

Technology Transfer: Exploiting Intellectual Property

by John McMillan

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Introduction

Many universities and other research organisations have developed valuable inventions. They are aware that they can exploit these to bring in useful funds. This document outlines the process of spinning out intellectual property. McMillan Technology provide consultancy services in this field. ([Click here](#) for information)

Project Phases

Most projects will follow roughly the same path. The first phase will be to assess the likely income from a product or service based around the IP. The second will build on this and create a business plan. The third phase will start to create a delivery vehicle – a company or team, and will begin to sell the product.

A “bootstrap” process should be used to check the likely success. Two or three stages should be used with increasing expenditure. As the project progresses, more data will be obtained as to the size of the market and hence the risk will fall. A key objective must be to minimise expenditure while the risk is high.

Assessment Phase

The objective of this phase is to assess the viability of exploiting a research project.

Stage 1: Patent Protection

During stage 1, the knowledge of the market will be minimal. Hence, risk is high and expenditure must be small.

Low cost research into the market must be done to assess the possible market before paying for patent protection. Some of this will be done by university staff, typically in a business development office, but a consultant will often also be used.

In this phase, the inventor, the Business Development Officer and the consultant will identify possible markets.

Only if this study finds markets should the costs of the patent and the second stage be approved.

Stage 2: Preliminary Market Research

Stage 2 will start with a hypothetical idea of possible income. Risk is still high, so expenditure must be low. At the end of stage 2 there will be a much better knowledge of likely income. Risk will then be moderate.

Exploiting Intellectual Property

When patent protection is approved, around £5000 should be spent on the second stage. This will carry out limited market research to test the assumptions made in the first phase. After this a working figure can be set for sales targets and hence budgets. The next stage(s) will be planned and costed.

A decision needs to be taken as to whether it is likely to be better to licence the knowledge or to set up a company to market it. Licensing can be attractive in that costs will be much less and income will come in much sooner. Also, if the invention would be used in existing products, licensing will be relevant.

If it seems a company will be set up, it will really be necessary to appoint an interim manager. If the company is to succeed, it will need a first class CEO. A CEO is expensive. An interim manager brought in for one or two days a week will resolve this "catch 22". It is unlikely that University staff will have the necessary skills. (They may be keen to learn them, in which case an interim manager would be an ideal mentor). Overall control will probably reside within a business development office. If licensing is to be the approach, expertise in this field is necessary - an expert could easily raise revenue five fold.

At the start of this stage the following will be present:

- The invention and inventor
- Business Development Officer
- The interim manager
- A document outlining the proposed product, assessing the feasibility of obtaining a patent
- A document laying out possible markets, leading to justification of the patent.

Business Plan – Stage 3

The end result of this stage should be a business plan for the project.

Market Research

At the end of stage 2 there will be some knowledge of likely income, so risk will be moderate. The research from stage 2 will not have been deep. Its objective will have been to decide whether to proceed with the project.

Normally an early part of phase 3 will be to refine the research in selected market areas. This research should produce a high knowledge of likely income, so future risk will be small. The more accurate projection will allow a business plan can be created after this. Decisions can be made about the best vehicle to deliver the invention.

The research will also find out what needs to be done to develop the invention into a product. During this, the interim manager will take an increasing contact with possible customers.

Product Development

At a very early stage, the invention will need to move from pure research to development. There will often be staffing issues at this point. Is the inventor the right person to carry out the development? Who takes control of the invention? Does it stay with the inventor, move to the University department, move to a business development office or to a company?

There may be times when the product needs to be developed in a way which does not interest the inventor. If this happens, how is the development to be managed?

The Delivery Vehicle

This will depend on the likely size of the market. If the invention has limited potential, it may be best to retain it within the University. For larger sizes, it will be necessary to spin out a company. As mentioned above, licensing may be the best vehicle. Probably for annual income of less than £250K it would be best to remain internal, for an income above £5M, a spin-out would be better. For income above £10M a spin-out would be essential.

Resources

During stage 3 more resources will start to be deployed. The risk will fall and the commitment rise. Most early resources will be on a consulting basis. There will probably be a need to bring in financial skills. There may be a need for marketing and selling skills.

Finance

The allocation of royalties will need to be addressed. Clearly the University wants a high share – in fact the lion's share of profits. The policy of the University should be simple: maximise its income. If the potential of an invention is high, good staff need to be recruited to manage and drive the project. If this costs an extra £200K a year and brings in an extra £300K, the University is better off. (The target ratio can be higher than the 50% in this example).

If a company is set out to exploit the invention, this matter will be tied to the ownership of the company. This will be done in the form of shares. At first, the University will probably retain the majority of the shares. However the directors of the company should take shares in it, as should the inventor. Other parties who help to launch the company should be allowed to buy shares – this will lift their motivation for success.

If the University owns most of the shares in the company, it will also take the same share of the profits. A further source of finance will arise from the more successful spin-out companies. At some stage, some of them will need to go public. When this happens, the share price tends to soar, so the value of the University's share holding will become very large.

Creating the Delivery Vehicle – Stage 4

An early part of stage 4 will be the raising of finance. Another will be the setting up of the vehicle. If this is to be within a business development office, then the structure of the office will need to reflect this.

If a company is needed, many matters need to be resolved. Who would be the directors? (i.e. the Board) For how long? What would be the objectives and articles of the company? Will overseas subsidiaries be needed? Who will be the shareholders and in what proportion? The company would need to be set up and bank accounts opened. Agreement has to be reached on cheque signatories. The company needs to be registered for VAT.

In any case, financial controls need to be defined. Who can incur expenditure? At what level does spend need to be approved and by whom?

It may take several months to raise finance. Should work proceed while finance is being approved? (Almost certainly yes). At least, work needs to be done on prospective sales. The invention will need to be developed.

This phase would continue until the first sale(s) are made. During stage 4 the company will change drastically. If it is to have a high turnover, it is vital to recruit the right management. The original Board should keep control until the right team can be recruited.

About John McMillan

John McMillan is an interim manager specialising in high tech start-ups and marketing. He gives many workshops and classes on these subjects.

John McMillan has worked in the I.T. industry for 25 years, starting with computer giant ICL. He has since launched a number of software products for his own company and has advised other companies on creating, marketing and managing computer products. Some of his projects and more articles are described in www.mcmillantech.co.uk. John can be contacted on <mailto:john@mcmillantech.co.uk> or 01787 371099.

