

Where to Play? Finding and assessing potential market opportunities for an innovative technology

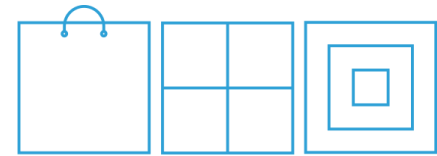
Dr Sharon Tal, March 2019



Hi, I am Sharon



Author of Where to Play:
www.wheretoplay.co



Co-founder and former executive
director of the Technion
Entrepreneurship Center



Lecturer on entrepreneurship and
marketing for high-tech start-ups



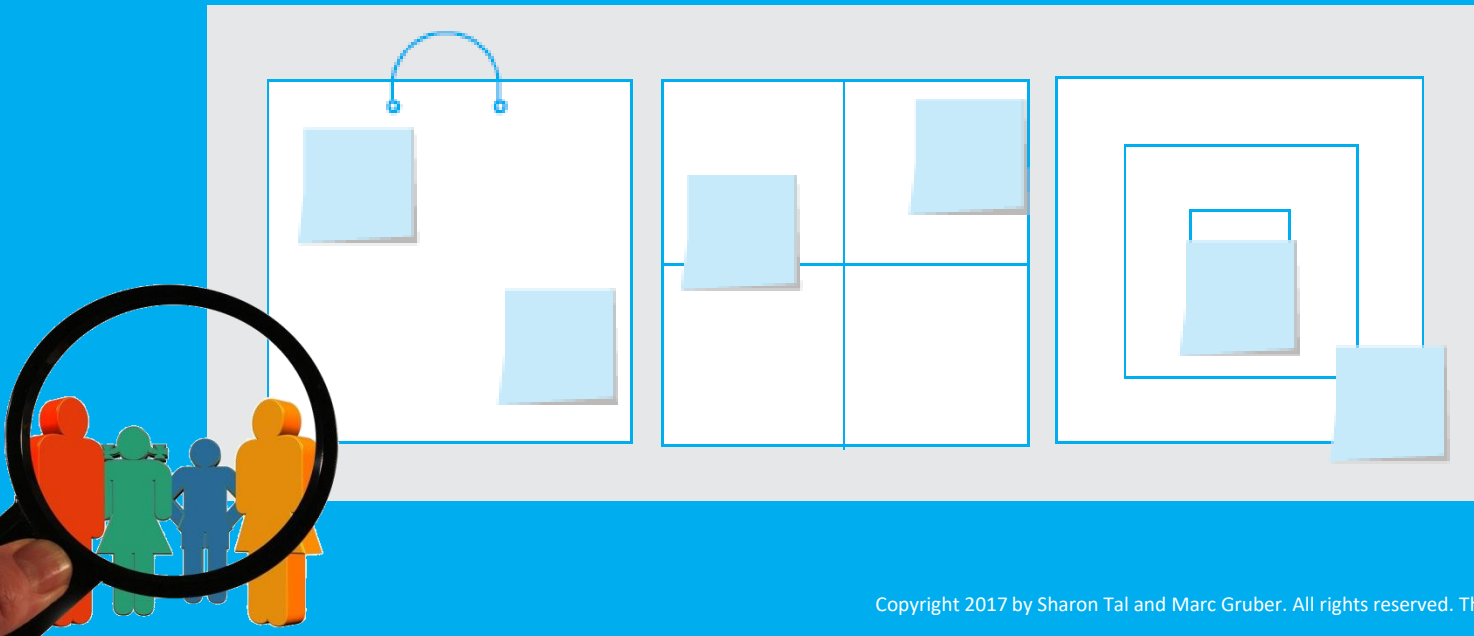
Vast experience in marketing and
strategic consulting



Find out where to play

The Market Opportunity Navigator

3 steps for discovering your most valuable
market opportunities



Which markets to focus on?

- A real dilemma for entrepreneurs
- No clear process or handy tools
- We have important insights on the common mistakes and key considerations for success



What did we learn from hundreds of start-ups?

#1

Look before you leap: a set of market opportunities is a real asset for the firm

(Gruber, MacMillan & Thompson, 2008)

#2

Number and variety of options matter

(Gruber, MacMillan & Thompson, 2008)

#3

Focusing smartly is more than choosing a promising market

(Tal, Gruber & de-Haan, 2013)



Setting a strategic focus

Setting your market opportunity strategy - at any given point- requires your deep understanding of 3 questions:

I

Which market opportunities exist for us?

II

What are the most attractive market opportunities for us?

III

What market opportunities should we focus on?

THE MARKET OPPORTUNITY NAVIGATOR

NAME

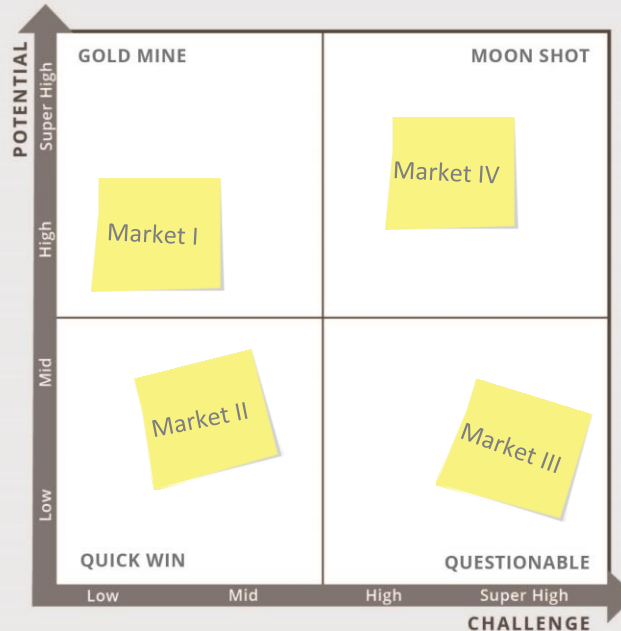
DATE



MARKET OPPORTUNITY SET

1

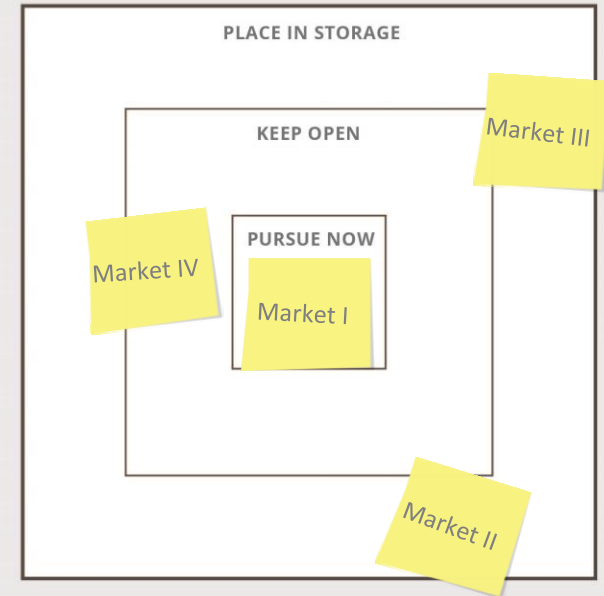
Use Worksheet 1 to identify potential market opportunities, and place them in the set



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

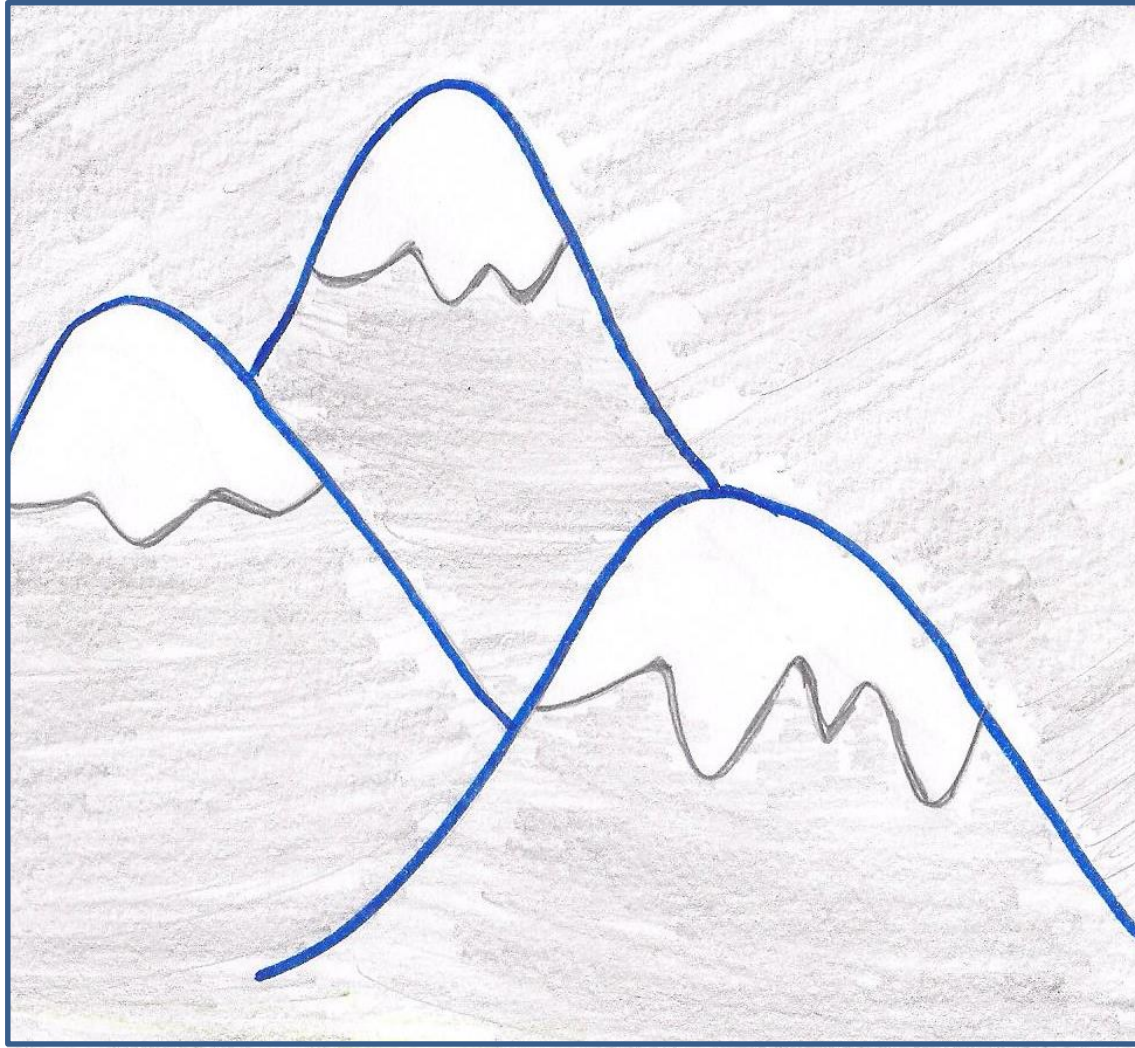
Use Worksheet 3 to design your Agile Focus strategy, and mark it on the dartboard

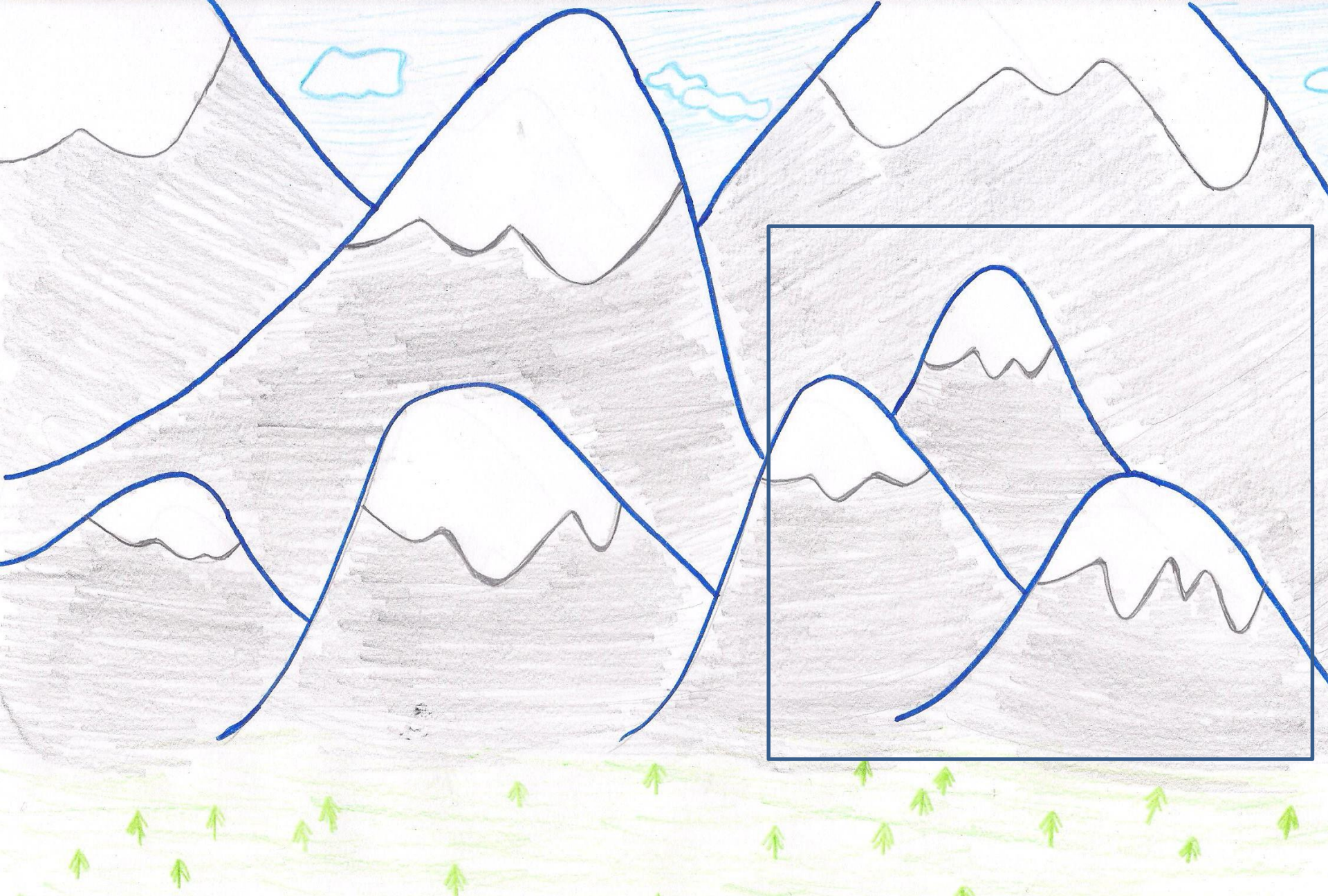


market opportunity = any combination of application + customer
Use sticky-notes™ to represent each market opportunity

**Valuable framework
for anyone dealing
with technology
commercialization**

If market opportunities were mountains...





The benefit of seeing the BIG PICTURE

How is this relevant to you?

Having a broad overview of markets and applications is key for:

- ✓ Identifying the value of an invention
- ✓ Realizing the value of an invention

It will help you to:



Evaluate technologies and assess their potential



Understand possible commercialization routes



Communicate with and increase the engagement of researchers



Set the foundations for stronger patents

What is the plan for today?

Time	Content
9:00-9:30	Introduction and overview
9:30-9:45	Presentations of today's technology
9:45-10:15	Step 1: identifying market opportunities for an innovation
10:15-10:30	Coffee break
10:15-10:45	Group work on Worksheet 1 to generate a set of market opportunities
10:45- 11:30	Step 2: evaluating the attractiveness of market opportunities
11:30-12:30	Group work on Worksheet 2 to generate the Attractiveness Map
12:30-13:30	Lunch break
13:30-14:10	Group presentations & takeaways
14:10-15:00	How to apply the Navigator in your department & supporting materials

So lets get started...

...with meeting today's innovation



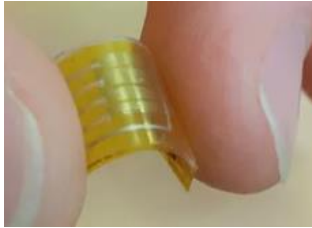
Enabling objects to feel touch

FeelIT presents flexible sensing
patch solutions with tactile
capabilities that match, and
even exceed, human fingertip
touch sensation

[READ MORE](#)



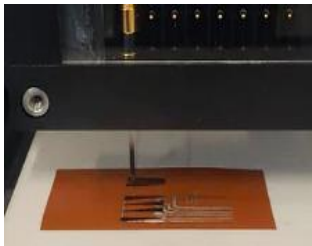
Enabling objects to feel touch



**Skin like"
patch
configuration**



**Low power
consumption**



**Fully printed
low cost
fabrication**



**Fast
milliseconds
response times**



**High resolution
touch and
location sensing**



**Fully integrated
wireless
solution**

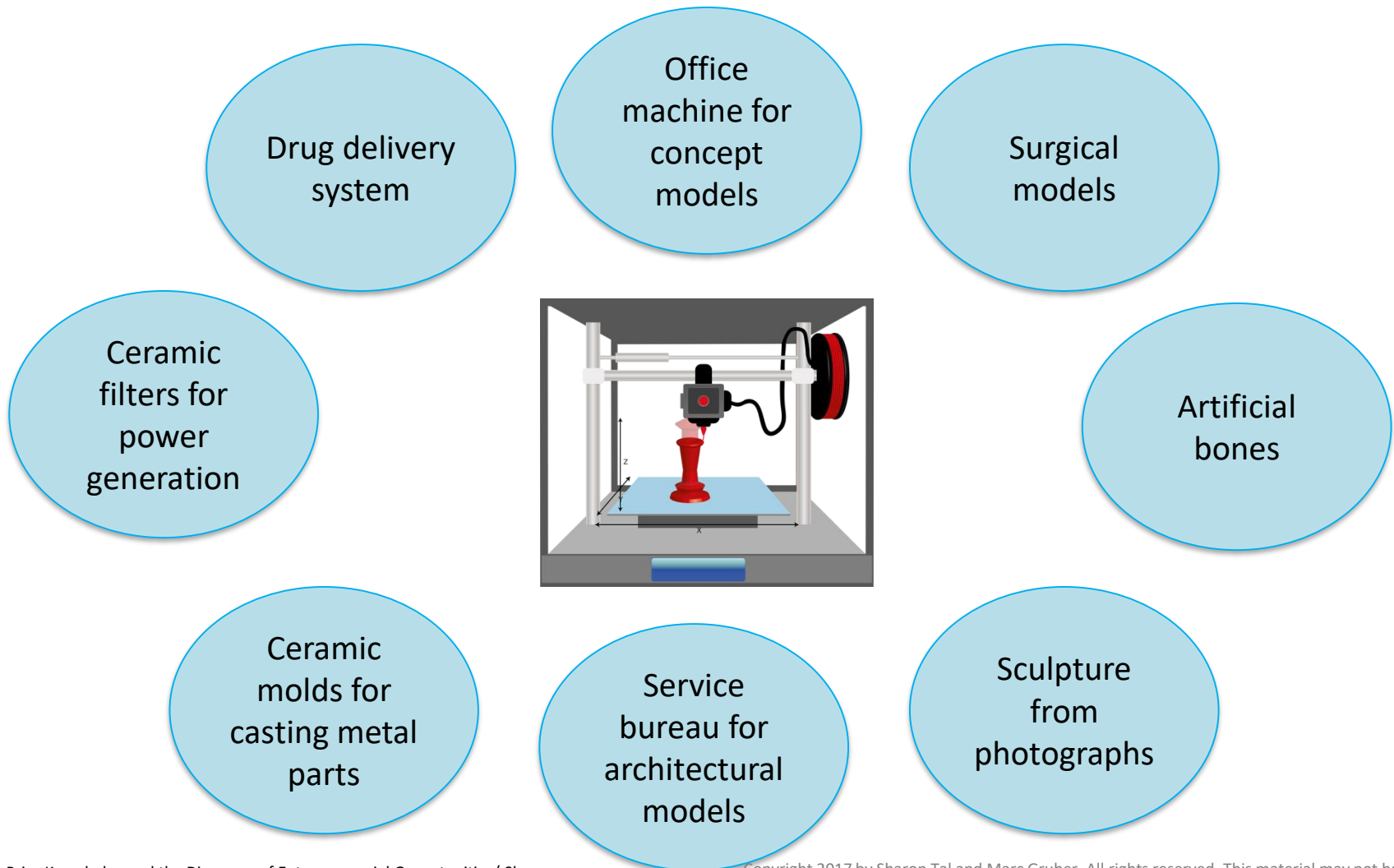
Step 1:

Identifying market opportunities for an invention



Innovations can be applied in many domains

Shane (2000): Case study research on one MIT invention (3D printing)



Generate a set of market opportunities



- The inventor's view of applications is usually limited
- The inventor does not understand the economic viability
- The inventor is often driven by publication concerns

Do you have a diamond in your hand?

How?



How?

Step 1 - understand your building blocks

Describe the core technological elements – in their own right, independent of any envisioned application. List what these elements can accomplish (their functions) and their main properties.

Step 2 - construct different towers

Search for different possible applications that these unique abilities can establish (as a whole or in parts), and who may need these different applications.

How?



application

+



customer

=



market opportunity

GENERATE YOUR MARKET OPPORTUNITY SET

NAME

DATE

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



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

application

+

customer

=

market opportunity

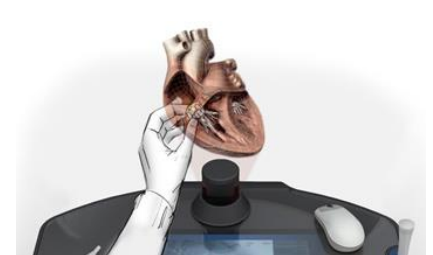
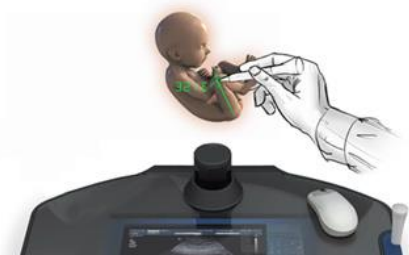
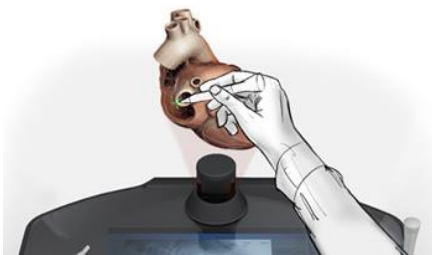
Place the market opportunities that you would like to evaluate in the Market Opportunity Set.

Example: RealView Imaging



Projecting highly realistic, dynamic 3D holographic images “floating in the air” without the need for any type of eyewear.

Users can touch and interact precisely within the image, presenting a unique and proprietary breakthrough in digital holography and real-time 3D interaction capabilities.





GENERATE YOUR MARKET OPPORTUNITY SET

NAME

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Real View

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

**3D holographic display**

- Dynamic image
- No eyewear needed
- 360 walk-around
- Multiple image modalities
- Multiple viewers
- Small/ mid objects

**Image interface system**

- touch
- interact & rotate
- mark
- measure
- crop/ sculpt

**2D transition**

- Control panel
- 2D projection of image
- 2D plane of cropped image



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

**Medical holography****Surgical interventions**Cardiology
catheterization

Orthopedic

Diagnostic imagingRadiology
labs

Fetal imaging

**Entertainment/ Education****Gaming**VR game
developersHeadsets
developers**Education**

Museums

Schools

**Commercial applications****Digital
Advertising**

Ad agencies

Large brands

**Computer
aided design**

application



customer



market opportunity



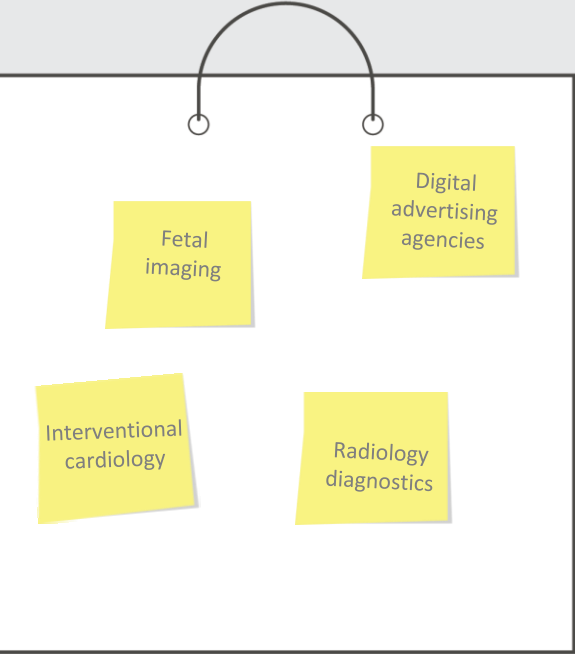
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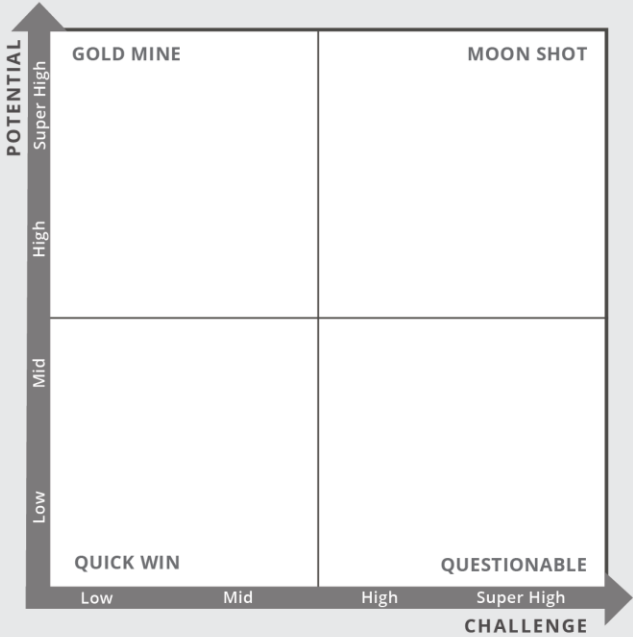
FeelIT

DATE



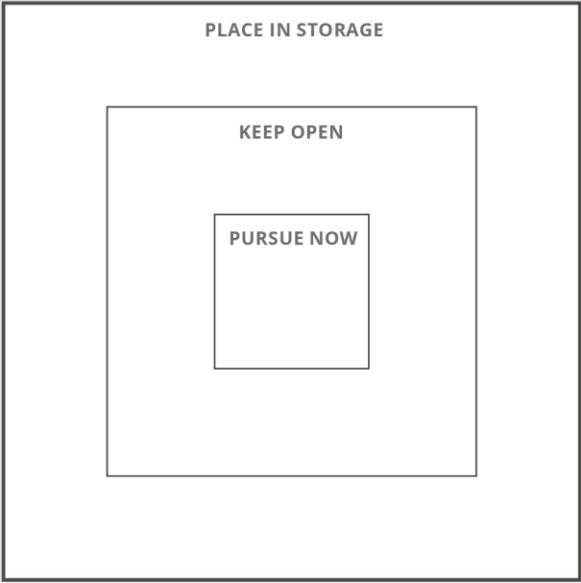
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ABILITIES

Now its your turn...

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

application

+

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=

market opportunity

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

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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



Sensors

Sense touch and pressure
Small and thin
High resolution



Patches

Flexible & Adherable
Wearable
Fully printed
Small or large areas
Low cost



Readouts

Small data volume
Long time measurement
Low power consumption
Extremely accurate & fast
Adjustable sensing range
Wireless solution



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



Wearables



Health monitoring

Blood flow

Sleeping disorders

Movement monitoring

Sports gear

Rehabilitation



Medical



Surgical tools

Gynecologists

Cardiologists

Medical trainers

Diagnostic tools

Gynecology

Prostatic exams

Tumors identification



Industrial and machineries



Predictive maintenance

Pipes

Valves

Pumps

Sensing robots

Human/home care

Industrial



application

+



customer

=

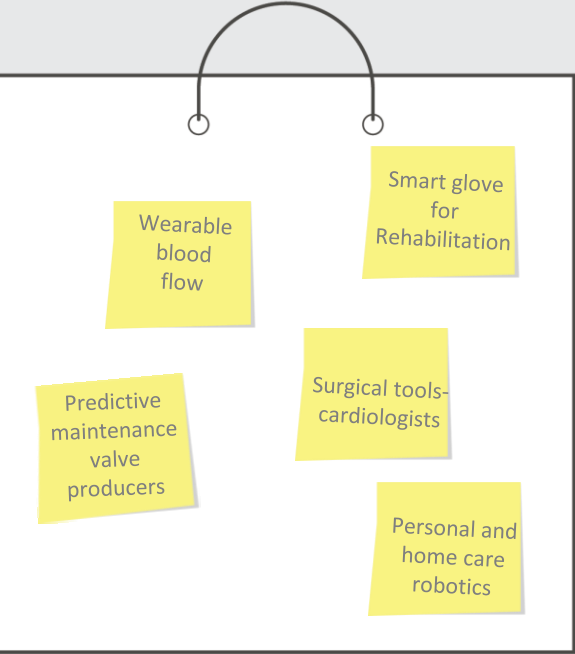


market opportunity



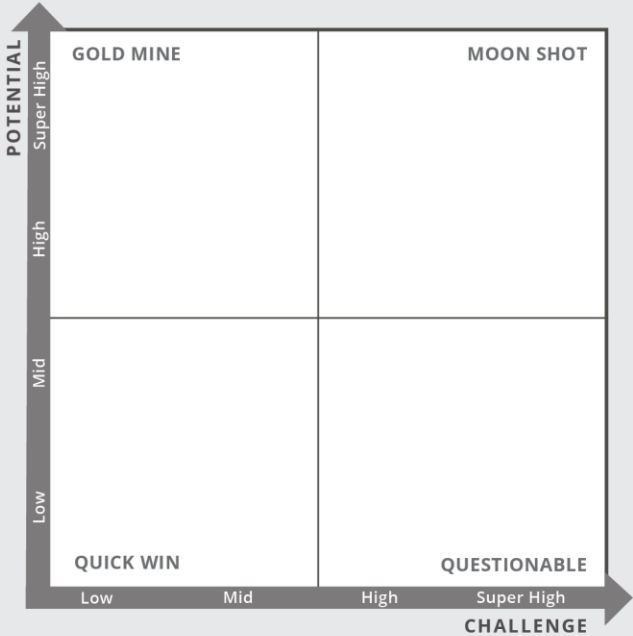
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THE MARKET OPPORTUNITY NAVIGATOR



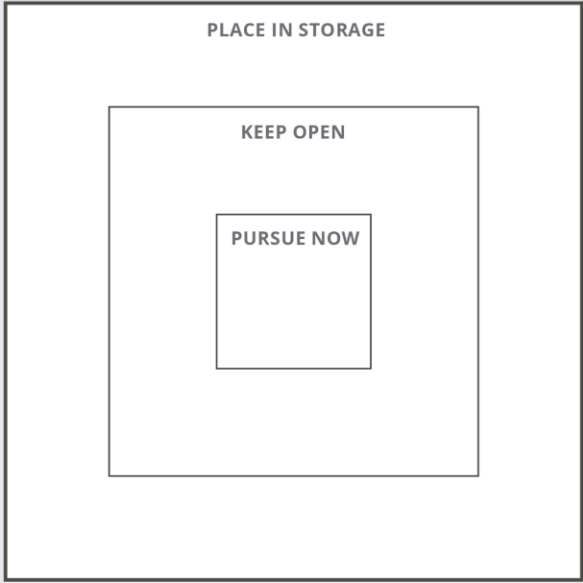
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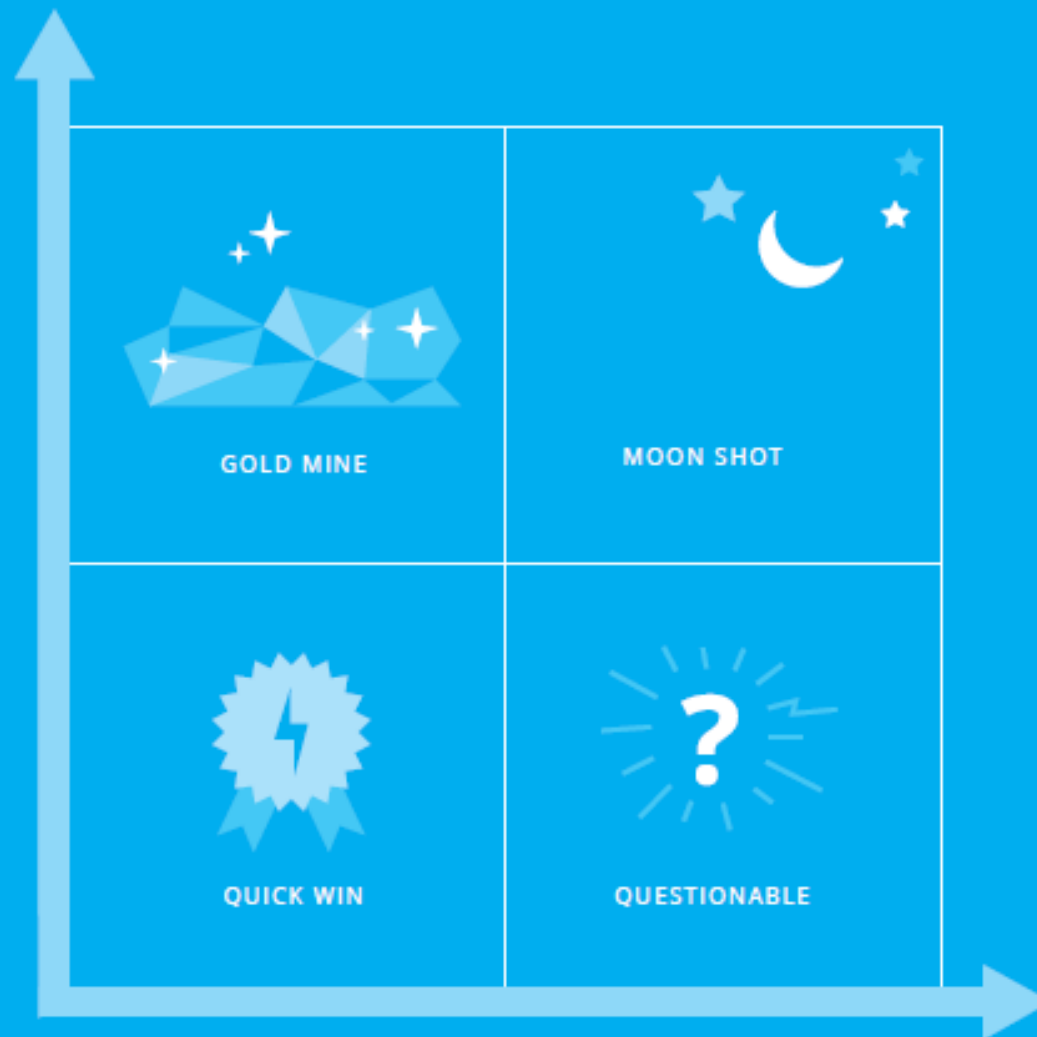
market opportunity = any combination of application + customer
Use sticky-notes™ to represent each market opportunity

What can we learn from this exercise?

- Adopt a wide perspective to uncover the value of an invention
- Be active, ask yourself the right questions
- A systematic approach is valuable for team discussions and debates
- Enhance the cognitive flexibility of the researcher

Step 2:

Evaluating market opportunities for an invention



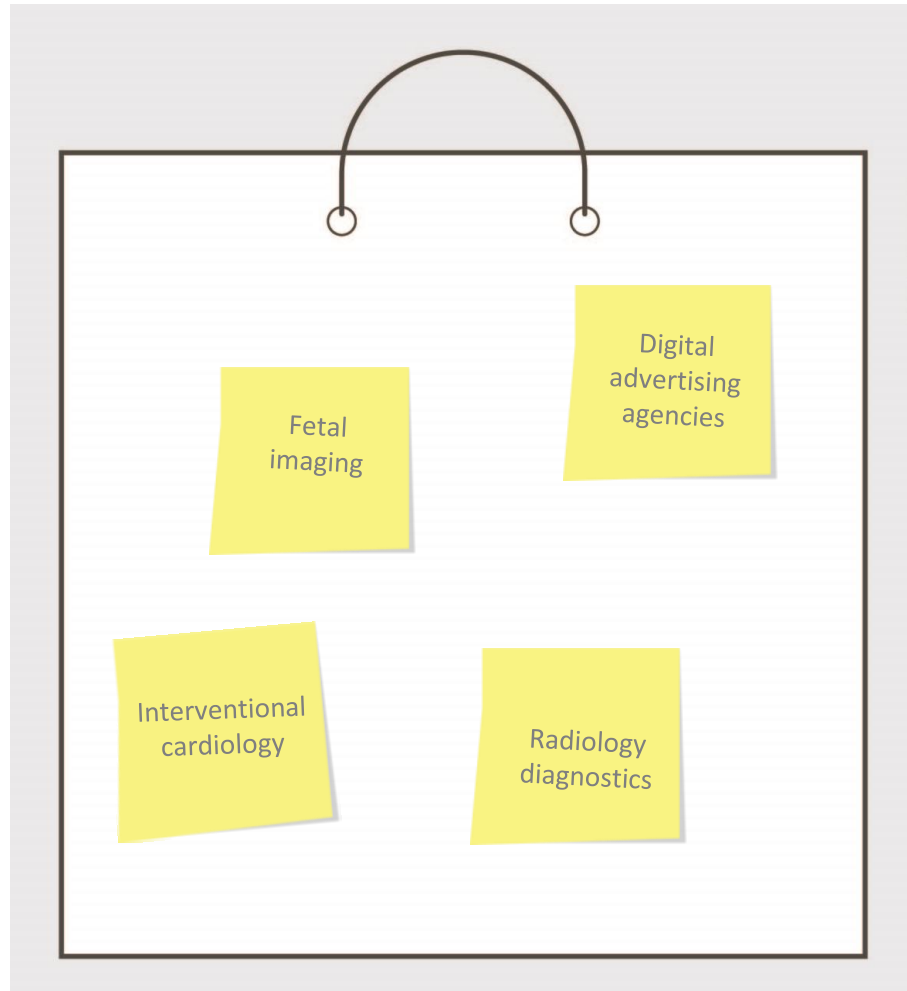
Find the Gold-Mine opportunities



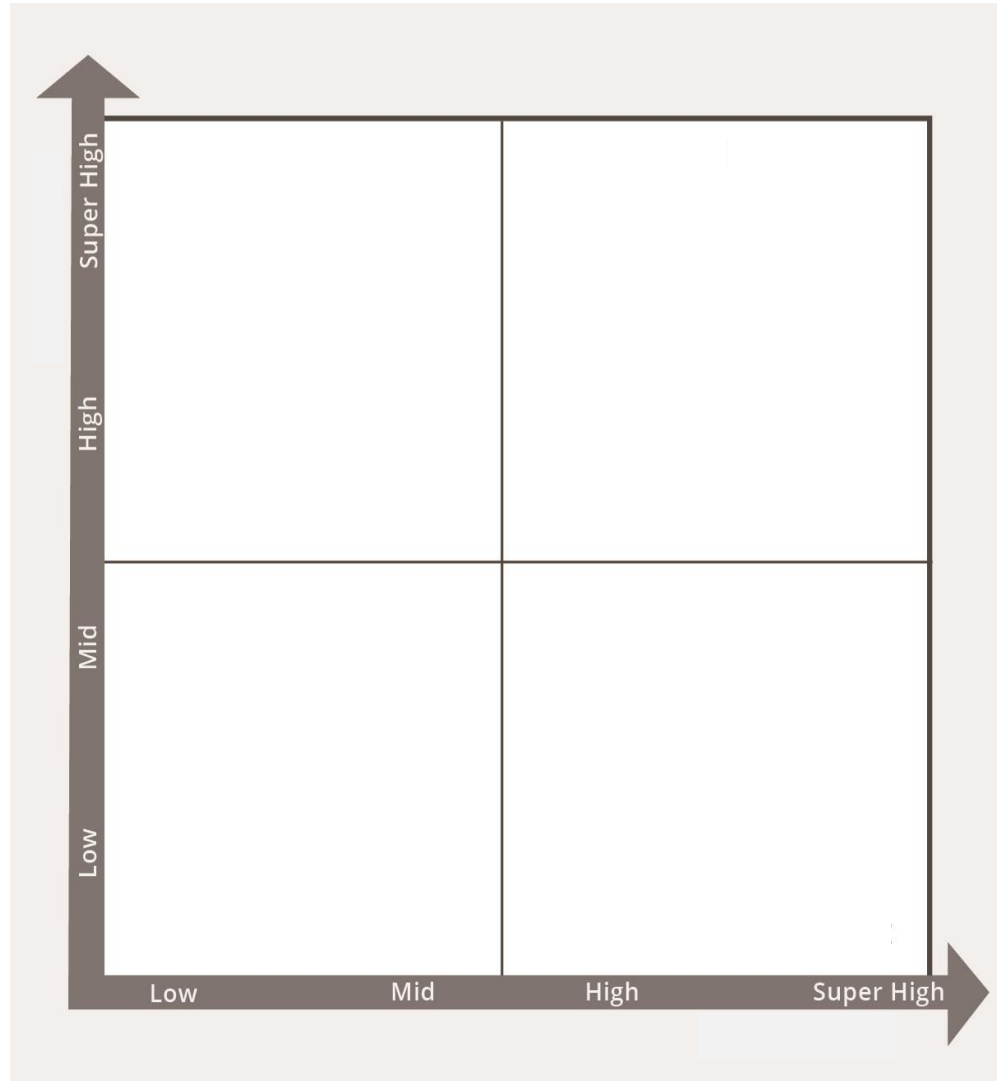
- Uncover promising opportunities
- Invest your time smartly
- Target the right partners or find the right entrepreneur
- Avoid irreversible mistakes

Put your diamonds in the right hands

Which options are more attractive?



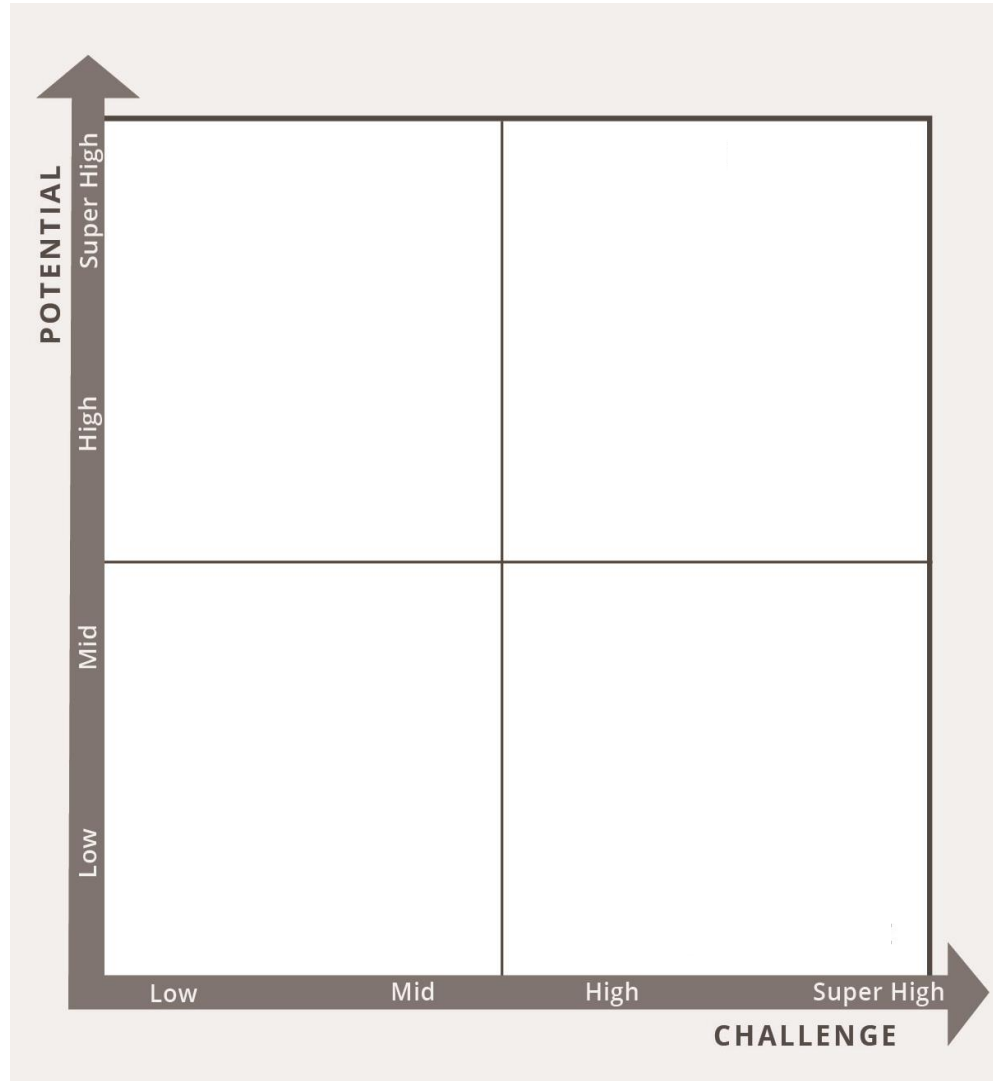
Which options are more attractive?



Which options are more attractive?

Opportunities differ
on their level of:

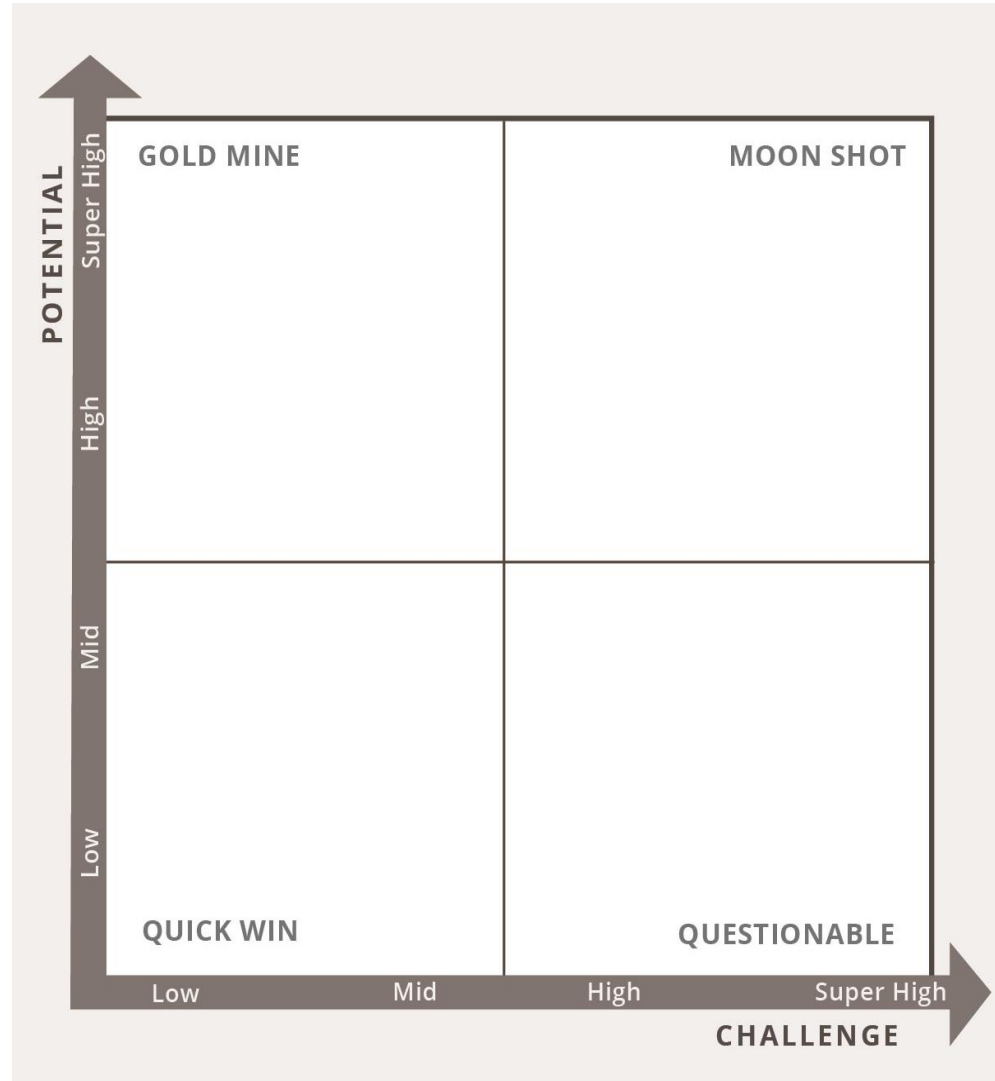
- ✓ **Potential** for value creation
- ✓ **Challenge** in capturing this value



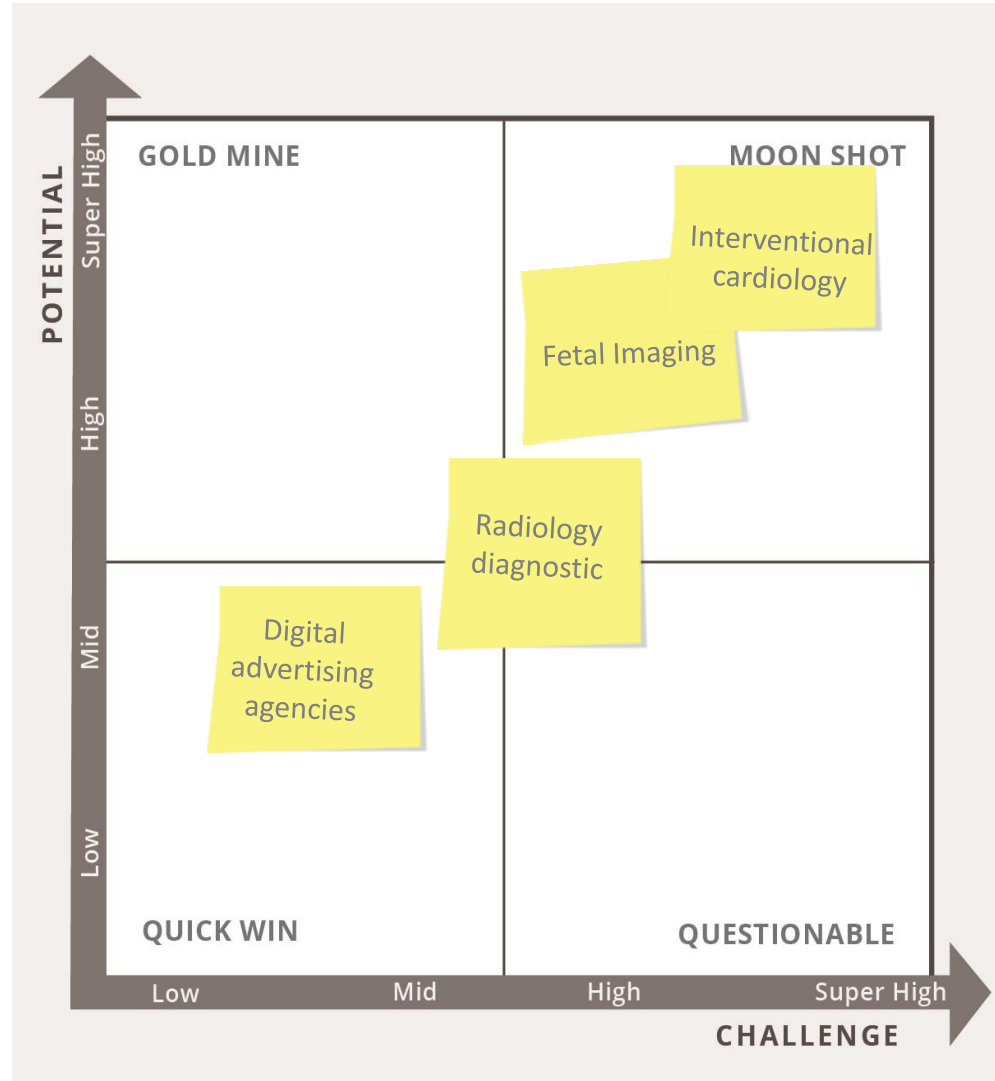
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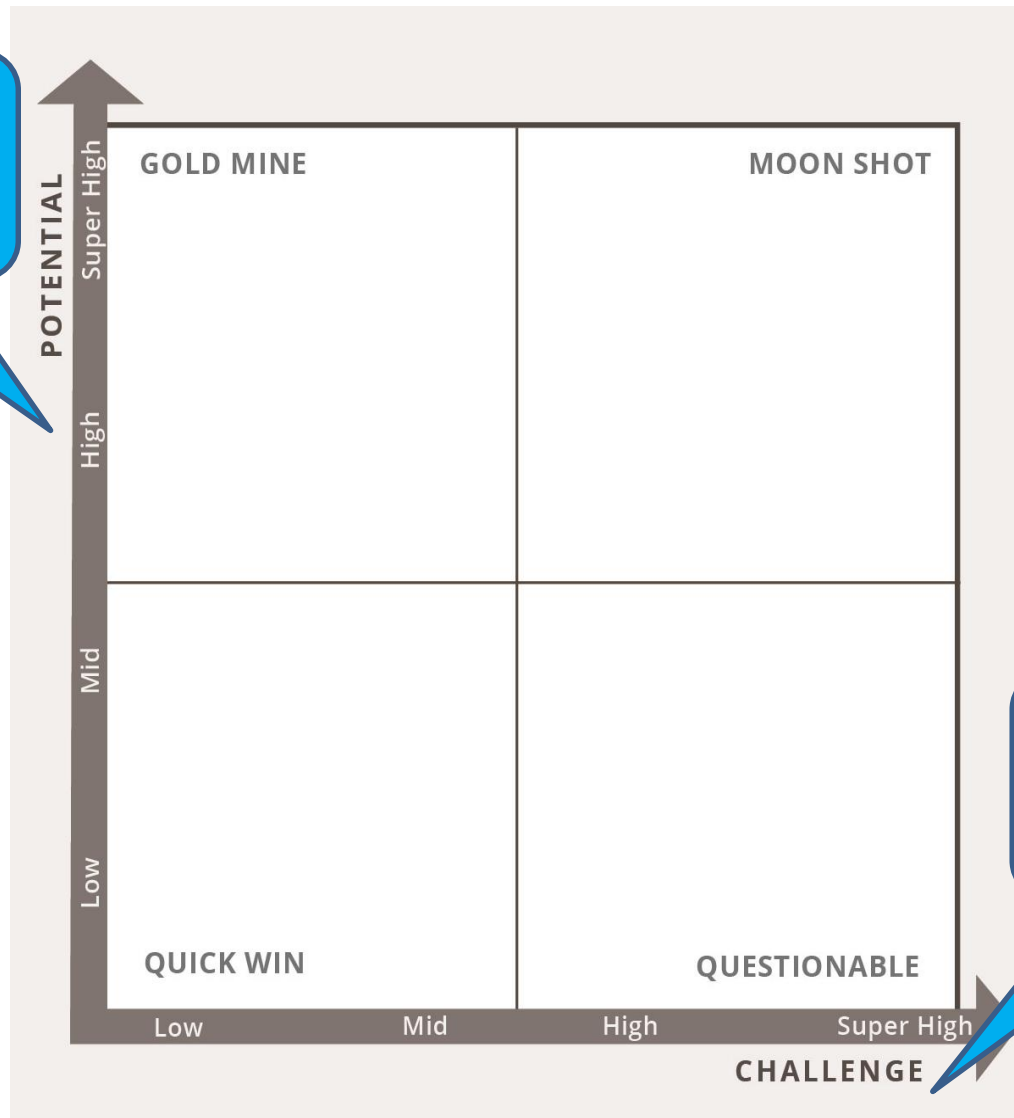


Which options are more attractive?



Gut feeling is not enough...

What shapes the potential of an opportunity?



What shapes the challenge of an opportunity?

Potential for value creation

#1

Compelling Reason to Buy

Will someone really want our offer and be willing to pay for it?

#2

Market volume

How big is this market, now and in the near future?

#3

Economic viability

Is it worthwhile from a business perspective to pursue this market?

Now you can estimate the overall potential

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
-----	-----	------	------------

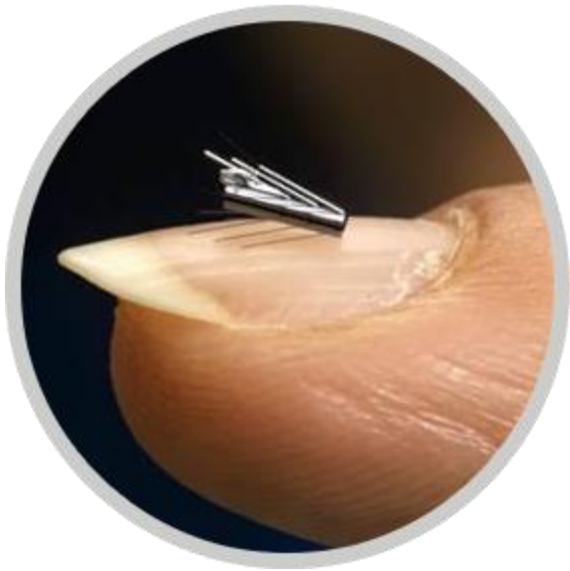
ECONOMIC VIABILITY
Margins (value vs. cost)
Customers' ability to pay
Customer stickiness

OVERALL POTENTIAL

LOW	MID	HIGH	SUPER HIGH
-----	-----	------	------------



Example: Microbot Medical



*Self-cleaning shunts for
'water in the brain'
treatment (Hydrocephalus)*

POTENTIAL



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Effective solution
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MARKET VOLUME

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ECONOMIC VIABILITY

Margins (value vs. cost)
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Customer stickiness

OVERALL POTENTIAL



Challenge in capturing value

#1

Implementation obstacles

How difficult will it be for you to create and deliver your offer?

#2

Time to revenues

How long will it take until you can generate cash flow through sales?


#3

External risks

What obstacles in your business environment can stand in your way?

Now you can estimate the overall challenge

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 CHALLENGE

LOW	MID	HIGH	SUPER HIGH
-----	-----	------	------------

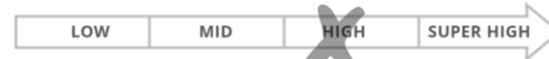


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CHALLENGE



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Competitive threat
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Barriers to adoption

OVERALL CHALLENGE





EVALUATE MARKET OPPORTUNITY ATTRACTIVENESS

NAME

DATE

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



Market Opportunity:

POTENTIAL



COMPELLING REASON TO BUY

Unmet need
Effective solution
Better than current solutions



MARKET VOLUME

Current market size
Expected growth



ECONOMIC VIABILITY

Margins (value vs. cost)
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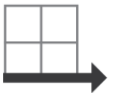
EXTERNAL RISKS

Competitive threat
3rd party dependencies
Barriers to adoption

OVERALL POTENTIAL



OVERALL CHALLENGE



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



EVALUATE MARKET OPPORTUNITY ATTRACTIVENESS

Microbot Medical

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



Market Opportunity: *Self-cleaning shunts for 'water in the brain' treatment (Hydrocephalus)*

POTENTIAL



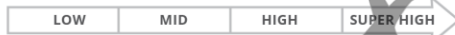
COMPELLING REASON TO BUY

Unmet need
Effective solution
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MARKET VOLUME

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ECONOMIC VIABILITY

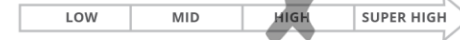
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CHALLENGE



IMPLEMENTATION OBSTACLES

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TIME TO REVENUE

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EXTERNAL RISKS

Competitive threat
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OVERALL POTENTIAL

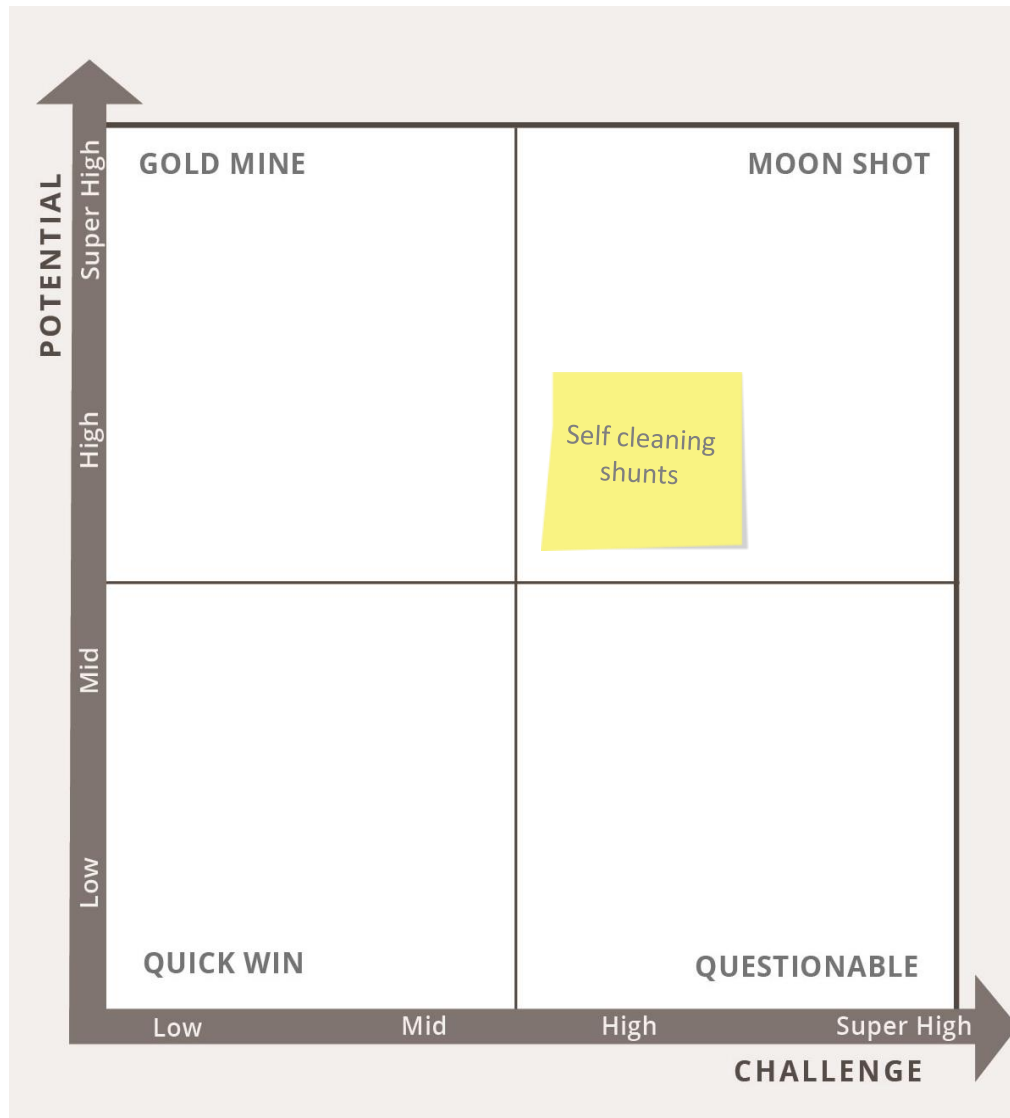


OVERALL CHALLENGE

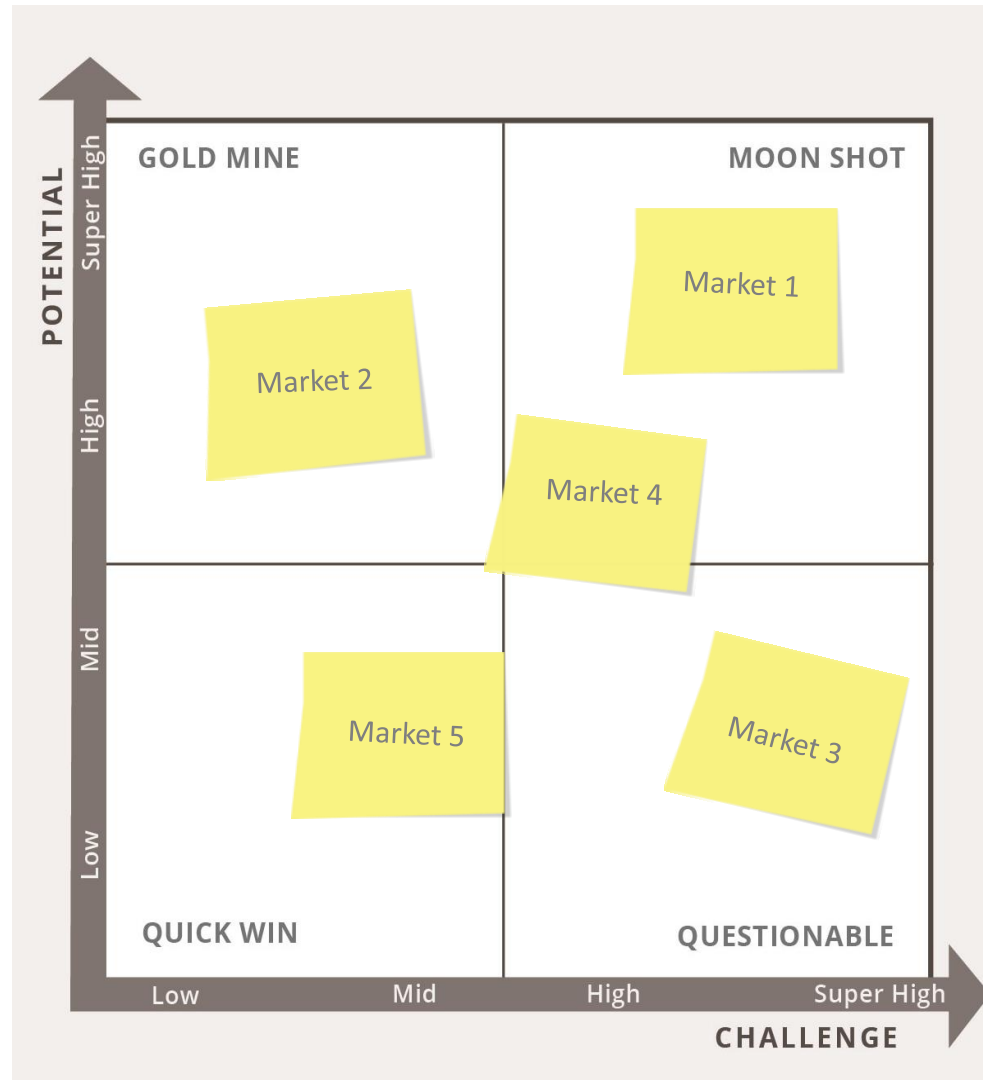


Use the overall ratings to situate each market opportunity on the Attractiveness Map.

Back to the Attractiveness Map



Be flexible in the commercialization effort





EVALUATE MARKET OPPORTUNITY ATTRACTIVENESS

NAME

DATE

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



Market Opportunity:

POTENTIAL



LOW	MID	HIGH	SUPER HIGH
-----	-----	------	------------

COMPELLING REASON TO BUY

Unmet need

CHALLENGE



LOW	MID	HIGH	SUPER HIGH
-----	-----	------	------------

IMPLEMENTATION OBSTACLES

Product development difficulties

Now its your turn...



LOW	MID	HIGH	SUPER HIGH
-----	-----	------	------------

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LOW	MID	HIGH	SUPER HIGH
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OVERALL CHALLENGE

LOW	MID	HIGH	SUPER HIGH
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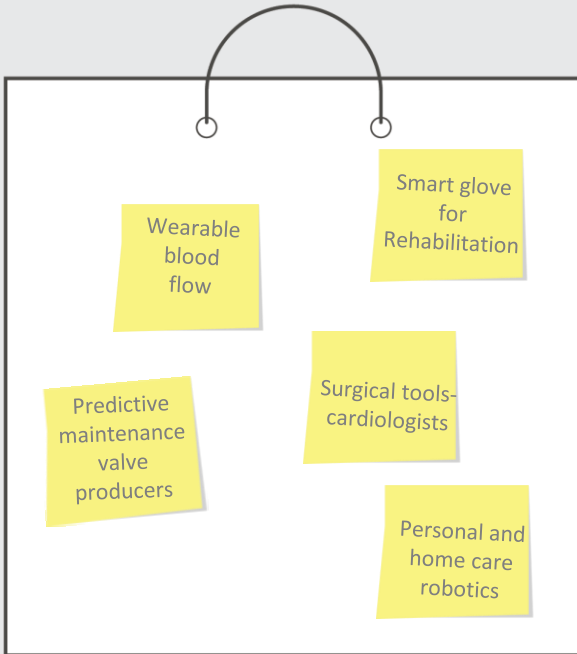


Use the overall ratings to situate each market opportunity on the Attractiveness Map.

Show us what you learned...

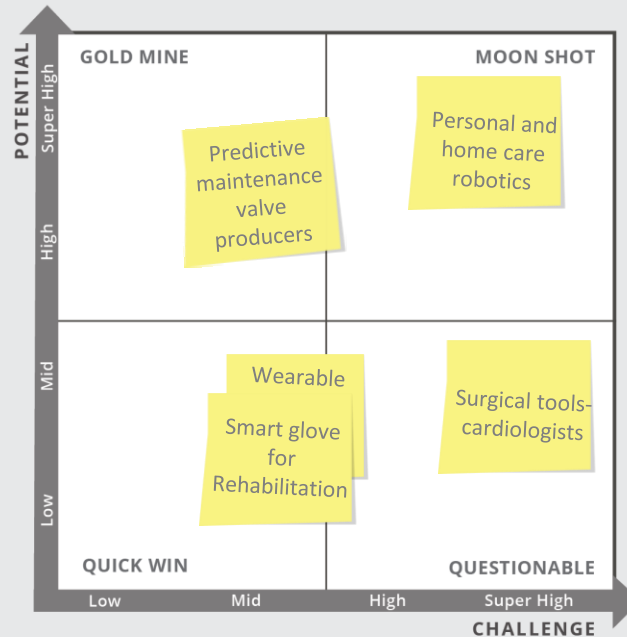
- What are the main markets for this innovation?
- Which one seem more attractive?
- How will it influence the suggested commercialization strategy?
- One main takeaway from this process?

THE MARKET OPPORTUNITY NAVIGATOR



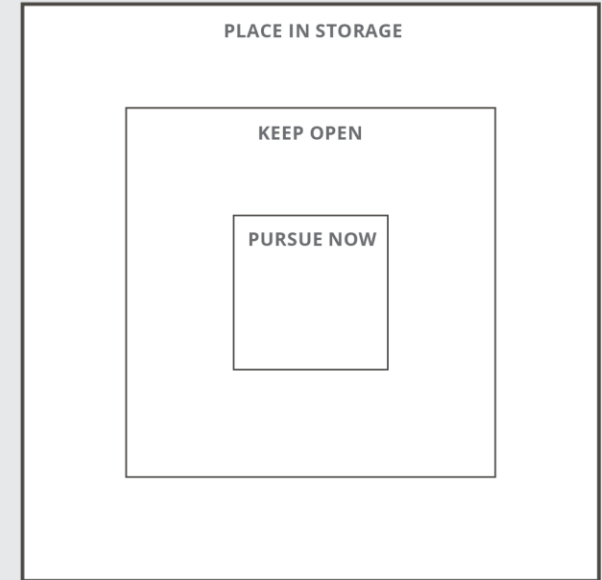
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AGILE FOCUS DARTBOARD

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

Main takeaways

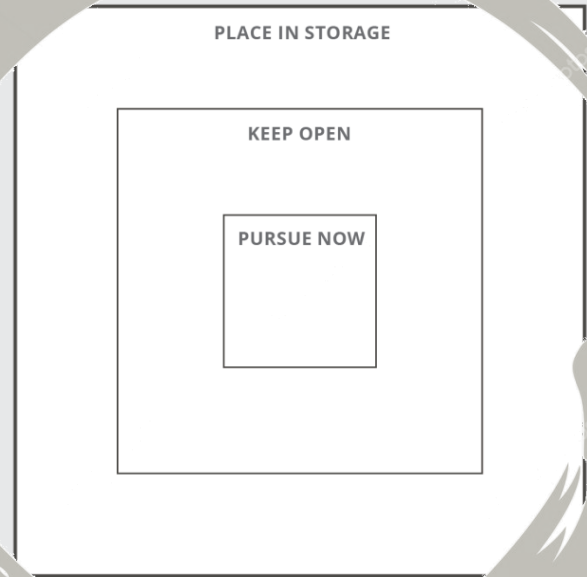
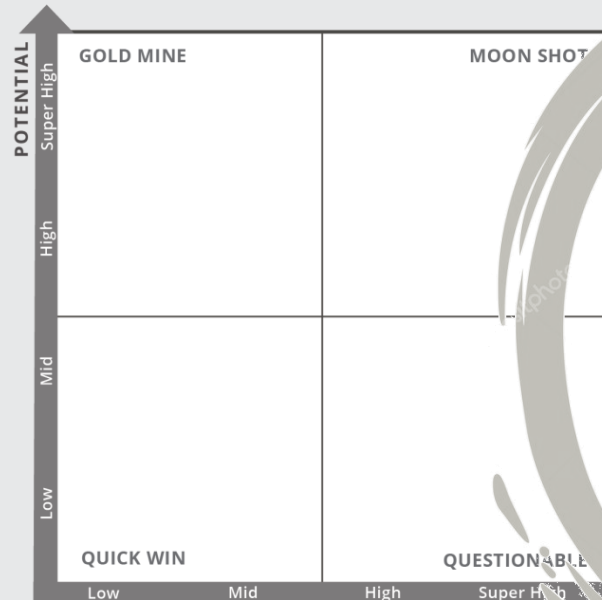
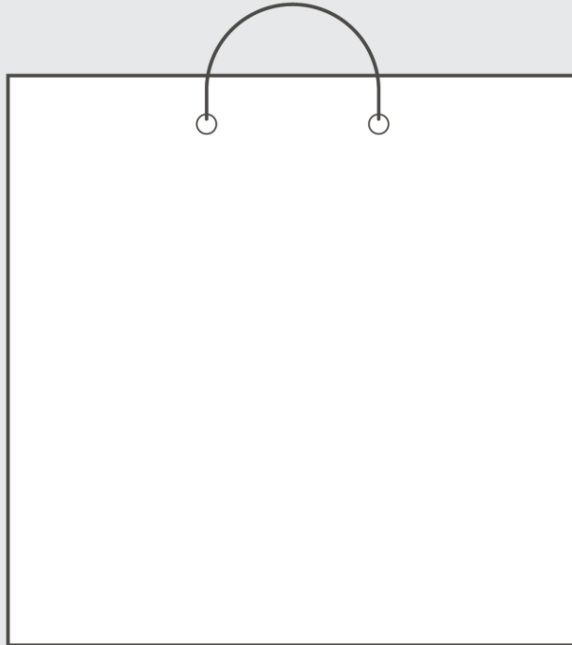
In some cases, choosing the right application is critical for the speed and the success of capturing value!

- Search actively for promising applications and markets-beyond the ones envisioned by the researcher
- A broad overview provides the necessary flexibility in the commercialization effort
- Engage the researcher and your peers to brainstorm together

THE MARKET OPPORTUNITY NAVIGATOR

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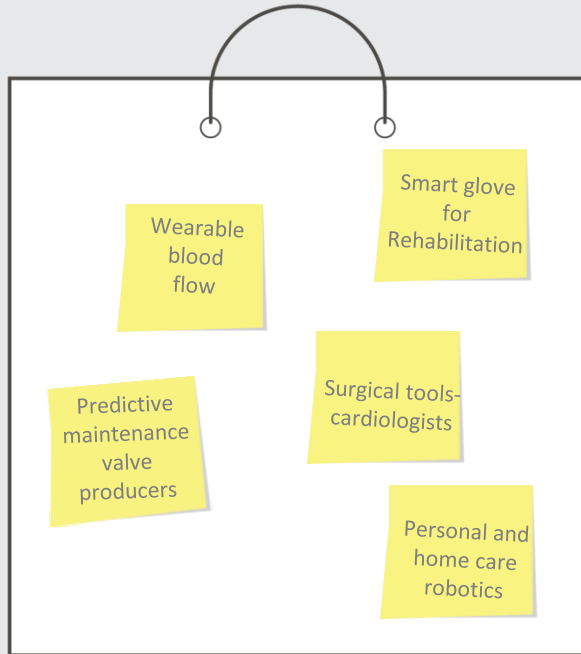
FOCUS DARTBOARD

- 3 Use Worksheet 3 to develop a strategy, and place it on the board



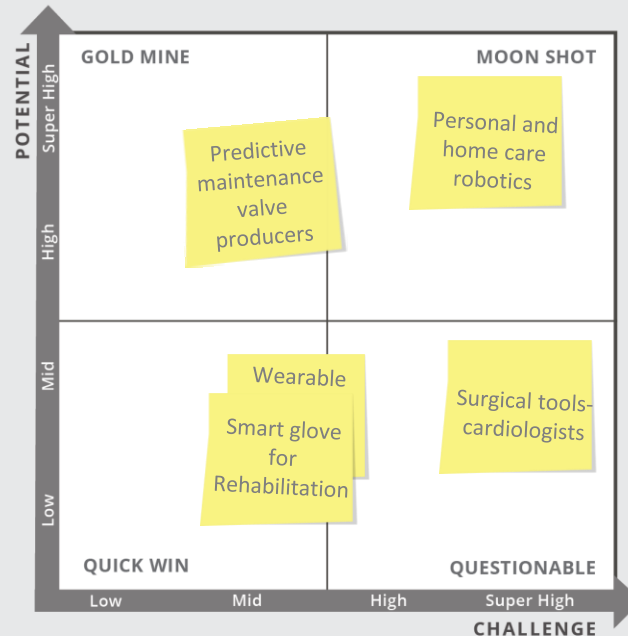
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Use sticky-notes™ to represent each market opportunity

THE MARKET OPPORTUNITY NAVIGATOR



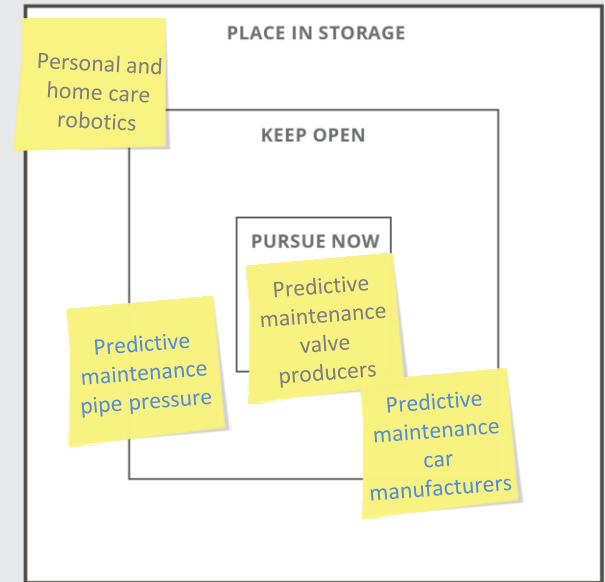
MARKET OPPORTUNITY SET

- 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

Additional usages of this structured process



Workshops for researchers – adopt a wide perspective from the outset



Decision making tool for spin-outs:

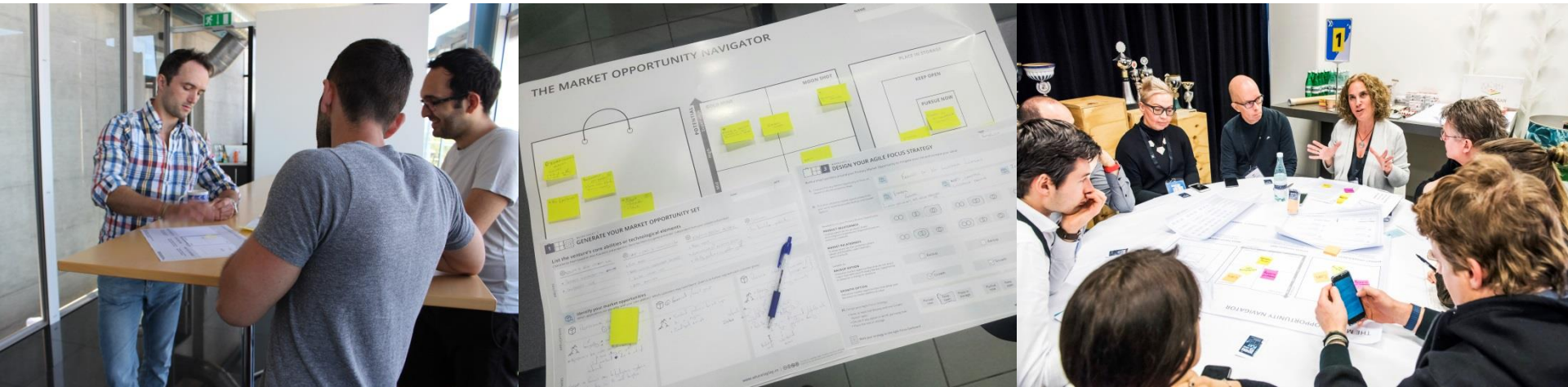
- Setting a focused strategy
- Pivoting
- Growing

How to run a workshop in your department?



Market Opportunity Brainstorming Workshop

- This workshop is intended to researchers and faculty members from a specific department.
- During the workshop, they will engage in a hands-on, lively activity to come up with as many applications as possible for pre-selected research projects within their department.



Market Opportunity Brainstorming Workshop

Objectives

- Open up researchers to thinking about the commercial applications of their research – as early as possible
- Find out potential market opportunities for pre-selected technologies to advance their commercialization effort
- Enhance the cooperation of the researchers and the reputation of the tech transfer department

Market Opportunity Brainstorming Workshop

Preparation

- Invite faculty members for a 1.5 hour session
- Pre-select few research projects from the specific department to work on
- Print large copies of worksheet 1 and the Market Opportunity Navigator, bring colored sticky-notes
- Have fun 😊

Market Opportunity Brainstorming Workshop

Suggested program:

Time	Content
15 minutes	Introduction: how to identify market opportunities for a specific innovation using Worksheet 1
20 minutes	Presentation of pre-selected technologies (5 minutes each) and group assigning (either voluntarily or pre-selected)
40 minutes	Group work on Worksheet 1 to generate a set of market opportunities
15 minutes	Group presentation and main takeaways from the process

Supporting materials

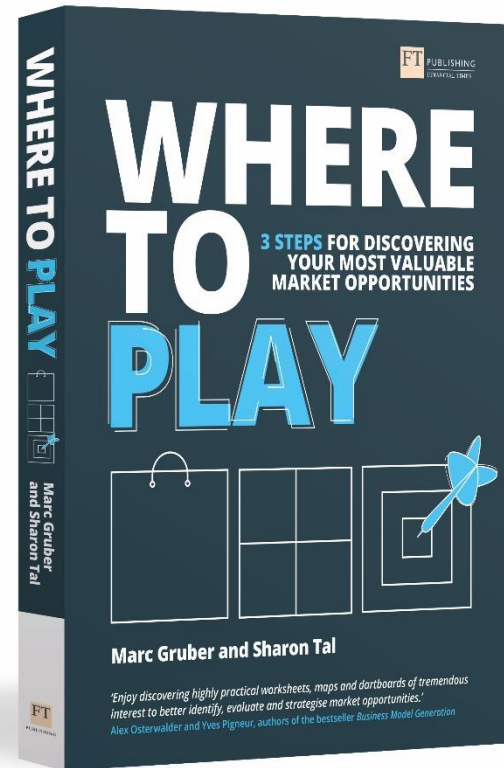


The book: Where to Play

Takes you by the hand through
the entire process,

Including:

- Cases and examples
- Theoretical foundations
- Use cases beyond startups



“Designed to work seamlessly with our Business Model and Value Proposition Canvases, the *Market Opportunity Navigator* will help entrepreneurs and innovators to commercialize technologies. You will enjoy discovering highly practical worksheets, maps and dartboards of tremendous interest if you want to better identify, evaluate and strategize market opportunities. Let yourself be charmed by the toolkit and the case studies, along with the thoughts of Marc and Sharon”.

Alex Osterwalder and Yves Pigneur, authors of the bestseller *Business Model Generation*

Free online course on edX



Find the right markets for your innovation- A tool for entrepreneurs and innovators

- Over 8 hours of bit-sized videos
- Including examples, interviews, and practice quizzes
- Great basis for flipped classroom learning or class presentations

YouTube Channel: Market Opportunity Navigator



Introduction to the Market Opportunity Navigator |...



Market Opportunity Navigator | Where to Play



Workshop at Cornell tech's Runway Program



Short Case Study

More content on our website



www.wheretoplay.co

- ✓ There are many articles and blog posts on the website which can enrich your reasoning.
- ✓ You can also download the Market Opportunity Navigator and its 3 worksheets here

Questions?

