



Business, Innovation & Organisations

Fiona Reid

*Associate Fellow
Said Business School
University of Oxford*

MEDICIS-PROMED

February 2015



Introduction – big picture

- What can science do? What do you have an opportunity to be part of
- Structure of this network – interface, connections, science-business
- Innovation enabled & channeled through money - need to know processes, operates
- What is this world – values, language, enough
- Not in the books

The business aspects of kick-off week



- Taste of what to come
- Context in which innovation exists
- Deep dives, outlines

Useful skills for you

- Language & Behaviours in Business
- Perceptions of 'value'
- Team-working within different values sets
- Innovation meanings?
- Problem-solving
- Seeing science in context

Using framework of ideas, innovation to talk about business	The difference between good idea and business opportunity	Evaluating ideas, using knowledge of what a market is and how it works
Major routes from idea to new venture	How organisations work – the anatomy of business	Organisational environments around MEDICIS-Promed
How different groups evaluate innovation	Language and meaning in business	Patents and protection
EXERCISES	Four finance flows	ASK QUESTIONS

What's more important for innovation

- People or ideas

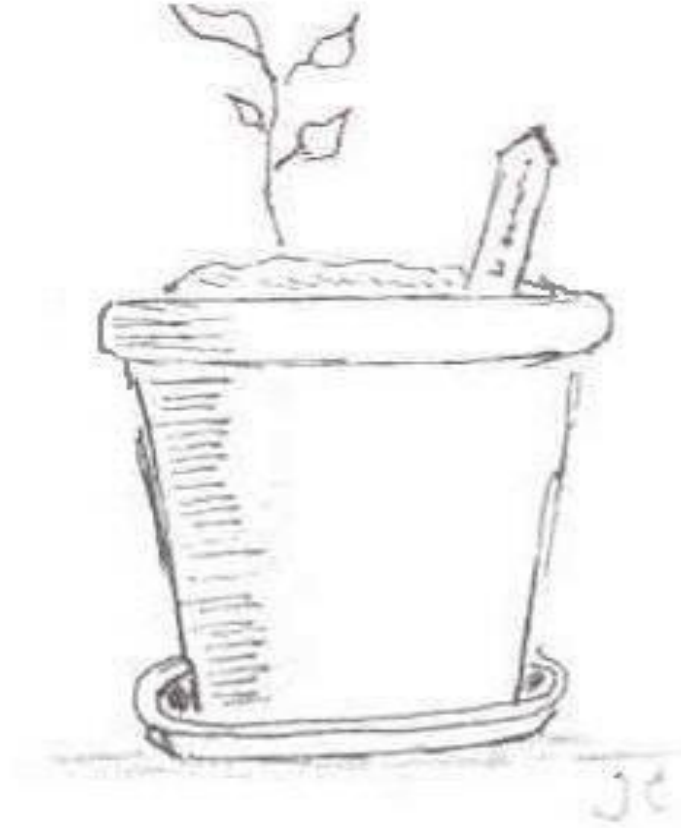


Idea?



People?

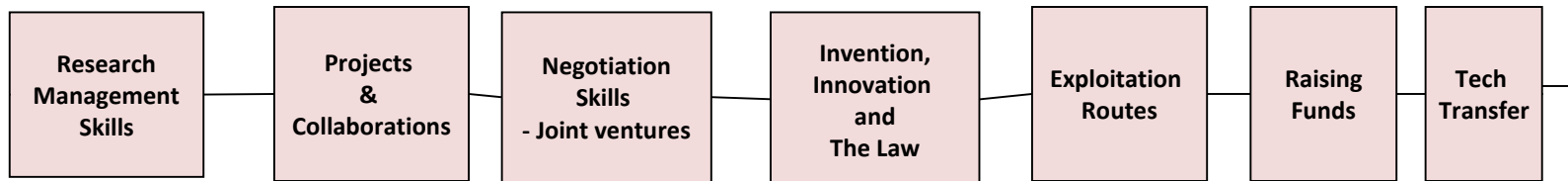
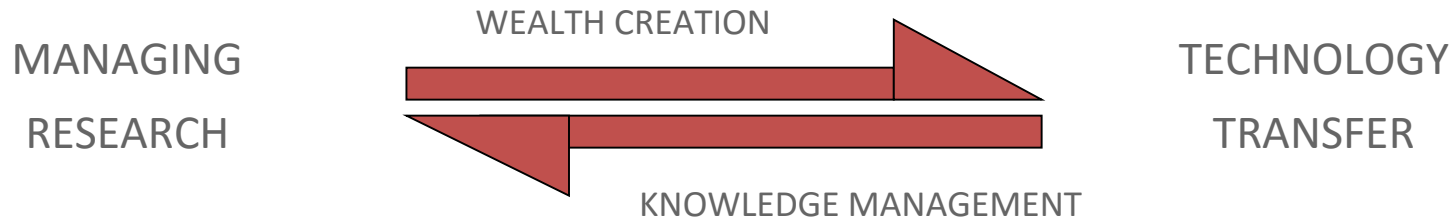
You



Management – Academic Trajectory



(typically for Bio Science Researchers Skilled in Knowledge Transfer)



Clash of method as well as culture and output

BUSINESS

- Driven by external needs
- Clear goals with shareholder commitments
- Commercial confidentiality

“Academics never deliver”

RESEARCHERS

- Self directed
- Next step defined by yesterday's results
- Free exchange of ideas

“Industry is out to cheat us”

→ So we can expect it will be challenging to build a mutually trusting relationship

When scientists meet business.....



Scientists like:

The word 'Innovation'

Intellectual property

Routinely over-valuing their idea

Seeing their invention out there in the world

Money = not having to write a research grant application again

Peer approval & status

Unfettered research funding

Academia is measured by journal articles and reputation arising thereof

Scientists dislike:

Marketing, Sales and selling

Educated guesswork

Simplification

People 'stealing their ideas'

Tech transfer offices

The words 'exploitation' and 'commercialisation', 'corporate', 'managerial'

The opinions of investors





ROUTES TO COMMERCIALISATION

Where are you now?

Commercial knowledge transfer routes from position of researchers



- Licensing
- Creating a company using a research organisation's intellectual property (spinout)
- Creating a company not from within an organisation, where there is no intellectual property, or you own it (start-up)
- Consultancy

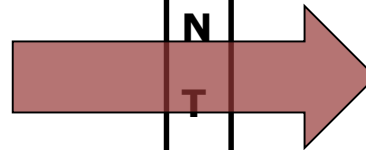
Anatomy of a Spinout

This side is a project

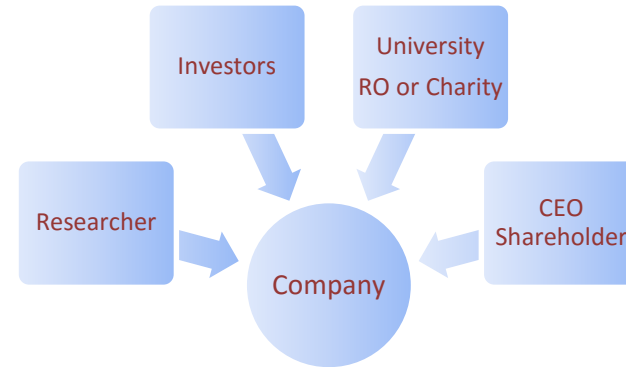


These people work together to create the new venture

I
N
V
E
S
T
M
E
N
T



This side is a company

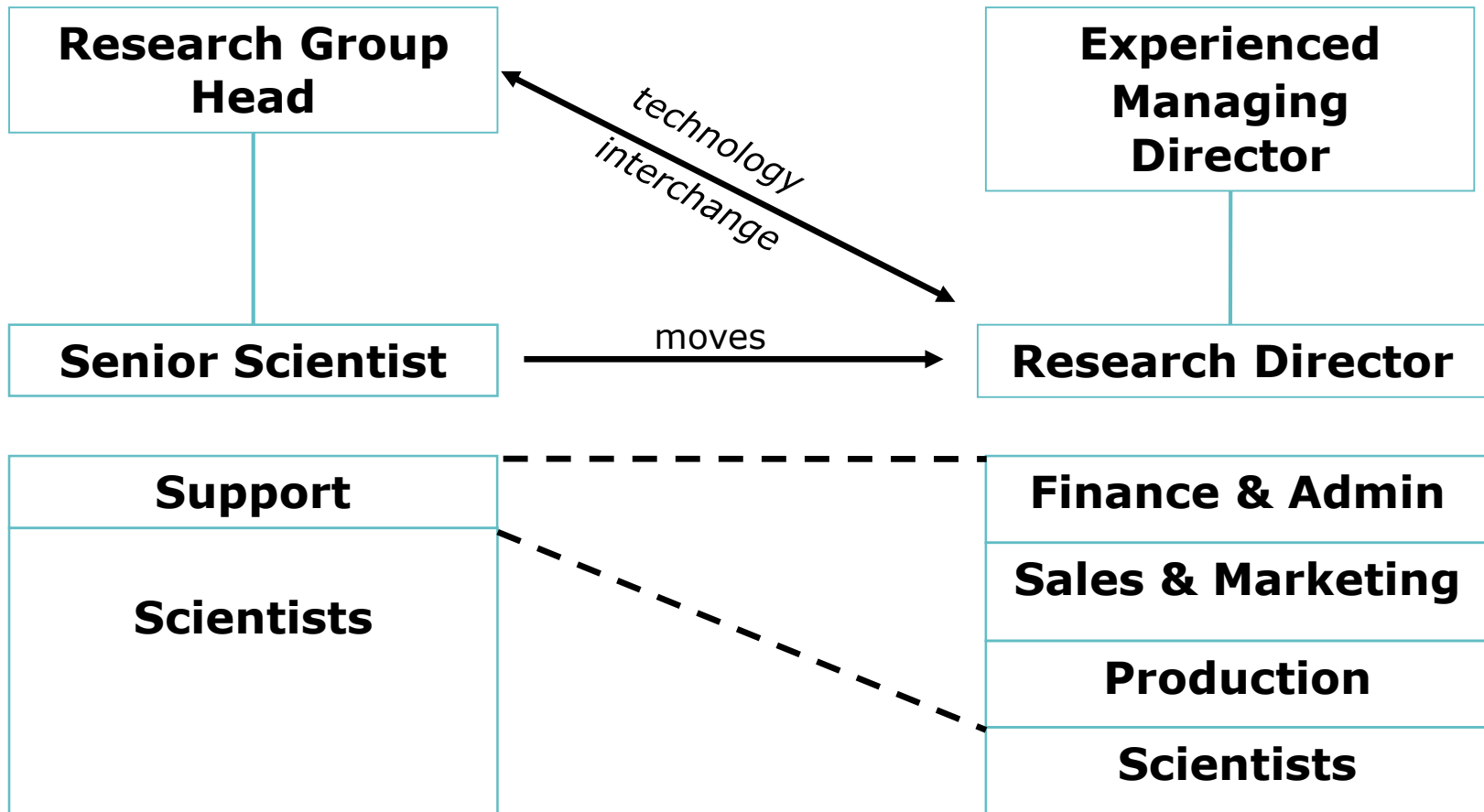


....which is then owned by a mixture of these people, who are shareholders

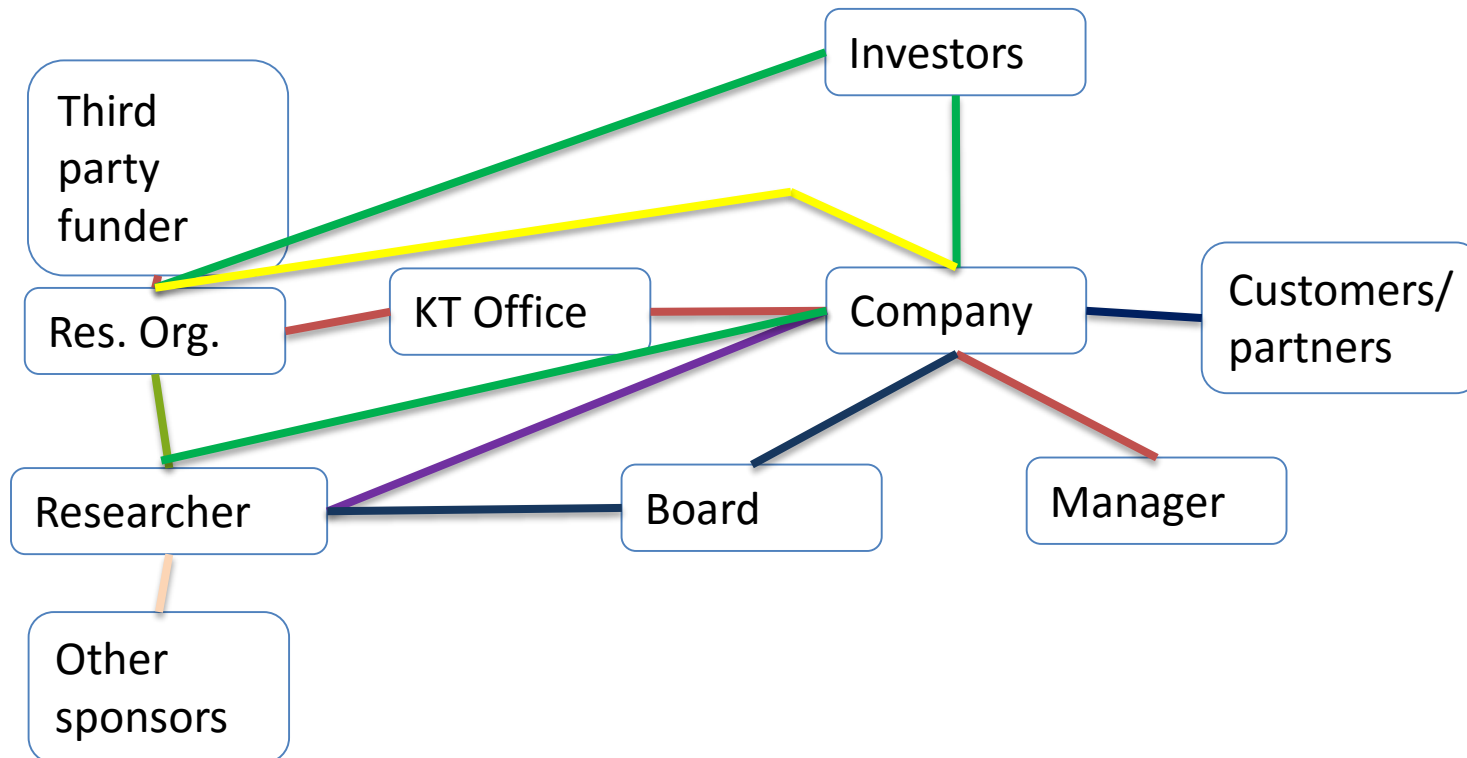
People changes in creating a new venture

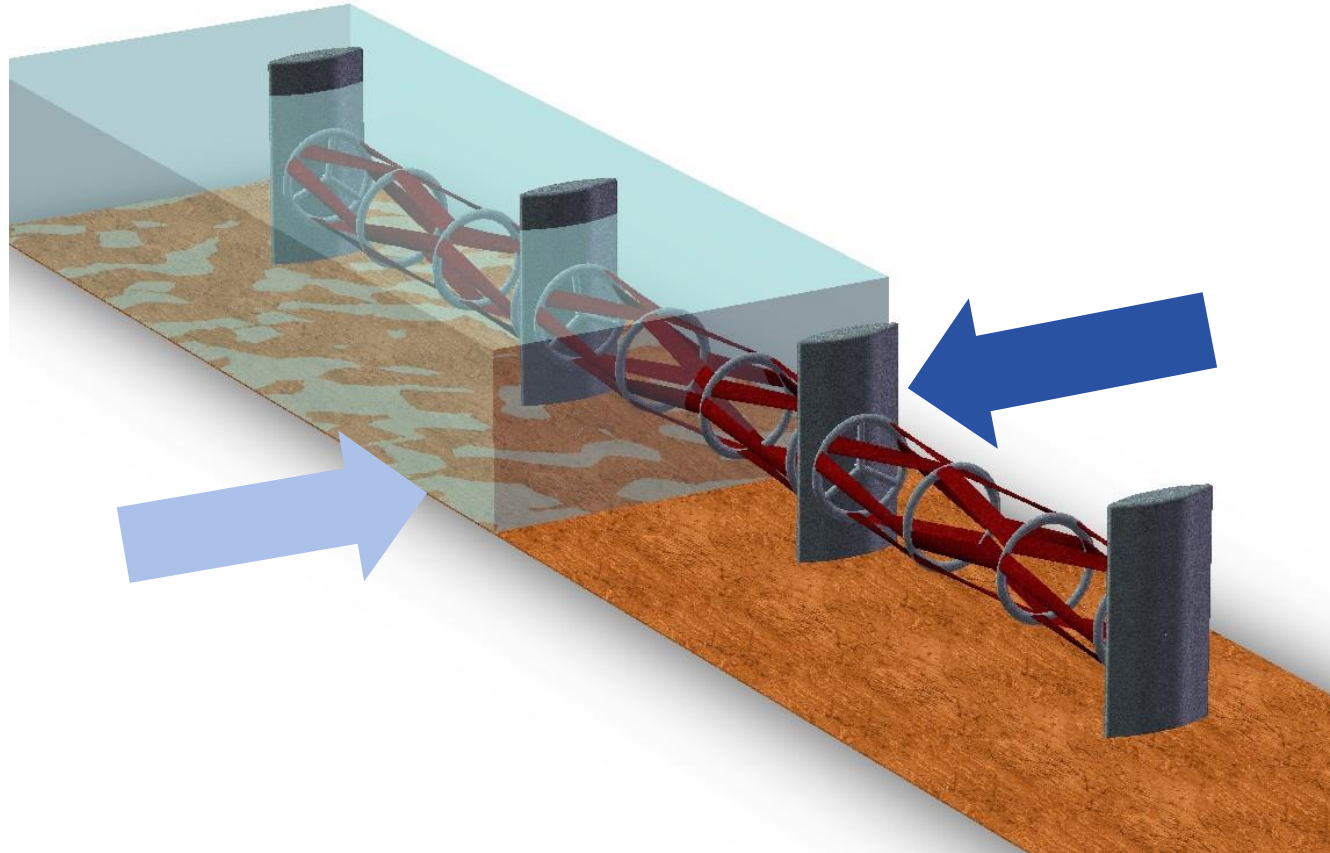
Research Organisation

New Company



- It can be complicated...the lines represent agreements...in a simple case





Turbine rotates in the same direction for both rising and ebbing tides, reducing the mechanical complexity of the device

Not how does it work, what does it do?



- **Functionality:**
 - Context dependent
 - Functionality only counts when it is linked to end-user requirements

- **Performances**
 - Functionality = a set of performances
 - Avoid label on your technology, don't attach it to a market data pie chart, it can restrict what you consider as a market application

Two tricks



- 1 Focus on what the end-user wants, rather than what you think they should want.
- ➔ Referring to THWAT turbine, energy companies might want production from renewables at comparable cost to existing sources, back-up technologies in case of regulatory change, PR.
- 2 a) Define functionality provided by a product, in as specific terms as possible, eg “Biosensors indicating levels of bioavailability”
- 2 b) Enter into a search engine the Functionality AND a word like “problem”, “need” or “requirement”



A short introduction to

ORGANISATIONS

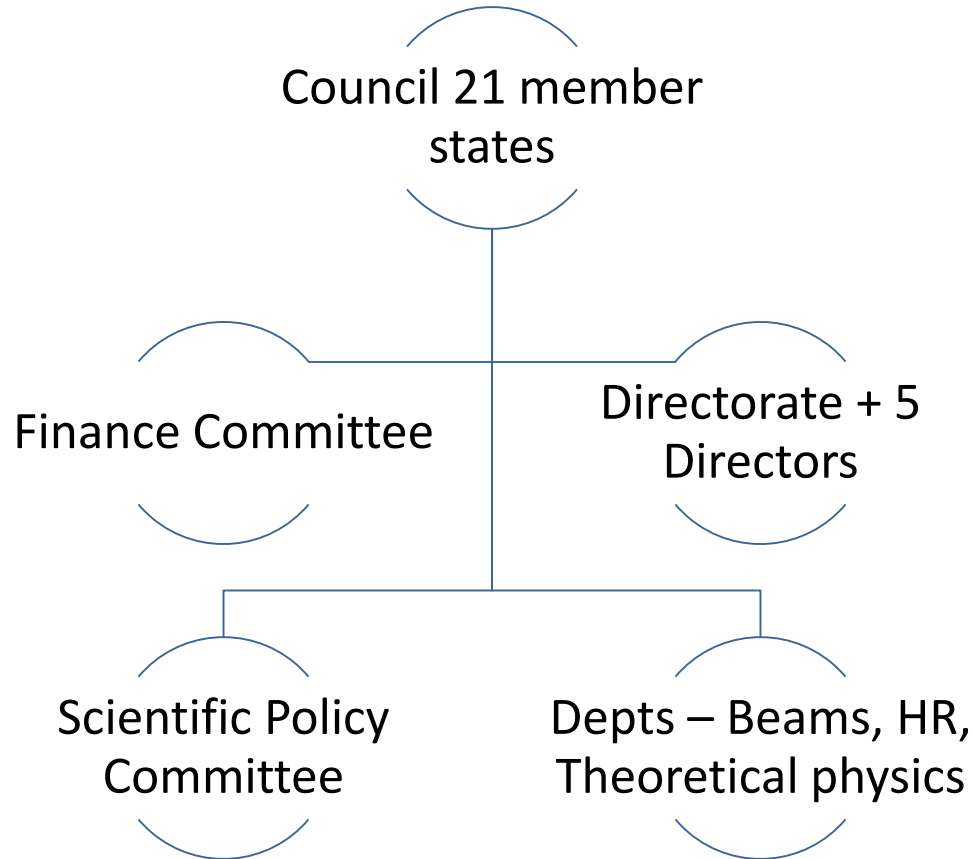
- What is the purpose of science?

Σ

- What is the purpose of business?

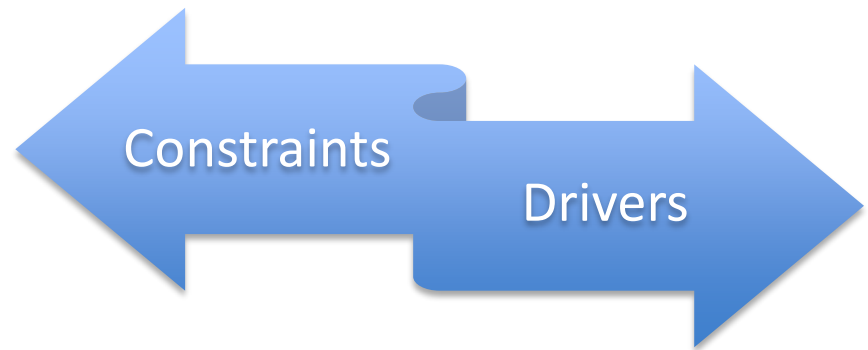
£

CERN – (not the organisational chart)



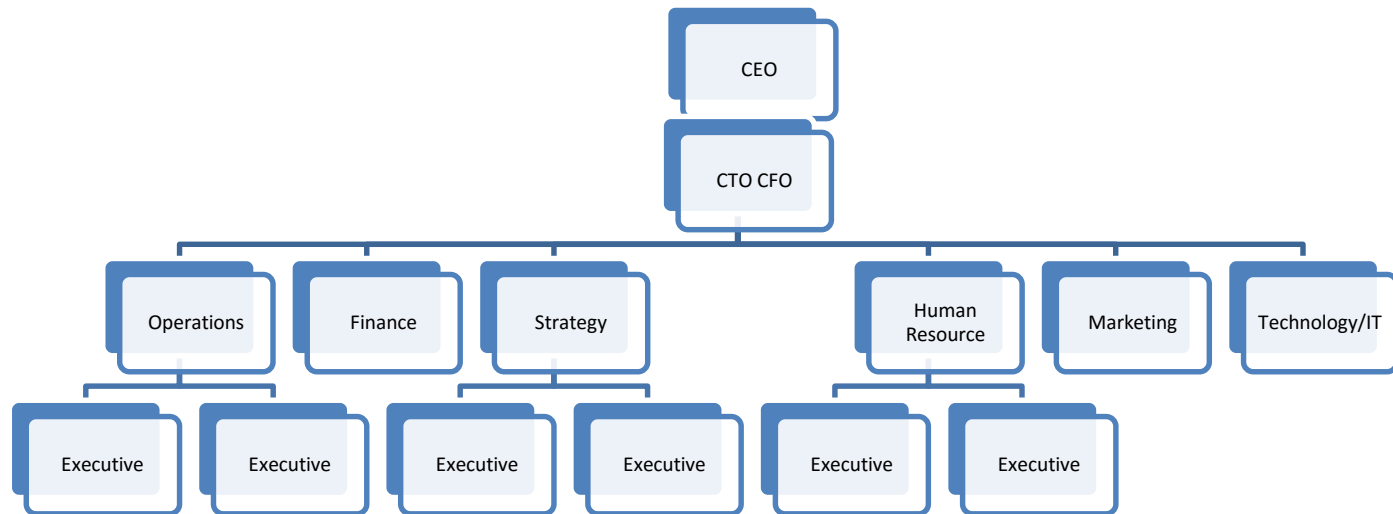
Some technologies, sectors in MEDICIS-PROMED

- Accelerator technologies
- Isotope mass separation
- Radiotherapies
- Functional imaging & treatment combinations
- Pharmaceutical – radiopharmaceuticals
- Clinical trials
- Healthcare provision
- **Regulators**
- **Insurance**
- CERN, EC



A typical organisation – nb authority relationships

OWNERS



Organisational pain and change

Government/public sector

- Impact from research
- Data
- National and data security (nuclear)
- Ageing
- Global challenges
- National cultural values
- Value – ROI

Private sector

- Short-span leadership
- Globalisation
- Innovation
- Skills
- Processes commoditised by IT
- R&D outsourcing

Policy challenge

- Policy on a mythical view of a **linear trajectory** from the scientist creating a licence or patent that grows into a wildly successful new product via a licence, Joint venture or spinout that floats on a stock market
- High-tech business = High Growth
- Shift to knowledge based economy
- Boundary-spanners



Traditional innovation management

Traditional
innovation
management:

- R&D department develops products
- M&A activity acquires innovation



Corporate Agenda and Research Policy are converging

Companies are looking to the outside for R&D and new ideas:

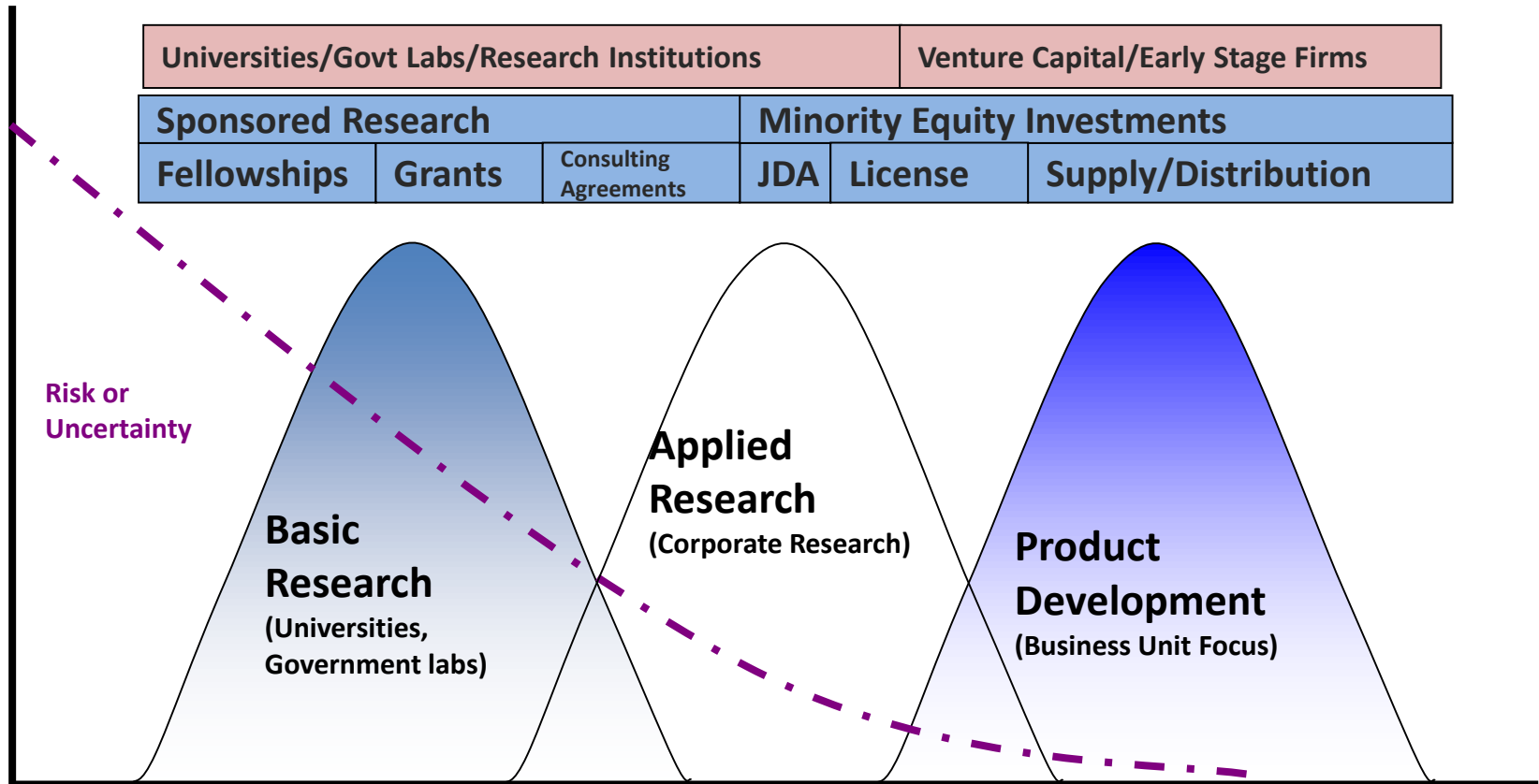
- Increasing competitiveness and inadequate results from internal R&D
- Increasing development costs and pressure to reduce R&D Spending
- Increased mobility of skilled workers – leaving corporate R&D

Research Organisations (including universities) are under pressure as well:

- More scrutiny to show that government and donor spending on research is relevant to society and contributing to the national economy
- Reduced government funding for research
- Entrepreneurial culture increasing in Universities



Research & Development Continuum





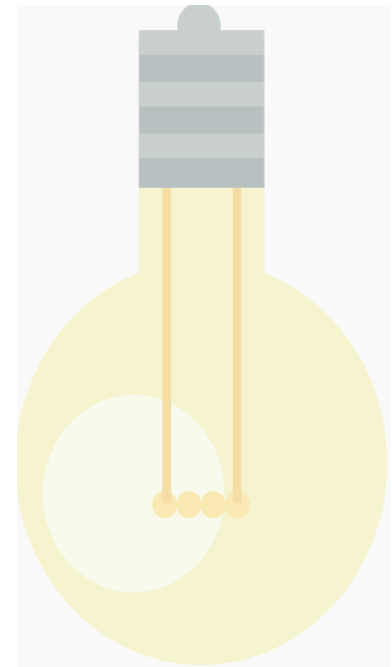
More on Thursday – start thinking like innovators

INNOVATION BASICS

Ingredients successful commercialisation of science?



- Attitude
- Execution
- Invention/innovation



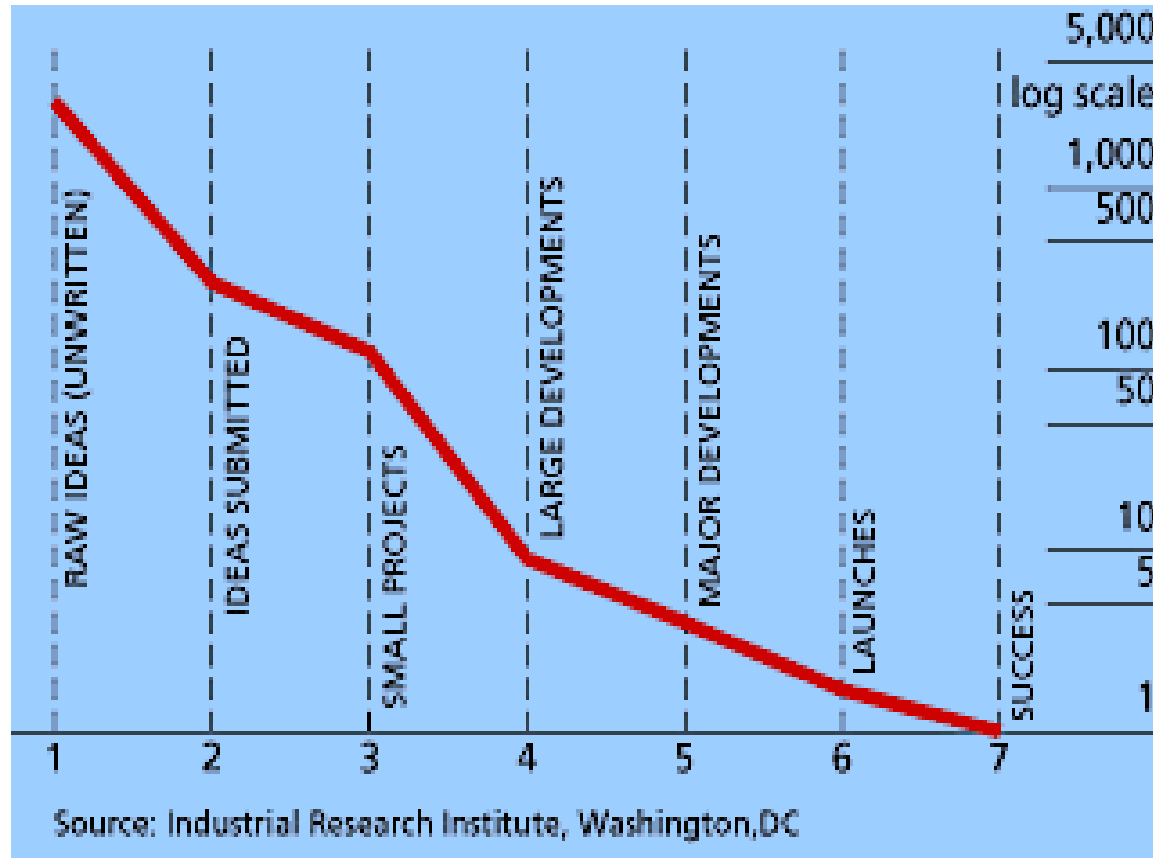
Invention is *much* less important than implementation.

→ it takes persistence and patience!



Source: The Economist, 18 Feb 2009

Ideas succeeding at each product development stage



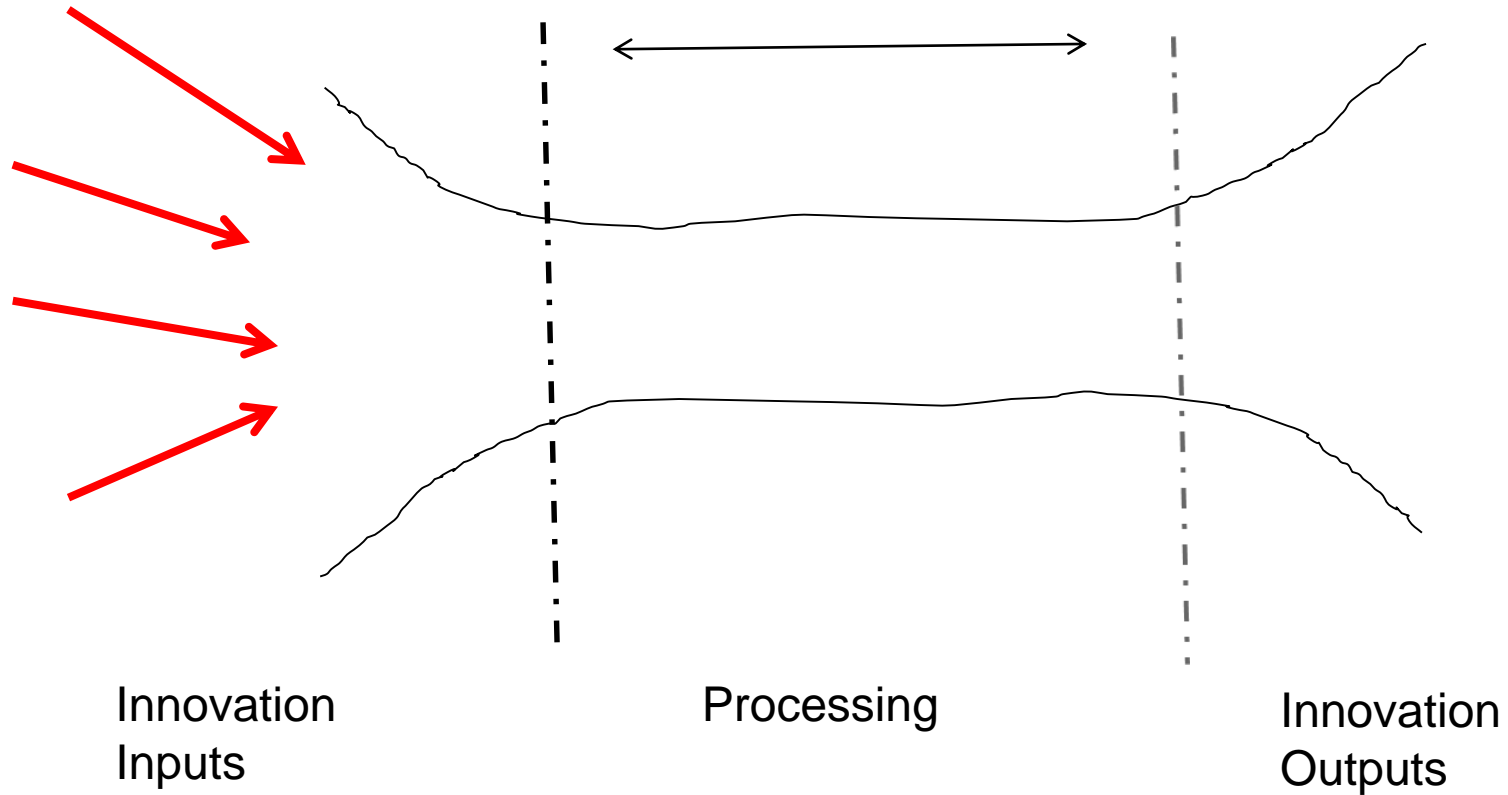
‘... start with around **3,000 bright ideas** to end up with four plausible development programmes...the minimum needed to get just **one winner**’

- (Leaps of Faith, The Economist 18 Feb 2009)



INNOVATION IN ORGANISATIONS

Innovation and organisations





How should we....

EVALUATE IDEAS

How do we now assess ideas



- As a young researcher?
- According to friends who agree with you
- An idea or a hero story
- Role models
- Business model role models
- Objective measures of value aka gut feeling

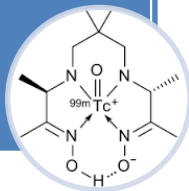
Investors, Shareholders are interested in:

- Performance – eg Ratios
 - Opportunity
 - Safety
- Access to exciting people
- Quality of the leader/CEO
- ROI return on investment
- Chasing others to the deal (VC)

Do an internal analysis – first stage feasibility?

- Strength of patent protection
- Readiness of technology
- Perceived features and end-user benefits?
- Incremental improvement or ground-breaking technology?
- One market or multiple markets?

Technology



- Any previous patent applications
- Prior experience of technology commercialisation?
- Clear understanding of the stakeholders and their requirements?

Scientific Team



- Ability to attract others to the technology?
- Potentially attractive to investors?
- How much further investment to investment readiness?

Resources





How SHOULD we evaluate ideas and opportunities

CUSTOMERS & MARKETS



Q What is the only necessary and sufficient condition for business?



SCIENCEPHOTO LIBRARY



Find the first customers?

Square

Start accepting credit cards today.

Sign up and we'll mail you a free Square Card Reader.

Email address

Create password Confirm password

[Sign Up For Square](#)

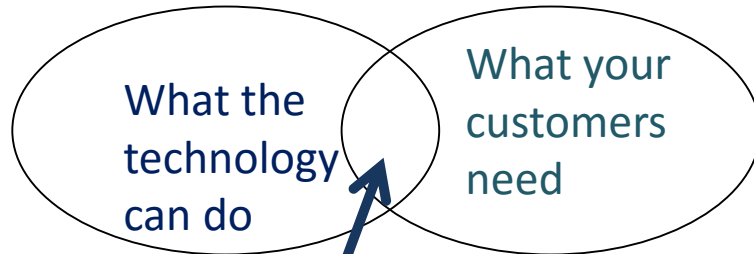
2.75% 2.75% per swipe for all cards
One simple rate, all major credit cards.

Sign In

Take Payment
\$600.00
Wedding Photography

Jack Dorsey's Company "Square"

Find the selective communication for positioning for customers + context



Positioning is finding the intersection between these two.

We are looking to communicate aspects of our innovation that = motivates buying behaviour = give it “wow” factor; or USP

➔ One key (**context**) here is understanding the dominant products used in the relevant practices and....

What is happening to the practice itself as it adapts to market forces, and general socio-economic change

Important question is how does an innovations benefit to the customer



Reduce effort

Dyson removed the need for dust bags and improved vacuum power

Convenience

The **microwave** saves time and effort

Enjoyment

Starbucks and other coffee chains transformed the cup of coffee into a lifestyle experience

Environmental benefit

Bayliss **wind-up radio** dispensed with batteries in rural, African communities

Reduce uncertainty

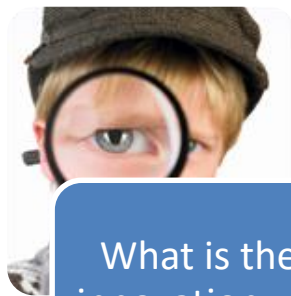
'**Intel** inside' brand reassured first time home PC buyers of reliability and performance

Who is your customer

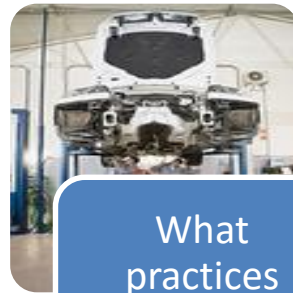


- New radiopharmaceutical for hadron-beam therapy
- New functional imaging + treatment apparatus
- Isotope mass separator

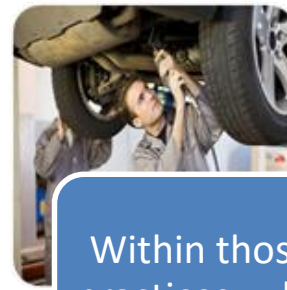
Four steps: sourcing customer benefit from innovation



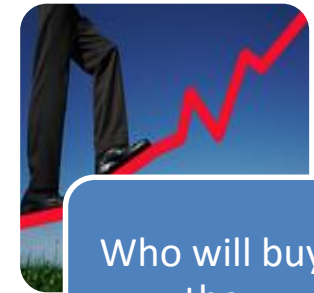
What is the innovation we could commercialise



What practices provide potential applications



Within those practices, who are the end users



Who will buy the innovation for them?



First up...

WHAT'S A MARKET?

- Set of actual or potential buyers of a product process or service
- Aggregation of one-to-one transactions between two humans who agree to transact
- As such bear the marks of all the history of such human interaction
- Wave-particle duality: flow and structure

Market considerations for MEDICIS-PROMED areas



- Cost-benefit
- Public-private
- Partnership/risk management
- Skills, maintenance
- Alignment with existing practice, machinery
- Few customers
- Cost of sales
- Existing behaviours/safety considerations

Market considerations for MEDICIS-PROMED areas

- Cost-benefit
- Public-private
- Partnership/risk management
- Skills, maintenance
- Alignment with existing practice, machinery
- Few customers
- Cost of sales
- Existing behaviours/safety considerations

