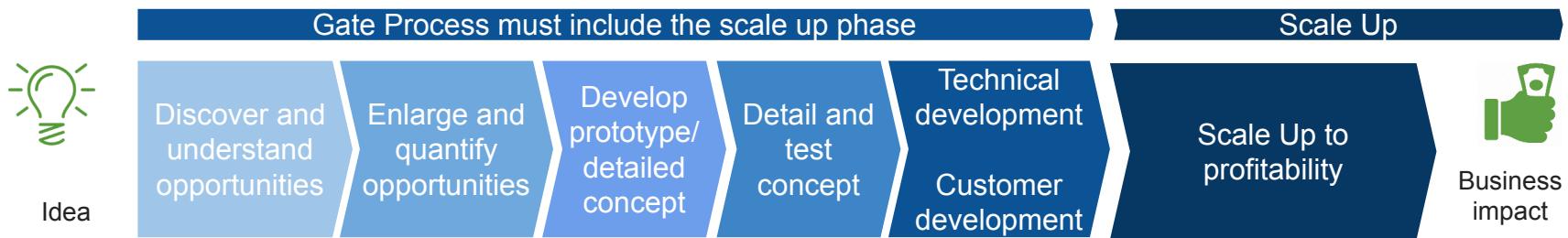
Corning – Future applications for glass

GE Targets Net Zero Energy Homes by 2015

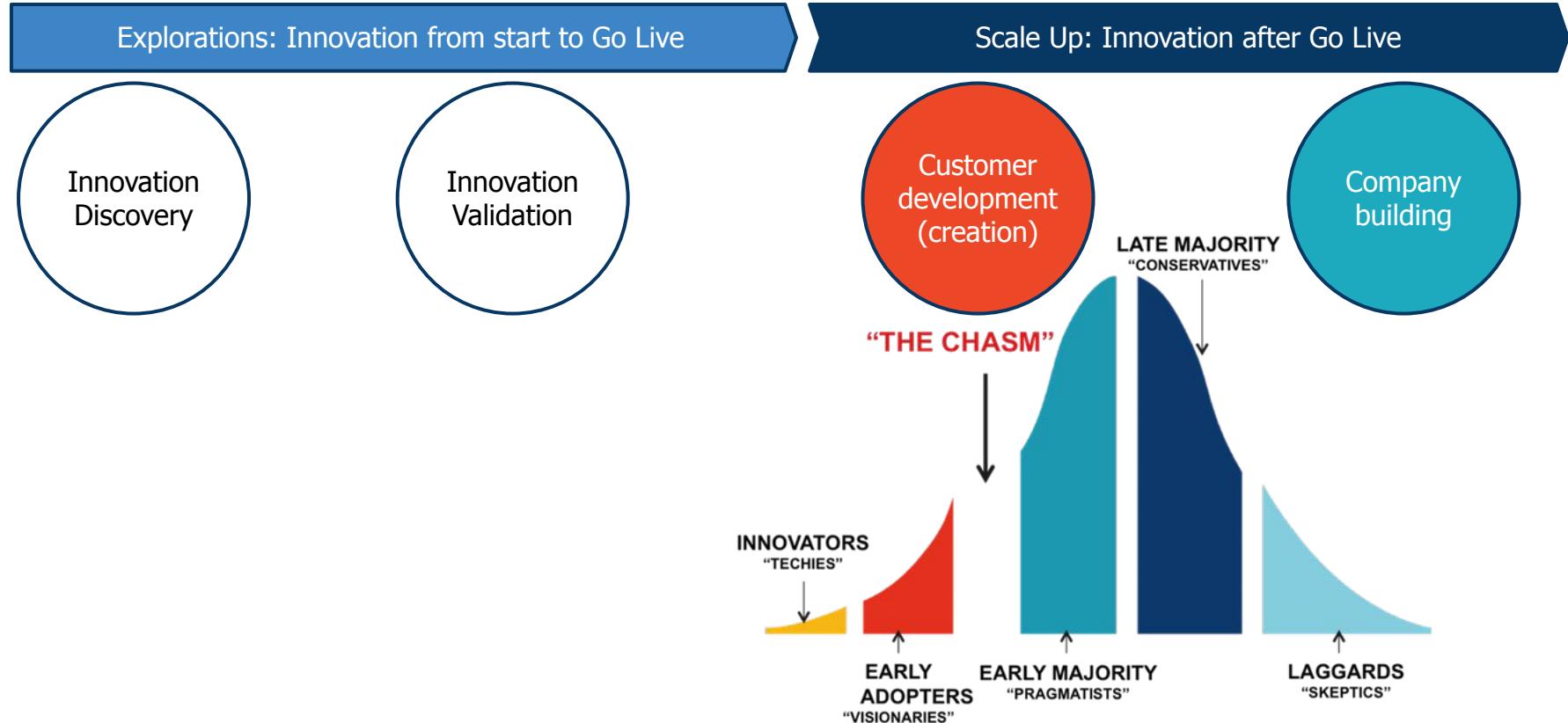


GE – House of the future

A clear Scale Up process is necessary to reduce time-to-impact for promising innovations. And avoid the 'Valley of Death'.



Steve Blank: Design Thinking and Lean start-up in context - how to cross the Chasm



Success after Gate 4 depends on answering 4 key questions

How to find and safeguard the right resources



How to build a "Greenhouse" / "Company Builder"



How to drive Intrapreneurship



How to open up flexibility for capturing the value



- After Gate 4, the focus shifts from "finding the right things to do" to "execute things".
- Teams need to be T-shaped plus have rapid access to special experts (e.g. Contracting / Legal, Financial Controllers)
- Open Innovation to complement companies experts with external experts

- Semi-formal structures (Cost control function, Head of initiative, ...)
- Self-directed / "On a mission" Team
- Customer development milestones
- Lean governance and trust required: At this stage, initiatives should report to Board level

- "Builder mentality"
- Self-motivated, energetic core team required
- We are working on an recruiting / incentivization scheme

- Ultimately, innovation is about capturing the value from meaningful insights
- Transfer a scaled-up business to Divisions is preferred option
- Depending on the way things go, there might be other ones: "New Business", Joint Venture, Trade Sale, Licensing, ..

Tech-Labs: true insight generating vs. innovation theater

Why tech labs so often end up being pure innovation theater

- For a long time, tech labs were the epitome of innovation. At the same time, the strategic requirements were forgotten
- Without clear guidelines (implicit or explicit), such labs are doomed to become technical gimmicks without any relevant results
- In order not to disappear into insignificance, innovation theater was resorted to in almost all cases

Key requirements for successful Tech Labs

- For a tech lab to deliver relevant results, it needs clear objectives as to what is to be achieved:
- these can be clearly defined by the business, for example as a result of a POF process
 - they can be implicitly based on a business that has grown over decades and the associated internally communicated market needs (very rare!)
 - they can be a result of focused customer research and can be generated as part of the innovation process

An in-house technology / innovation lab without strategic direction is almost always doomed to dissolve and or mutate into innovation theater

How innovation is killed - a real story: Rating of financial instruments

Fundamental situation

- The **rating industry** is dominated by three main players
- The business model provides that the **issuers** of financial instruments **pay the rating agencies** for their ratings.
- this means that the **necessary independence is not given**, which always leads to **problems**: Lehman Brother were **AAA** rated when they went **bankrupt**
- **EU** literally **demands** more **independent rating agencies**
- **many financial instruments cannot be used** by institutional investors because there are **no ratings for them for cost reasons**

Value 3 - Solution approach

The start up Value-3 has a solution approach that enables **fully automated ratings** to be carried out cost-effectively using AI:

- This allowed the **business model to be changed to a user paid model**
- It could be easily implemented ratings of **many smaller instruments**

a disruption of the market seemed possible

The innovations dilemma trap

Despite the potential and the **added value** for the entire swiss financial center (relevant rating agencies are exclusively american), there was **massive internal resistance** because the **existing business relationships** with the rating agencies were seen to be **in danger**.

After this could be solved, other obstacles came that led to the **dissolution of the company**

Successful innovation must overcome a number of obstacles from all sides. The biggest ones almost always come from the market

7 Case Study / group work

Case Study

Innovation in Existing
Organizations

Group Assignment - Innovation in Existing Organizations

- Assemble in groups of 5 students
- Share your experiences with innovation efforts in existing organizations. It can be from your own, or observed in the market
- Try to identify, which principles were / or were not followed, and why the innovation efforts ultimately took the turn
- Discuss, how they might have been averted / made differently
- Prepare a small 5 minute presentation condensing your key findings, to be shared with the class



DISRUPTIVE BUSINESS MODELS

Jochen Schlapp

NORMA Group Associate Professor of
Operations & Technology Management
Frankfurt School of Finance & Management
Adickesallee 32-34
60322 Frankfurt am Main, Germany
j.schlapp@fs.de

The Innovation Journey



**“The quest for certainty blocks the search for meaning.
Uncertainty is the very condition to impel man to unfold
his powers.”**

Erich Fromm



Jochen Schlapp

*NORMA Group Associate Professor of Operations
and Technology Management*



<https://www.linkedin.com/in/jochen-schlapp>

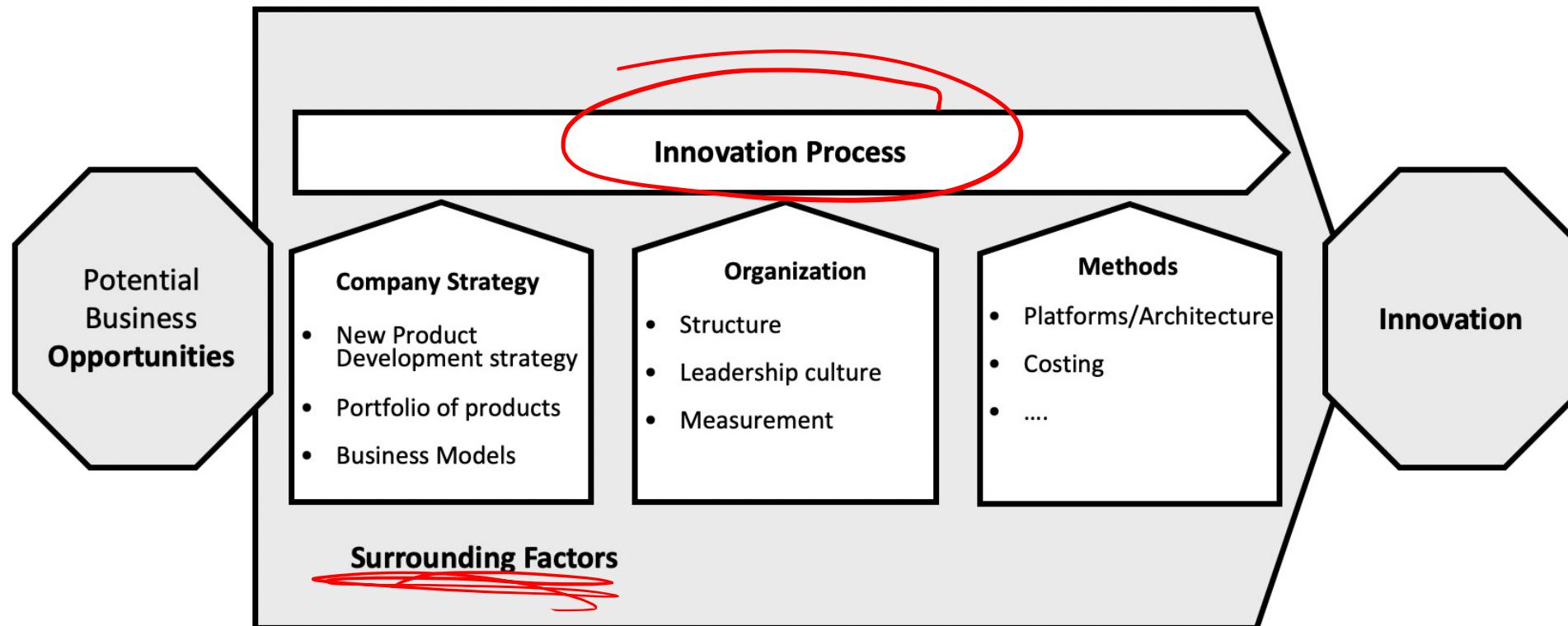


j.schlapp@fs.de



Frankfurt School of Finance & Management
Adickesallee 32-34
60322 Frankfurt am Main
Germany

This Course is About...



1. Preparation for Class

- Assigned reading material **must** be read before coming to class
- Books and academic papers are optional

2. In Class/Online

- Classes start on time
- Video should be switched on (online)
- Silence is an affirmative answer (online)
- Participation is important for the learning experience



1. Narrated Presentation (60 points)

- Group project
- Due on 23 March 2024
- In-depth analysis of a company of your choice

2. Exam (60 points)

- Date 24 February 2024
- Mix of multiple-choice and open questions

- Loch, Kavadias, 2008. *Handbook of New Product Development Management.* Butterworth-Heinemann.
- Girotra, Netessine, 2014. *The Risk-Driven Business Model.* Harvard Business Review Press.
- Schilling, 2019. *Strategic Management of Technological Innovation.* McGraw-Hill.
- Ulrich, Eppinger, 2019. *Product Design and Development.* McGraw-Hill.
- Ries. 2017, *The Lean Startup.* Currency.

Session 1

Venturing Into The Unknown

The Joint Strike Fighter Program

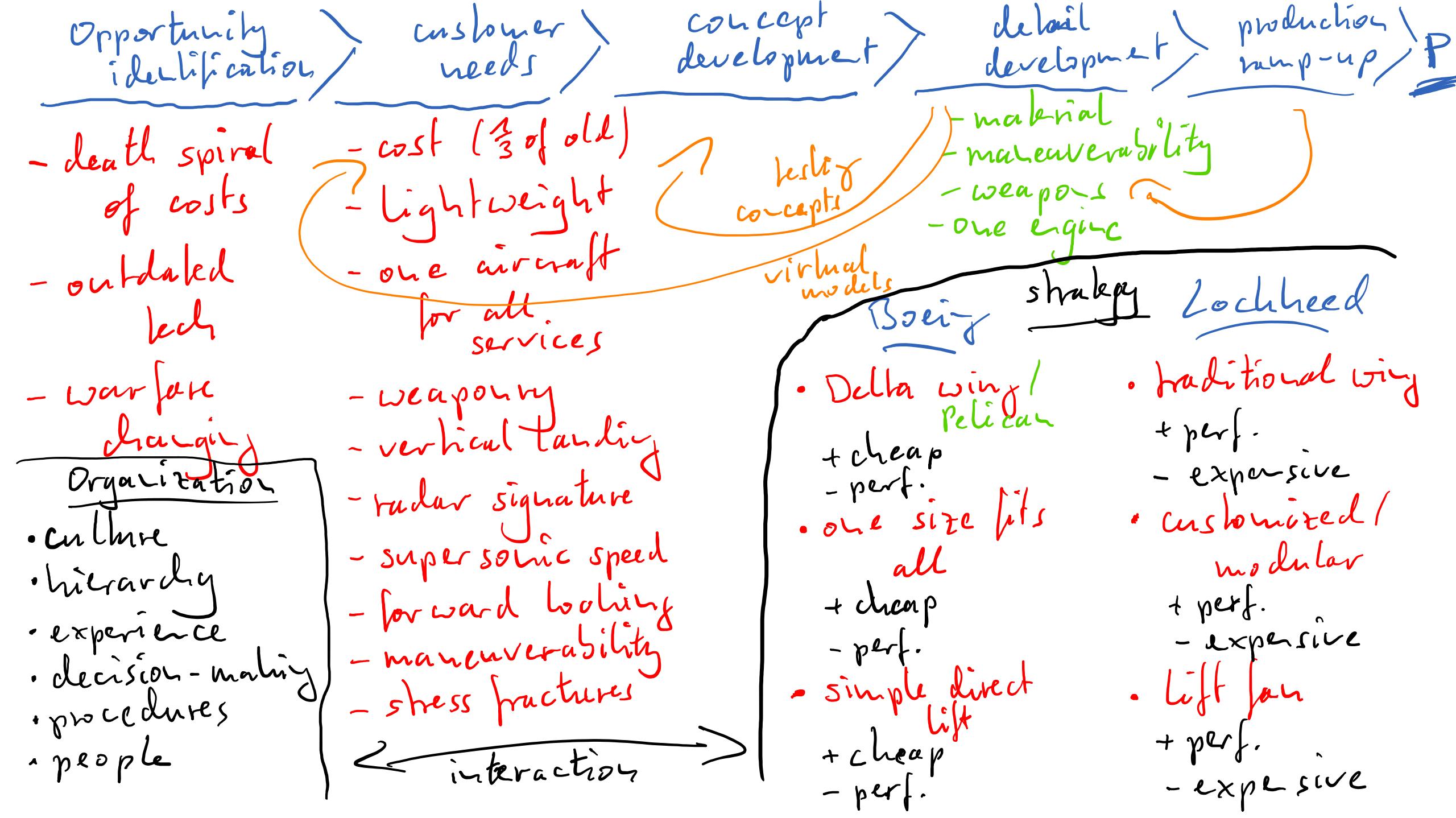
The Joint Strike Fighter Program

- project life cycle cost ~ 1.5 tn \$
- documentary starts in 1996
- contract awarded in 2001
- in service since 2015



**What do we know about the
products over time?**

What are the major decisions?



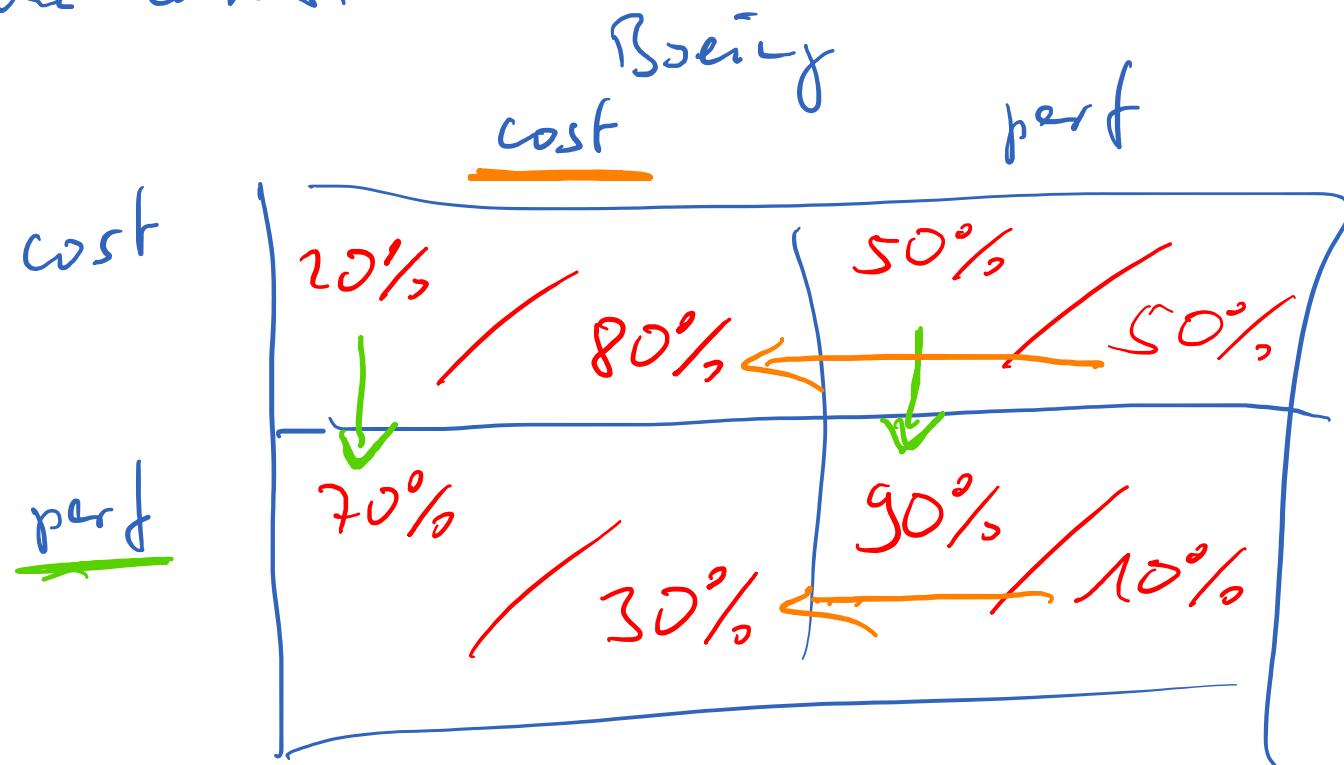
What strategies did Boeing and Lockheed choose?

Why?
Does it make sense?

A Strategic Rationale

- short-term goal: win the contest

Lockheed



- long-term goal: change the game towards stronger cost focus

Boeing: Cost-Centric Engineering



Boeing 737 Max



Frank Shrontz
CEO Boeing, 1986 – 1996



Boeing 787 Dreamliner

Who gets the blame for a 20-year misadventure? In 2013, the GAO's [Michael Sullivan asserted](#) that Lockheed had failed to get an early start on systems engineering and had not understood the technologies involved at the program's launch. But a [RAND study](#) the same year found the three F-35 variants had drifted so far apart during development that having a single base design may prove to be *more* expensive than if services had just built separate aircraft tailored to their own requirements from the get-go. And to this the fact that enormous defense projects almost always go over-budget and you've got a recipe for the start-and-stop, muddled first two decades of the F-35.

The Price Tag and the Promise

Cost estimates for the F-35 have changed yearly over the past 15 years. It's safe to say, though, that the program is the most expensive in U.S. history (so far), pegged at more than \$320 billion in 2012. In 2014, the [GAO found](#) that the F-35 fleet would have operating costs 79 percent higher than the aircraft it was to replace.

The Russian Suchoi SU-57

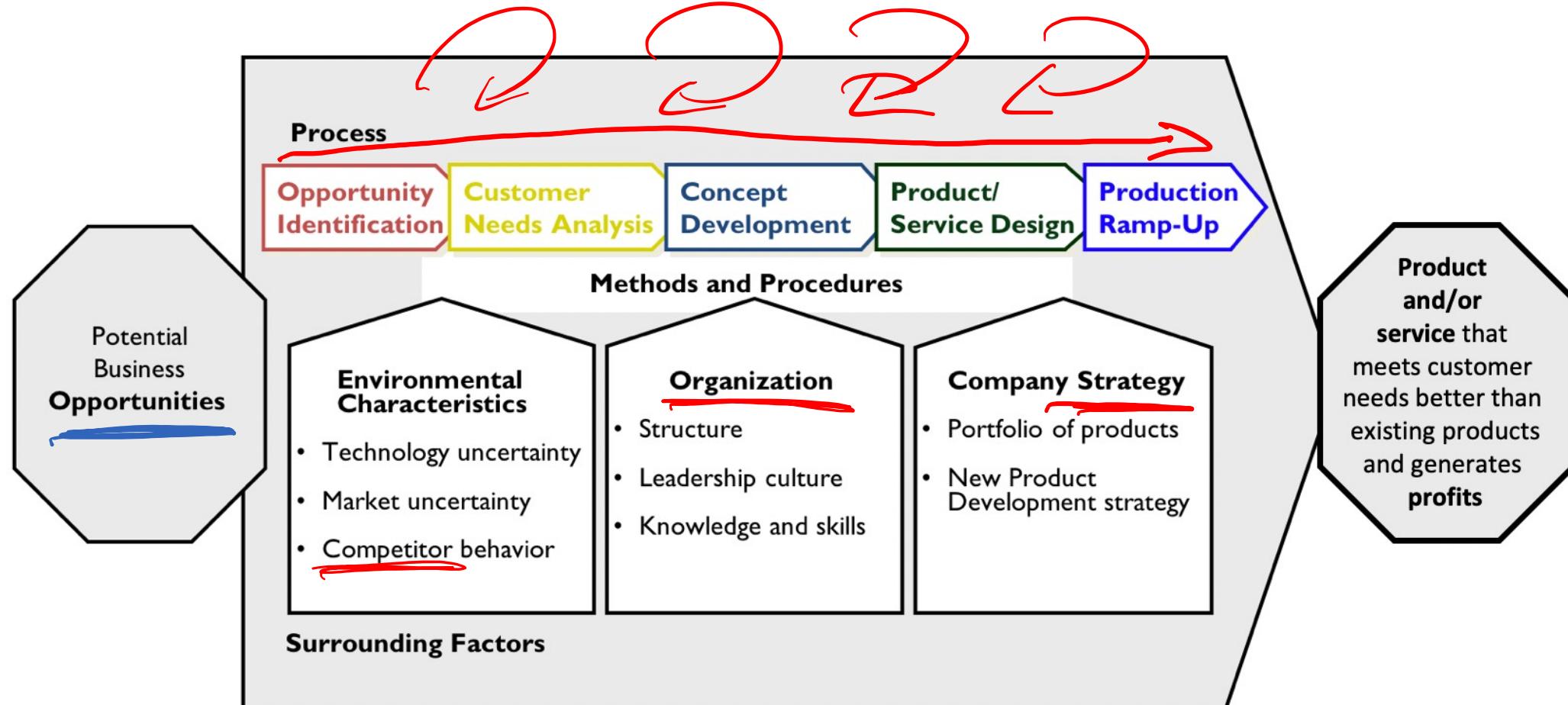


Dissecting the Innovation Process

The Development Process



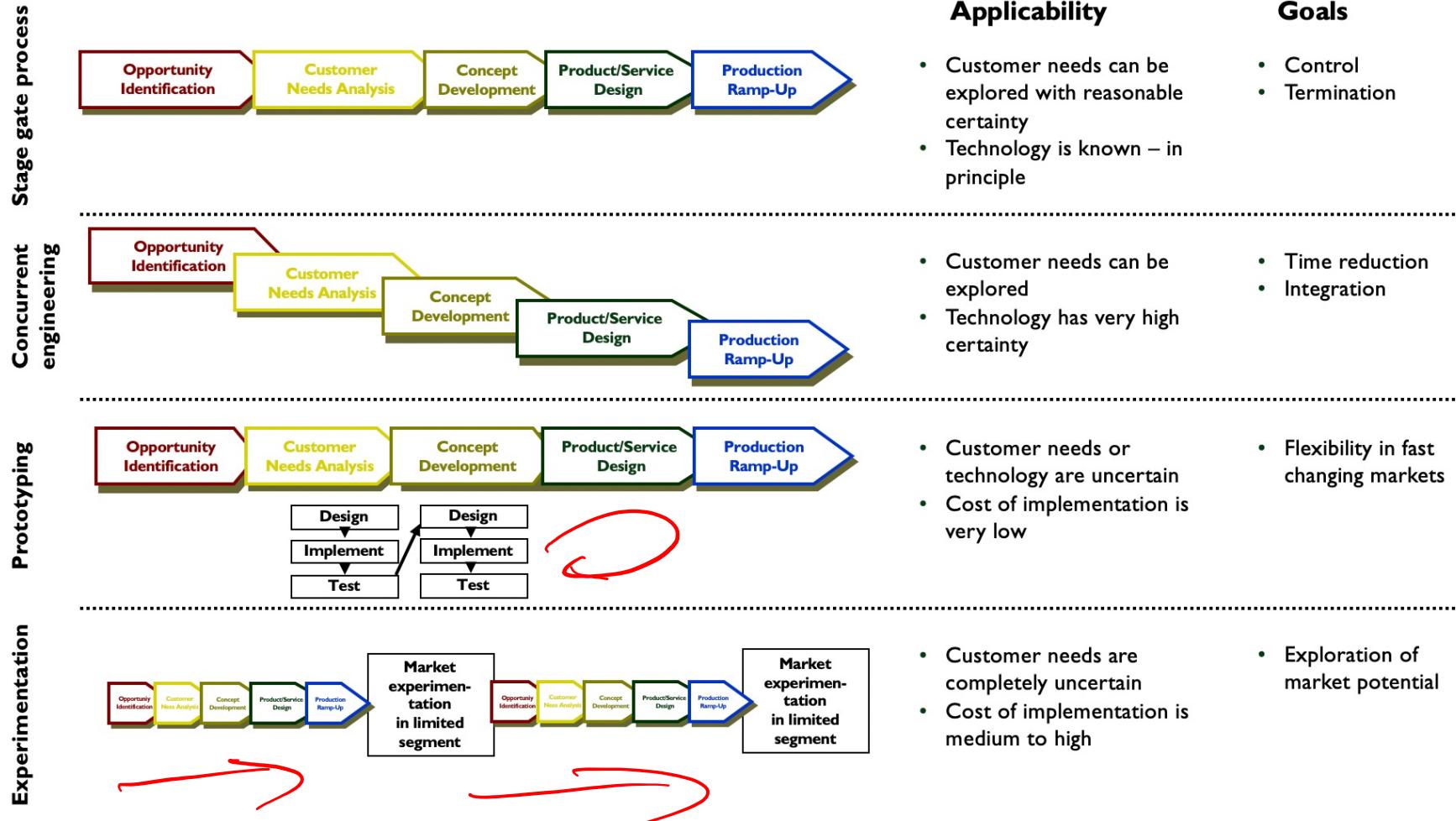
Frankfurt School



Forget about a Linear Process



Frankfurt School

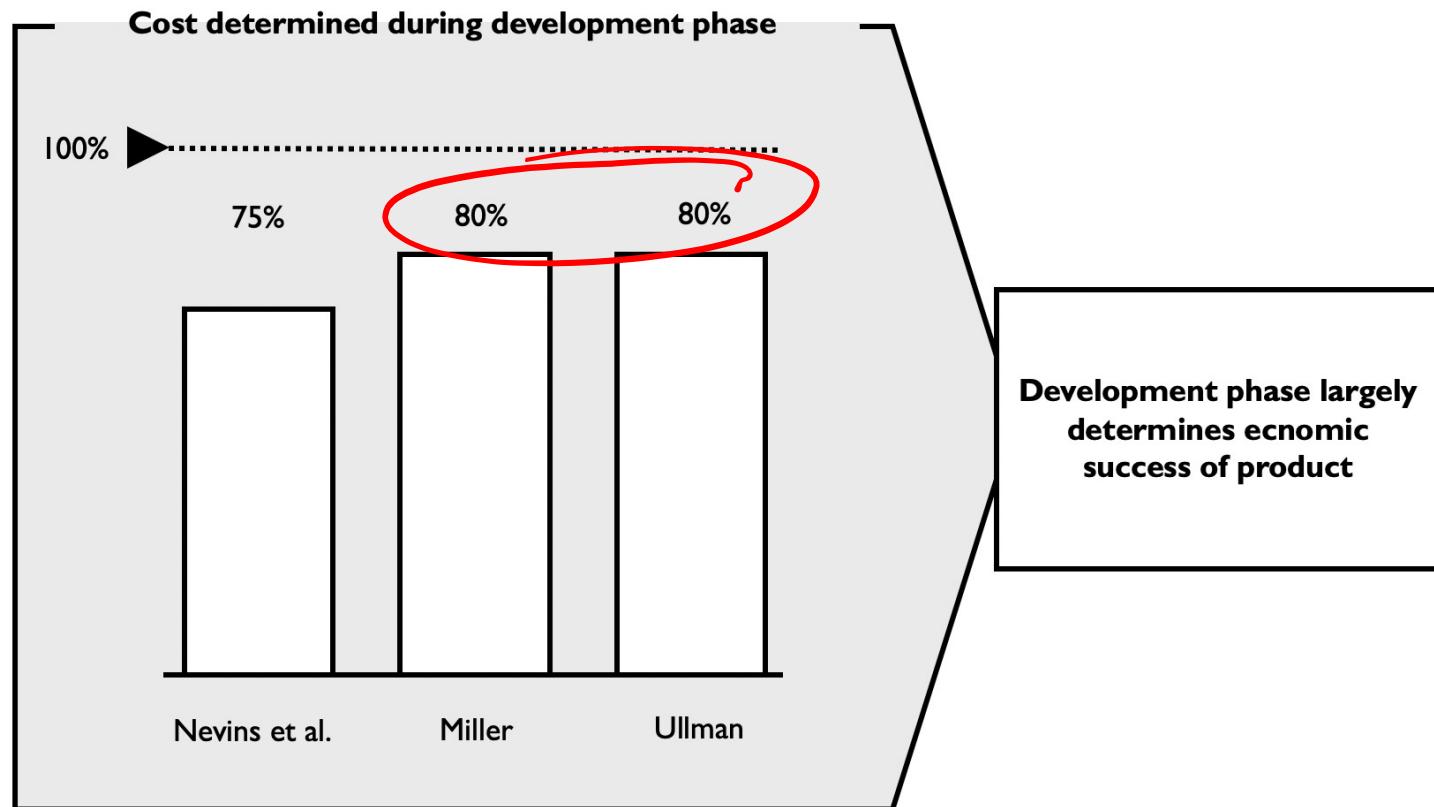


What determines the total cost of a product?

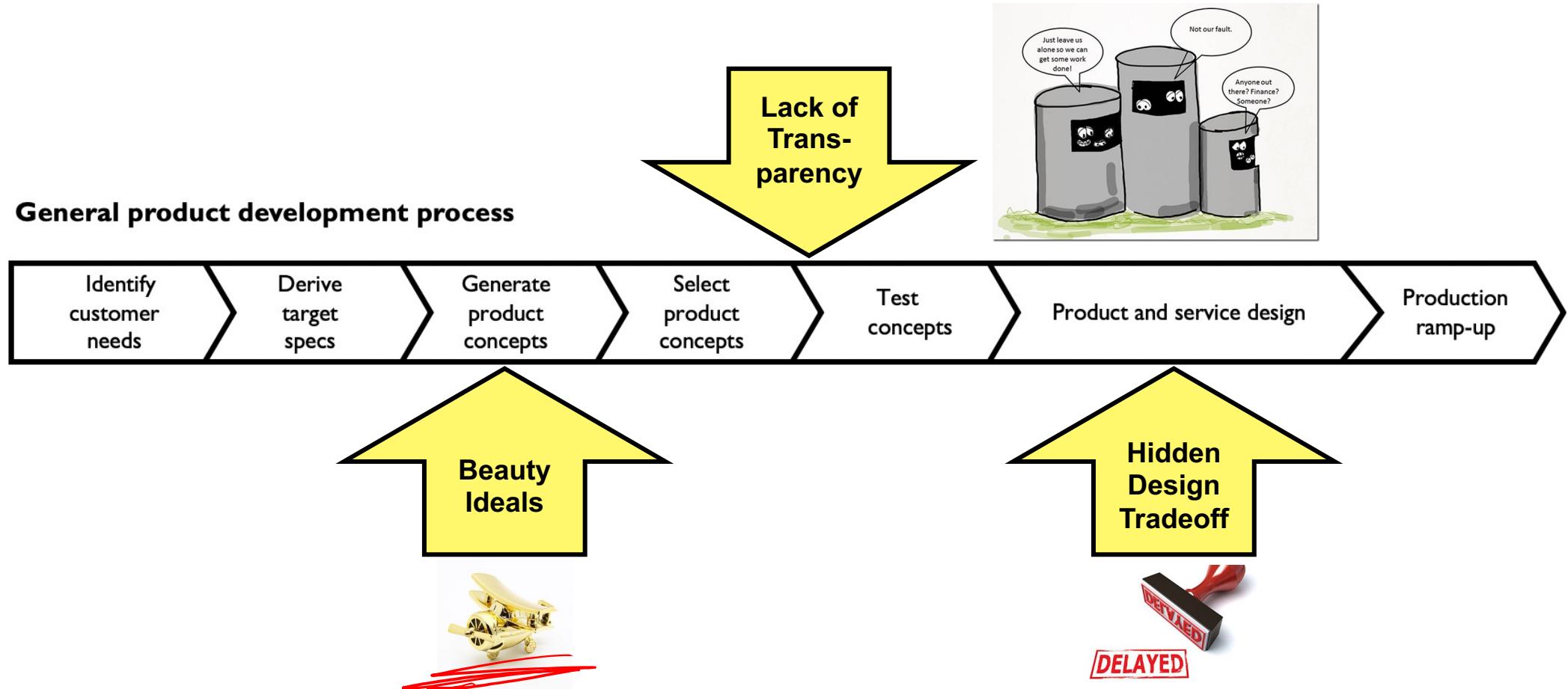
Total Cost of a Product

- material ✓
- R&D expenses ✓
- labor ✓
- marketing
- inventory ✓
- shipping ✓
- cost of sales
- production ✓
- warehousing ✓
- overhead ✓
- training of workforce ✓
- capex (machinery, plants) ✓

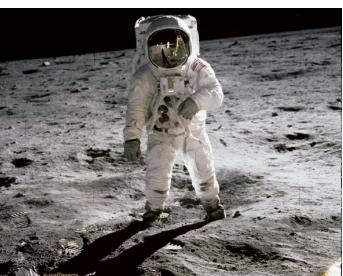
Excessive Costs? Blame the Development Team?



Exceeding the Spending Limit



**Original Moon Landing had no target costing:
Creativity would have been limited**



**X-Prize had explicit target costing:
Creativity was dramatically boosted**



**What is the biggest innovation of
the last 20 years?**

product/service ideas

- smartphone
- e-vehicles
- video calls

tech/process ideas

- internet
- AI
- blockchain
- quantum computing
- I.C.O

business model ideas

- social media platforms

Innovation is a new **match** between a **need** and a **solution**.

Novelty can be in

- the need
- the solution
- a new marriage of existing need and solution.

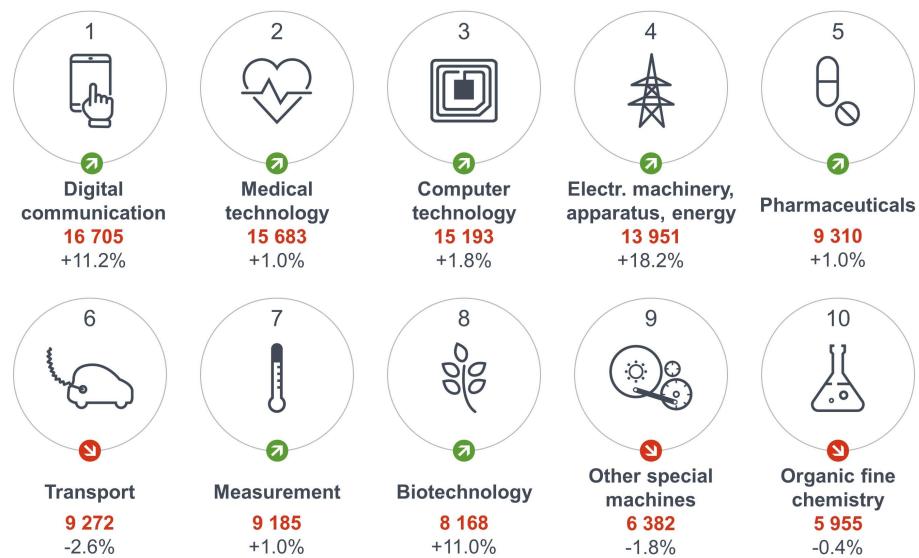
Match is synonymous with market success.

Are there Objective Measures of Innovativeness?

- Number of patents per year?
- Number of new product introductions per year?
- Annual R&D spending?
- Innovation premium (current market capitalization vs. NPV of cash flows from existing businesses)?
- ...

Leaders in Innovation: No. of Patents (in Europe)

TOP 10 Technical fields with most patent applications 2022

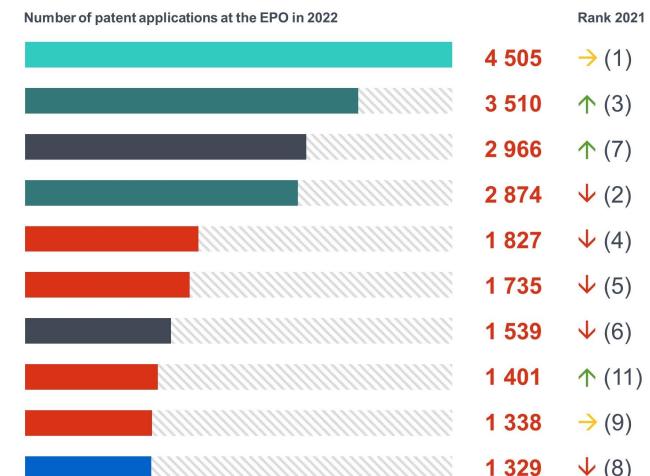


European Patent Office 2023

Top ten applicants 2022

TOP 10

- 1 Huawei
- 2 LG
- 3 Qualcomm
- 4 Samsung
- 5 Ericsson
- 6 Siemens
- 7 Raytheon Technologies
- 8 BASF
- 9 Royal Philips
- 10 Sony



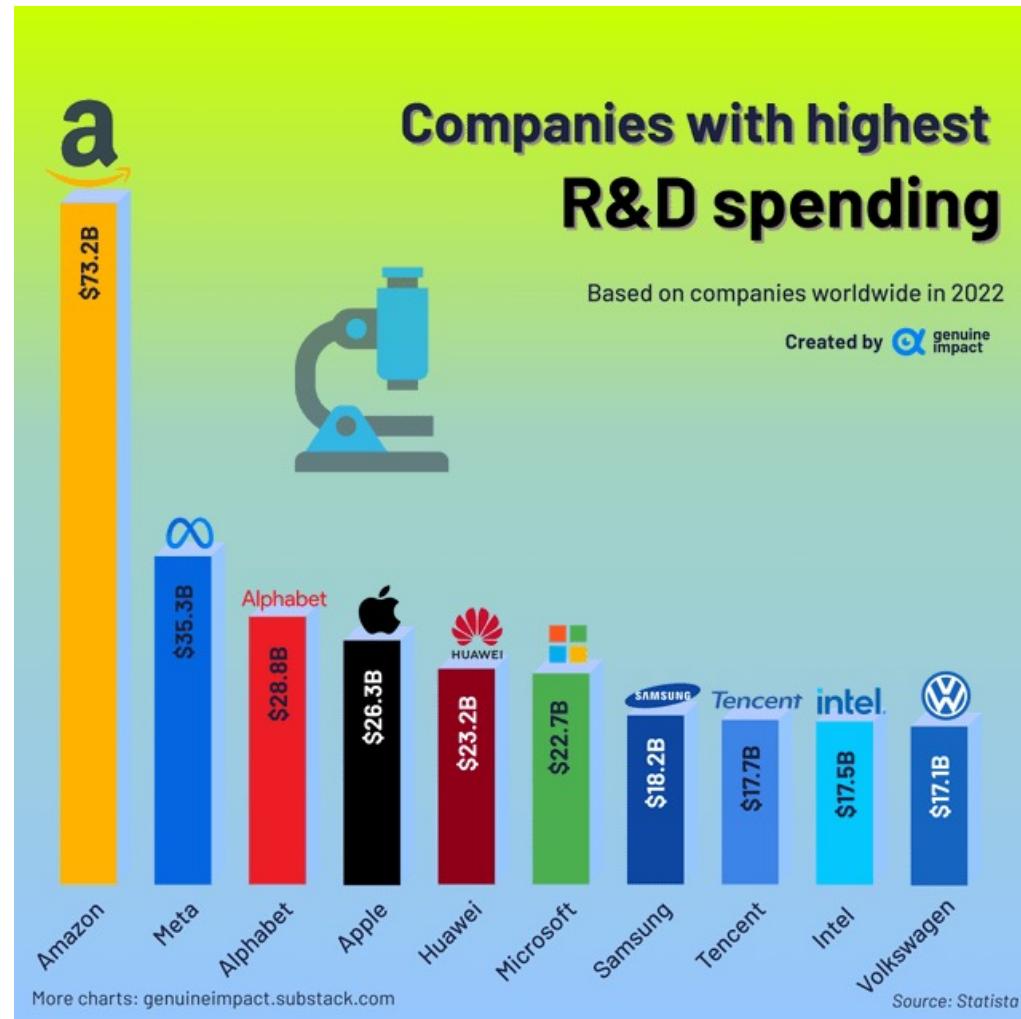
■ EPO states ■ United States ■ P.R. China ■ R. Korea ■ Japan

European Patent Office 2023

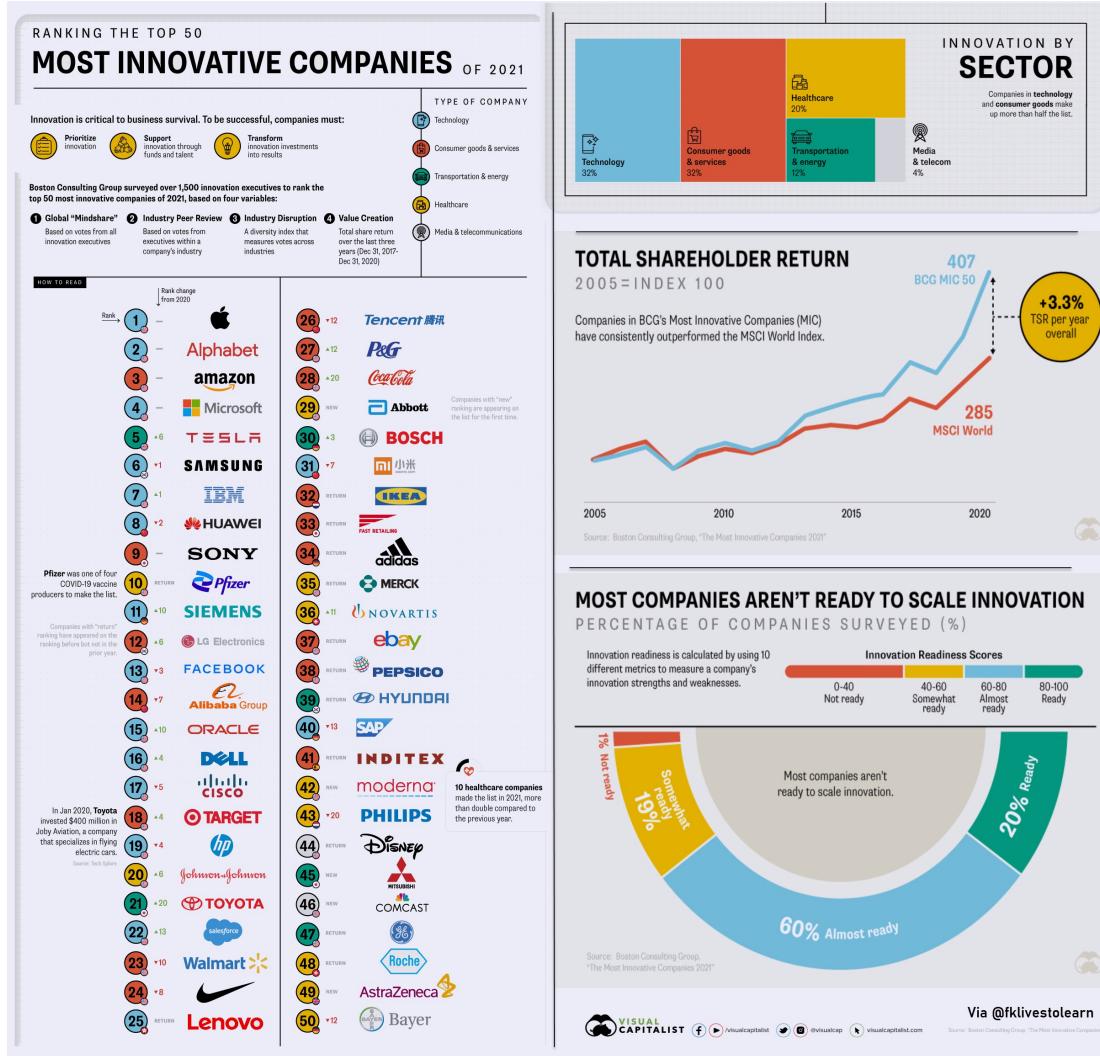
Top 50 countries for patent applications 2022

TOP 50

		2022	Change				
1	United States	48 088	+2.9%	18	Israel	1 741	+1.2%
2	Germany	24 684	-4.7%	19	Chinese Taipei	1 474	-0.7%
3	Japan	21 576	-0.4%	20	Ireland	1 140	+12.3%
4	P.R. China	19 041	+15.1%	21	Australia	1 003	-1.4%
5	France	10 900	+1.9%	22	Singapore	835	+16.1%
6	R. Korea	10 367	+10.0%	23	India	817	+1.4%
7	Switzerland	9 008	+5.9%	24	Norway	660	+4.9%
8	Netherlands	6 806	+3.5%	25	Poland	615	+17.8%
9	United Kingdom	5 697	+1.9%	26	Türkiye	542	-26.3%
10	Sweden	5 036	+1.8%	27	Liechtenstein	456	-7.5%
11	Italy	4 864	-1.1%	28	Barbados	344	+15.8%
12	Denmark	2 662	+0.6%	29	Luxembourg	343	-20.8%
13	Belgium	2 604	+5.0%	30	Hong Kong SAR (China)	331	+49.8%
14	Austria	2 388	+3.4%	31	Portugal	312	+7.6%
15	Finland	2 140	+1.5%	32	New Zealand	230	+2.7%
16	Canada	2 001	-3.8%	33	Brazil	220	+20.9%
17	Spain	1 925	-1.0%	34	Czech Republic	219	+9.0%
				35	Saudi Arabia	206	-45.6%
				36	Russian Federation	199	-26.8%
				37	Greece	185	-8.9%
				38	Cayman Islands	136	-54.2%
				39	Slovenia	123	+6.0%
				40	Hungary	102	-14.3%
				41	Thailand	95	-4.0%
				42	South Africa	87	+2.4%
				43	Lithuania	78	+9.9%
				44	Malta	72	+28.6%
				45	United Arab Emirates	69	0.0%
				46	Estonia	66	-4.3%
				47	Mexico	58	-6.5%
				48	Slovakia	49	+14.0%
				49	Chile	48	+2.1%
				49	Iceland	48	-23.8%



Leaders in Innovation: Innovation Premium



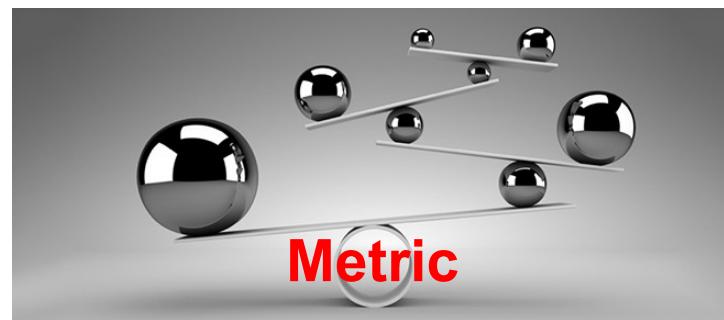
Don't get fooled by size!

innovation premium
current market cap
=
NPV of existing cash flows
↳ net present value

Firm Characteristics

- Size
- Revenue
- Strategy
- Diversification
- ...

Product Orientation



Industry Characteristics

- Market speed
- Competition intensity
- Regulatory burden
- Technology evolution
- ...

Performance Orientation

Some Uninnovative Giants?



Frankfurt School

vendor managed inventory



ThyssenKrupp

ThyssenKrupp Elevator Americas



LI & FUNG

intermediary

[Western
companies]

Asian
manufacturers

1. Product Innovation

Introduction of a new good or service

2. Process Innovation

Implementation of a new production or service process

3. Business Model Innovation

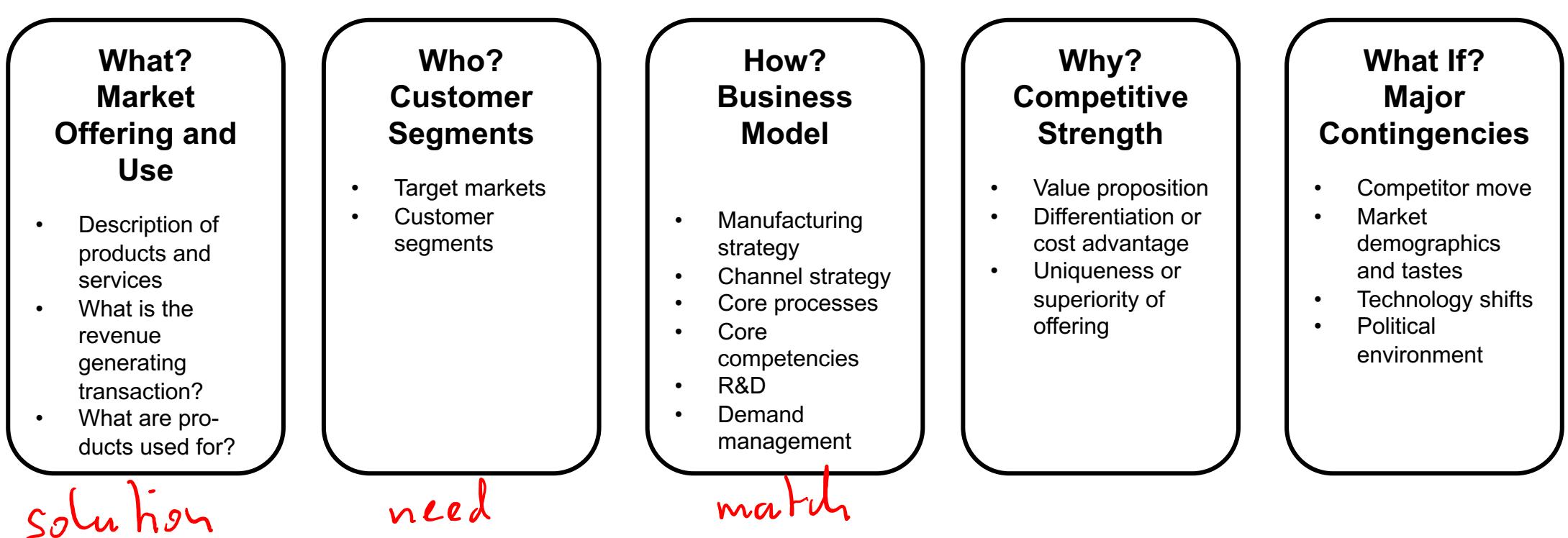
Programmatic changes to existing business model

Economic Relevance of Different Types of Innovation



(1) Excluding Greece.

INNOVATION STRATEGY



Innovation at Microsoft

CEO

Today's questions:

- Was Bill Gates a good innovation manager?
- Was Steve Ballmer a good innovation manager?
- Are there signs that Satya Nadella is a good innovation manager?



—
2000

—
2000

—
2014

—
2014

Segments / Products

Operating system (Windows)

MS Office

Windows phones

Xbox / gaming

hardware / surface

enterprise software

search engine, skype,
browser

cloud services

others / security

Age

old

old

medium

medium

medium

new

new

Profitability

+ +

+ +

Gaks

def.
def-

--

+ / 0

def.

off.

?

-
-

Baller def.

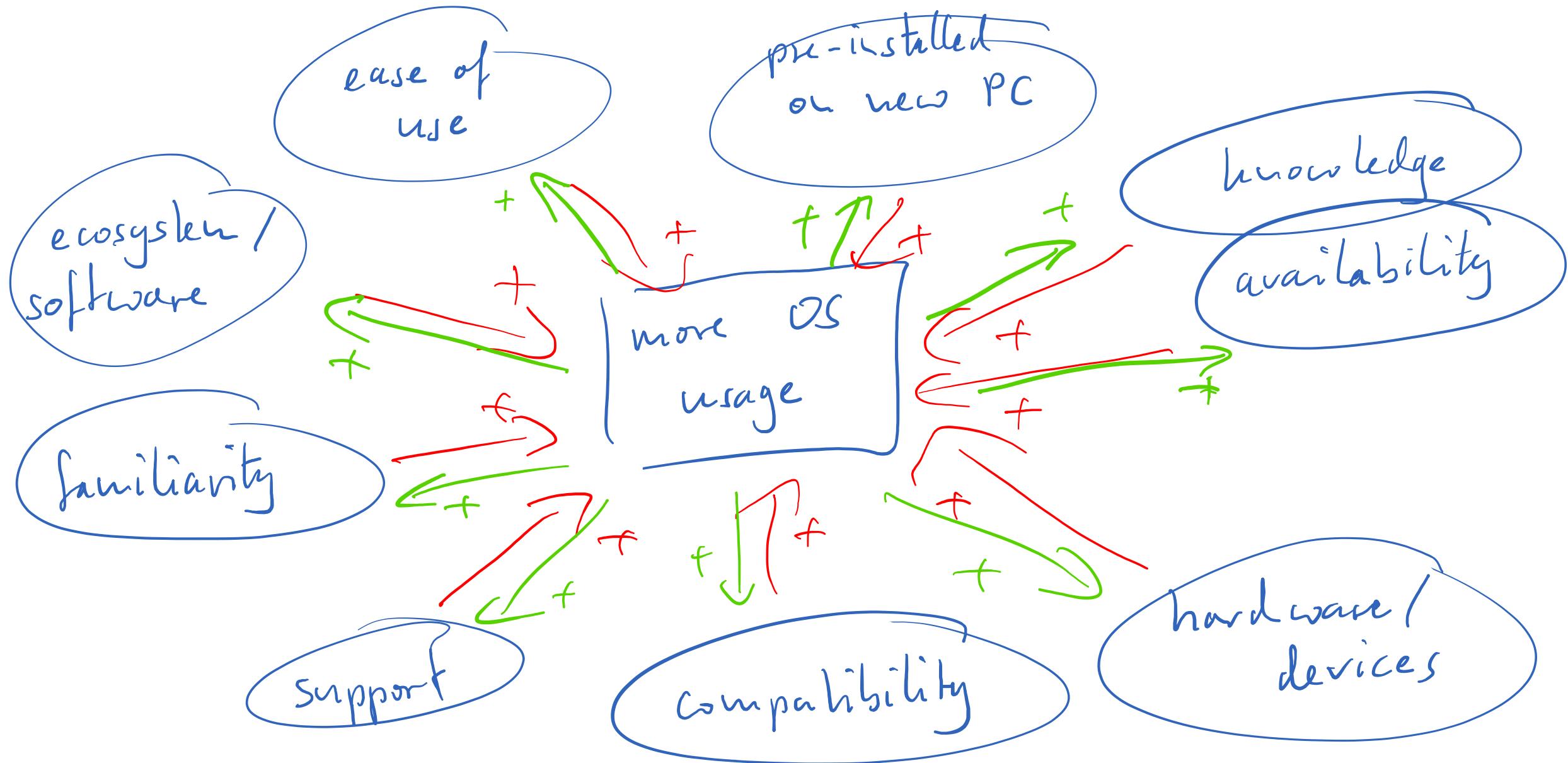
Nadella

off.

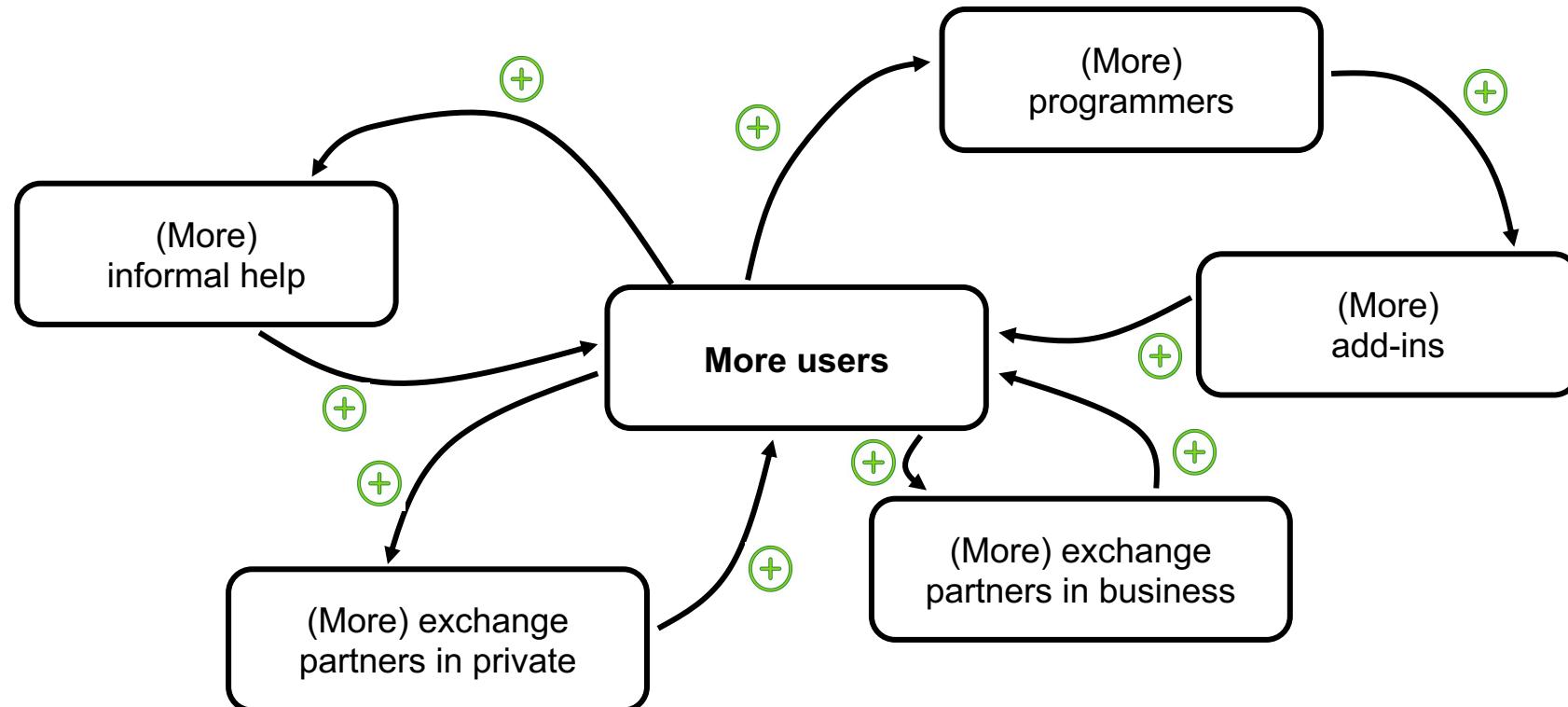
0 / + ↑

?

**Why do people use Microsoft's
operating system (Windows)?**



Why do people use Microsoft Office?



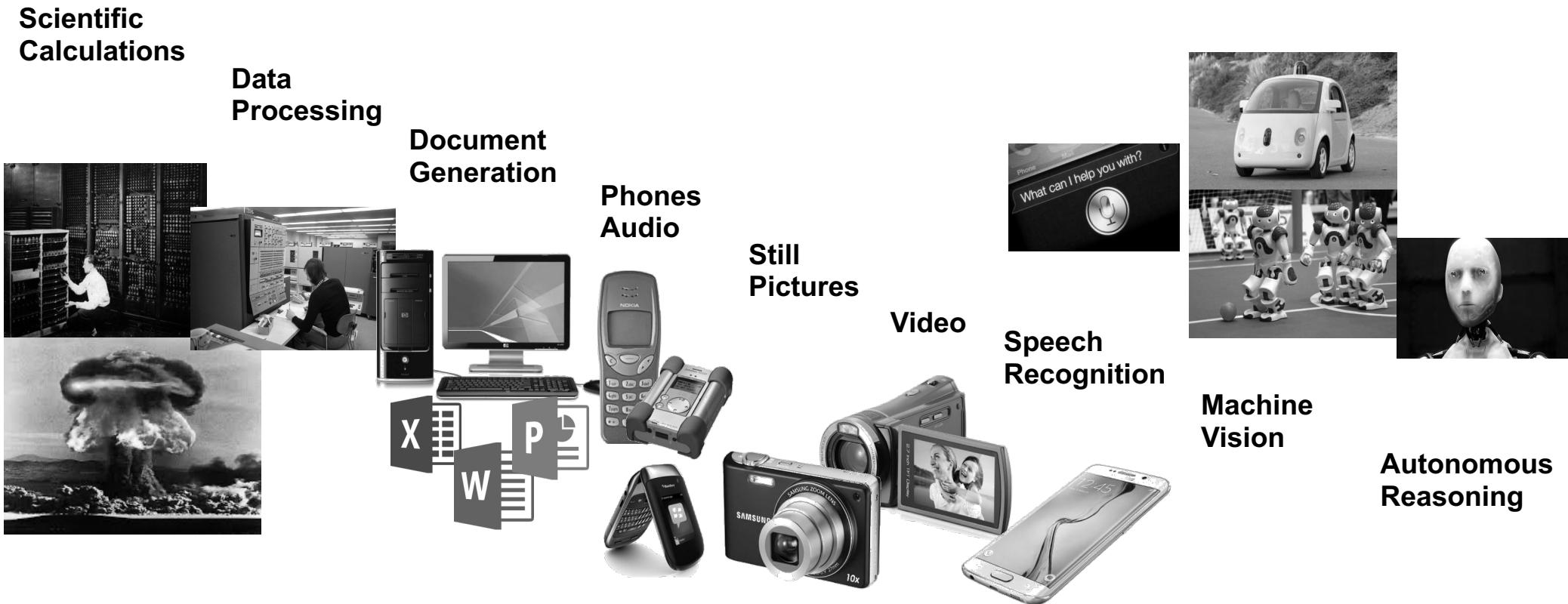
How to Destroy a Reinforcement Cycle?

- convince 3rd party software providers to leave Windows ecosystem
- new & better features + not imitatable
- easy to use + low cost
- attract young customers (collaborate with schools)
- make operating systems obsolete
- hardware-software connectivity
- optimize solution for a niche → subcycle for niche market
 - ⇒ cannot be destroyed from within
 - ↳ replacement from "far away"

How to Destroy a Reinforcement Cycle?



The Threat Comes from Far Away





Why did Facebook buy a company with 55 employees with revenues of ca. USD 15m and a net loss of USD 232m for USD 21.8 bn?



**Why does Microsoft often fail in
new ventures?**

Microsoft's Innovation Strategy over Time



creating new products ✓

keep the cycles alive ✓

promote cloud services

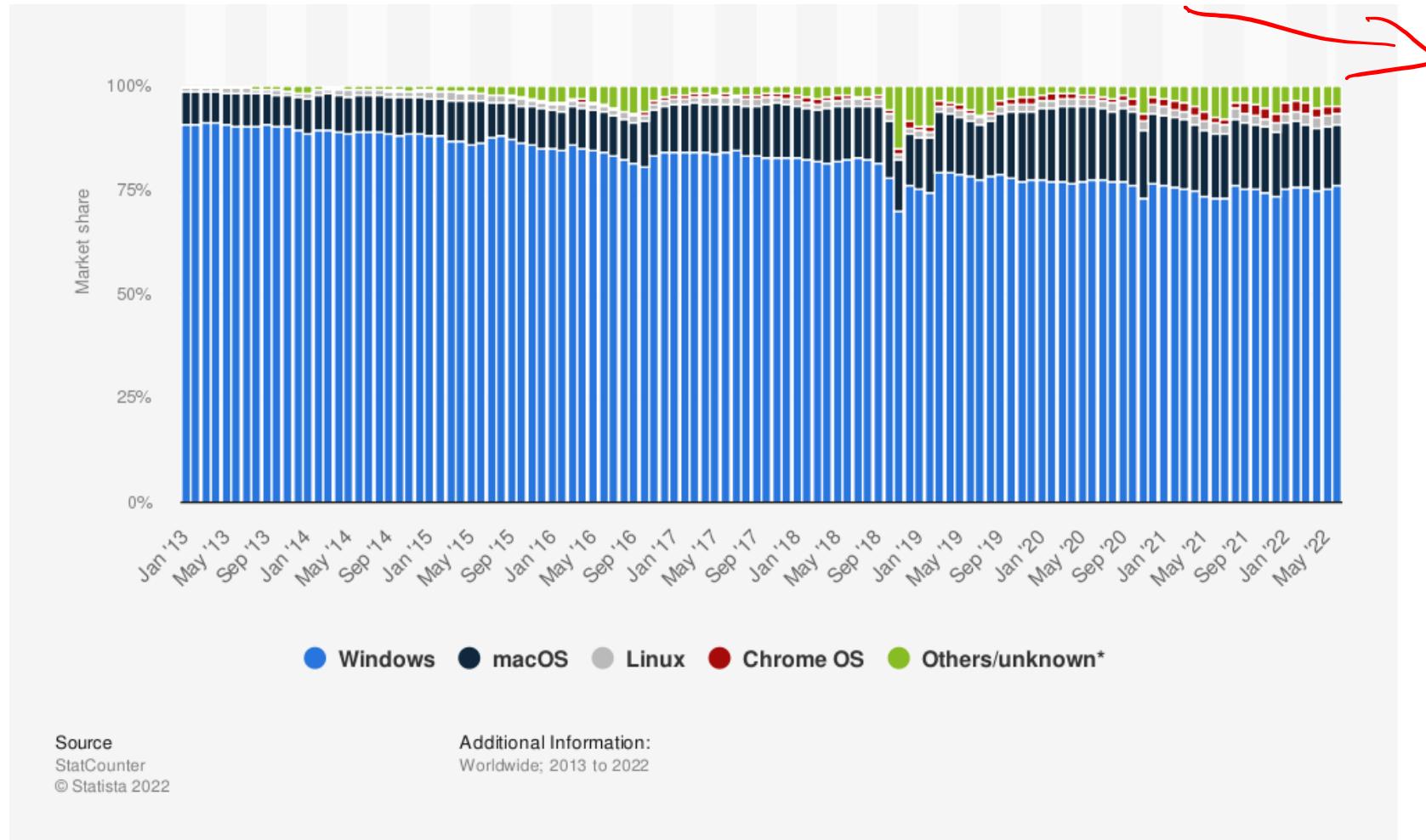
keep MS Office

willing to sacrifice Windows cycle

Satya Nadella's Agenda

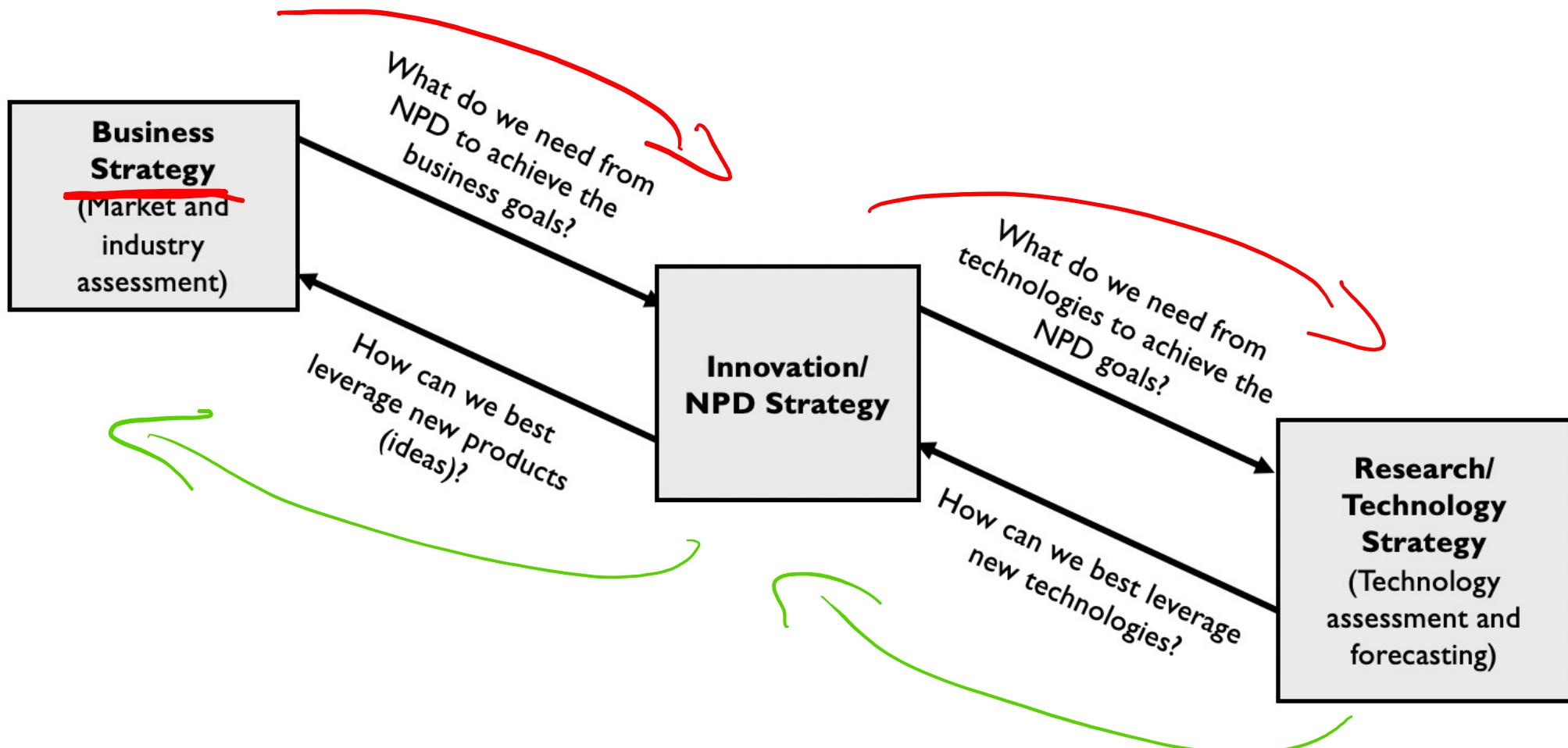


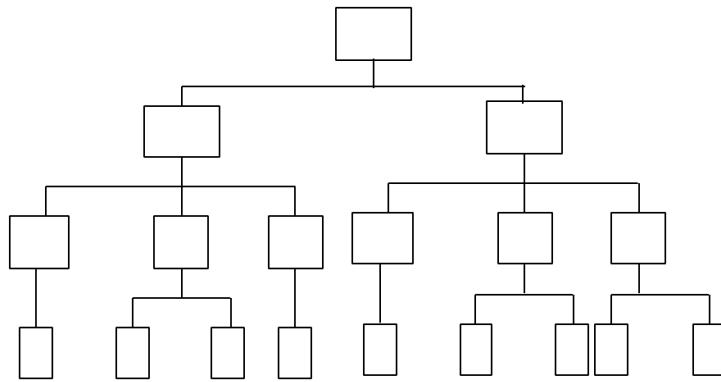
Frankfurt School



Implementing an Innovation Strategy

The Strategy and Purpose of Innovation

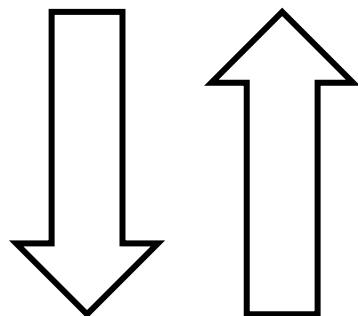




Keep the cycle alive

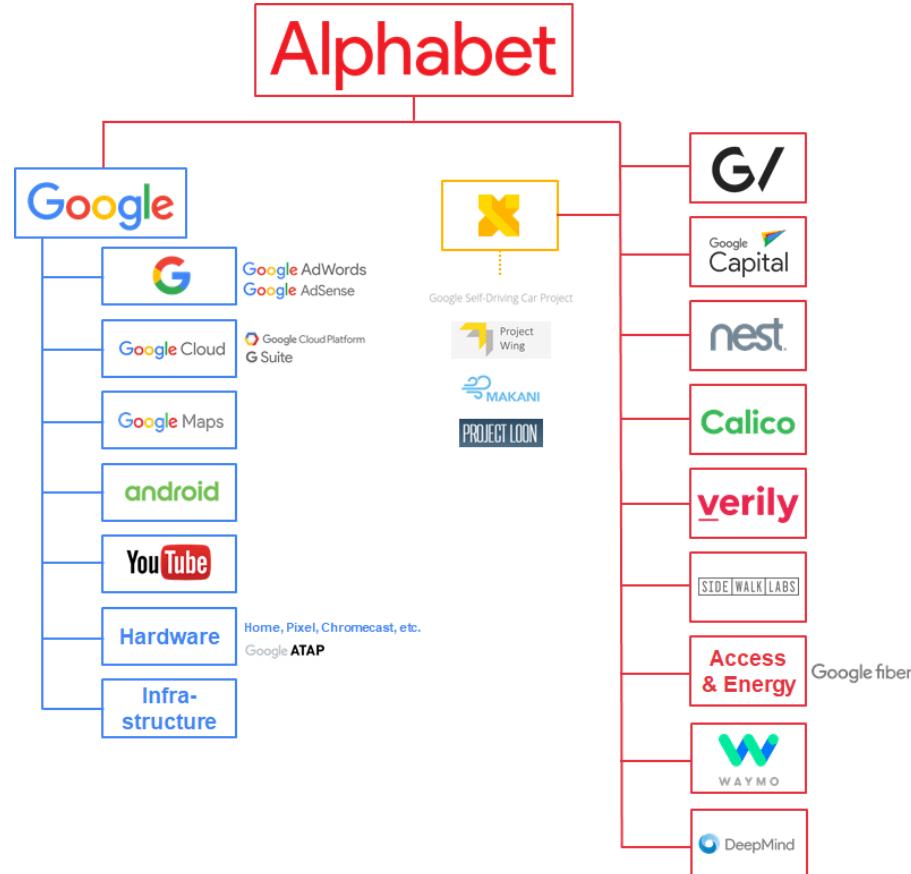
One laptop per child
Direct X extensions
China piracy
Free programming tools

- Guidance:**
- Priorities, Selection
 - High-level goals & metrics
 - Coordination



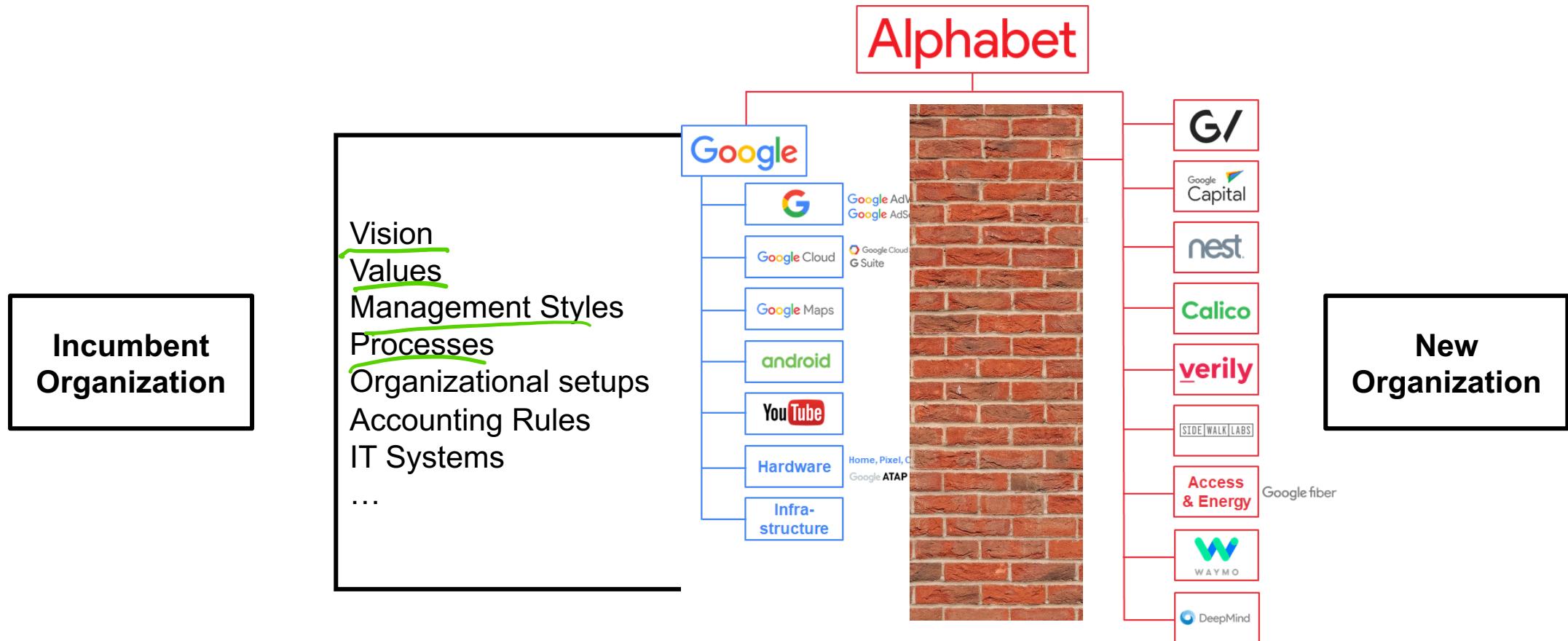
- Ideation & Adaptation:**
- Refinement, Translation
 - Problem solving
 - Bottom-up modification and additional ideas

Why did Alphabet Separate its most Aspirational Business Units?



- Projects need to be aligned with core competences, or the knowledge set that distinguishes and provides a competitive advantage to the company's existing customers. This knowledge set is
 - embodied in employee knowledge and skills
 - embedded in technical systems (e.g. CAD, simulation, EDI, internal communications)
 - guided by managerial systems (Evaluation, costing (e.g.); Incentives (opportunities or target? international?); Process control: SOPs, PM methods, tracking, protocols, process maps; Organizational structure: who reports to whom?)
 - associated with values and norms ('what's good business?')
- Core capabilities are *inflexible*: they are designed to be stable and can only be changed with time and effort.
- Core capabilities can become rigidities when an industry change requires *disruptive change* (= a change geared toward a new market, but making the company's product/service worse in the eyes of existing customers).

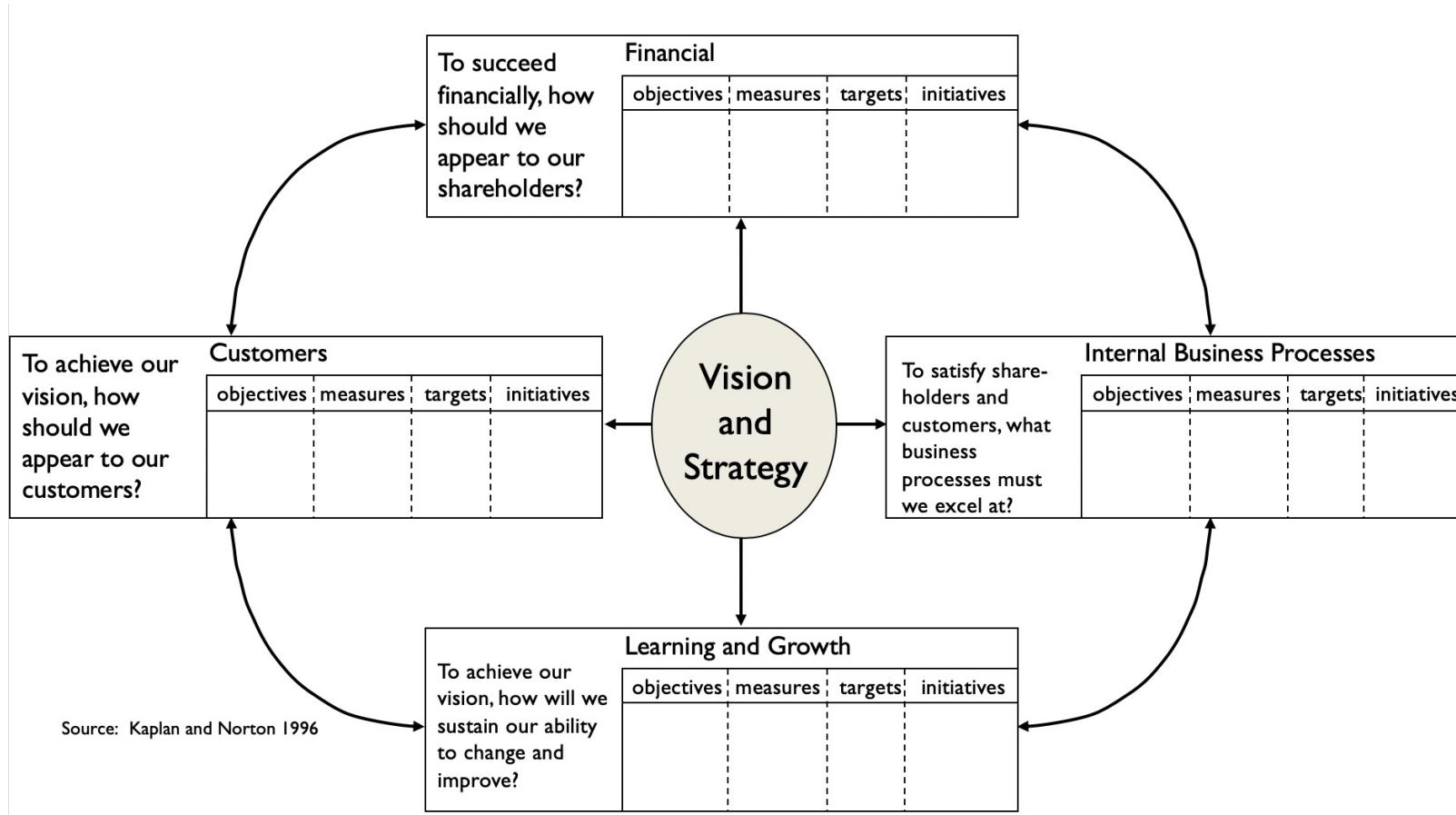
The Skunkworks Approach



Balanced Scorecards



Frankfurt School



Thank you very much!