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

Dr Sharon Tal, March 2019
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Co-founder and former executive director of the Technion Entrepreneurship Center</td>
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<tr>
<td>Lecturer on entrepreneurship and marketing for high-tech start-ups</td>
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<tr>
<td>Vast experience in marketing and strategic consulting</td>
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</table>
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?
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
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?

<table>
<thead>
<tr>
<th>Time</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-9:30</td>
<td>Introduction and overview</td>
</tr>
<tr>
<td>9:30-9:45</td>
<td>Presentations of today’s technology</td>
</tr>
<tr>
<td>9:45-10:15</td>
<td>Step 1: identifying market opportunities for an innovation</td>
</tr>
<tr>
<td>10:15-10:30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>10:15-10:45</td>
<td>Group work on Worksheet 1 to generate a set of market opportunities</td>
</tr>
<tr>
<td>10:45-11:30</td>
<td>Step 2: evaluating the attractiveness of market opportunities</td>
</tr>
<tr>
<td>11:30-12:30</td>
<td>Group work on Worksheet 2 to generate the Attractiveness Map</td>
</tr>
<tr>
<td>12:30-13:30</td>
<td>Lunch break</td>
</tr>
<tr>
<td>13:30-14:10</td>
<td>Group presentations &amp; takeaways</td>
</tr>
<tr>
<td>14:10-15:00</td>
<td>How to apply the Navigator in your department &amp; supporting materials</td>
</tr>
</tbody>
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So let's 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.
Enabling objects to feel touch

Skin like" patch configuration

Fully printed low cost fabrication

High resolution touch and location sensing

Low power consumption

Fast milliseconds response times

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)

Drug delivery system
Office machine for concept models
Surgical models
Artificial bones
Sculpture from photographs
Service bureau for architectural models
Ceramic molds for casting metal parts
Ceramic filters for power generation

Source: Prior Knowledge and the Discovery of Entrepreneurial Opportunities/ Shane
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
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.

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.

Application + Customer = Market Opportunity

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

Example: RealView Imaging
**Real View**

### 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

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**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
  - Orthopedic
- Diagnostic imaging
  - Radiology labs
  - Fetal imaging

#### Entertainment/ Education
- Gaming
  - VR game developers
  - Headsets developers
- Education
  - Museums
  - Schools

#### Commercial Applications
- Digital Advertising
  - Ad agencies
  - Large brands
- Computer aided design

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Place the market opportunities that you would like to evaluate in the Market Opportunity Set.
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market opportunity = any combination of application + customer
Use sticky-notes to represent each market opportunity

NAME: FeellIT
DATE: 

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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.

Now it’s 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.

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

### 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

### Applications
- Wearables
- Medical
- Industrial and machineries

### 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.

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

- Fetal imaging
- Interventional cardiology
- Digital advertising agencies
- Radiology diagnostics
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
Which options are more attractive?

Opportunities differ on their level of:

✓ **Potential** for value creation

✓ **Challenge** in capturing this value
Which options are more attractive?

- **GOLD MINE**
  - Interventional cardiology
  - Fetal Imaging
  - Radiology diagnostic
- **QUICK WIN**
  - Digital advertising agencies
- **QUESTIONABLE**
- **MOON SHOT**

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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**

- **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)
  - Customers’ ability to pay
  - Customer stickiness

**OVERALL POTENTIAL**
Self-cleaning shunts for ‘water in the brain’ treatment (Hydrocephalus)
Challenge in capturing value

**Implementation obstacles**
#1 How difficult will it be for you to create and deliver your offer?

**Time to revenues**
#2 How long will it take until you can generate cash flow through sales?

**External risks**
#3 What obstacles in your business environment can stand in your way?
Now you can estimate the overall challenge
Self-cleaning shunts for ‘water in the brain’ treatment (Hydrocephalus)
EVALUATE MARKET OPPORTUNITY ATTRACTIVENESS

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)
  - Customers' ability to pay
  - Customer stickiness

CHALLENGE

- IMPLEMENTATION OBSTACLES
  - Product development difficulties
  - Sales and distribution difficulties
  - Funding challenges

- TIME TO REVENUE
  - Development time
  - Time between product and market readiness
  - Length of safe cycle

- 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.
Market Opportunity: Self-cleaning shunts for ‘water in the brain’ treatment (Hydrocephalus)

Potential:
- **Compelling Reason to Buy**: Unmet need, Better than current solutions
- **Market Volume**: Current market size, Expected growth
- **Economic Viability**: Margins (value vs. cost), Customer stickiness

Challenge:
- **Implementation Obstacles**: Product development difficulties, Funding challenges
- **Time to Revenue**: Development time, Length of safe cycle
- **External Risks**: Competitive threat, Barriers to adoption

Overall Potential: Low
Overall Challenge: Low
Be flexible in the commercialization effort

![Diagram showing market potential and challenge]

- **GOLD MINE**
  - Market 2
  - Market 1

- **QUICK WIN**
  - Market 5
  - Market 3

- **QUESTIONABLE**

- **MOON SHOT**

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Now its your turn...
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?
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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
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FOCUS DARTBOARD
3. Focus strategy and resources on the most promising market opportunities

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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 for 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.
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
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 😊
### Suggested program:

<table>
<thead>
<tr>
<th>Time</th>
<th>Content</th>
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<tbody>
<tr>
<td>15 minutes</td>
<td>Introduction: how to identify market opportunities for a specific innovation using Worksheet 1</td>
</tr>
<tr>
<td>20 minutes</td>
<td>Presentation of pre-selected technologies (5 minutes each) and group assigning (either voluntarily or pre-selected)</td>
</tr>
<tr>
<td>40 minutes</td>
<td>Group work on Worksheet 1 to generate a set of market opportunities</td>
</tr>
<tr>
<td>15 minutes</td>
<td>Group presentation and main takeaways from the process</td>
</tr>
</tbody>
</table>
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
More content on our website

✓ 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

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