Spotting Market Needs

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Characteristics of the Entrepreneur

Optimism, desire, motivation
Because of intention – (Bandura et al)

Entrepreneurial alertness (Kirzner)

In Cambridge – \( f = (\text{networks} + \text{people with research based ideas} + \text{culture that says it is OK}) + (\text{sources of advice} + \text{funding} + \text{expertise}) \)

But where are the paying customers?
If I have 1% of the $5bn market… (one of the lies!)

But which 1%
Where are they?
Are they organisations or consumers?
What will it cost to reach them?
At what price point will they buy?
Will you be able to service them?
Are they part of a growing or shrinking trend?
Who is competing in the same space?
What makes your offer different?
Opportunity Recognition – Intuition and rational thought combination
Methodical Translation journey

- Novel Patentable Policeable technology
  - Technical attributes
    - Faster
    - Smaller
    - Cheaper
  - Technical advantage
    - Faster: 10x
    - Smaller: 2X
    - Cheaper: 1X
  - Brainstorm: Comparison With rival technologies
  - Create and Understand Potential applications Segmentation
  - Market dynamics Routes to market Commercialisation
  - Market size
  - Potential buyers
  - Reasonable returns

Significant wins

Applications - commercial advantages
  - Viable applications
Innovation and the University’s mission

The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence.
The Cambridge model

- Recruit the best academics in the world
- Give them the freedom to do what they choose.
- IP belongs to the University unless requested by the academics
Isaac Newton
“If I have seen further it is by standing on the shoulders of giants.”

Isaac Newton, in a letter to Robert Hooke, 5 February 1676
Cambridge ideas change the world
Cambridge ideas change the world
A long history of innovation

Cambridge University Press:
Established 1534

Harvard University:
Established 1636
A long history of innovation

• More than 180 spin-outs from the Computer Laboratory alone; building on the legacy of Babbage and Turing
Cambridge ideas change the world

EDSAC ➔ ARM ➔ Raspberry Pi

Crick & Watson ➔ Solexa (acquired by Illumina in 2006) ➔ BlueGnome (acquired by Illumina in 2012)

DNA sequencing ➔ Screening for aneuploidy
Leading to Europe’s most successful technology cluster

1,500 cluster companies
54,000 employees

89 Nobel Prize Winners

Whittle, Turing, Darwin, Watson & Crick, Babbage, Rutherford, Sanger……

2 x $10bn companies
10 x $1bn companies

world leading underpinning science

a vibrant Cambridge Cluster Economy

 ARM
Autonomy

abcam
AVEVA
CAT
CSF
DOMINO
IONICA
Solega
Virata
“Cambridge Enterprise exists to help University of Cambridge inventors, innovators and entrepreneurs make their ideas and concepts more commercially successful for the benefit of society, the UK economy, the inventors and the University”
Cambridge Enterprise Group
CAMBRIDGE ENTERPRISE
PORTFOLIO COMPANIES
HAVE RAISED OVER
£1 BILLION
IN FURTHER FUNDING
......... to date
Meeting customer Needs - PULL & PUSH
Remember

Universities tend to create technologies

Consumers buy products and services
How do you test lung function on a child who is unconscious?
The steps towards a solution:

One of the company Founders knew Philip Guildford in Engineering which led to Joan Lasenby and her work for the gaming industry

the algorithm

Hardware was needed to house the algorithm which led to a local consultancy firm Plextek

the design

It needed to be tested – Dr Richard Iles a consultant in Respiratory Paediatrics at Addenbrookes was keen to help

the clinical testing
A company is created

PneumaCare was founded in 2009 based on the clinical need for better lung function assessment in children.
Where are the markets? And why?
The Market Pull

There is a huge market need for a portable device - WHY?

If you need to have your lungs tested you have to be:

**Mobile** to get to the hospital testing area

**Conscious** to undertake instructions

**Well enough** to sit upright for a length of time while the tests are undertaken

And then there is the **cost**……..

The PneumaCare solution lowers healthcare costs by allowing detection of diseases earlier and easier in wider patient population.
Seven awards since founded

Launched two products

Used in hospitals in the UK & abroad

Funded by Cambridge Enterprise Seed Funds
Sometimes the best ideas are the most obvious ideas
Wittgenstein's *Tractatus Logico-Philosophicus*

- 6.54 "My propositions serve as elucidations in the following sense: anyone who understands me eventually recognizes them as nonsensical, when he has used them - as steps - to climb up beyond them. (He must, so to speak, throw away the ladder after he has climbed up it.)

He must transcend these propositions, and then he will see the world aright."
Polymer Opals

• Polymer Opals are a new material that produce a range of pure, vibrant colours solely through their structure.

• Polymer Opals can be made to produce any colour on the visible spectrum, and even beyond…

• By layering differing Polymer Opals, or including dyes, the colour capabilities of Polymer Opals can be expanded even further.

http://www.youtube.com/watch?v=v3jlooc0t0yU&feature=youtube
Where are the markets? And why?

What products or services might this technology lead us to?

Why would customers buy Polymer Opals?

If you were the scientist what would you do next?
Novel nano-porous membrane

**Technology**
It is a novel method of producing nano-porous material

**Advantages:**
- Simple coating technology
- Cheap process
- Improved support performance by an order of magnitude
What markets would you focus on and why?
What have we done?

- Brainstormed millions of applications....
- Talked to people for each market/market segment
- Listened to their problems
- Think! Are the features of your technology benefits in those markets?
- What are the feasible applications?
- Talked with the market again, what would they want to see from a technology?
- Developed a Proof of Concept that will reduce their perception of risk
- Keep them involved in the whole process
- Keep our fingers crossed!

- Important: Talk with people and do not stand still!
You (think you) have an idea

Cambridge Enterprise

is happy to work

with you

to determine the best

route for

commercialisation
Innovation and the University’s mission

The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence.
Thanks

www.enterprise.cam.ac.uk