



Commercialisation

**Presented by Richard Knight
Knowledge and Innovation
Manager**

Routes to commercialisation

- Licensing
 - Joint venture
 - Sale of IP
 - Spin Out
-
- The inventor's plans for their future involvement in the commercialisation of the invention or idea
 - Whether the technology is a 'one-off' invention or perhaps part of a portfolio of inventions
 - Size of potential market for the invention or idea

Routes to commercialisation - Licensing

Who owns the ip?

Who are we going to license to?

When does the licence start?

What rights are we licensing (evaluation, production, sale, sub-licensing)?

What services/products are we providing (sample products, software support)?

Are we restricting future research activities?

Is the licence exclusive, sole or non-exclusive?

- **non exclusive** - licensor grants any number of licences
- **sole** - licensor and single licensee can use the rights
- **exclusive** - only single licensee can use rights

- What geographical territories are involved?
- What applications/fields of use are involved?
- What is the duration of the licence?
- Under what circumstances can the licence be terminated?
- How is the performance of the licensee measured?
- What payments will we receive (fees, milestone payments or running royalties)?
- How and when will payments be made?
- Royalties as a percentage of what?
- Can the licensor use the university name?

Spin out

- New company formed
- Shares owned by university and possibly academic/inventor
- To maximise potential
- To secure investment (in return for shares)
- Academic involvement with business

Licence or Spin out?

Licensing may be appropriate if:

- there are significant barriers to a new company entering the market
- the marketplace comprises a small number of large companies
- it is a niche technology
- there is a single patent
- the technology is near market and requires little further development and investment
- a company is linked with the research either as a sponsor or interested observer
- the technology fits an existing company's ip/product portfolio
- licensing is a common strategy within the industry sector

A spin out company may be appropriate if:

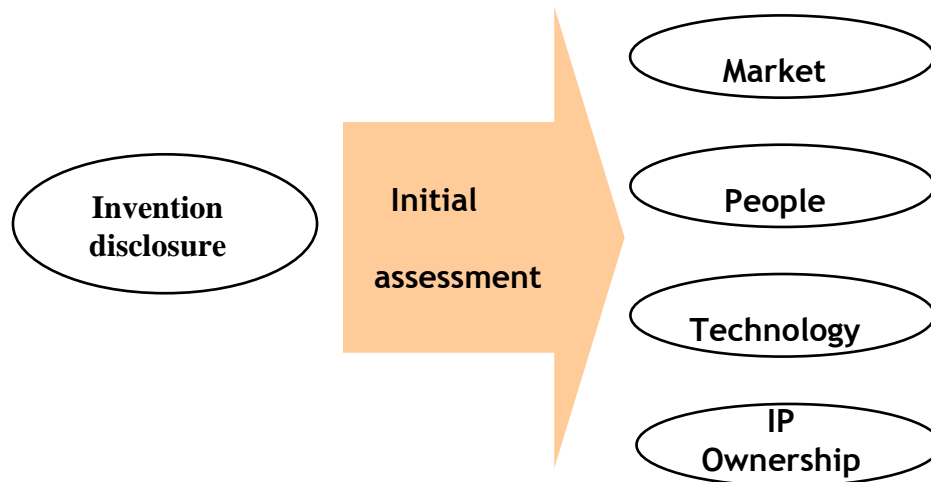
- entry to the market by a new company is relatively easy with few significant barriers
- the marketplace is fragmented with a lot of small companies
- the technology has many applications
- there is a portfolio of patents
- further investment is required in the technology and associated infrastructure in order to reach the market
- there is a group of founders motivated to start a company
- it is likely that investment funds can be raised for a company
- there is a financial exit route for investors, including the University

University shares profits with inventor and faculty according to IP policy.

University of Plymouth

	First £25k	£25k-£100k	£100k-£500k	Over £500k
The inventor(s) of the IP	70%	60%	40%	20%
Host Faculty/School	10%	20%	35%	50%
UoPEL	20%	20%	25%	30%

Stages of assessment



Further deeper
assessment

Unique selling
proposition

Route to
market

Technology
confidence

Liability
issues

Barriers to
competition

People

Market
inertia

Nature of
competitors

Financial
return

Dependence on
3rd party IP

From point of view
of University or
potential licensee.

1 Overall market size

Information gathering

- What is the full range of applications that the technology could be used for?
- Who is going to buy it – customer profile
- Assessment of current market position/Market reports
- Data on existing companies e.g. turnover, reputation, share
- Market validation
 - Contact end users, distributors, industry insiders

2 Unique selling proposition (USP)

- What are the **BENEFITS** of the technology that make it the technology of choice
 - Function
 - Cost
 - Quality
- How novel/attractive would it appear to a user/customer?
- Is there a clear unmet need?
- Information gathering**
 - A thorough knowledge of the existing and emerging technologies
 - Dialogue with end users/distributors/industry insiders

3 Route to market viability

Is there a credible route to market?

Existing distributor chains/outlets?

If no, does setting up an appropriate route to market seem

Sensible/affordable

Information gathering

Typical margins and overheads in existing distribution systems

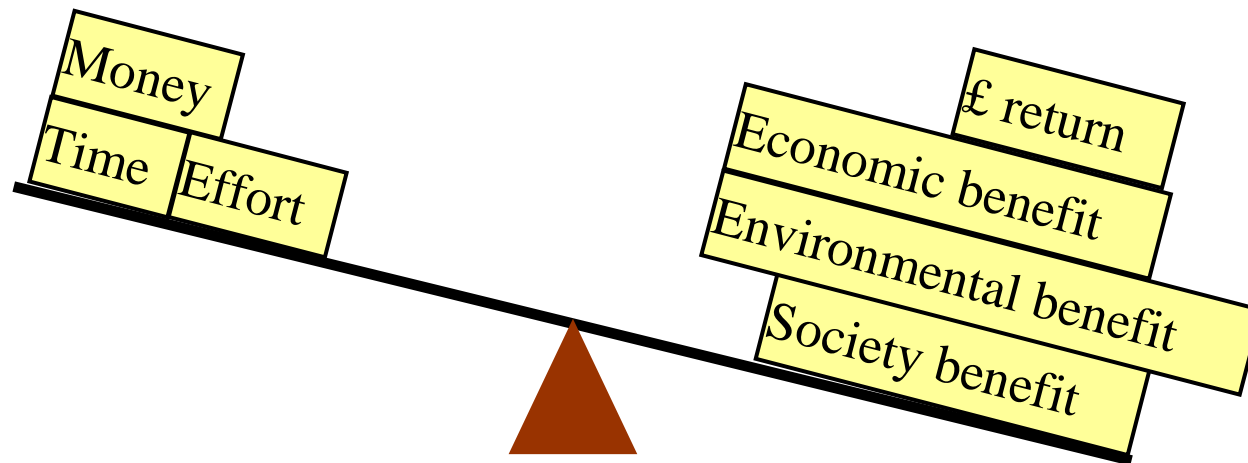
Identify key players – assess what would motivate them to work with us
make contact if appropriate

4 Confidence in the technology

- Do we have clear proof of concept?
 - Function
 - Scale up potential
- Clear understanding of the technical risks/downsides/limitations
- How easily will the technology scale up
- Reproducibility? – works every time in volume
- Cost of manufacture in volume environment
- Ability to manufacture with a commercially acceptable level of skill
- How confident are we that it can deliver the performance desired by the market
- **Information gathering**
 - Potential external technical review, testing or evaluation
 - A good understanding of the investment required to bring to the technology production.

5 Potential return on investment

- WILL IT MAKE MONEY???
- What is the ratio of gain to effort? Is it favourable?
- If so, is this likely to be achieved within an acceptable timescale (e.g. 5-7 years?)



6 People

- Commercialisation can be very time consuming and is not for everyone
- Key attributes of successful entrepreneurship
 - Open minded
 - Flexible style
 - Focussed
 - Tenacity
 - Teamwork



7 Barriers to competition

- Does a strong intellectual property position exist currently?
 - Patents
 - Know how
 - Software
- If “no”, is there a good likelihood that strong IP will be developed from future developments?
- If “no” to both of the above
 - Are there any other measures that could be taken to help the technology/product stay ahead of the competition
 - Customer benefits
 - Cost
- **Information gathering**
 - Prior art searches of existing and potential future IP
 - Identify Specific skills and expertise that are not replicated elsewhere
 - Technology road map
 - Can it be kept secret?

8 Market inertia

- Is there either significant...
 - Customer entrenchment in this market sector?
 - Significant new infrastructure investment/required to get the technology/product to market
- Has this sector already invested heavily in current technology, and will therefore be unlikely to orphan that investment?
- Are there obvious opinion leaders or early adopters that could help overcome these barriers?
 - **Information gathering**
 - Canvassing of existing customers/distributors etc
 - Technology roadmap of industry

9 Nature of competitors

- Do we fully understand the strengths/weaknesses of competitors and their technologies?
- Are we confident we could take a significant market share?
- Would competitors be able to take measures to undermine our project? e.g.
 - Undercut on price
 - Offer additional feature/benefit
- **Information gathering**
 - Competitor analysis
 - Contacting existing customers/distributors
 - Specialist opinions/consultants

10 Dependence on 3rd party IP

- Is ownership of the technology clear
 - People who have been involved
 - 3rd parties organisations who have been involved
 - “Freedom to operate”
- **Information gathering**
 - Thorough questioning
 - Prior art searches
 - Search for umbrella patents

11 Liability issues

- Product liability
- Reputation
- Ethical

12 Market dynamics

- Do the dynamics for this market match the timing of the product/technology?
 - A new mobile phone technology may be very risky if it has a 5 year development plan
- What are the market trends/pace/volatilities?
- **Information gathering**
 - Project timing plan
 - Legal or regulatory requirements/constraints



Can go on 'gut feel' but risk getting it wrong.....



***‘We don’t like their sound - groups of guitars
are on their way out.’***

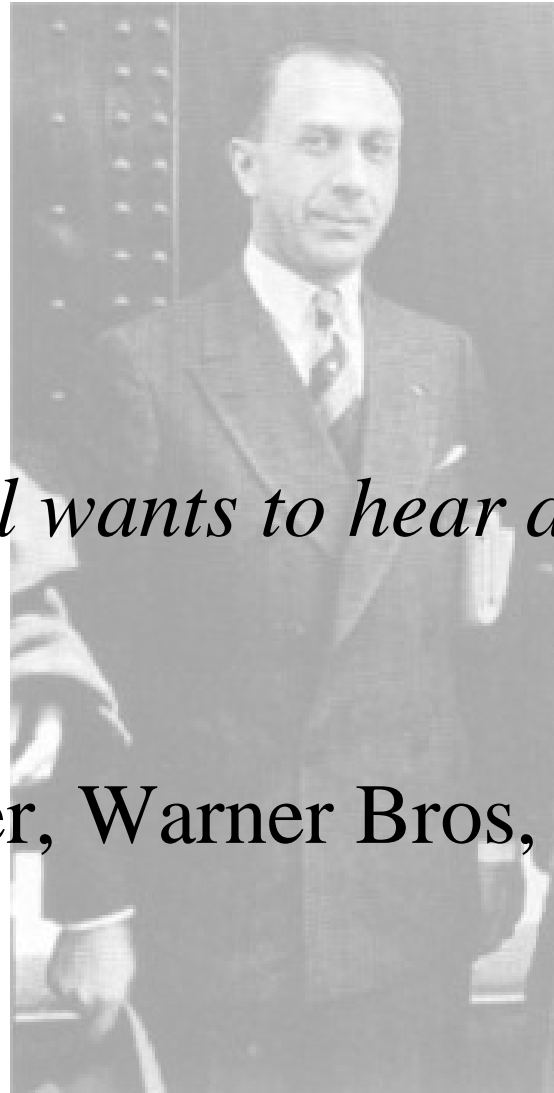


Decca Records rejecting The Beatles, 1962



‘I think there is a world market for maybe five computers.’

Often attributed to Thomas Watson Sr,
in 1943 (later Head of IBM),



‘Who the hell wants to hear actors talk?’

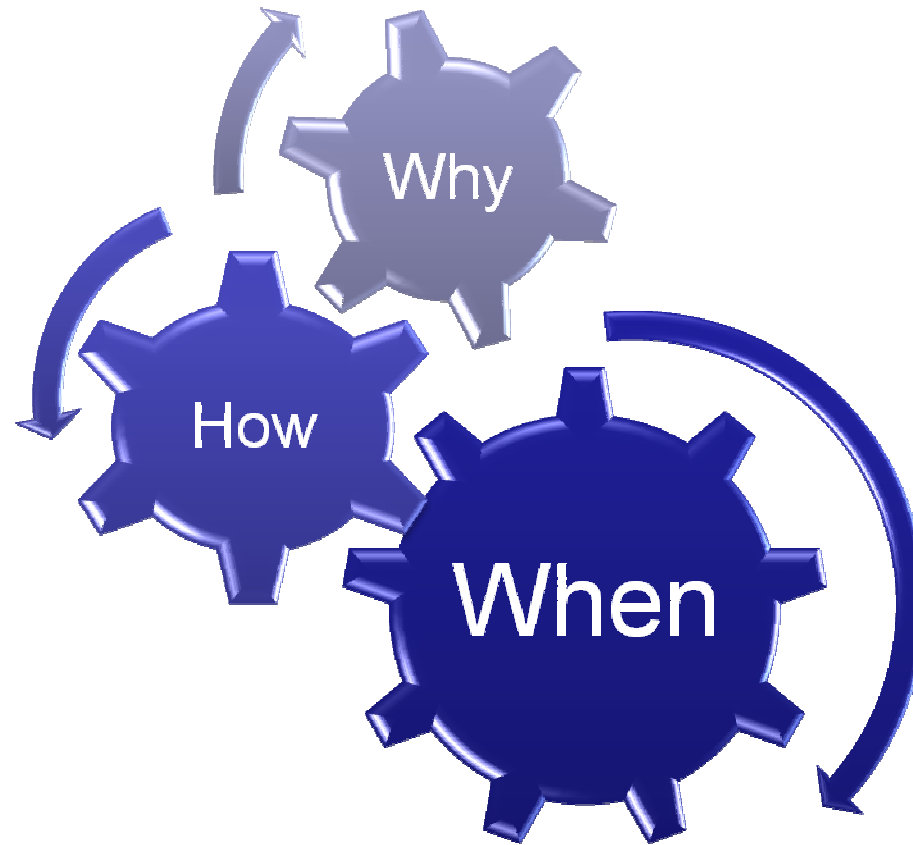
Harry Warner, Warner Bros, 1927

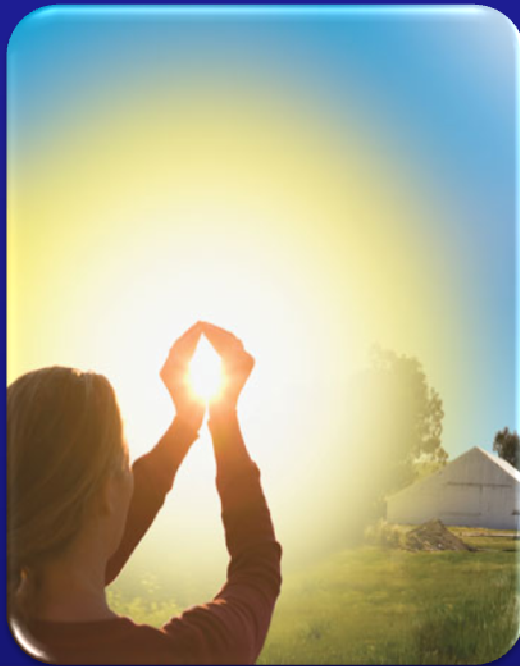


Benefits of commercial activity

- Harnesses the commercial world in getting your work out there
- Reputation
 - Organisation
 - Personal
- Additional income
 - Department
 - Personal
- The experience

What is a Business Plan? Why have one?



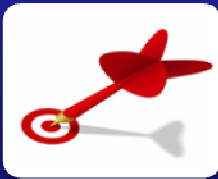


Planning is about
looking to the future to
minimise risks and
maximise opportunity

Business Start-up Flow Chart



Why have a Business Plan?



A document setting out what you aim to do
(setting targets)



Reducing the risk of failure



Possibly assisting with the raising of business
finance



Make your mistakes on paper!!

Further reasons for preparing a Business Plan



To raise money

You know where you are going and when you have arrived!!

To cut down the risks

It forces you to deal with all aspects of the business

It reminds you why decisions were reached

It encourages realism

It allows you to 'sell' the business to customers

It helps to convince you and your team, landlords, backers and suppliers

Important parts of the plan



Business Plan



Executive Summary

The Executive summary should briefly describe the business and highlight the key objectives. It should probably be written last as it will be a summary of the whole business plan. It should include:

- The current position of the business.

- Who the customer is.

- Objectives and a brief explanation of how they will be achieved.

- Summary of financial forecasts.

- The funds the business needs.

Business details

This section should also cover:

The legal status of the business.

The business's mission statement.

Detailed business objectives.

The state of the business and its history to date. How the business performs compared with its competitors.

Summary of records if the business has already started – profit and loss, balance sheet, bank records, present funding.

Any major accomplishments.

Key members of staff

Product or service

A description of the product or service, but this should not be too technical. The reader may not understand industry jargon.

What are the advantages of the product or service; what need does it fill; what are its unique features?

Details of patent or copyright or statutory requirements should be provided if appropriate.

What are its competitive products?

Who are the business's main suppliers?

The Market

Who are the target customers?

What is the estimated demand for the product in the short, medium and long term and why is this demand expected?

Who are the key competitors?

What are their strengths and weaknesses?

Products and services should be compared to those of the competition – why are the business's products distinctive?

Any competitive advantages should be highlighted.

Market Plan

This forms the basis of how it is intended to promote the business and to ensure success in generating sales. i.e. what is going to be done , when, by whom, what will it achieve, and how much will it cost? It will include:

- Details of target markets, showing that a market exists

- Pricing policy

- How the business is planning to promote its product or service.

- Details of the selling and distribution methods should be given.

- Details of interest and orders by potential customers.

- Details of market research that has been, or will be, carried out.

Operations

This section will show how the business will be run in order to be successful. It will include:

- The business's location

- The premises and the equipment the business has, or will need.

- A description of the production process.

- The business's personnel requirements

- How the product or service is distributed.

- Details of any safety or quality standards that the product must meet.

- How stock and materials are obtained.

- How the product is packaged.

Management and Organisation

What are the strengths of the people involved?
If there are apparent weaknesses, how they will be overcome?
Brief CV details including age, education, experience, etc of all key personnel should be provided.

SWOT Analysis

Strengths	- internal -	attributes that are helpful in achieving the objectives e.g. IP
Weaknesses	- internal -	attributes that inhibit achieving the objectives e.g. lack of finance
Opportunities	- external -	conditions that are helpful achieving the objectives e.g. new market
Threats	- external -	conditions that inhibit achieving the objectives e.g. recession

Financial Information

budget information

Costing and pricing information.

Margins

The 'break even' point (i.e. the level of sales at which the business will start to make a profit).

Financial Requirements

Details of how much is needed, when and from whom

What overdraft facility will be required?

What are the risks involved?

Details of any other grants or loans which have been obtained or applied for.

Financial Forecasts

Sales Forecast

Cashflow Forecast

Profit and Loss Forecast

The cash flow forecast



This important document helps to:

Establish the amount of money required and when it is needed

Ensure that capital expenditure is controlled

Encourage efficient use of resources

Identify any shortfalls

Provides facts to help with decision-making

Appendices

CV's

Market Research Reports

Previous accounts

Supporting information

Reasons for Failure



Under pricing

Inadequate cash flow

Lack of capital

Over-trading

Change in market demand

Ill health

Failure to keep Bank informed

Over estimating sales

Failure to control costs

Losing control over cash

Inadequate market research

Taking unnecessary risks

Failure to meet client needs

Third party debt – major customer