

Managing Innovation & Identifying New Growth Options: Challenges, Opportunities, Tools...and the Right Mindset

Prof. Dr. Marc Gruber
EPFL

Swico, May 8- 2025

Agenda

9:00-10:30 Taking Stock – What is happening around us in terms of Innovation?

10:30-10:45 Break

10:45-12:00 Managing the Innovation Process: Getting from Assumptions to Facts

12:00-13:00 Lunch

13:00-14:00 Workshop Part 1 - Identifying New Growth Opportunities: The Market Opportunity Navigator

14:00-15:15 Workshop Part 2: Group Work on Your Companies (incl. Break)

15:15-16:00 Presentations & De-Briefing/Next Steps

Price Development for Key New Technologies

	Initially	Today	Scaling Effect
Sensors (esp. 3D-Lidar)	20'000 USD	79 USD	250x in 5 years
3D-Printing	40'000 USD	100 USD	400x in 10 years
Industrial Robots	500'000 USD	1000 USD	500x in 9 years
Drones	100'000 USD	100 USD	1000x in 10 years
Solar Energy	30 USD	0.002 USD	1500x in 34 years
Biotech (DNA-Profile of Human Being)	10'000'000 USD	100 USD	100'000x in 11 years

Source: van Geest, Exoxo



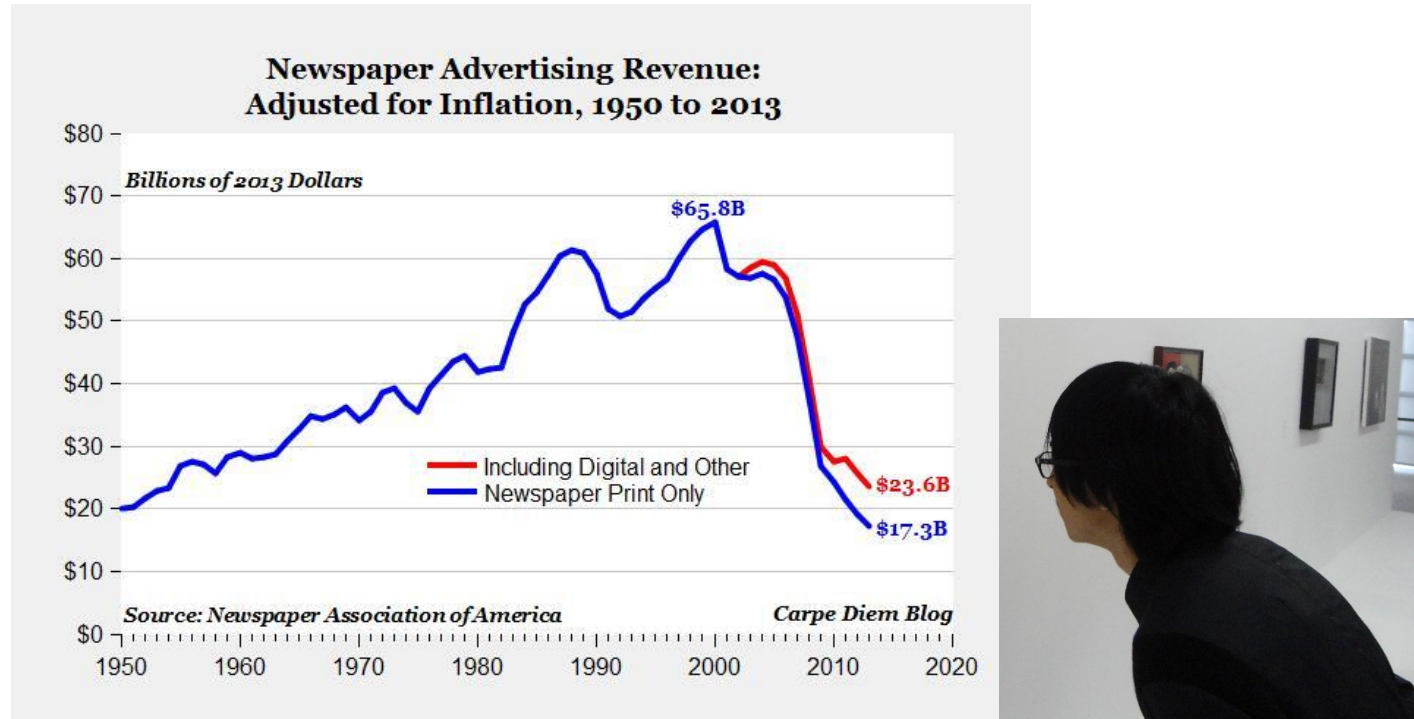
***“Everything
can be
reinvented”***

Bracken Darrell
Former CEO
Logitech

Newspaper Industry



Newspaper Industry



Classifieds have imploded, local display ads are down, and black newsroom humor long ago re-labelled the Obituary column 'Subscriber Countdown.'

Automotive Industry

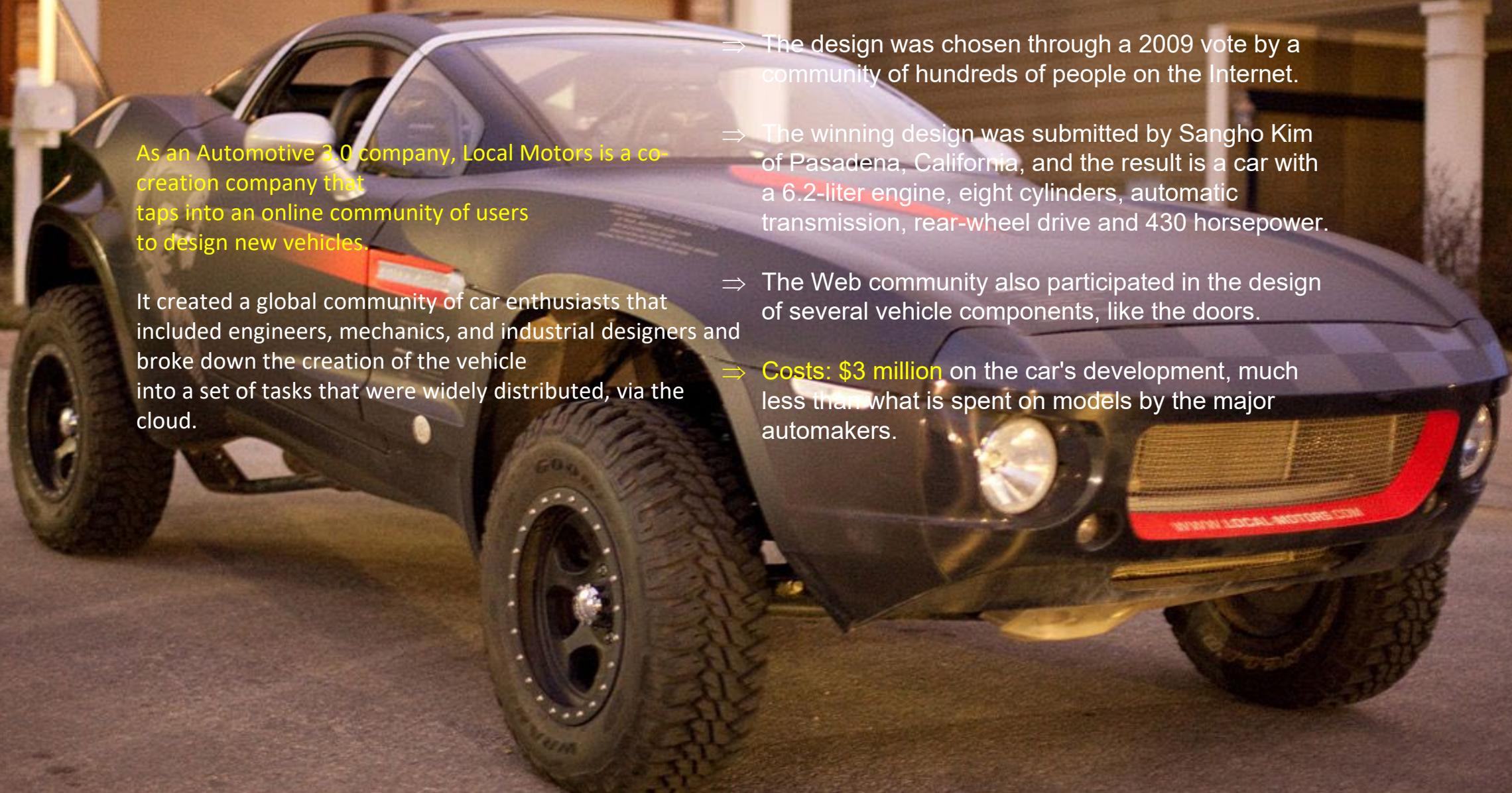


The Rally Fighter

As an Automotive 3.0 company, Local Motors is a co-creation company that taps into an online community of users to design new vehicles.

It created a global community of car enthusiasts that included engineers, mechanics, and industrial designers and broke down the creation of the vehicle into a set of tasks that were widely distributed, via the cloud.

- ⇒ **Produced in 18 months**, about five times faster than through conventional processes.
- ⇒ The design was chosen through a 2009 vote by a community of hundreds of people on the Internet.
- ⇒ The winning design was submitted by Sangho Kim of Pasadena, California, and the result is a car with a 6.2-liter engine, eight cylinders, automatic transmission, rear-wheel drive and 430 horsepower.
- ⇒ The Web community also participated in the design of several vehicle components, like the doors.
- ⇒ **Costs: \$3 million** on the car's development, much less than what is spent on models by the major automakers.



Meet the Strati: 44 hours to build several dozens of parts instead of thousands of parts



...not an enduring success

(announcement in January 2022)



Chris Stoner • 2nd

Creating the future of mobility with Beep !!

9mo • 🌐

[+ Follow](#) ...

I am disheartened to announce that Local Motors will cease to exist as of January 14. I was only there a few months, but loved every minute of it. I made some great friends, both locally and globally, which makes it worthwhile.

The autonomous vehicle space is an exciting emerging market with plenty of opportunity. Experiencing first-hand the skill and dedication of the people I worked with, I have no doubt AVs (like Olli) are the future of transportation.

[#Olli](#) [#OpenToWork](#) [#autonomousvehicles](#) [#autonomousdriving](#)
[#autonomousfuture](#)



62

13 comments • 1 share

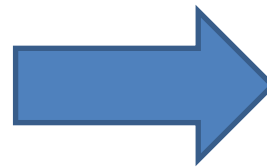
**Also key for the
automotive industry:
Shift to autonomous
driving and electric
vehicles**



Disruption: The new Strategy of Volkswagen



Existing business model:
Production cost and
profit achieved by selling the
car



New business model:
Production cost recovered by
selling the car
Profit created while the car is in use

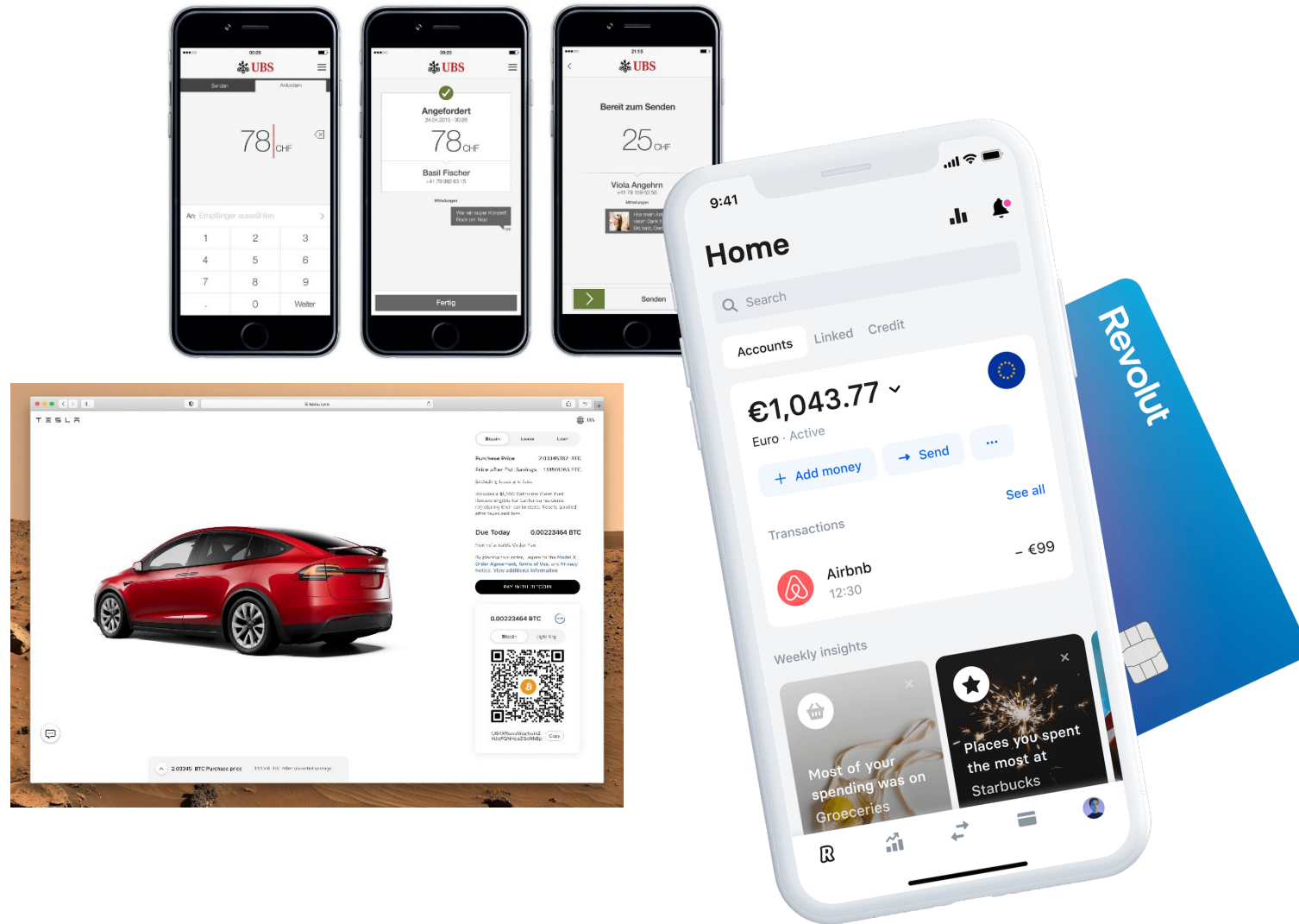
Banking Industry



New Technologies with fundamental implications



New Applications, incl. sales channels



New Competitors (Example CH 2024)



e.foresight



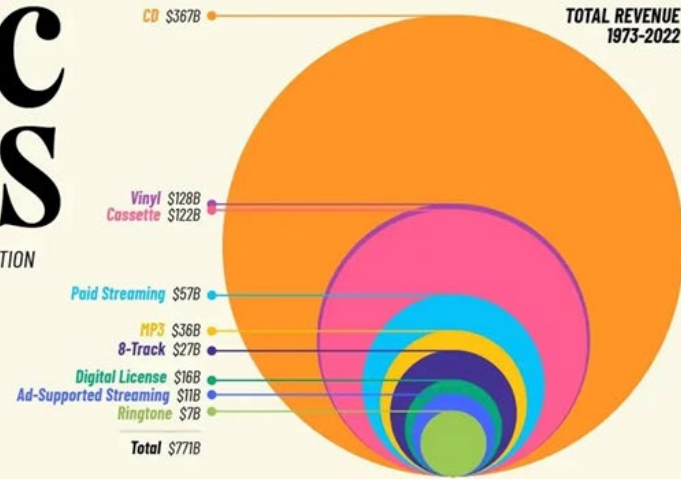
Music Industry



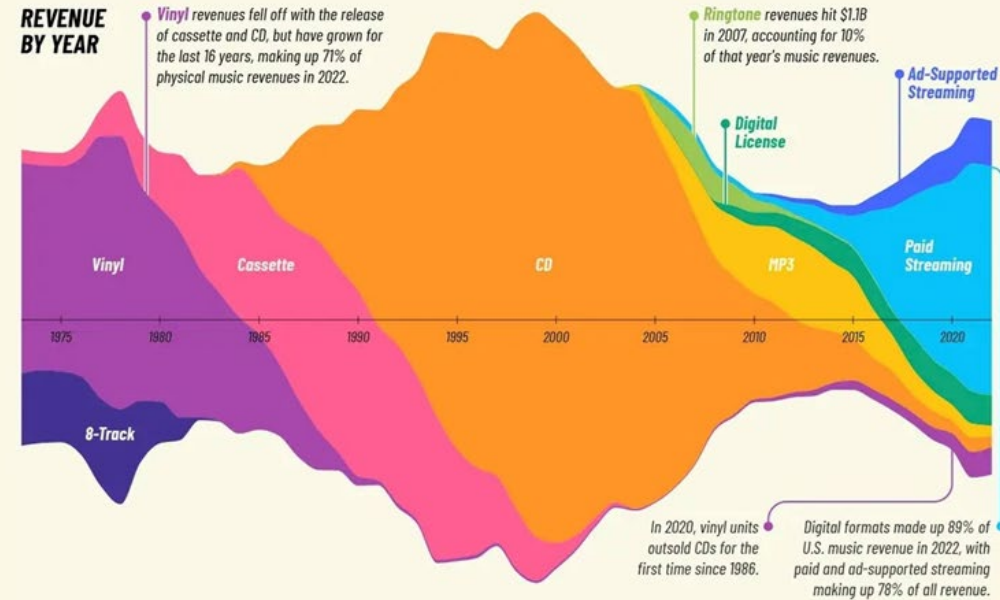
MUSIC SALES

1973 - 2022 ✂ ADJUSTED FOR INFLATION

While digital formats lead the music industry's revenues, vinyl is the only remaining physical format with growing sales.

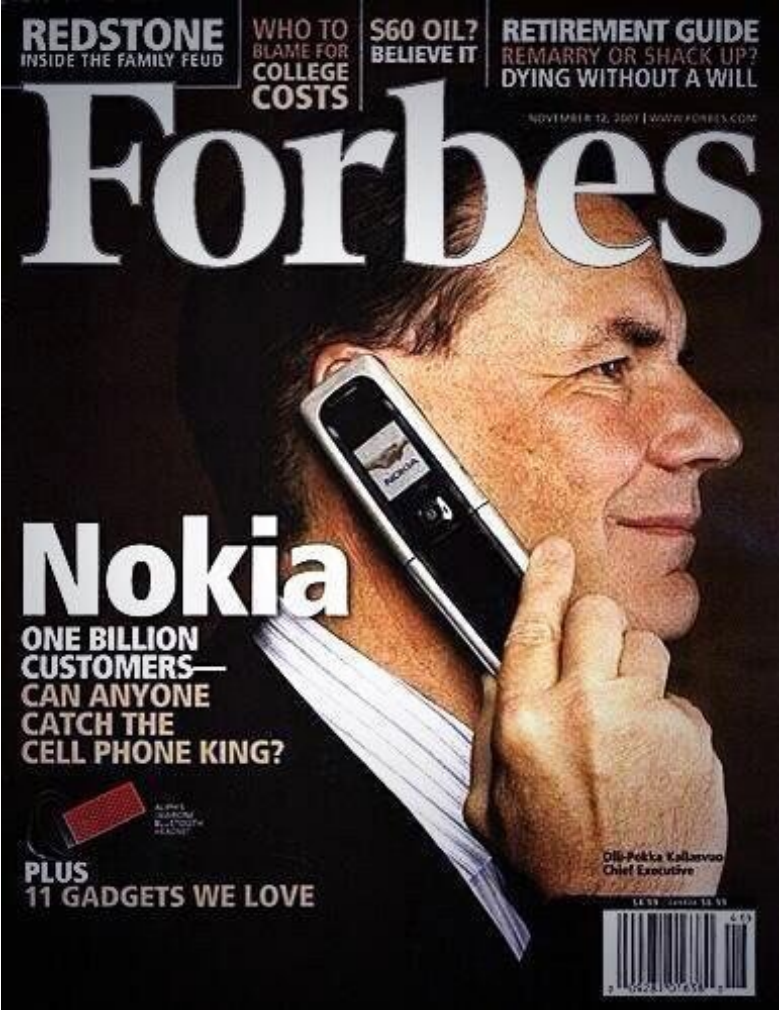


REVENUE BY YEAR



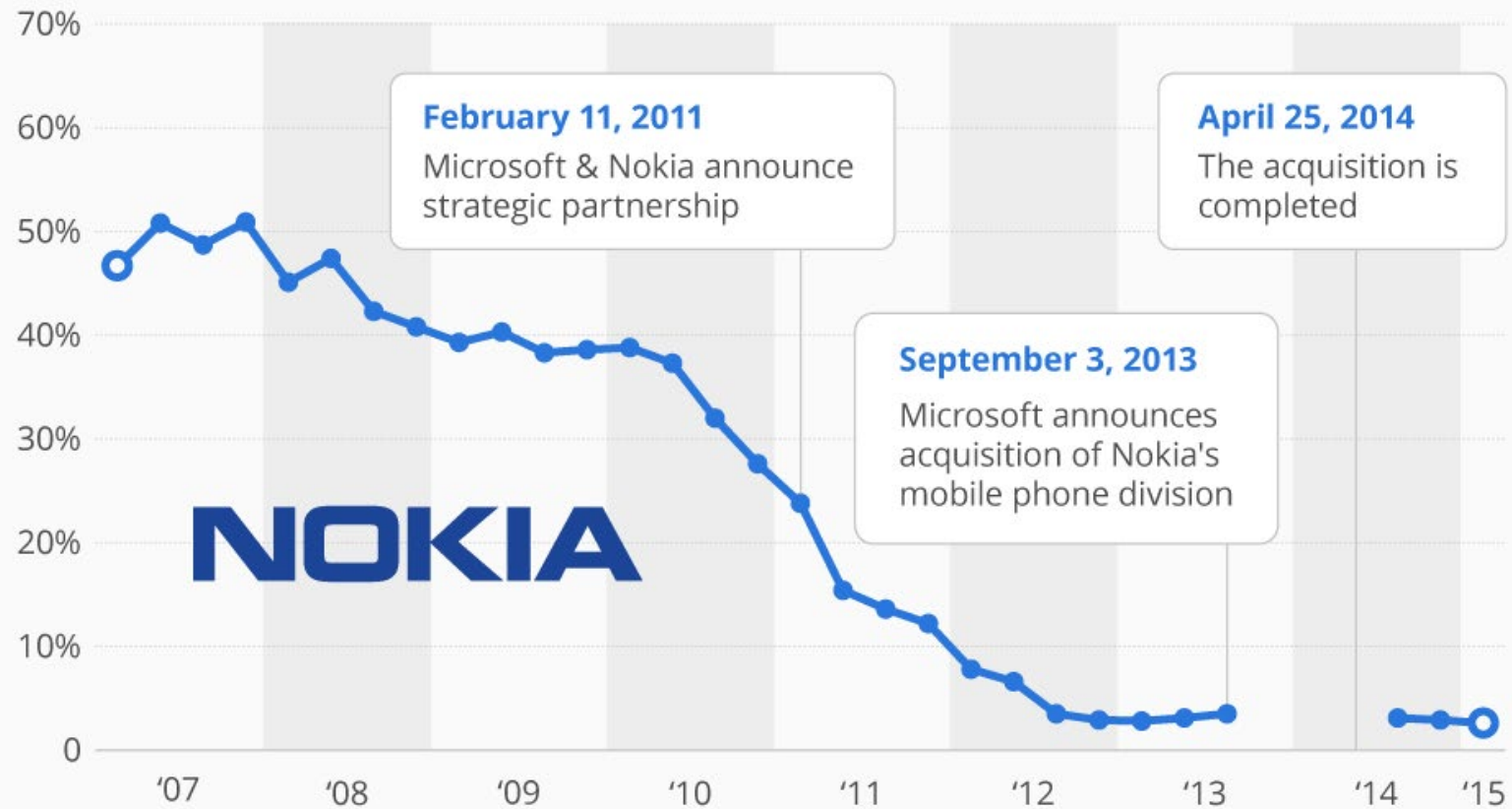
Source: RIAA Notes: Adjusted for inflation, 2022 USD. Values are at MSRP. Formats with no retail value equivalent are at wholesale price.
 Cassettes includes reel-to-reel and quadraphonic. Ringtones includes master ringtones, ringbacks, and prior to 2013 music videos, full length downloads, and other mobile.
 Ad-Supported Streaming includes revenues paid directly for statutory services that are not distributed by SoundExchange and not included in other streaming categories.
 Paid Streaming includes streaming, tethered, and other paid subscription services not operating under statutory licenses.
 Digital Licensing includes Sound Exchange Distributions, Synchronizations, and other digital music licensing.

Cell Phone Industry



Microsoft Spent \$9.4 Billion on a Sinking Ship

Nokia's/Microsoft's global smartphone market share



CC BY ND
@StatistaCharts

No data available for the period between Q4 2013 and Q2 2014
Sources: IDC, Gartner, Nokia, Microsoft

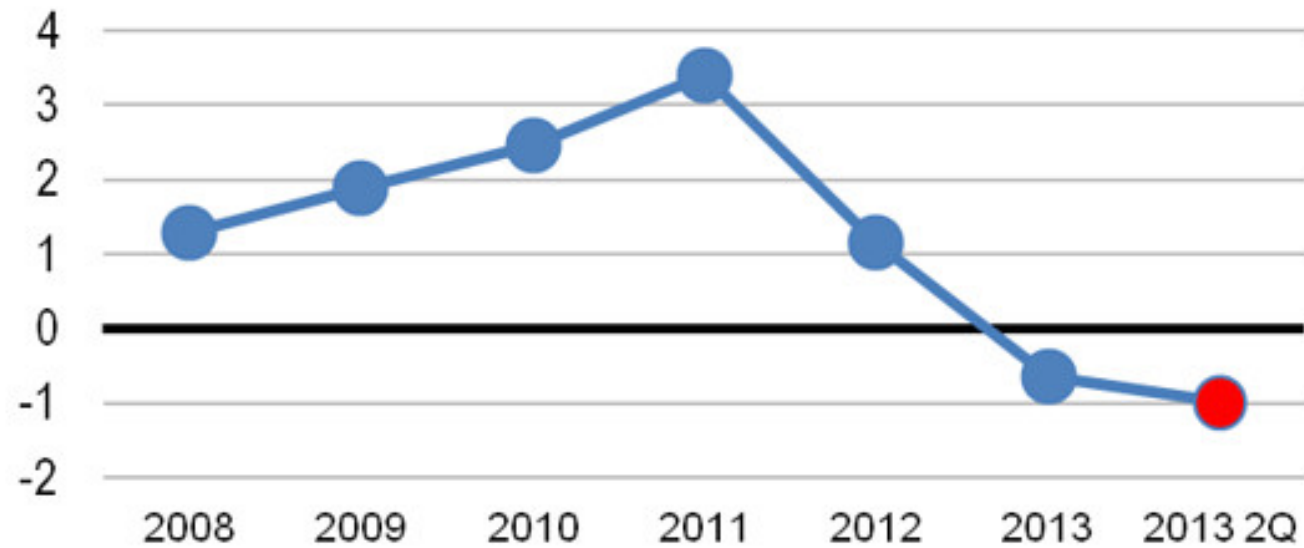
statista

What do these shifts mean... in real terms? (I)

Rapid Value Migration: from one company ... to another.

Earnings Slide

BlackBerry expects to report a loss of \$950 million to \$995 million in its second quarter, compared to a \$646 million loss for the year ended in March.

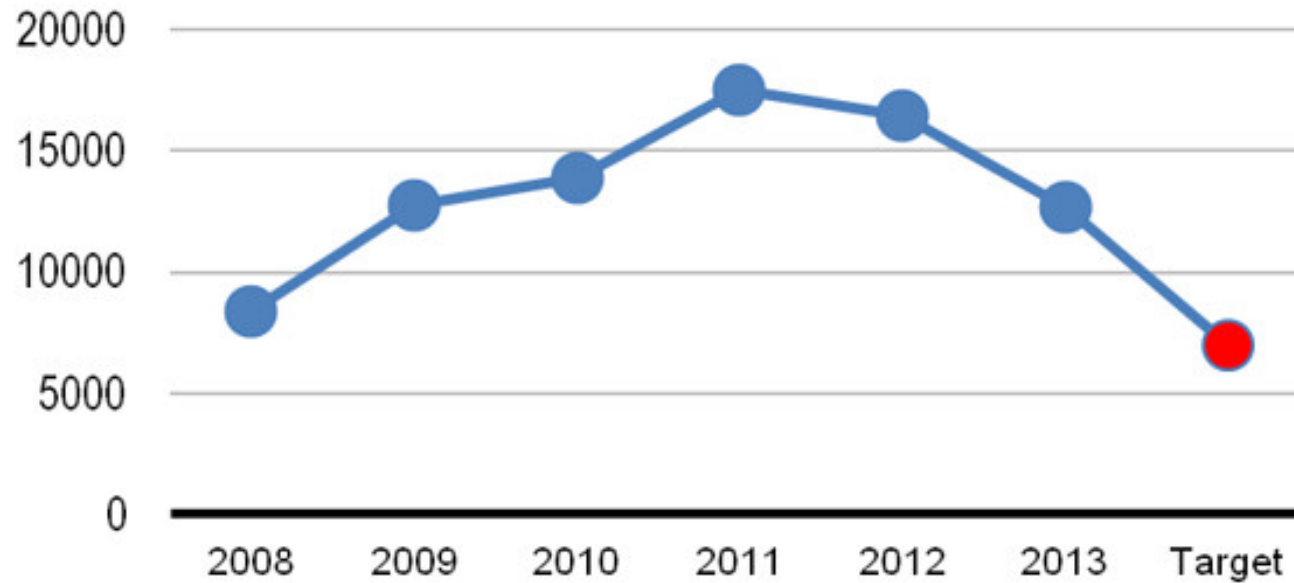


Source: Company filings

What do these shifts mean... in real terms? (II)

Headcount

BlackBerry expects to cut about 40% of its workforce to 7,000 full time employees, a 60% slide from 2011.



Source: Company filings

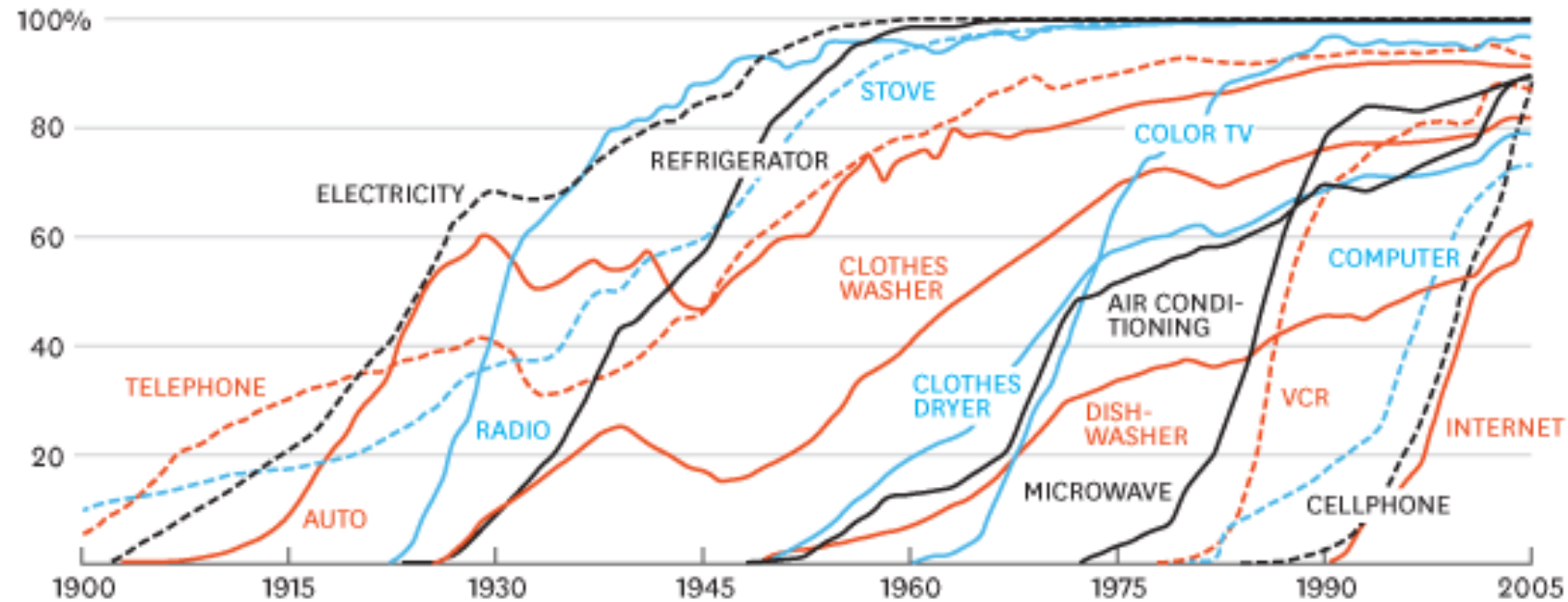


Sorry!
**The lifestyle you
ordered is currently
out of stock**

Not only tech, but also market/customer changes (I)

CONSUMPTION SPREADS FASTER TODAY

PERCENT OF U.S. HOUSEHOLDS

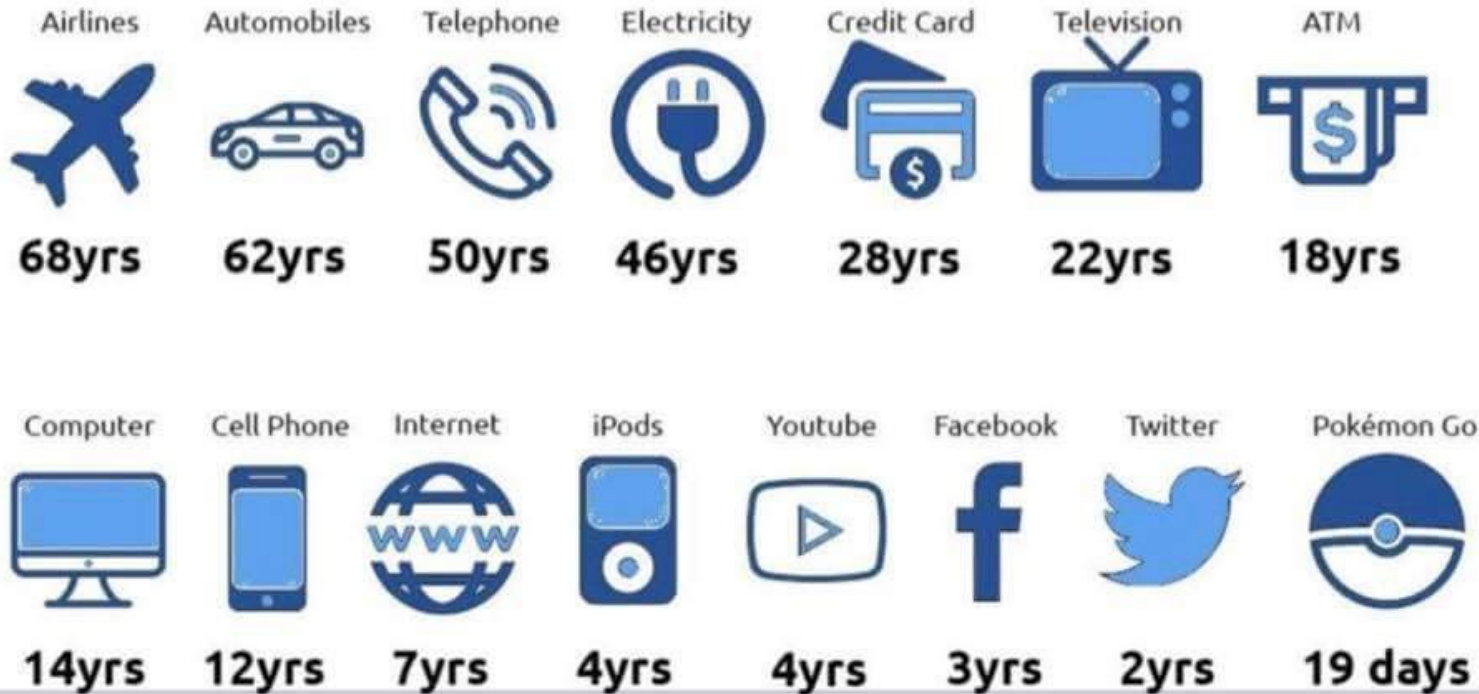


SOURCE MICHAEL FELTON, THE NEW YORK TIMES

HBR.ORG

Not only tech, but also market/customer changes (II)

NUMBER OF YEARS IT TOOK FOR EACH PRODUCT TO GAIN 50 MILLION USERS:



ChatGPT Sprints to One Million Users

Time it took for selected online services to reach one million users



* one million backers ** one million nights booked *** one million downloads
Source: Company announcements via Business Insider/LinkedIn



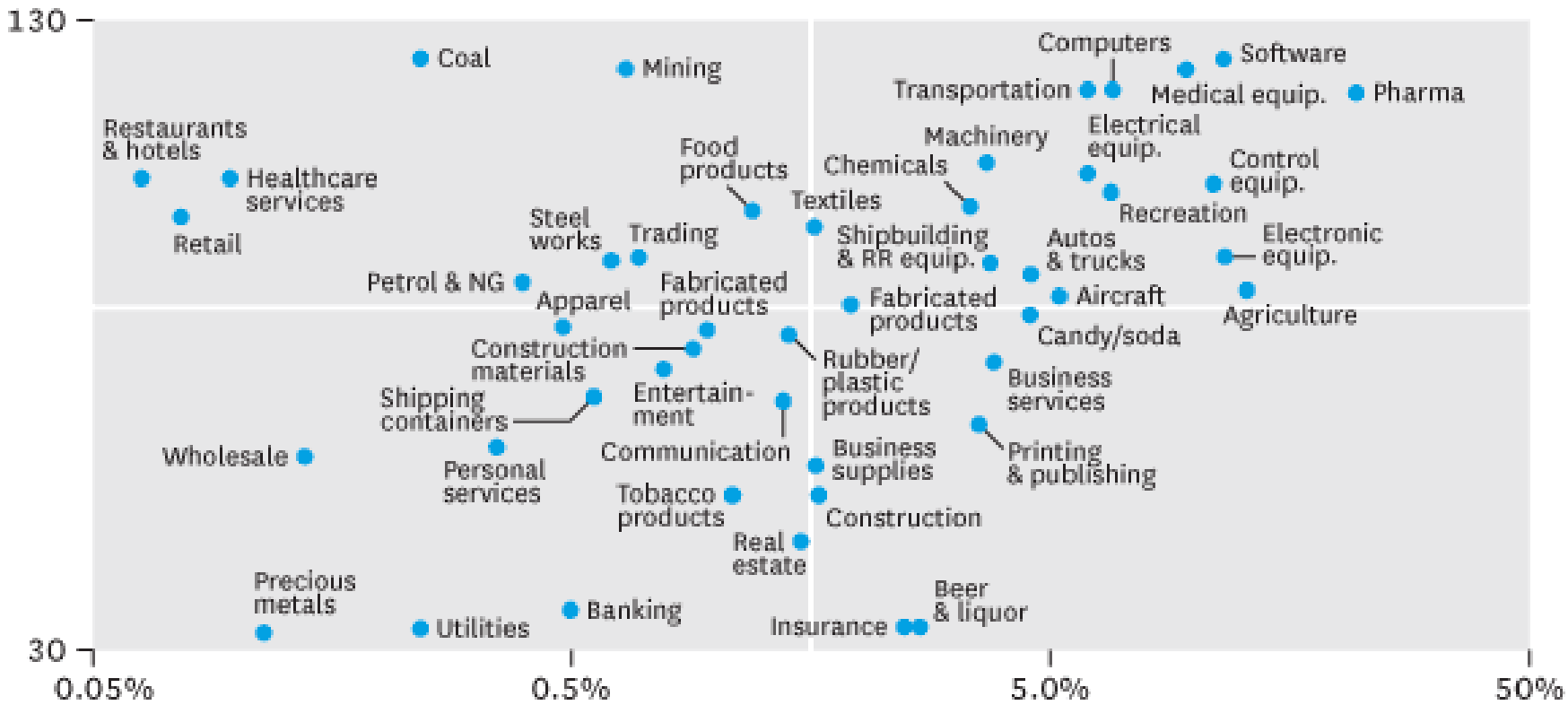
statista

How it has changed...this was the 1st decade of the Millenium

DEMAND AND TECHNOLOGICAL UNCERTAINTY BY INDUSTRY, 2002-2011

DEMAND UNCERTAINTY

Index of industry revenue volatility and firm turnover (logarithmic scale)



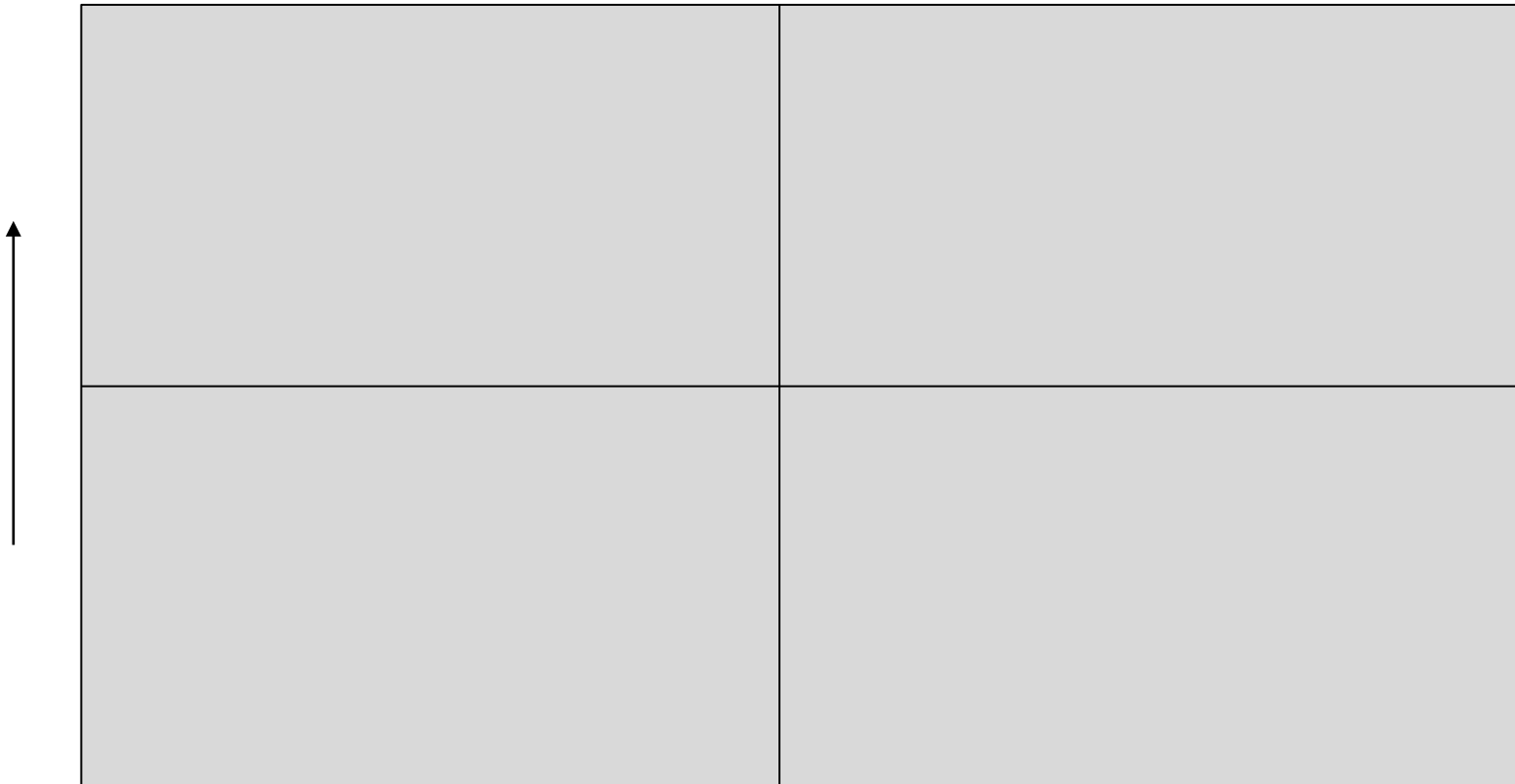
TECHNOLOGY UNCERTAINTY

Industry R&D as a percentage of revenue (logarithmic scale)

SOURCE COMPUSTAT, 2013

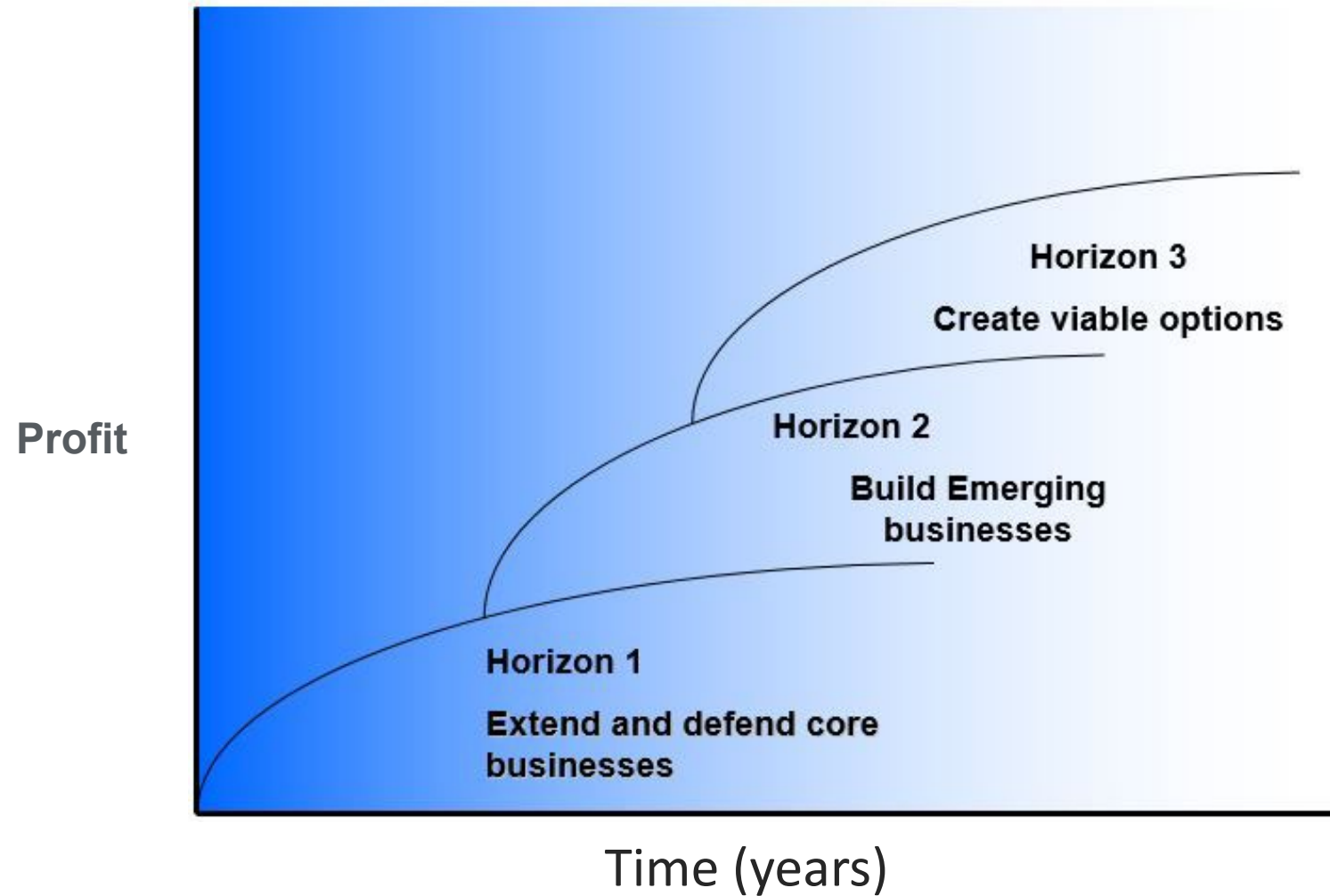
How should management differ according to the quadrant a firm is located?

Demand Uncertainty



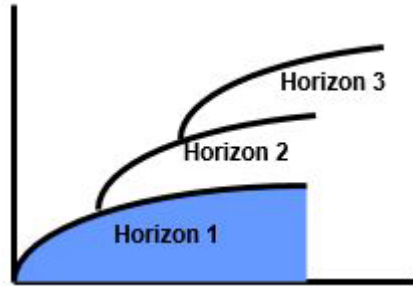
Technological Uncertainty

Three Horizons of Firm Growth



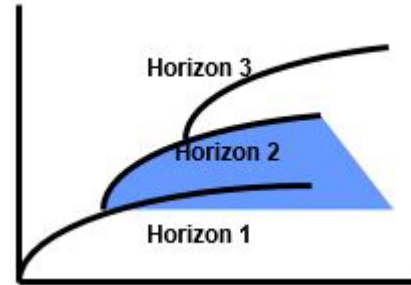
Source: The Alchemy of Growth, Baghai, Coley & White

Three Horizons of Firm Growth



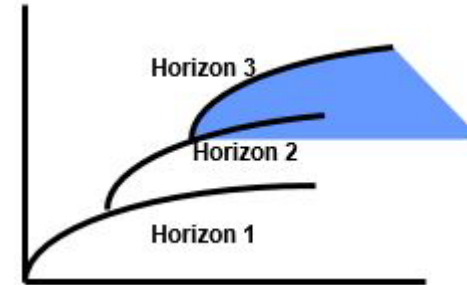
Executing to defend, extend and increase profitability of existing businesses

Annual operating plan: tactical plans, resourcing decisions, budgets



Resourcing initiatives to build new businesses

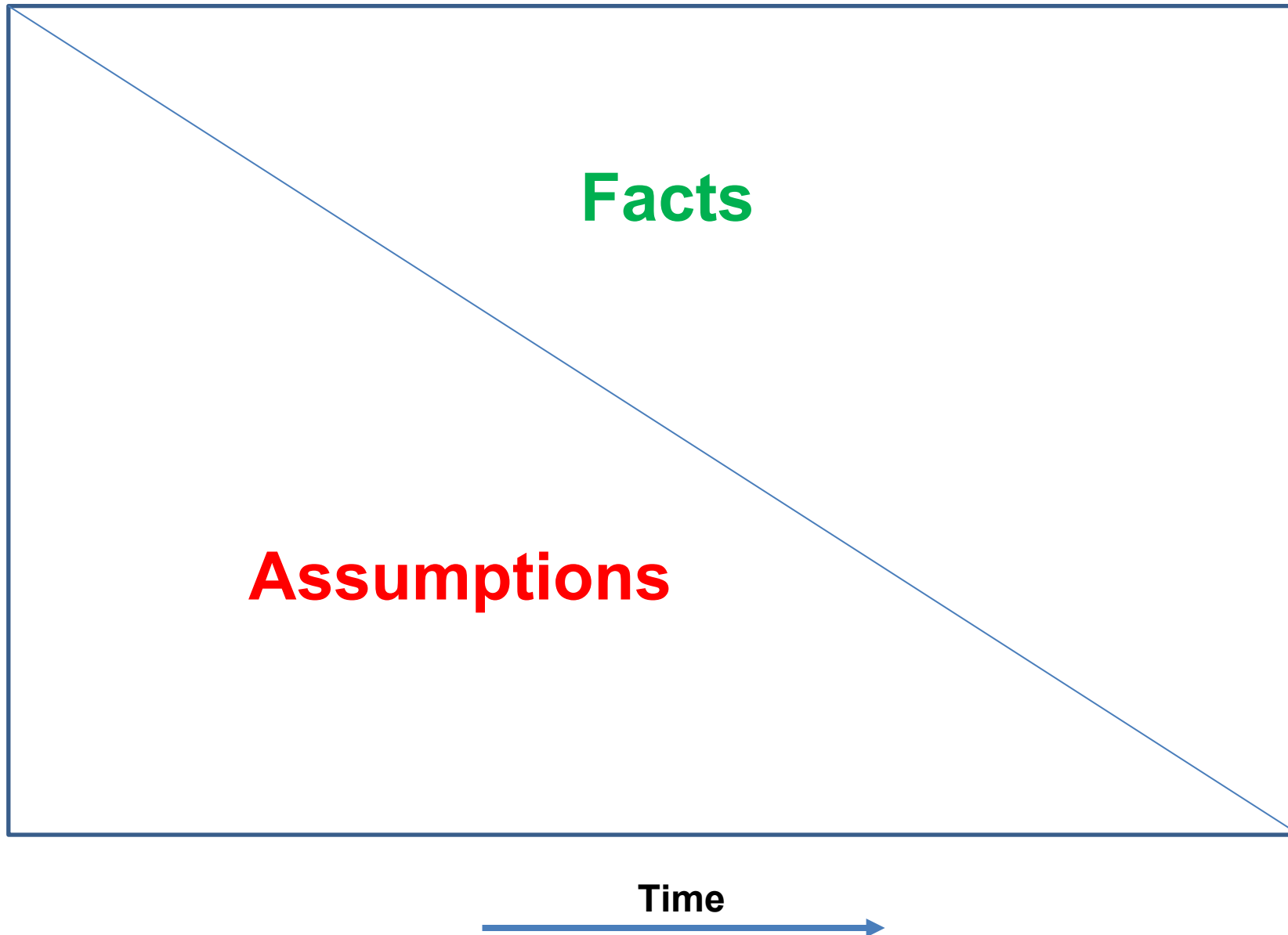
Business building strategies: investment budget, detailed business plans for new ventures



Uncovering options for future opportunities and placing bets on selected options

Decisions to explore: initial project plan, project milestones

Managing Innovation: Getting from Assumptions to Facts



Mounting challenges with increasing degree of novelty!

Incremental Innovation, small improvements

Printer: better functionality

Cars: better fuel injection pump

Significant Innovation, important improvements

Printer: b/w to color printer

Cars: new generation of a car (Golf III, IV)

Radical Innovation

Printer: Laser instead of inkjet

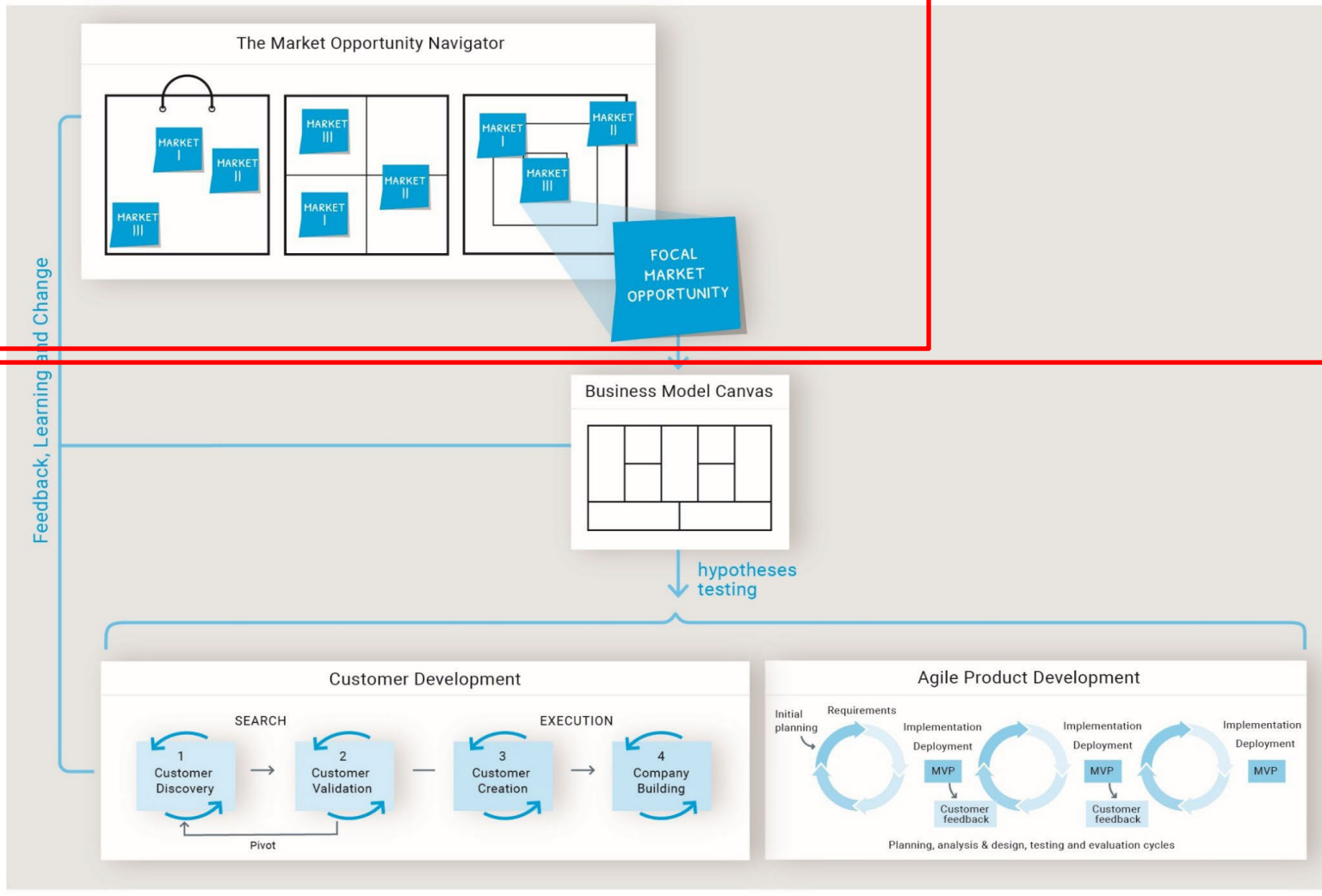
Cars: e-mobility, autonomous driving



Tools can help you in managing this process:


The Lean Startup Tool-set: Where to Play & How to Play!

Where to Play



How to Play



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**Entrepreneurship is
a Calling**

How to Stop Playing “Target Market Roulette”: A new addition to the Lean toolset

Posted on **May 7, 2019** by [steveblank](#)

Modern entrepreneurship began at the turn of this century with the observation that startups aren't smaller versions of large companies – large companies at their core execute known business models, while startups search for scalable business models. [Lean Methodology](#) consists of three tools designed for entrepreneurs building new ventures:

- The [Business Model Canvas](#) – to write down all the hypotheses about a new business;
- [Customer Development](#) – a process for testing those hypotheses outside the building;
- [Agile Engineering](#) – to rapidly build minimal viable products to test product/market fit.

These tools tell you *how* to rapidly find product/market fit inside a market, and how to pivot when your hypotheses are incorrect. However, they don't help you figure out *where to start the search* for your new business.

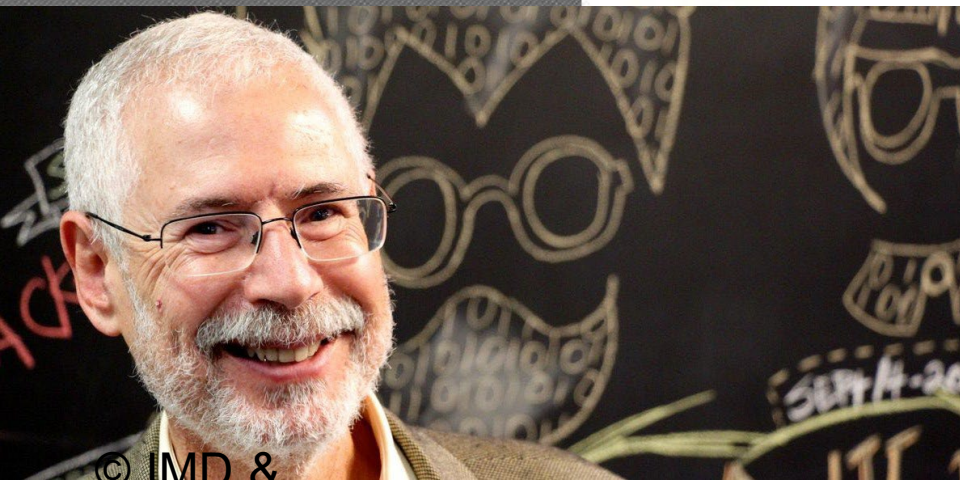
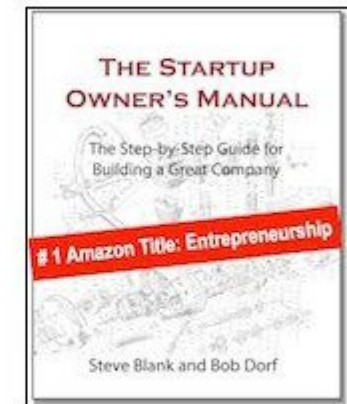
A new tool – the Market Opportunity Navigator – helps do just that. It provides a wide-lens perspective to find different potential market domains for your innovation, before you zoom in and design the business model or test your minimal viable products. This new framework can act as *the front-end of Customer Development*. It helps figure out the most promising starting position – market domain – for your customer development process. And it helps identify promising Plan B's and new growth options if you have already embarked on your innovation journey.

Over the years, I have seen many startups and innovation projects perform a painful

contact: info@kandsranch.com



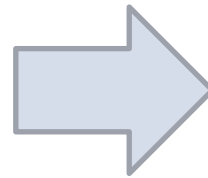
LinkedIn



Steve Blank: 'A new tool joins the Lean Startup toolset'

“**Lean Methodology** consists of three tools designed for entrepreneurs building new ventures:

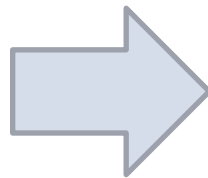
- Business Model Canvas
- Customer Development
- Agile Engineering



HOW TO PLAY

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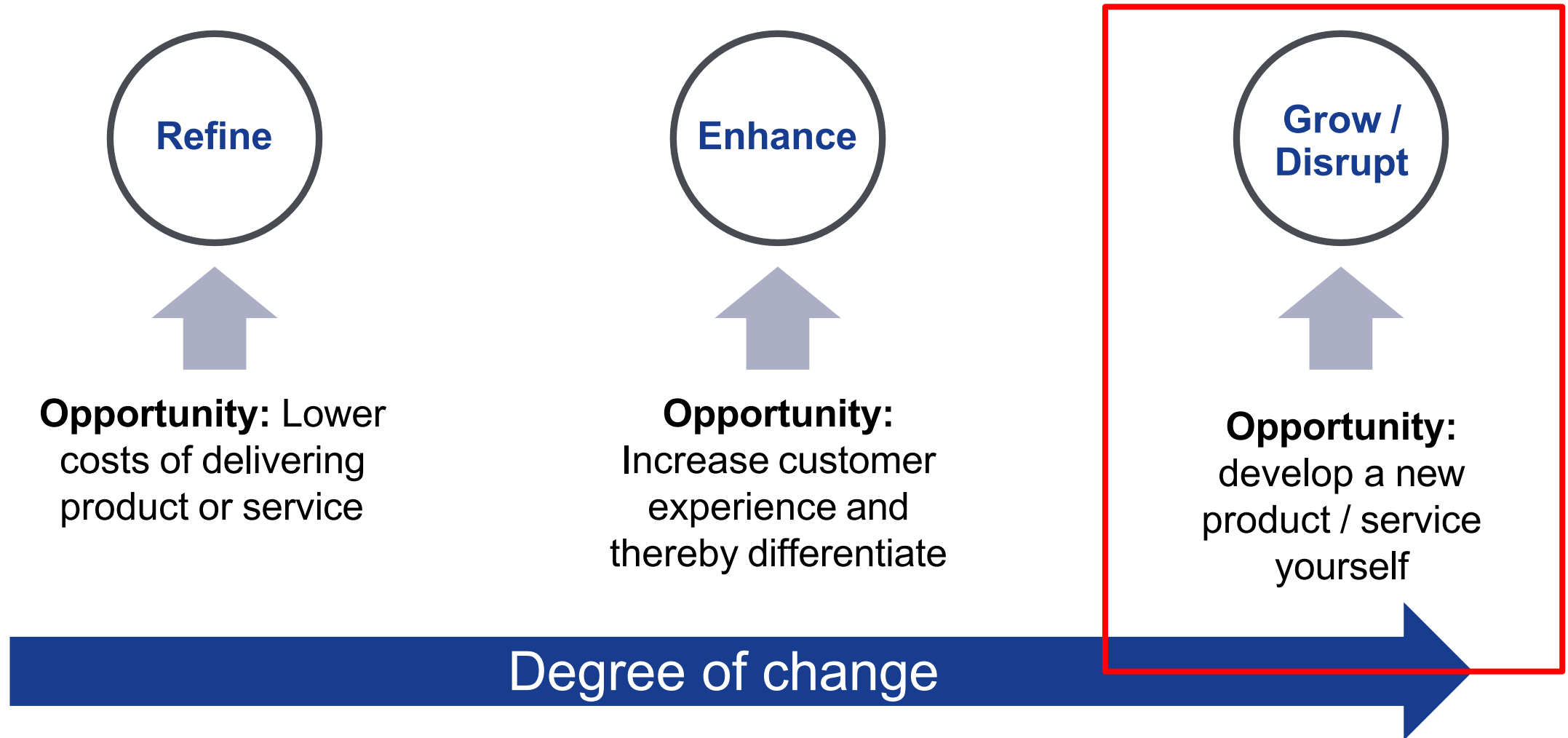
WHERE TO PLAY

Workshop: Identifying & Exploiting New Growth Opportunities with Innovative Technologies - Where to Play?

Prof. Dr. Marc Gruber
EPFL - Chair of Entrepreneurship &
Technology Commercialization

marc.gruber@epfl.ch

Your Technology Transformation Playbook



Disruptive Technology as an Enabler of New Market Opportunities

Example: Watch Industry



Traditional watch



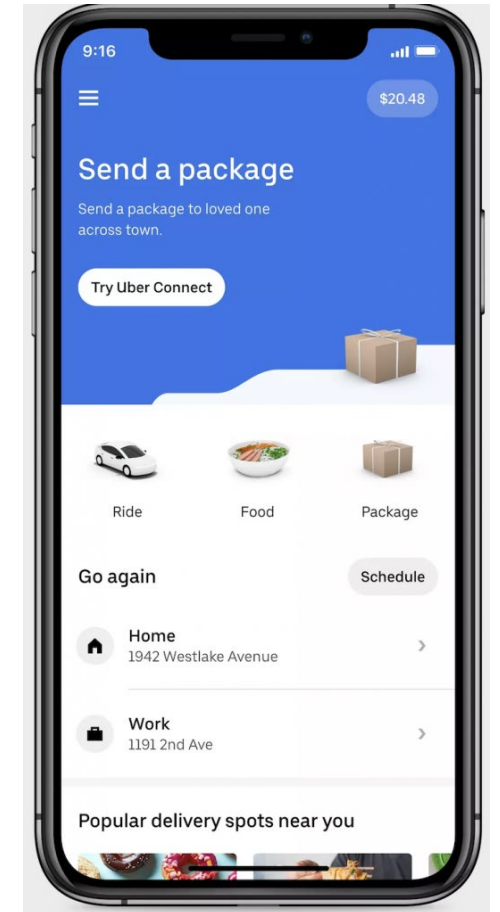
Medical device

By using innovative sensor technology and software, traditional watchmakers now have the potential to expand into medical device markets – a growth move they could not have done prior to the development of these technologies.

....and what does this mean for the “identity” of an organization?

‘The ‘who we are’ and ‘what we do’?

Example: “**UBER**” - From one Market Opportunity to Another



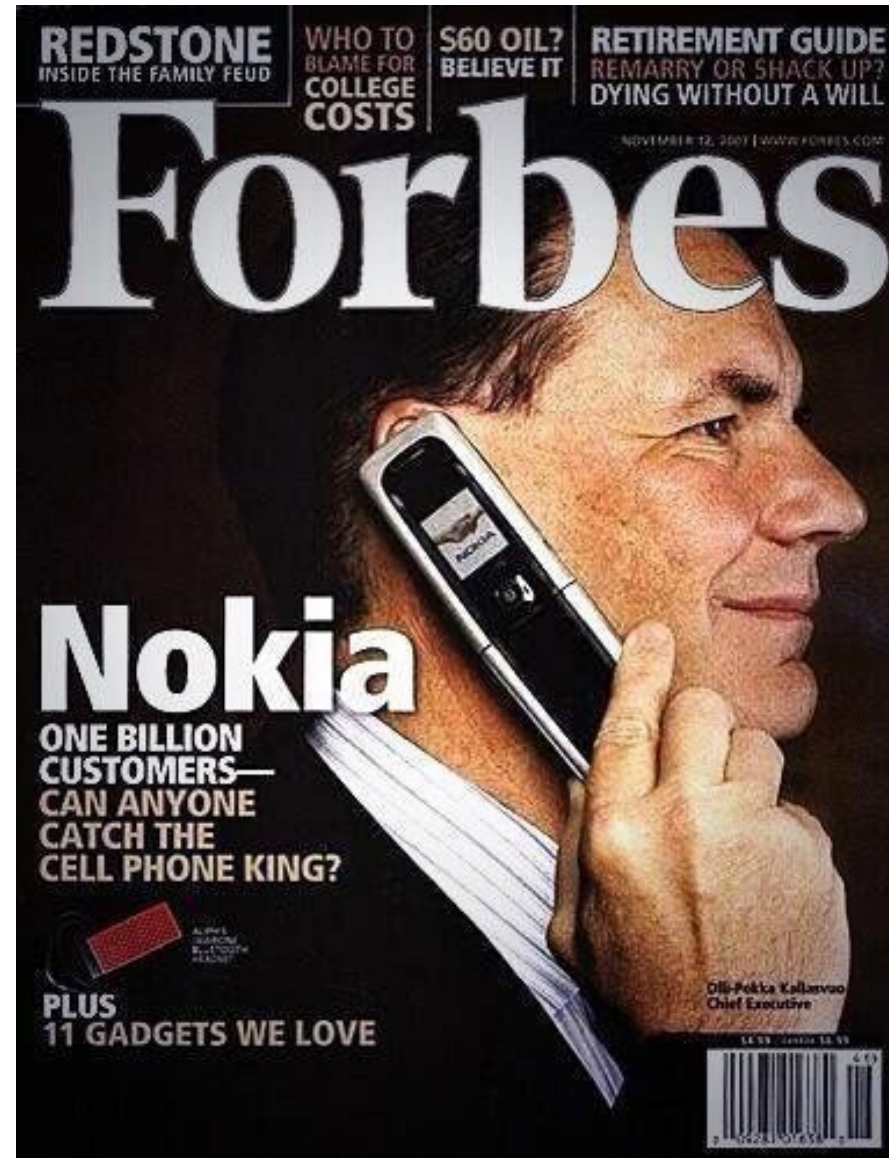
UBER’s mission statement says: we create “opportunity through movement”.

UBER is not fixated at “industry boundaries” when it comes to growth, they move in an ARENA



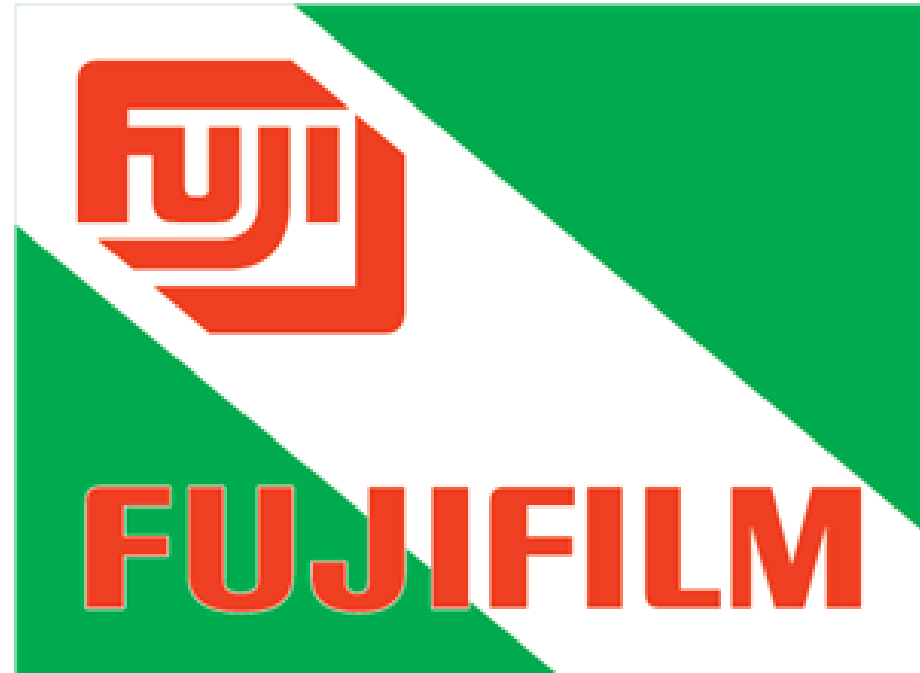
APPLES 12.99/lb	MIXED APPLES 12.99/lb	ORANGES 12.99/lb	PEACHES 12.99/lb
CARROTS 12.99/lb	TOMATOES 12.99/lb	SEASONAL LETTUCE 12.99/lb	
HERBS 12.99/lb	SPINACH 12.99/lb		
EGGS 12.99/doz	GARLIC 12.99/lb		

Already Discussed: Mobile Phones – Competition came from Another Industry



Classic Example: Photography

Redefining the Core at Fujifilm



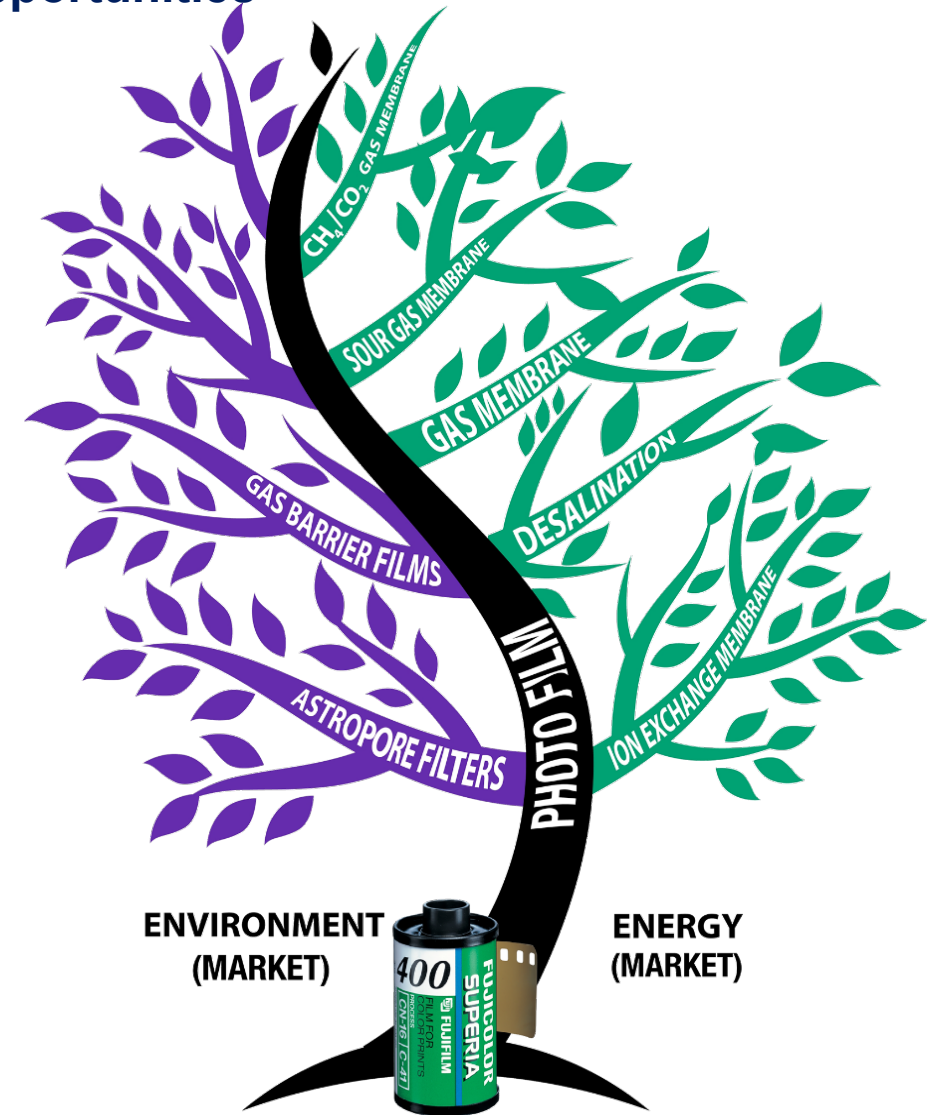
Classic Example: Redefining the Core at Fujifilm

Existing & New Technology as an Enabler of New Growth Opportunities

FUJIFILM

By researching and developing for many decades everything related to photographic film, from raw materials to processes to systems, Fujifilm became an expert in many different advanced materials technologies, including coatings, membranes, and organic compounds.

By combining these abilities with newly developed technologies, the company today creates unique materials that can be used in an extremely wide variety of applications, including desalination, gas membranes and astropore filters.

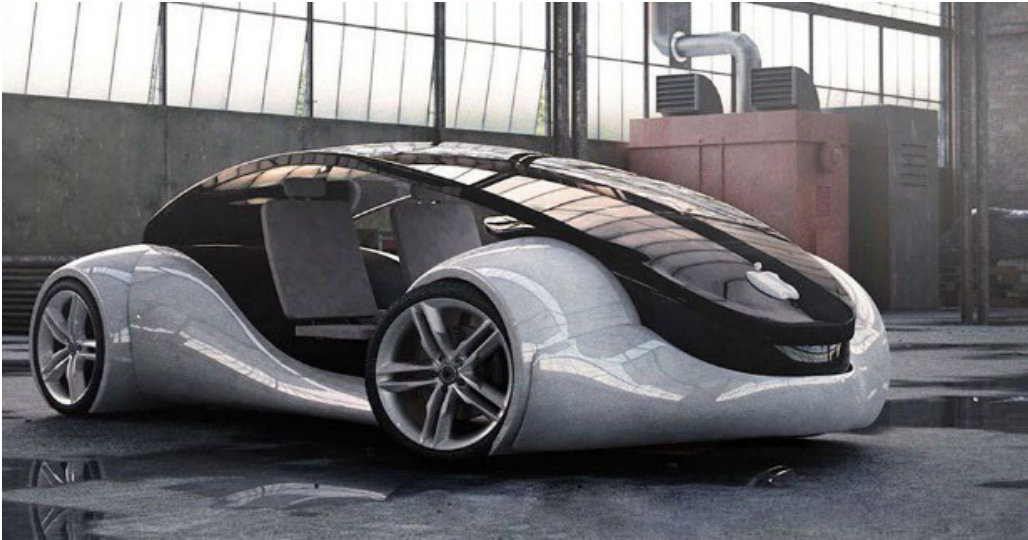


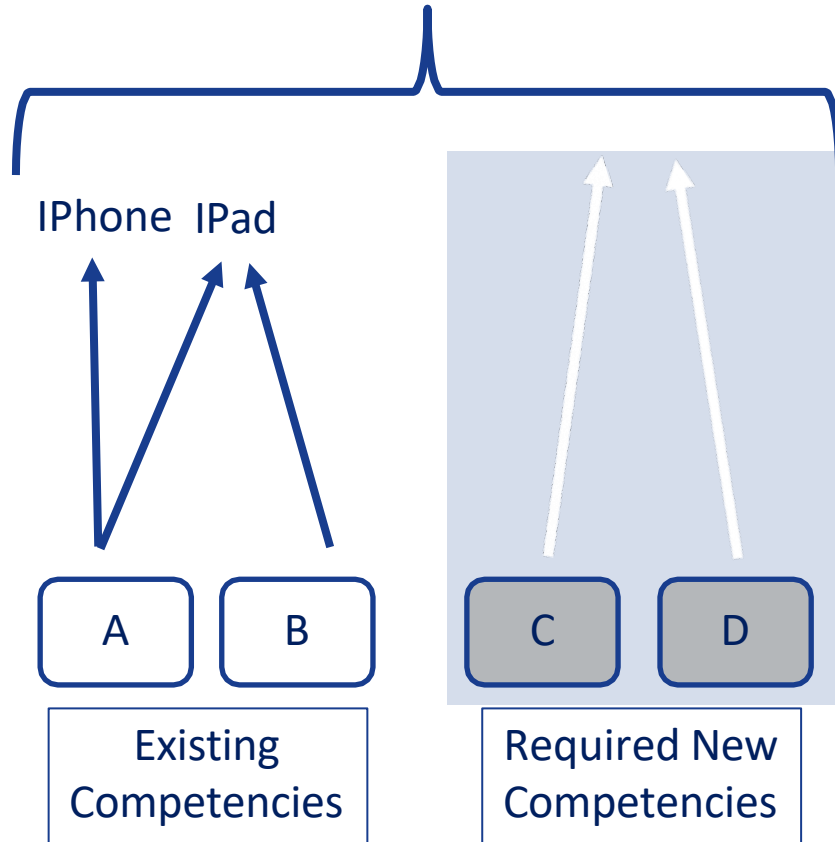
Example: Automotive Industry 4.0?

Apple vs. Daimler: Both firms (would) have to develop/acquire new competences to become credible players in autonomous driving

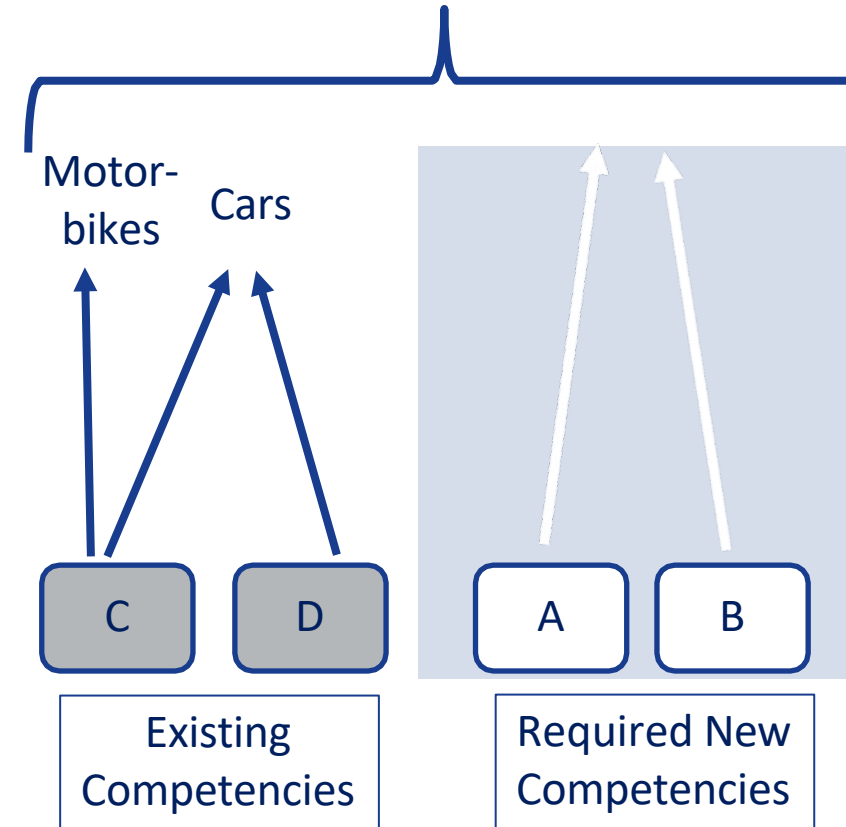


Daimler
Mercedes-Benz





Daimler
Mercedes-Benz

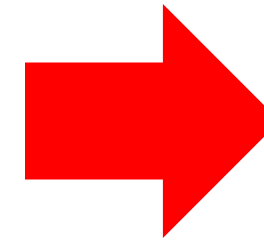


A dense forest of tall, thin trees, likely a coniferous forest, with a person walking in the distance. The text "DON'T MISS THE FOREST FOR THE TREES" is overlaid in large, white, bold, sans-serif capital letters.

**DON'T MISS
THE FOREST
FOR THE TREES**

Conceptual Perspective: From an “Industry Perspective” to an “Arena Perspective”

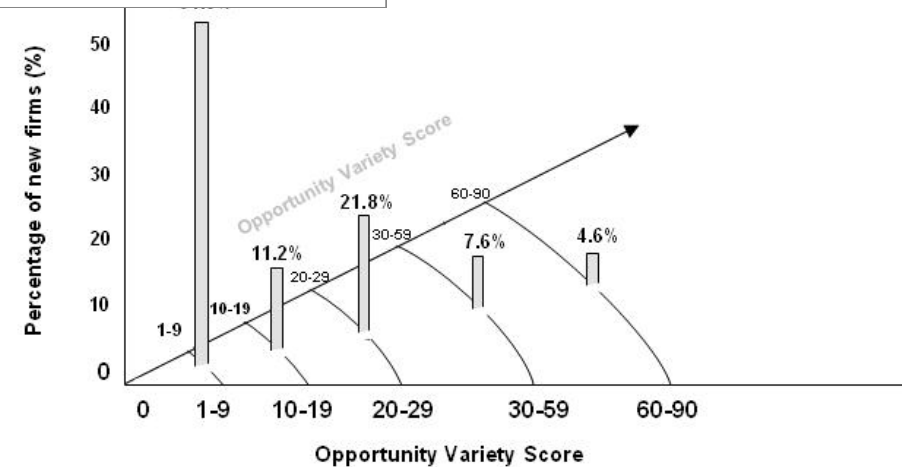
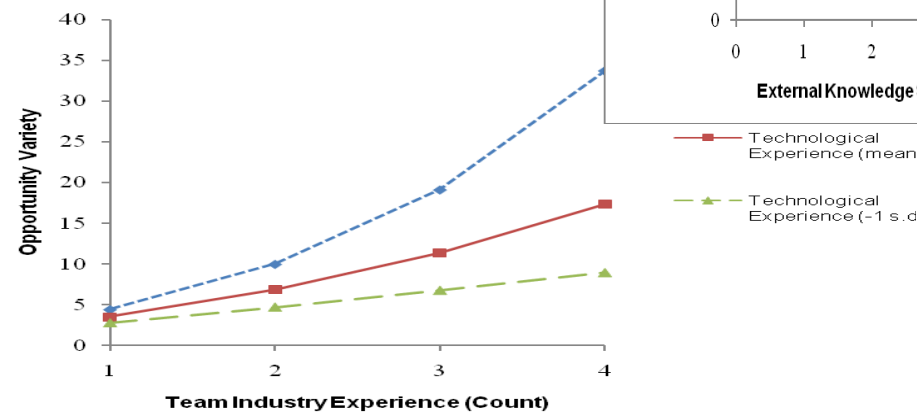
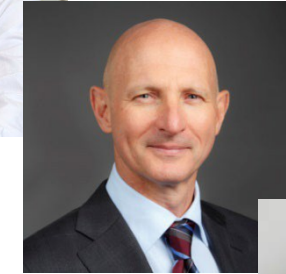
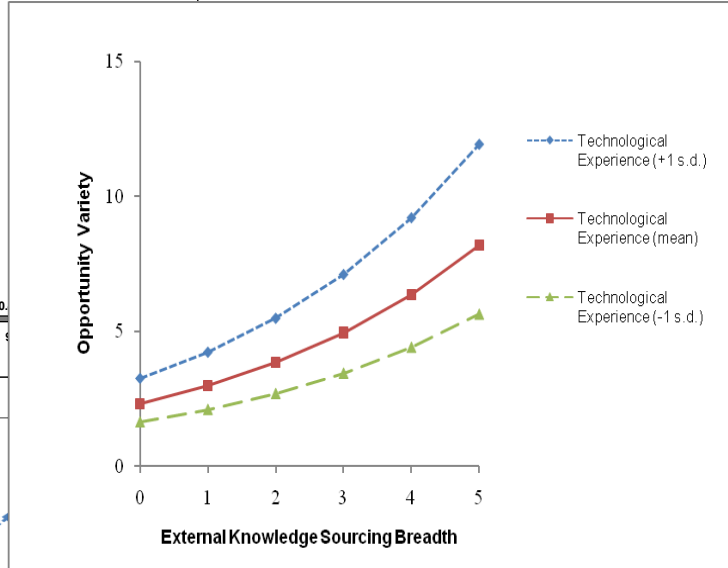
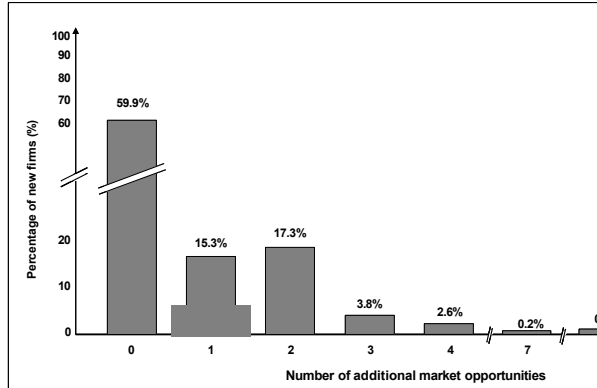
	INDUSTRY	ARENA
Goal	Positional advantage	Capturing territory
Measure of success	Market share	Share of potential opportunity space
Biggest threat	Intraindustry competitive moves	Interindustry moves
Definition of target customers	Demographic or geographic	Behavioral
Key drivers	Comparative price, quality	“Jobs to be done” in total customer experience
Likely Acquisition Behavior	With-in industry	New capability acquisition, often across industry boundaries



What is YOUR
Opportunity Space
and associated
Growth
Opportunities?



The Research behind it...



- Gruber, MacMillan, Thompson, 2008 Management Science
- Gruber, MacMillan, Thompson, 2013 Organization Science
- Gruber, 2010 Journal of Management
- PhD Dissertation Sharon Tal, 2014

n=197

What is your Opportunity Space: “Where to Play”?

I

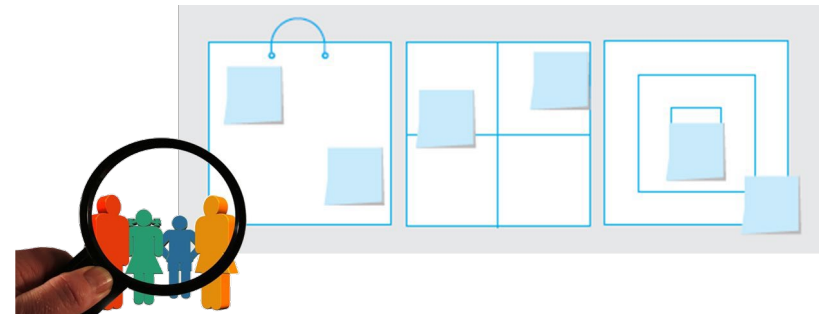
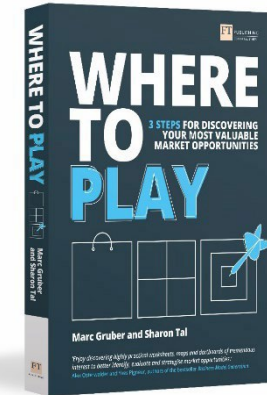
Which market opportunities exist for us based on our existing competences and new technology?

II

What are the most attractive market opportunities for us?

III

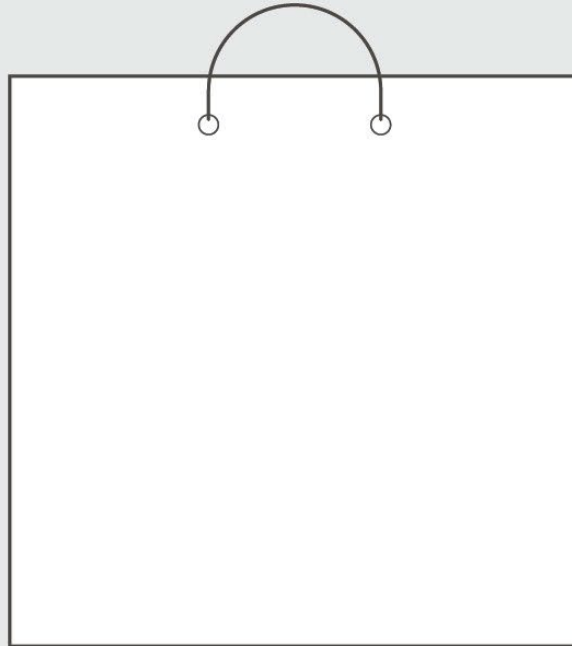
What market opportunities should we focus on?



THE MARKET OPPORTUNITY NAVIGATOR

NAME

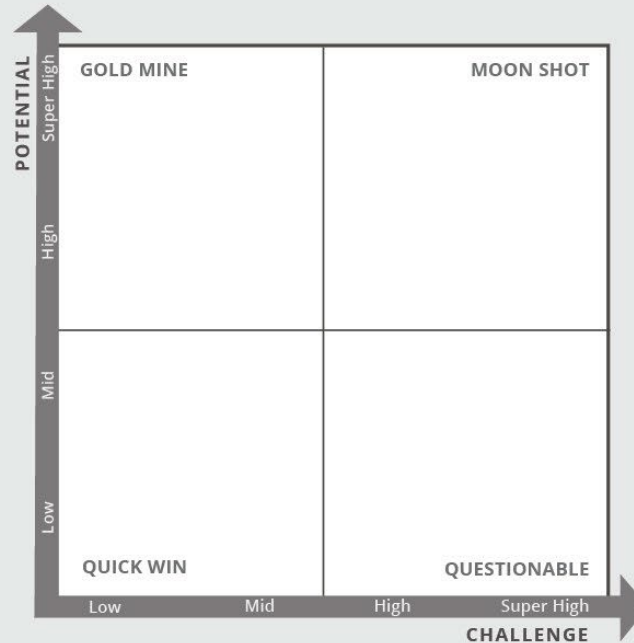
DATE



MARKET OPPORTUNITY SET

1

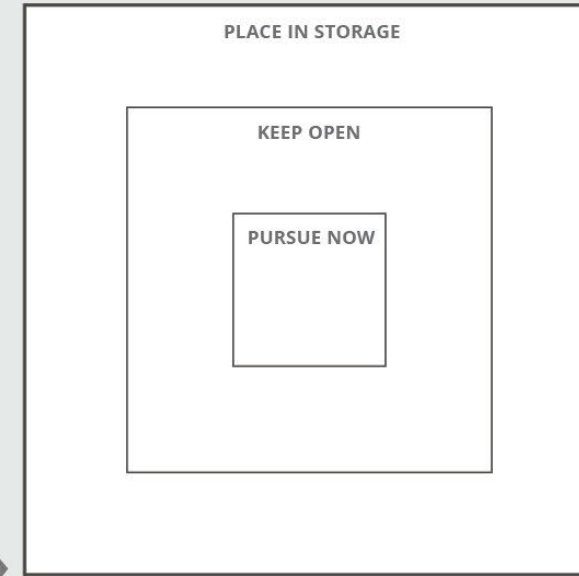
Use Worksheet 1 to identify potential market opportunities, and place them in the set



ATTRACTIVENESS MAP

2

Use Worksheet 2 to evaluate the attractiveness of each market opportunity, and place each one on the map



AGILE FOCUS DARTBOARD

3

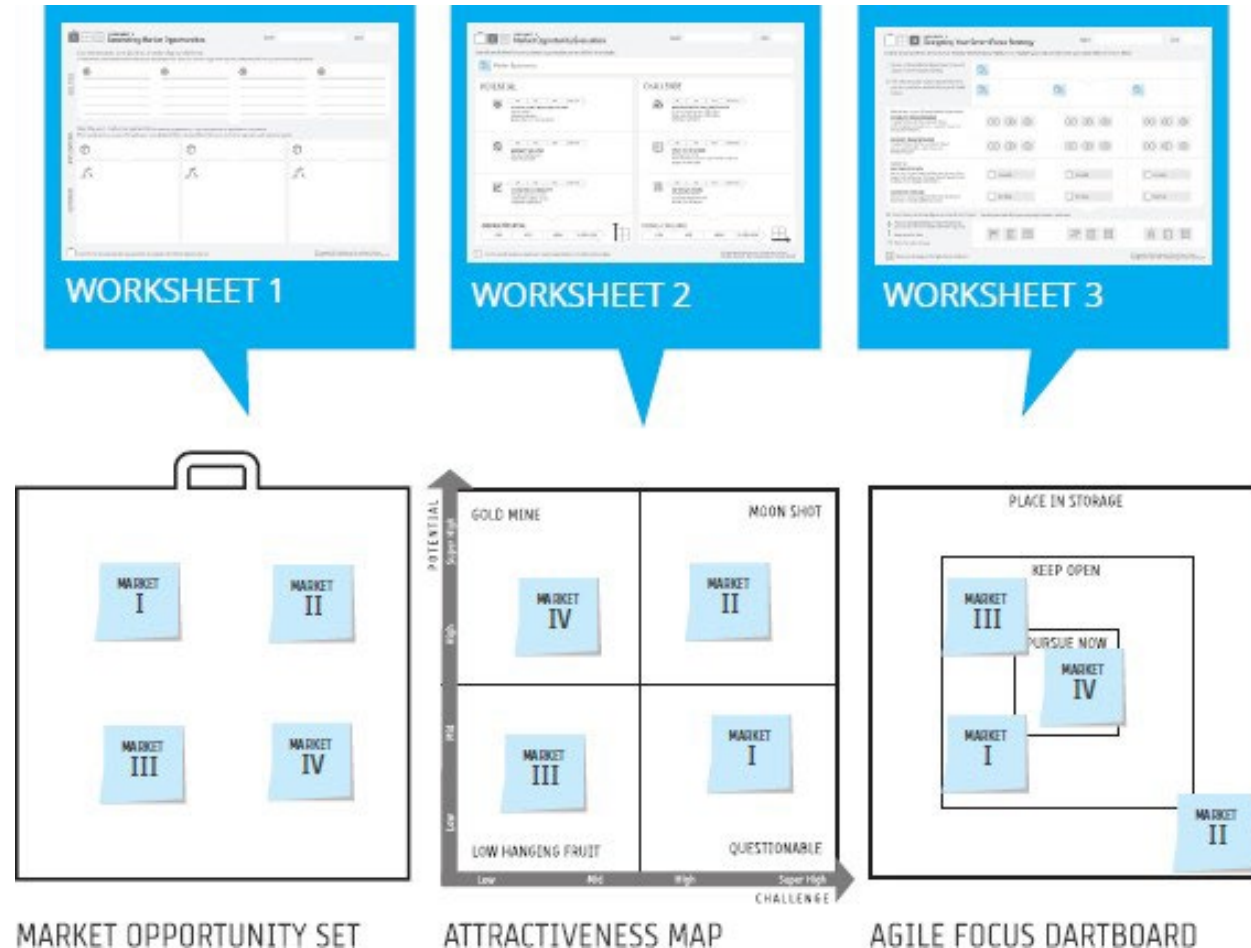
Use Worksheet 3 to design your Agile Focus strategy, and mark it on the dartboard



market opportunity = any combination of application + customer
Use sticky-notes™ to represent each market opportunity

Working with the Market Opportunity Navigator

Three dedicated worksheets that lead to the three important outcomes:



Market Opportunities: From imagination to smart exploitation



Safe drones for operating indoors, in complex and confined spaces, and in contact with people





GENERATE YOUR MARKET OPPORTUNITY SET

List the venture's core abilities or technological elements

Characterize them based on their functions and properties. Describe them in a general manner, independent from your (envisioned) product.

ABILITIES



Unique Accessibility

Collision tolerance (humans/ walls)
Decoupled & light protection cage
Roles on any surface
Operates in a range of
temperatures & pressures



Aviation Abilities

On-site video piloting
Dark/ smoked/ dusty environments
Limited fly duration



Imagery System

HD recording
Thermal recording
Real time video streaming
Remotely adjustable
Post mission analysis



Identify your market opportunities

Which applications can you offer with your core abilities? Which customers may need them? Zoom in to further segment each customer group.

APPLICATIONS



CUSTOMERS

Take 3 minutes to come up with market opportunities



application



customer



market opportunity



Place the market opportunities that you would like to evaluate in the Market Opportunity Set.



GENERATE YOUR MARKET OPPORTUNITY SET

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HD recording
Thermal recording
Real time video streaming
Remotely adjustable
Post mission analysis



Identify your market opportunities

Which applications can you offer with your core abilities? Which customers may need them? Zoom in to further segment each customer group.

APPLICATIONS



Industrial Inspection



Infrastructure Inspection



Security / Search and Rescue

CUSTOMERS



Oil & Gas

Power plants

Pressure
vesselsStorage
tanksThermal
boilersNuclear
rooms

Open air facilities

Bridges

Indoors facilities

Sewers

Mines



Intelligence surveillance

Police

Military

Rescue forces

Fire fighters



application

+



customer

=



market opportunity



Place the market opportunities that you would like to evaluate in the Market Opportunity

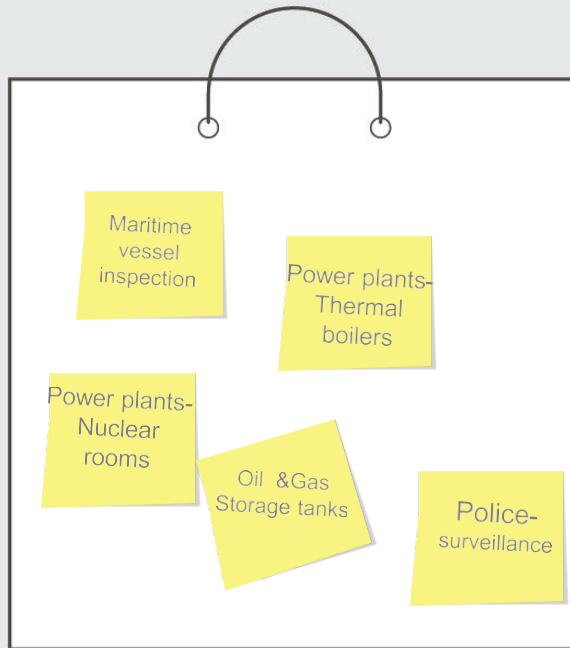
THE MARKET OPPORTUNITY NAVIGATOR

NAME

FlyAbility

DATE

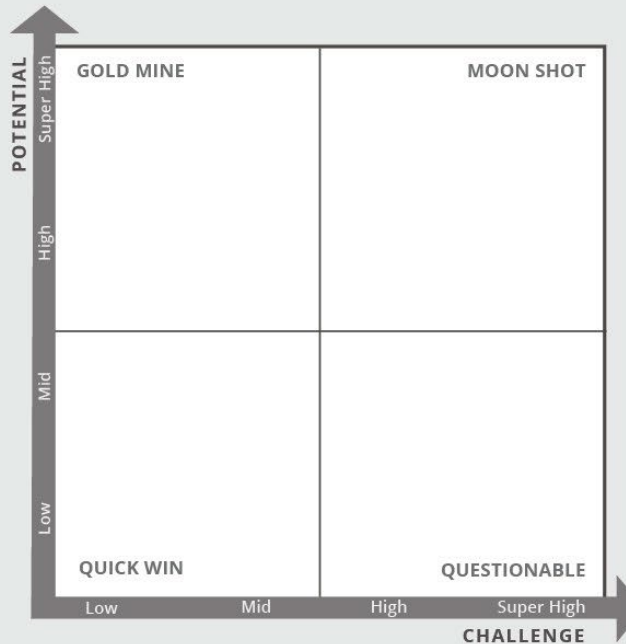
2015



MARKET OPPORTUNITY SET

1

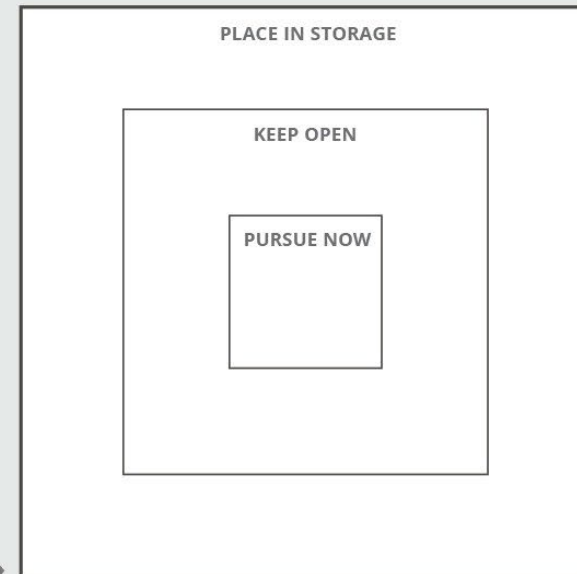
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2

Use Worksheet 2 to evaluate the attractiveness of each market opportunity, and place each one on the map



AGILE FOCUS DARTBOARD

3

Use Worksheet 3 to design your Agile Focus strategy, and mark it on the dartboard



market opportunity = any combination of application + customer
Use sticky-notes™ to represent each market opportunity



Use this worksheet for every market opportunity you would like to evaluate.



Market Opportunity: Power plants – thermal boilers

POTENTIAL



LOW MID HIGH ~~SUPER HIGH~~

COMPELLING REASON TO BUY

Unmet need
Effective solution
Better than current solutions



LOW MID ~~HIGH~~ SUPER HIGH

MARKET VOLUME

Current market size
Expected growth



LOW MID ~~HIGH~~ SUPER HIGH

ECONOMIC VIABILITY

Margins (value vs. cost)
Customers' ability to pay
Customer stickiness

CHALLENGE



LOW ~~MID~~ HIGH SUPER HIGH

IMPLEMENTATION OBSTACLES

Product development difficulties
Sales and distribution difficulties
Funding challenges



LOW MID ~~HIGH~~ SUPER HIGH

TIME TO REVENUE

Development time
Time between product and market readiness
Length of sale cycle



~~LOW~~ MID HIGH SUPER HIGH

EXTERNAL RISKS

Competitive threat
3rd party dependencies
Barriers to adoption

OVERALL POTENTIAL

LOW MID ~~HIGH~~ SUPER HIGH



OVERALL CHALLENGE

LOW ~~MID~~ HIGH SUPER HIGH



Use the overall ratings to situate each market opportunity on the Attractiveness Map.

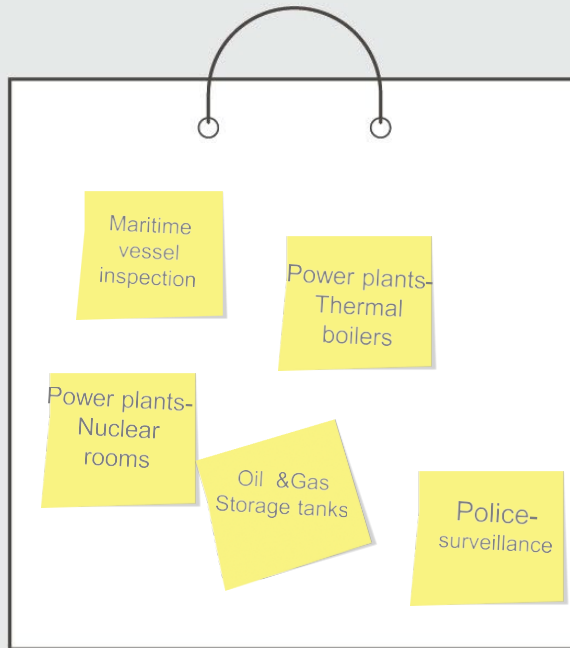
THE MARKET OPPORTUNITY NAVIGATOR

NAME

FlyAbility

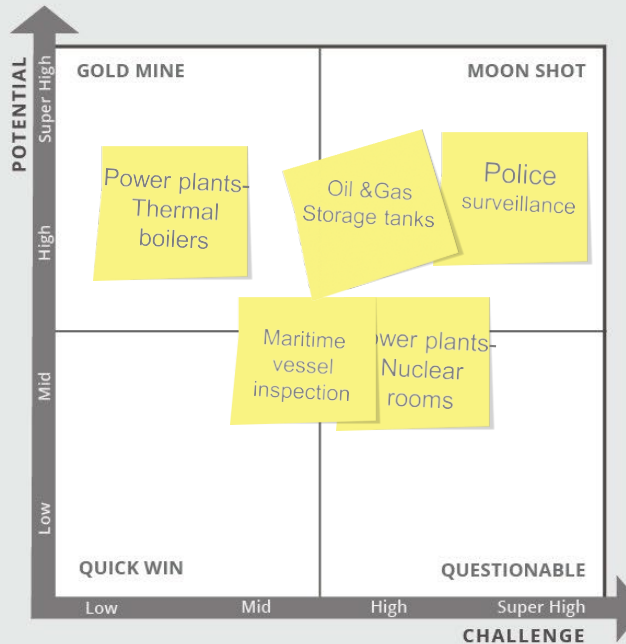
DATE

2015



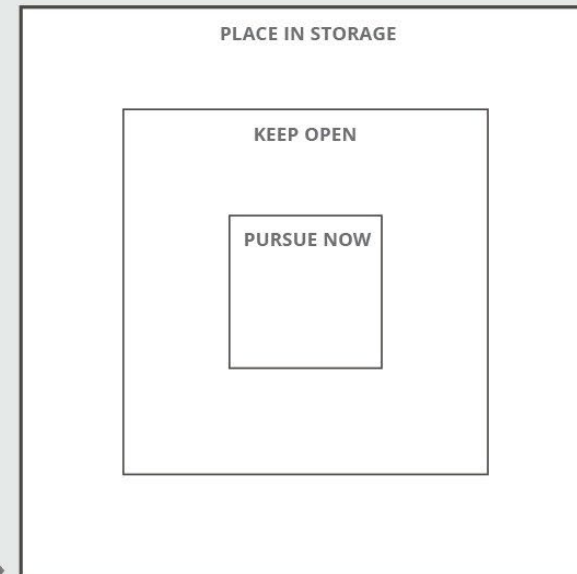
MARKET OPPORTUNITY SET

- 1 Use Worksheet 1 to identify potential market opportunities, and place them in the set



ATTRACTIVENESS MAP

- 2 Use Worksheet 2 to evaluate the attractiveness of each market opportunity, and place each one on the map



AGILE FOCUS DARTBOARD

- 3 Use Worksheet 3 to design your Agile Focus strategy, and mark it on the dartboard



market opportunity = any combination of application + customer
Use sticky-notes™ to represent each market opportunity



DESIGN YOUR AGILE FOCUS STRATEGY

Build a smart portfolio around your Primary Market Opportunity to mitigate your risk and increase your value.

- I. Choose a Primary Market Opportunity to focus on (based on the Attractiveness Map).



Power plants – thermal boilers

- II. Pick other attractive market opportunities from your set to examine possible Backup and Growth Options.



Oil & Gas Storage tanks



Maritime vessel inspection



Police surveillance

Relatedness to your Primary Market Opportunity:

PRODUCT RELATEDNESS

To what extent do the products share: technological competences, required resources, necessary networks



MARKET RELATEDNESS

To what extent do the customers share: values and benefits, sales channels, word-of-mouth



Suitable as:

BACKUP OPTION

Attractive market opportunities that do not share major risks with your Primary Market Opportunity to allow for a change in direction

☐ Backup

☐ Backup

☒ Backup

GROWTH OPTION

Attractive market opportunities that allow your business to create additional value

☒ Growth

☒ Growth

☐ Growth

- III. Design your Agile Focus Strategy:

- Keep at least one backup and one growth option open
- Decide which options (if any) to pursue now
- Place the rest in storage

Pursue now ☒ Keep open ☐ Place in storage

Pursue now ☒ Keep open ☐ Place in storage

Pursue now ☒ Keep open ☐ Place in storage



Mark your strategy on the Agile Focus Dartboard.

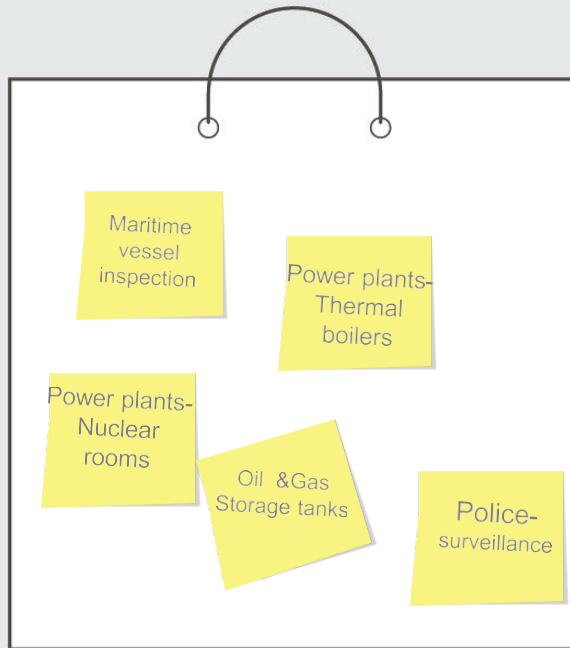
THE MARKET OPPORTUNITY NAVIGATOR

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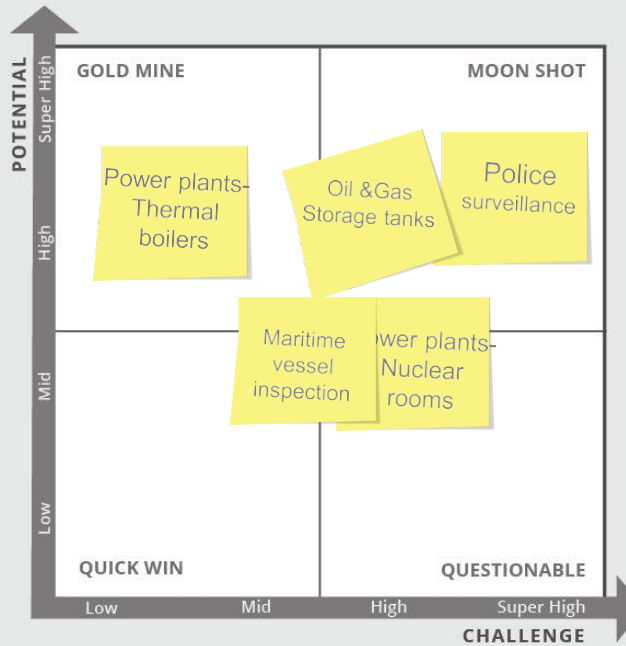
2015



MARKET OPPORTUNITY SET

1

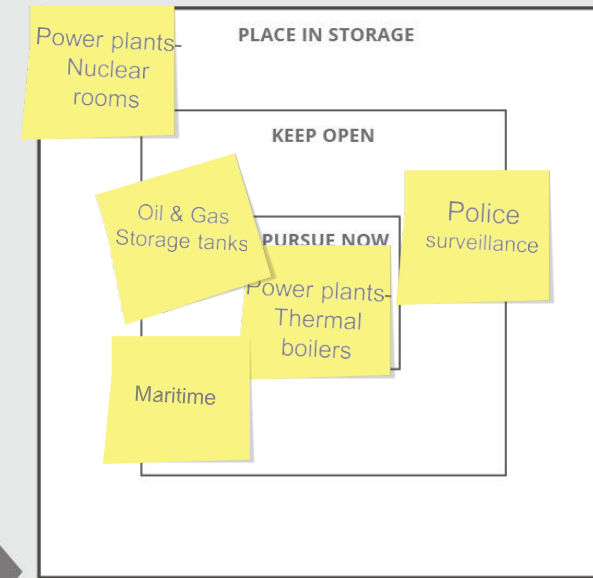
Use Worksheet 1 to identify potential market opportunities, and place them in the set



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AGILE FOCUS DARTBOARD

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market opportunity = any combination of application + customer
Use sticky-notes™ to represent each market opportunity

Not only Tech...consider Competences more widely!

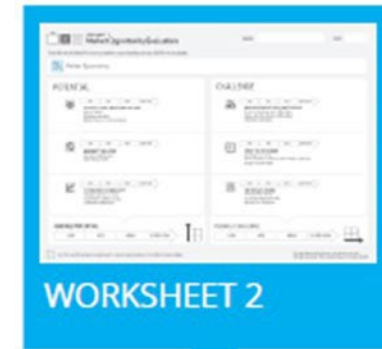
Example: Frank, Journalist



Frank worked with the Market Opportunity Navigator



WORKSHEET 1



WORKSHEET 2



WORKSHEET 3

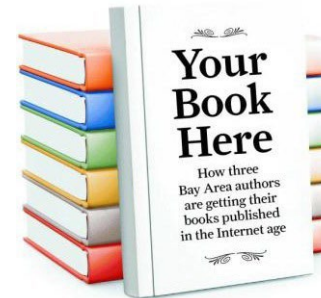
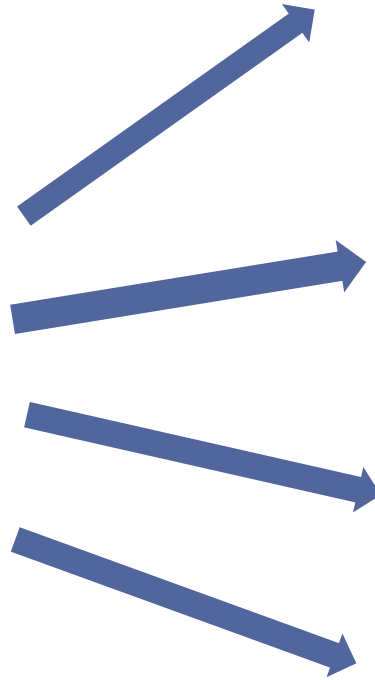


MARKET OPPORTUNITY SET

ATTRACTIVENESS MAP

AGILE FOCUS DARTBOARD

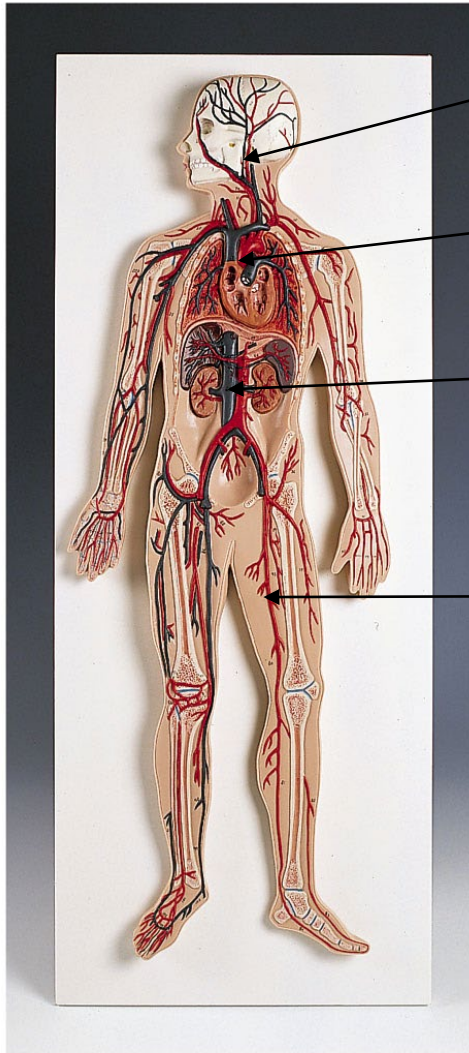
...and identified new opportunities for himself



...and many more...

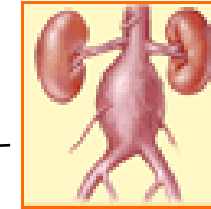
Needed: Cognitive Flexibility

Example: Biotech-Venture EndoArt



Cerebrovascular disease

Congenital heart disease



Aortic aneurisms



Artificial vessels (grafts)

EndoArt focus: **blood flow technology**.

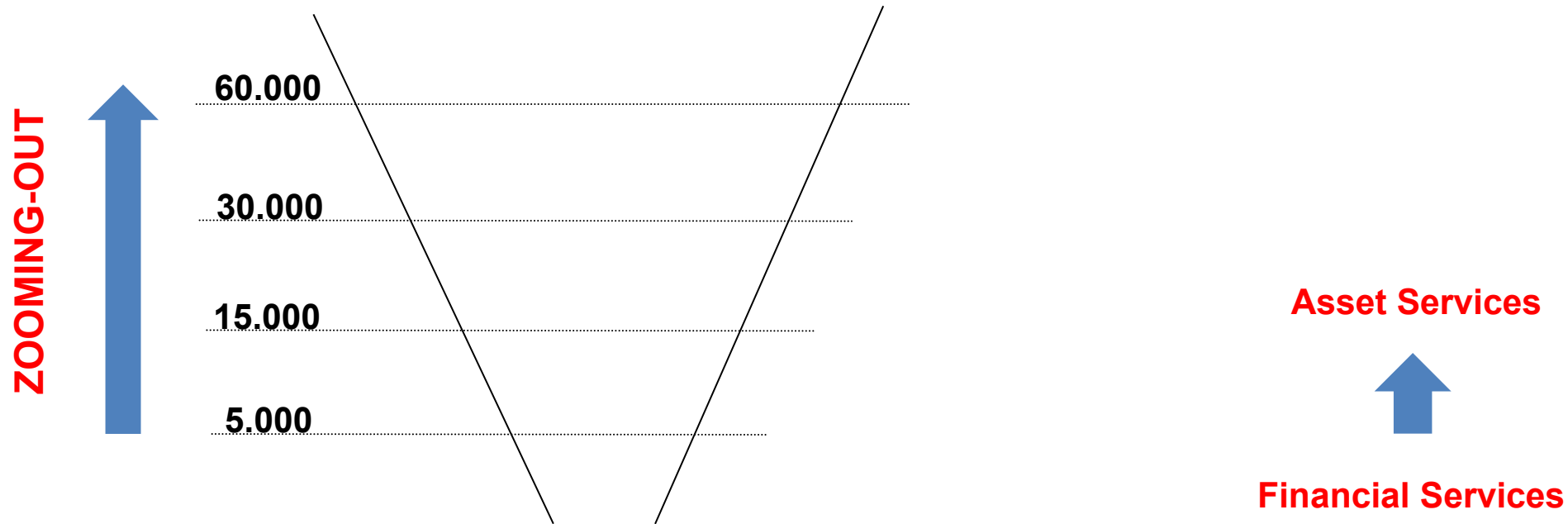
Intelligent use of blood flow dynamics

- new solutions
- superior therapeutic product performance.

Source: Stergiopoulos EPFL

Example: Cognitive Flexibility in Financial Services

„Who are **We** as a Company...Where can We Play?“



Implication: Expanded Understanding of Assets



UBS

Wealth Management UK

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[Our services](#)

[Why UBS](#)

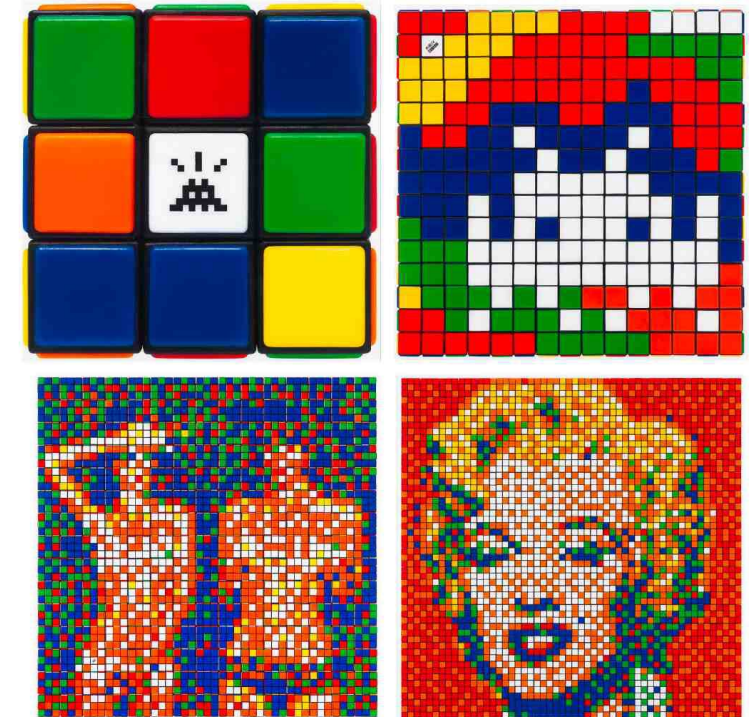
[Contact us](#)

Art advisory

Helping you pursue your passions

Art is a passion. It brings emotional fulfilment. There are several ways of cultivating a passion for art, and the motivation behind every art collection is different. But passion is what all great collectors share.

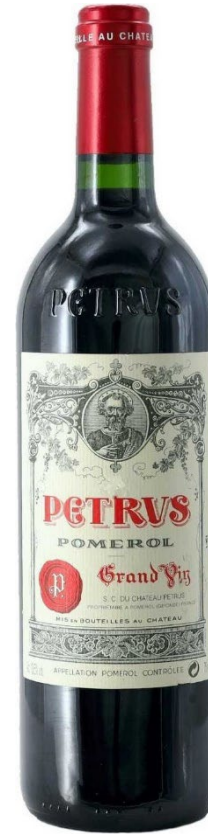
UBS Art Advisory supports you in pursuing your passion, navigating the intricacies of building up your own art collection and securing your art legacy for future generations. Turning your vision into a reality requires long-term partnerships such as ours, built on understanding and trust.

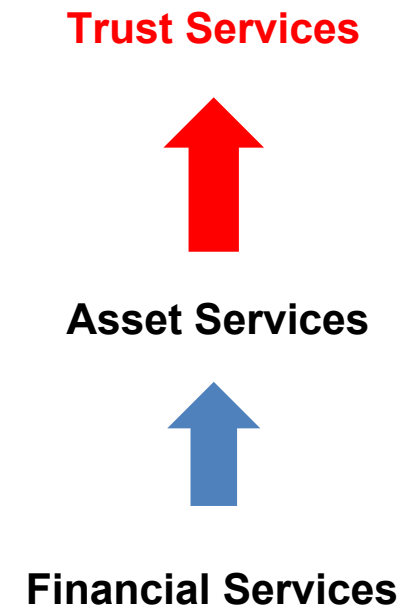
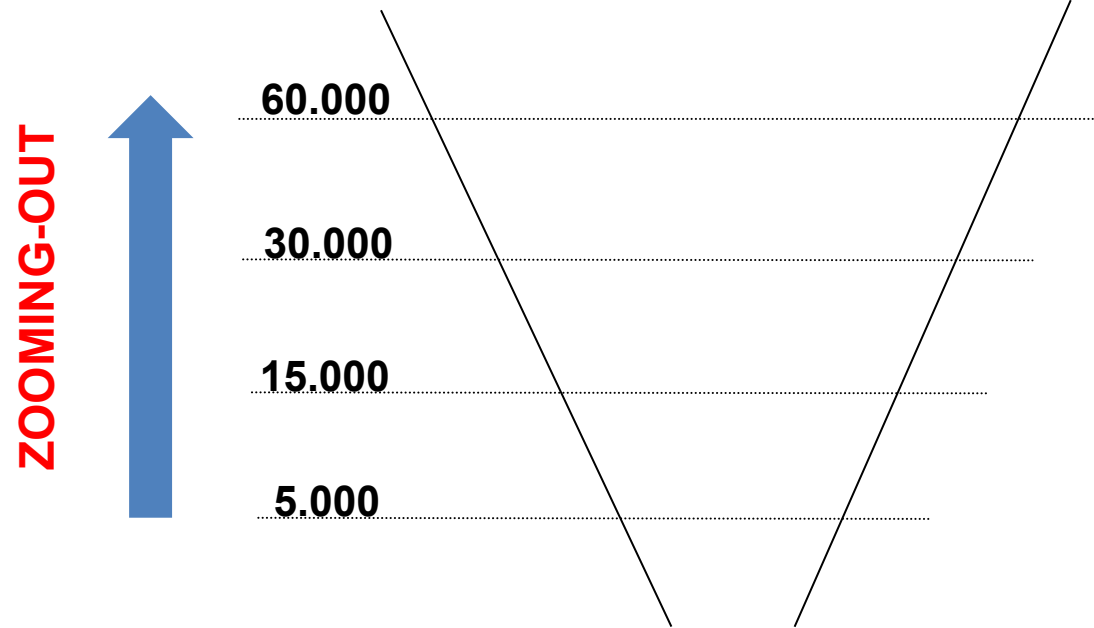


Together, we can help you take your passion for art further.

[Get in touch >](#)

Implication: Expanded Understanding of Assets





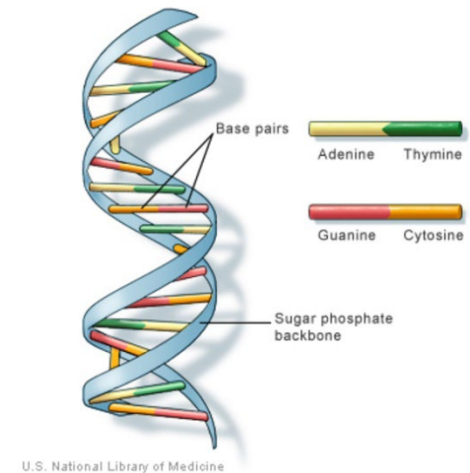
Zoom-out: **TRUST** Services?

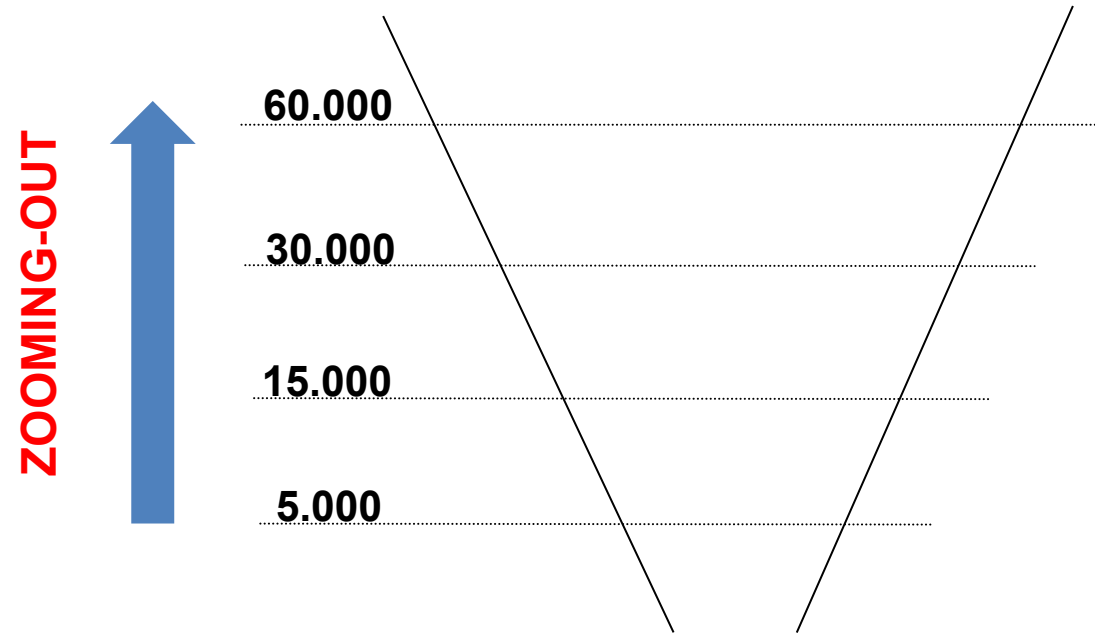
- **Storage, Management** (e.g., Verification and Revenue Generation)

....of **Personal Data/Identity**

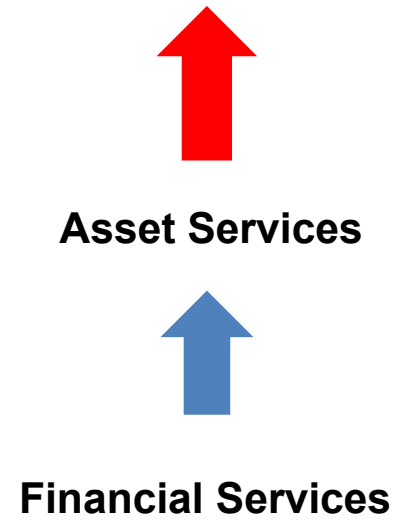


....of our **DNA** for Personalized Medicine





Holistic understanding of WEALTH



Zoom-out: **WEALTH** holistically defined

- **Health Care Services**

Of all the assets one can possess none more is precious than good health. And quality healthcare, underpinned by caring financial support, is one of the most important services a company can offer (FT, 2023)



- **Lifecycle Services**

Health, financial wealth, knowledge wealth, experience wealth etc.

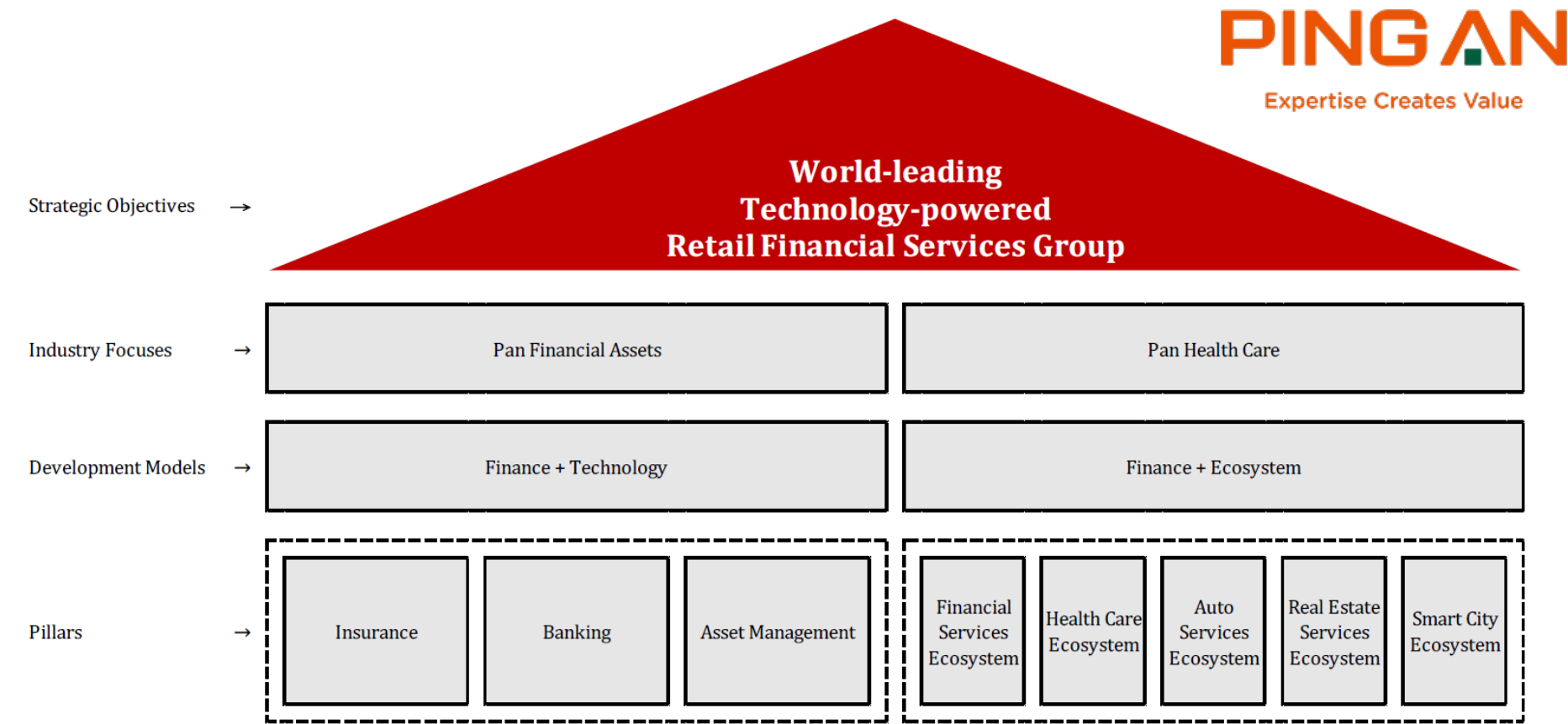


Example: PING AN....developing it's ARENA

Ping An started as an insurance company and has since expanded into many other domains.

**Ping An's
“finance +
technology”
business
Model**

(AI, Blockchain, etc.)



Source: Company data, CMBIS

PING AN Healthcare

Ping An **healthcare software solutions**.

Ping An offers **mobile platform** for

- online consultation,
- hospital referral and appointment,
- health management, and
- wellness interaction services,
- connects consumers and patients with health care resources.

+ strong service network, including

- More than **40,000 doctors**.
- More than **3,600 partner hospitals**.
- **202,000 partner pharmacies**
-

PING AN
GOOD DOCTOR



A conceptual image showing a white robotic arm reaching out from the left, its fingers just inches from a human hand reaching out from the right. The background is a deep blue with glowing digital elements, including binary code (0s and 1s) and abstract light patterns. A bright, glowing blue light emanates from the point where the two hands are nearly touching, creating a sense of connection and energy.

Where to Play for Your Companies

- Workshop -

Let's get started: 2 Goals for this Workshop

Think out of the box!

1. Identify New Market Opportunities, incl. **new tech** as abilities (**Worksheet 1**), and note them as the Opportunity Set on the Market Opportunity Navigator Sheet

2. Perform a “quick-and-dirty” evaluation of your Top 2 Opportunities (**Worksheet 2**), and place them in the Attractiveness Map on the Market Opportunity Navigator Sheet

...be prepared to present your results at the end of the session!

A futuristic scene featuring a metallic, grey robotic arm reaching from the left towards a human hand on the right. The background is a deep blue with glowing digital elements, including binary code (0s and 1s) and abstract light patterns. A bright, glowing point of contact is visible where the two hands are nearly touching.

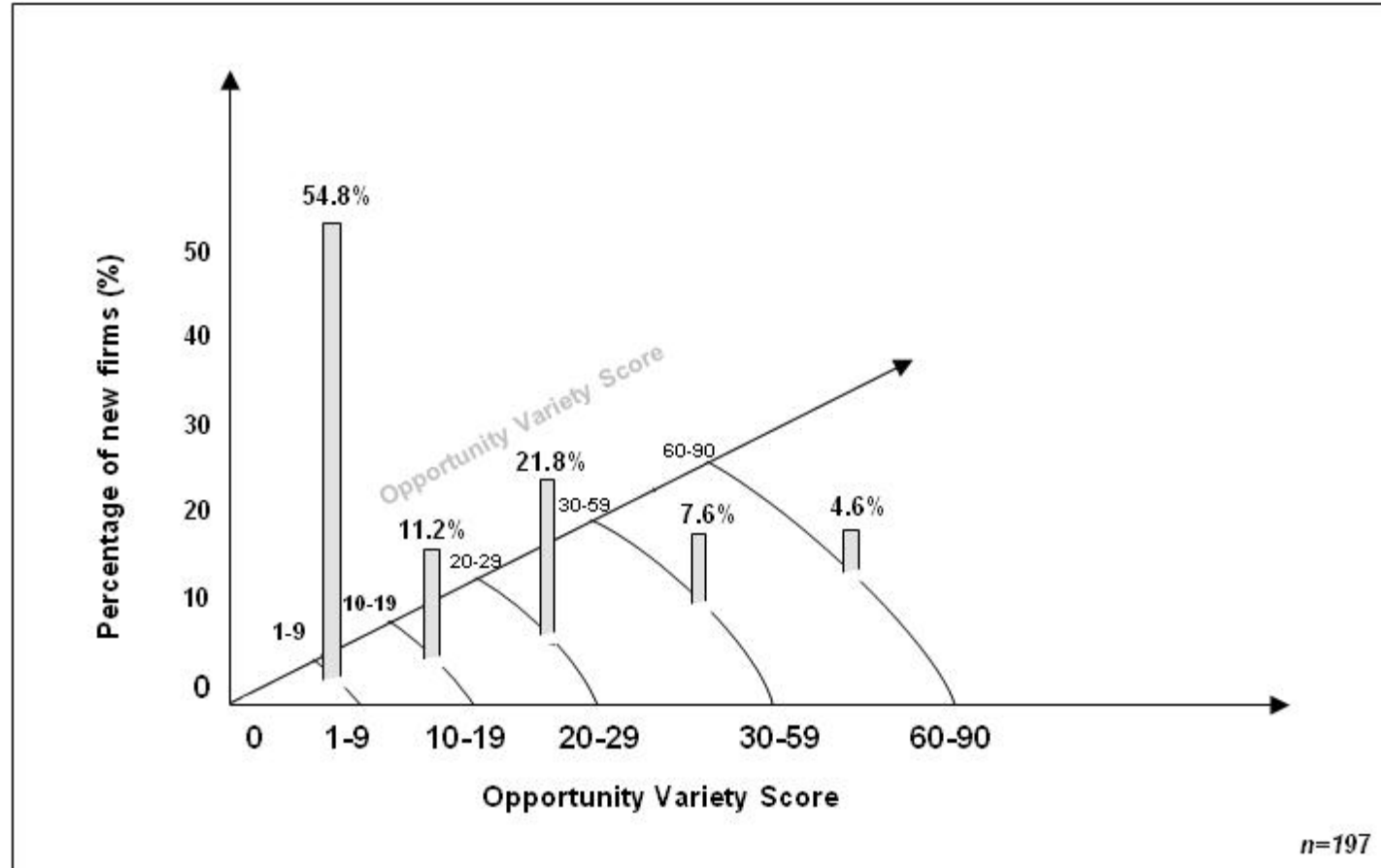
Where to Play - Debriefing -

Joint De-briefing

1. What inhibits opportunity identification, how can you increase the scope of opportunity identification?
2. What do these learnings mean for a culture of continuous growth and, in particular, managing the uncertainty of innovative projects?
3. What can you do in your role?

Evidence from Technology Start-ups (I)

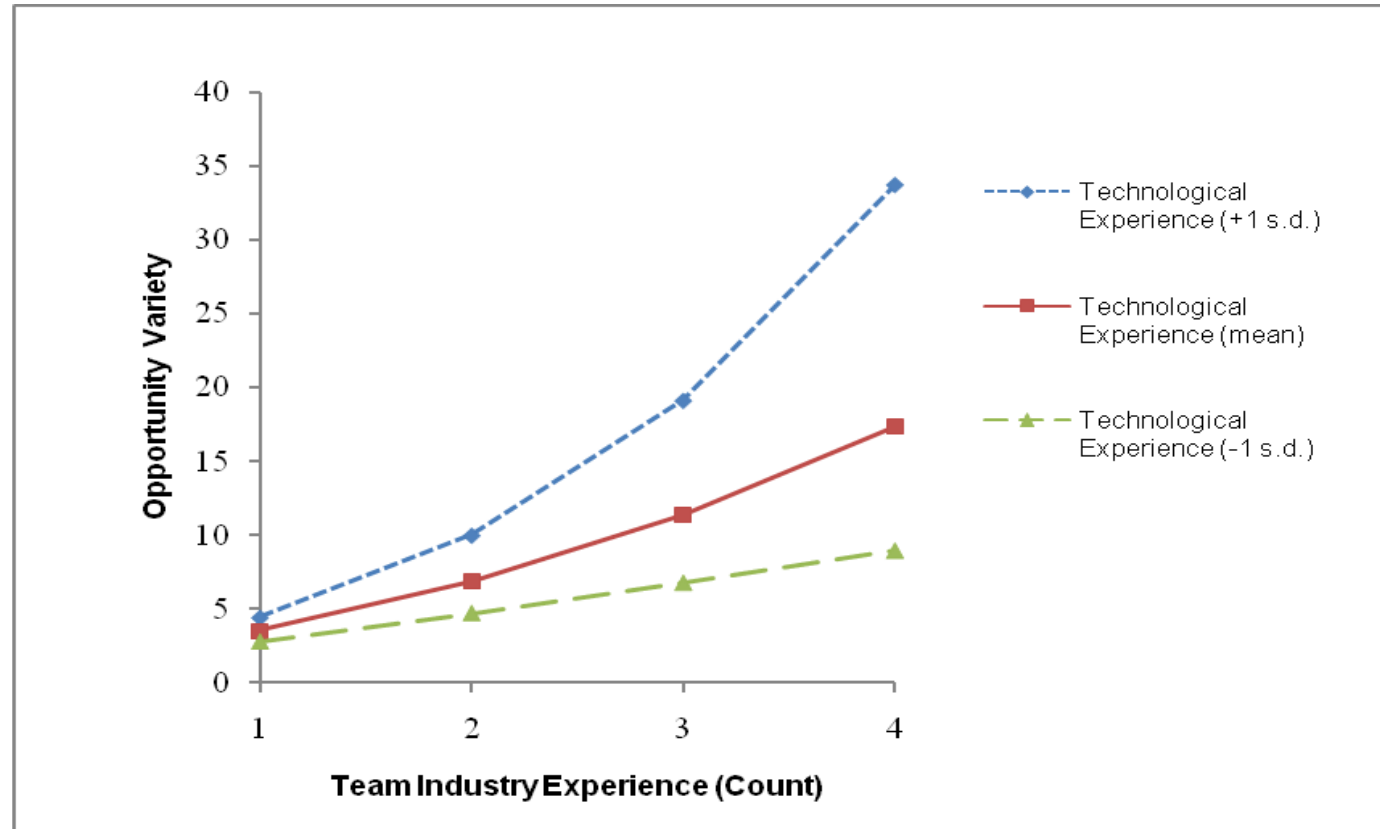
OPPORTUNITY VARIETY (prior to initial entry)



Source: Gruber, MacMillan & Thompson, 2013

Evidence from Technology Start-ups (II)

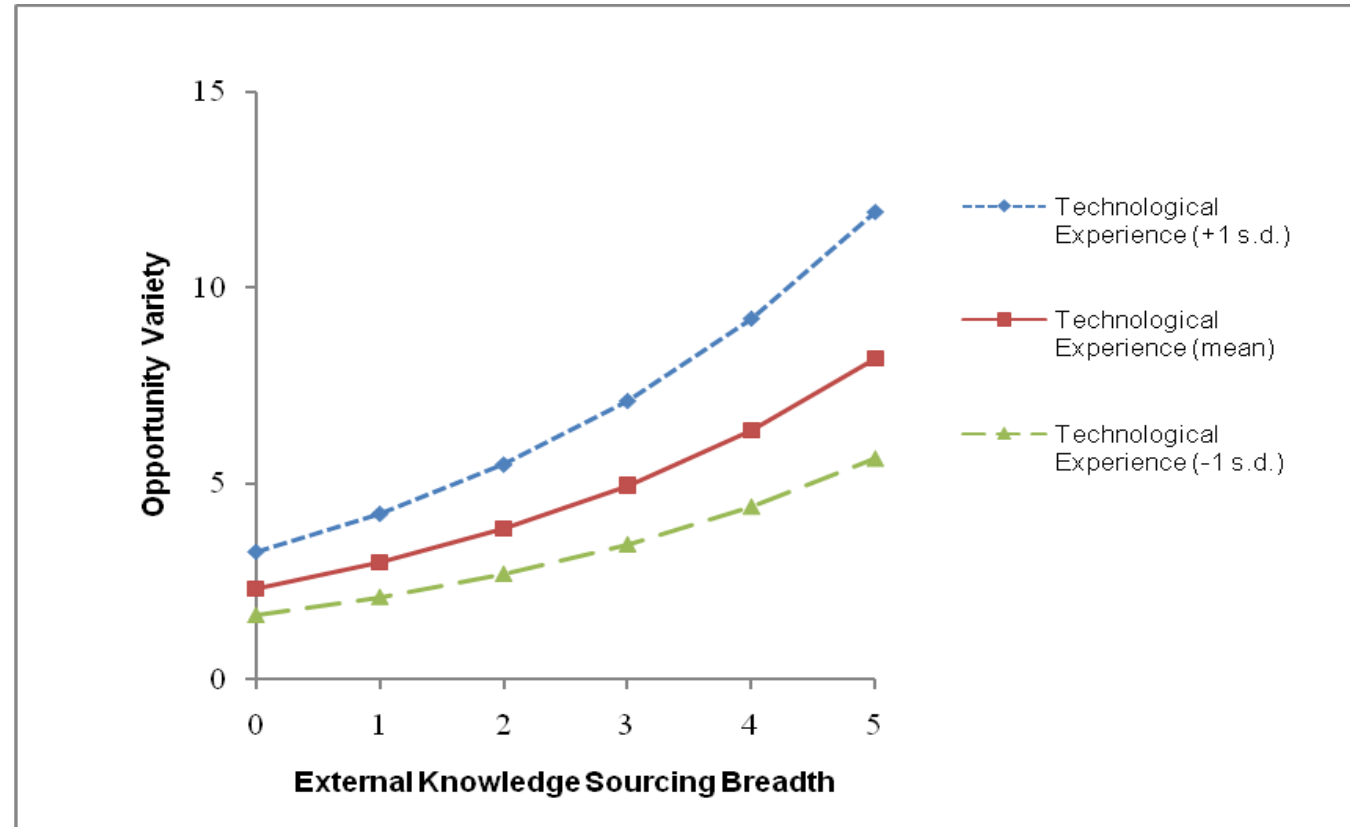
Generating OPPORTUNITY VARIETY: Internal Knowledge Endowments



Source: Gruber, MacMillan & Thompson, 2013

Evidence from Technology Start-ups (III)

Generating OPPORTUNITY VARIETY: External Knowledge Sourcing



Source: Gruber, MacMillan & Thompson, 2013

ChatGPT as additional team member: FREE AI-powered Web-app on www.wheretoplay.co

The screenshot displays the 'Opportunities Counselor GPT' web application. The interface is structured as follows:

- Left Sidebar:** Contains navigation links for 'Overview' (with a grid icon), 'Market opportunity set' (with a calendar icon), 'Worksheet 1', 'Attractiveness map' (with a 2x2 grid icon), 'Worksheet 2', 'Agile focus dartboard' (with a dartboard icon), and 'Worksheet 3'.
- Central Chat Area:** Features the ChatGPT logo and the title 'Opportunities Counselor GPT'. The chat history includes:
 - AI: "I'm here to help you expand your exploration process"
 - User: "Let me look at the capabilities of your technology..."
 - AI: "Please write a short description of the project"
 - User: "We are looking to develop a new biodegradable breast tissue marker"
- Right Sidebar:** Includes a 'NEED HELP?' link, 'DOWNLOAD PDF' and 'LOGOUT' buttons, a 'PLACE IN STORAGE' section with 'KEEP OPEN' and 'PURSUE NOW' options, and an 'AGILE FOCUS DARTBOARD' section with instructions to use Worksheet 3.

In sum: how to develop a capability in opportunity identification

- Train your alertness and extend your “stock of prior knowledge”
- Be aware of the limiting effects of your limited knowledge of customer problems and new technological capabilities
 - => enlarge your scope, diversify your experience base
 - => look for others who complement your knowledge bases, create a heterogeneous team
- Reach out to others in opportunity search (“crowdsourcing”), incl. AI
- Look at problems from multiple angles, zoom-in and zoom-out
- The Market Opportunity Navigator will help you in structuring this important task



THANK YOU!

Prof. Dr. Marc Gruber

EPFL - Chair of Entrepreneurship & Technology Commercialization

marc.gruber@epfl.ch