

Developing New Technology

January 2003

By Peter T Gow

This article discusses the importance of linking the technology to the product, and to the customer.

Main Points in this article:

- 1 Technologies have life cycle stages from emerging, to viable, to growth, to maturity and then to decline.**
- 2 A company needs to understand the cycles, the applicability of the technology, and its capabilities to exploit it.**
- 3 The goal is to distinguish the different technologies within the products and the different market segments.**
- 4 Technology is sometimes the key to sustainable advantage; however meeting customer expectations will determine superior performance.**
- 5 Technology, although an important factor, is just one of the many ingredients required for success.**

Developing new technology and building a company on the back of it requires a very flexible but disciplined approach.

In order to take advantage of emerging technologies, an understanding of the linkages between the technologies, products and the markets is critical.

New technologies, or repackaging existing technologies in different ways, may have a profound impact on a company's competitive position and its sustainability.

Technology is sometimes the key to sustainable advantage; however it is the creation of products and meeting customer expectations that determine superior performance.

Understanding the customer benefits, in terms of perceived value, price, quality and performance will drive product advantage and harness the benefits of technologies.

So how does a company harness the benefits of technology?

The benefits of technology can be harnessed in the following ways.

- Understanding the technology, or combinations of technologies, that make up new or existing products
- Involving marketing in the process from inception to product launch. Finding the right market may be more difficult than developing the technology.

- Building a company based on a range of technologies and products. It is rare for investors or venture capital managers to back a single technology or product company. Investors are looking for companies with technology platforms that are capable of creating multiple products.

- Developing the technological expertise to achieve the multiple product approach.

- Patenting the unique know-how to defend the company's position

Technology development involves committing significant resources over a period of time in the hope of securing a return on that investment.

Research suggests that many large corporates exploit less than 20% of all technology developed in their laboratories.

Figures are not readily available for smaller high growth companies, but one would expect a far higher exploitation rate by these companies.

Smaller companies tend to be more focused on developing commercially orientated technologies within shorter time frames.

However, testing the acceptance of the new technologies with potential customers may be the major stumbling block for smaller companies.

Technology and Product Linkages

Technologies, like products, have life cycle stages from emerging, to viable, to growth, to maturity and then to decline.

Generally, these technology and product life cycles are not aligned. In some cases, new products are developed from mature technologies.

There are many examples of technologies developed in one industry taking time to be transferred to another industry. This may be due to the different industry adoption cycles, or the convergence of several technologies.

To fully understand the technology and product linkages, the technology needs to be well documented and understood by more than one person in the company. The performance limits need to be defined, along with potential improvements and how much it will cost to develop the technology through the various stages of its development.

It needs to be distinct from the general field of knowledge and distinguishable in the different products. Distinctness may be the source of future competitive advantage.

The company needs to understand the applicability of the technologies, along with the capabilities to exploit it.

Unfortunately, there are many examples of brilliant technologists who lack the commercial abilities and ruthlessness to use that technology to build a successful company.

Sometimes identifying a gap in the market is all about being in the right place at the right time, along with the ability to execute and exploit the opportunity.

Ideally, the goal is to be able to distinguish the different technologies in the different products within the different market segments.

External investors and venture capital managers will be trying to determine if the company has a proprietary technological position and whether the company can leverage its current resources to exploit the technology and generate profits.

The rate of technology adoption or its substitution needs to be fully understood, as this will impact both the level of infrastructure and the potential funding required.

Many technology companies have fallen by the wayside because they have underestimated the time required for adoption. Many factors influence the rate of technology adoption, ranging from changing perceptions and attitudes, to changing government regulations, to major global movements.

Product and Market Linkages

Technologies are exploited through the development of products to meet the needs of customers.

The most basic questions need to be asked:

- How are the technologies or products used?
- How will the technologies or products meet the customers' needs?
- What key attributes provide product differentiation?
- What are the key product features for minimum performance?

Product features can be loosely grouped into three categories:

- Base level requirements of the customer
- Additional features required to win the customer

- Features required for retaining the customer.

These features need to be assessed relative to the features of the competitive products in terms of price, performance and maturity.

Products, like technologies, exhibit life cycle/maturity characteristics. The different stages cover early commercialisation, growth, maturity and decline.

Sometimes, the product life cycle will coincide with the technology life cycle in technology-based companies. However, these cycles are generally separate.

Due to intensity of competition and the pace of technology development, these cycles are becoming shorter and shorter.

In order to meet the changing needs of the market, companies need to:

- Develop new technologies to anticipate the changes in customer needs.
- Monitor the technological viability of competitors' products,
- Monitor life cycles of both technologies and products
- Develop new technologies or technological capabilities.

The main point to remember is that business issues, rather than technological issues, drive the development of successful companies. Investors will look beyond the technological issues when considering an investment position.

Technology, although an important factor, is just one of the many ingredients required for success.

Peter T Gow is the Managing Director of Creative Capital Pty Limited. He founded Creative Capital to accelerate the learning skills of entrepreneurial CEO's and

develop their expertise in capital management, business and strategic planning, cash flow management and market research and analysis. Peter has over 12 years of experience in working with growth companies and has been involved in the completion of over 30 financings in the software, manufacturing and medical areas. His expertise covers company evaluation, strategy and market analysis, capital raising, transaction structuring, documentation and completion. Peter has also set up several venture capital funds for a major financial institution and appraised a range of venture capital managers.

Creative Capital Pty Limited

Peter T Gow

61 412 235 455

petergow@creativecapital.com.au