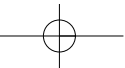


Part I

Principles



1 Developing People and Competencies

Robert B. Mellor

Introduction

In this chapter the need for an entrepreneurial team is put forward, as is the need for a concrete strategy (normally documented in the form of the business plan) and a network. The latter part of the chapter introduces how these and related topics are further developed in this book.

Capitalizing on a bright idea

The concept of 'the entrepreneurial inventor' does not hold much water and indeed only a few of the classical 'engineer entrepreneurs' like Robert Stephenson, Isambard Kingdom Brunel and Alexander Graham Bell have received both honours and economic reward for their efforts. But the majority of the great scientific inventive minds have not managed to make a lasting financial profit (e.g. Curie, Einstein, Marconi, Pasteur and Whittle) and today a pop star probably makes more money than 50 Nobel Prize laureates (see Chapter 15). Even Thomas Edison, founder of the Edison Electric Light Company (later to merge with the Thomson-Houston Company and be called General Electric), like many scientists and engineers, was not a good financial manager and despite all his incredible energy he managed to bankrupt several – if not most – of his ventures despite the fact that he held 1,093 US patents and 1,239 foreign patents, including those on the phonograph, motion pictures, the alkaline storage battery and synthetic rubber, as well as the first practical incandescent light bulb (note that the 'incandescent filament lamp' was invented by Joseph Swan, Edison bought the rights and made the process practical). Technical competence – the ability to make new things – can be plotted against managerial competence – the ability to get things done and products sold (Figure 1.1).

8 Principles

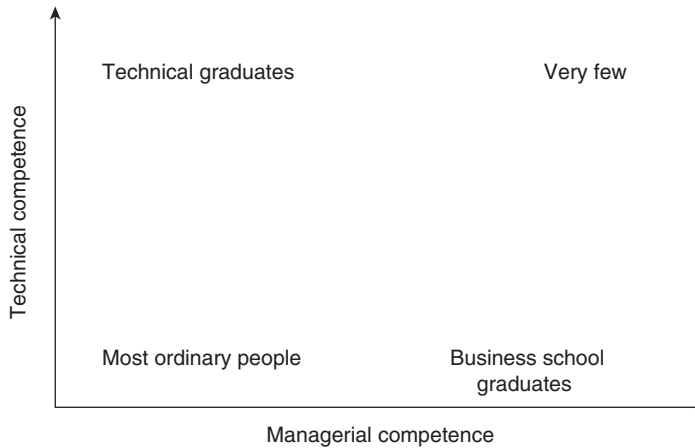


Figure 1.1 Plot of technical versus managerial competence. Very few inhabit the top right quadrant, although the multi-skilled (e.g. an engineer with an MBA) will tend away from the axes towards the middle and thus may be more innovative (see Chapter 2)

In contrast to inventors, the entrepreneurs often mentioned in connection with entrepreneurship, e.g. the late Anita Roddick (the Body Shop), Marks & Spencer, Tesco and Richard Branson (Virgin), achieved fame and fortune not by applying new technological inventions at all, but by using creative business models.

So having a bright technology-based idea is only the first of several factors needed to form a successful enterprise. The second factor is the other people involved in the business aspects of a technical idea and who can bring it forward, while the third factor is most often called 'the network'. The combination of the second and third factors, judiciously applied, can go a long way to solving the budding entrepreneurs' major problem, namely finding finance.

The entrepreneurial inventor

The career of Elmer Sperry offers an excellent example of the entrepreneurial inventor. Sperry was born into a New York family of modest means and after attending public schools, decided that he wanted to be an inventor. He tried to learn as much about electricity as possible from the library and courses, including attending lectures at nearby Cornell University. Acting on the suggestion of one of the professors there, he designed an automatically regulated generator capable of supplying a constant current when the load on its circuits varied and then immediately started to search for a financial backer. In 1880, he was taken in by the Cortland Wagon Company, whose

executives included both inventors and investors and which provided him with the services of a patent lawyer, as well as money to live on and a workshop. In this 'incubator' Sperry not only perfected his dynamo, but over the next two years developed a complete system of arc lighting to go with it. Thus the Sperry Electric Light, Motor, and Car Brake Company was formed in 1883, with Sperry (who owned a large part of the company's stock) serving as 'electrician, inventor, and superintendent of the mechanical department'. Although the company was not a financial success, it launched Sperry's career. He would go on to write more than 350 patents and found nearly a dozen companies including – with the help of a wide assortment of financial backers – the Sperry Electric Mining Machine Company, the Sperry Streetcar Electric Railway Company, and the Sperry Gyroscope Company. Although Sperry often played an active role in these companies in their early stages, he typically downgraded his role to the position of technical consultant and went on to a new project, once they were reasonably well established.

Sperry focused on ensuring that his inventions were commercially exploited as best possible and consequently sold many of his inventions to companies better placed to put them to productive use. Indeed, one of his firms was the Elmer A. Sperry Company of Chicago, formed in 1888 as a vehicle for his research and development activities and whose output was patented technology. Interestingly, this firm also advertised its business as helping inventors 'develop, patent and render commercially valuable their inventions'.

(Source: Further researched from Hughes (1971))

How, then, can you combine excellence in technical subjects, with excellence in business? Clearly it is advantageous if you have a large family consisting of marketing people, lawyers, accountants, etc. and in the early 1990s it was rumoured that the single largest success factor for new start-ups was a high-earning spouse! Most individuals wishing to start up, however, are not in the privileged position of being able to surround themselves with the necessary expertise from their immediate family. As a consequence of this – and as illustrated in Chapter 6 – investors strive to surround the inventor with bought-in professionals possessing these skills.

Covering the business side

Another method is to team up with people possessing complementary skills from the start. This involves teaming up 'content people', often real experts in their field, with 'structure people', who can sell – no matter what it is. The right person may not necessarily be someone

10 Principles

Table 1.1 Illustrating the 'Hewlett-Packard' effect; 'content' people team up with 'structure' people to form a winning team

	Inventor (Content)	Business (Structure)
Bolton and Watt Pattern Store and Erecting Shop	Watt	Bolton
HP	Hewlett	Packard
Genentech	Boyer	Swanson
Wolffolins	Wolff	Olin
The Beatles	George, Paul, John and Ringo	Epstein
Apple	Wozniack	Jobs

already known, or even liked (indeed taking best friends or family on board can lead to excruciating conflicts). It must, however, be someone that the inventor can trust to make good business decisions, to be highly motivated and someone who can work towards a common goal. This mixing factor has been a feature of leading undergraduate courses for some years (e.g. at the University of Nevada, Reno – see Wang and Kleppe, 2001; and at the IT University of Copenhagen, Denmark – see Mellor, 2003, 2005). The very positive effect of these synergies is often called the 'Hewlett-Packard' effect after the huge success of the Hewlett-Packard Company, which combined the technical brilliance of Hewlett with the business brains of Packard (see Table 1.1).

Entrepreneurship is often wrongly perceived as a solitary activity – this misconception is actually reinforced by terms such as 'sole trader'. However, not only the high-profile examples cited in Table 1.1 but also the results of recent surveys e.g. *Entrepreneurship and Local Economic Development*, by the OECD (OECD, 2003) indicate that team-based business start-ups fare much better than individual start-ups. Specifically:

- In micro enterprises, partnerships exhibit higher rates of survival than individual firms.
- Investors are more likely to approve financing to team-led start-ups in early-stage venture capital assessments.
- The success of the firm and client satisfaction correlate well with the degree of social interaction in entrepreneurial teams.

And, indeed, many of today's leading corporations, like General Motors, DuPont, Coca-Cola and McDonald's, were all set up by teams and not by individuals acting alone. Although not all business ideas will result in a new Hewlett-Packard or Apple, a strong sales team can sell most things, so investors can expect some Return on Investment (RoI). Unfortunately most new businesses are weak on the business side; whereas 91 per cent of high-tech start-ups are confident in their technical ability, only 27 per cent of high-tech start-ups are confident that they can get their product to the market on time (Mellor, 2003). This lack of proper management is seen as a major drawback by investors – who invariably know their business very well. It cannot

Table 1.2 Number of business plans receiving funding in some common venture capital areas

	Ideas	Plans	Funds
US Biotech	1000	100	56
EU 'Hi-Tech'	182	20	5
EU Internet	400	25	12

Source: Modified from Mellor (2003).

Table 1.3 Commonly cited reasons for rejecting business plans

Reason for rejection	Number
Weak management	52
Not market driven	38
Timeframe too long	31
Investment too large	25
Lack of patent/protection	15
Lack of technical expertise	12
Other	17

Source: Modified from Mellor (2003).

be stressed enough that the business objectives are of paramount importance in setting up a business. One major indicator of the quality of the business acumen is the business plan. Table 1.2 illustrates that typically only few business plans receive funding and Table 1.3 illustrates that the reason for rejection is most often a poor management team.

Since usually 100 ideas are needed to generate one business plan, the business plan needs not only to be excellent but must also address both technical and managerial issues.

The essential social and business network

The third ingredient for success is having a network. Networks are also useful in starting new companies as they provide a knowledge background. Since growing a company is full of uncertainties, it is not possible in advance to know which expert tips are going to be needed (i.e. heterogeneous knowledge is needed). Those entrepreneurs with an extensive network are therefore in a much stronger position to reply to external threats, changes in the market and similar challenges. They will be in a stronger position to innovate and overcome obstacles. This is the social capital that adds value to the company. Such social capital can be accessed formally or informally, e.g. on the web there exist many networks (communities) specifically to create this type of social capital, and where membership gives one the 'right' to approach others.

Network, finance and technical ability: the case of Silicon Valley

The importance of networking is perhaps best illustrated by the example of Silicon Valley. Silicon Valley is contained by the San Francisco Bay on the east, Santa Cruz Mountains on the west and the Coast Range to the southeast. Once – when fruit orchards predominated - it was called the ‘Valley of Heart’s Delight’. The San Francisco Bay Area has traditionally been a major site of US Navy work, as well as the site of the Navy’s large research airfield – including anti-submarine warfare rockets and torpedoes – at Moffett Field. A number of technology firms had set up business in the area around Moffett to serve the Navy. However, the Navy moved its west coast operations to San Diego and, in 1935, Moffett Field came under the control of the US Army Air Corps and later NASA took over portions of Moffett for aeronautics research. Many of the original companies stayed, while new ones moved in. The immediate area was filled with aerospace firms and the Air Force Satellite Test Center was created adjacent to Moffett. By this time a large pool of highly skilled knowledge workers were living in the ‘Valley of Heart’s Delight’ and, despite closures, many wished to stay in the area. Both from changing jobs and working in large bases, they often knew each other (network), had hard-to-imitate know-how (expertise) and some had significant cash lay-off settlements from the Government (finance).

Given the vivid social network and access to capital, the area was already on its way to becoming a technology hot-spot (the software firm Novell pays tribute to these early days by retaining a section of the railway track to the military base in the reception of its Silicon Valley office). But the enormous expertise the area had accumulated in radio and microwave technology, microelectronics, etc. (and later semiconductors, the example of Intel is probably the most famous) also made the area attractive for more established players, who were looking for something in short supply – competent suppliers. The more established players, however, were having difficulty moving in due to lack of space. Serendipitously and due to unrelated finance problems at Stanford University (who own large portions of the estate), Professor Fred Terman had the idea of building an industrial park and raising finance by leasing land out to commercial companies. In 1951, Varian Associates signed a lease, and in 1953 the company moved into the first building in the park. Others, including Eastman Kodak, General Electric, the Admiral Corporation, Beckman Instruments, Lockheed and Hewlett-Packard, followed suit soon after. Today some 2000–4000 electronics and information technology companies, along with numerous service and supplier firms, are clustered in the area.

Building the right strategy

But is entrepreneurship only about building a team of at least two, possibly up to four or five 'core' entrepreneurs with different but complementary skills and experience that will pay attention to networking? The answer is not so easy. The other side of the coin is working out what the entrepreneur wants. Common aims for entrepreneurs are:

- 1 Some wish to open their own business or company immediately and head for an initial public offering (IPO). This involves writing an excellent business plan and showing a high degree of business acumen because it entails targeting providers of fairly substantial amounts of financing.
- 2 Establishing social enterprises like charities or other forms of 'social entrepreneurship'; non-profit and not-for-profit enterprises. Nuffield, Carnegie, Rockefeller and others (probably including Bill Gates) all returned their enormous profits to society by way of such constructions. Major differences include tax laws and the use of capital (e.g. social enterprises often rely on voluntary labour).
- 3 Some want 'organic growth' starting with a micro-business and invest some low level of resources – like evenings and weekends – to see if the concept will work. Examples include Lovereading.co.uk and Totstofrance.co.uk. Here a business plan can function as a personal 'roadmap' but will also be needed to attract investment should the concept begin to take off.
- 4 Some want to be employed in an 'innovative company' (which could be big or small). Large companies may try to act like a collection of small innovative companies and working in such an environment has significant differences to working for more traditional companies. It is becoming more common for employees in innovative companies to be asked to make a 'business plan' concerning proposed reorganizations, new workflows, product improvements, etc. Indeed, innovative companies may even put up the resources needed for employees to spinout their own ideas, like Rob Hamilton did with 'Instant Offices'. This is often called intrapreneurship or corporate entrepreneurship.

After having read and performed the exercises in this book, you should be in a good position to prepare the following:

- a business plan;
- a more (or very) concrete 'central business proposition';
- an elevator pitch.

Supported, where appropriate, by:

- posters;
- press releases;
- consultancy reports or other presentations.

14 Principles

However, reading on its own is not sufficient. For knowledge to be understood and used, the individual must be involved in its active construction. You must have opportunities to answer questions, to discuss (heatedly) and debate meanings, strategies and implications, thus engaging authentic problem solving in near-real situations. Thus your business partner (ideally an inventor, if you are a business person, or a business person, if you are a more technical person) and your network should become your sparring partners in order to get first-hand experience of 'decision-making' and 'action' and thus to gain a real benefit that can be used in entrepreneurship.

Choosing a topic

The subject of these debates should ideally be a business idea that you and your business partner (or partners, if you have several) have agreed upon. The objection to this is that you may not have a fully finished idea right now. Those who have the germ of an idea may find the creativity techniques described in Chapter 3 useful. Using these techniques, your idea can be modified or polished and thus can be used as a vehicle of entrepreneurship. Those who have no idea at the present time can choose between those presented shortly below – a fuller description is included in Appendix C – or your instructor may have created some other examples for you.

- **Euroflorida:** This involves a scalable model of advertising and selling to other people over the web. The core is communicating Italian real estate to north Europeans, but could just as easily be e.g. Trinidad real estate to US Americans and involves globalization and legal, as well as trans-lingual, aspects. Furthermore, the idea is scalable, and could include not only selling retirement-quality estates to 'grey gold', but also e.g. integrating early retirees with useful skills into their new community, keeping in contact (clubs, newsletters), providing them with local services, etc., and thus the 'product' can contain considerable 'added value'.
- **Gnashes:** A simple Internet supply chain, trying to extract value from a service (comparison of dentists' prices) by e.g. advertising related goods on the web site or by sponsoring. Extra spice is added because the service suppliers and service receivers may not share common interests, i.e. dentists providing high-price services may drop out of the system unless some motivation is added.
- **LP2CD:** This involves making a gadget to record CDA and/or MPG-compatible CDs from LPs. Thus it incorporates technical aspects and would be well suited to those with IT technical hardware/software patent-like ideas and interested in researching demographics as well as IPR issues or advertising and distribution channels.
- **WFYK Holdings:** A simple financial construction concerned with preserving knowledge assets. However, large degrees of complexity can be added, e.g. taxation issues and the project is aimed at those interested in venture creation, accounting and business economics.

Your instructor will also give you templates for the confidentiality agreements, etc. that you should exchange with your business partner(s).

The development of a start-up

In the course of this module you will learn many things. However, covering everything is not possible. In principle, the stages a classical start-up goes through are: Idea, Proof of Concept, Strategic Planning and Development, Venture Creation, Business Growth, Maturity and finally Exit. Your final report (the 'business plan') should cover these areas, although if you are heading for a try-it-and-see 'organic growth' strategy, then Exit may not be very relevant.

In this book we shall cover the 'Idea' area in a comprehensive fashion:

- Your motivation and creativity (Chapter 3).
- Fitting your ideas to the market (Chapters 3 and 5).
- Looking at emerging strategy (Chapters 3 and 4).
- Starting your planning and operations (Chapter 7).
- Your abilities and skills (Chapters 7 and 8).
- The resources available to you (Chapter 9).

As for the next stage, proof of concept, we will look into a more detailed marketing plan (Chapter 5) and the business plan itself (Chapter 6). However, if you have hard-to-imitate know-how and/or previous relevant experience, then you may wish to include more background. What this is depends to some extent on your specialist area.

Table 1.5 points out what factors are important for which branch of industry and these, where appropriate, could be highlighted in the final version of the business plan.

Table 1.5 A matrix plotting the importance of various background factors in the specialist areas covered in this book

	Knowledge barriers	External network	Financial and legal barriers	High-end IPR patents, etc.	Low-end IPR copyright, etc.
Technical	High	Low	Low	High	Low
Biotech	High	Low	High	High	Low
Green	Medium	Low	Medium	Low	Low
Health & Social	Medium	Medium	Medium	Low	Low
Journalism	Low	High	Low	Low	High
Arts & entertainment	Low	High	Low	Low	High

Chapter summary

Inventors and innovators can experience difficulty in bringing new products to market because they often lack the business skills needed to introduce new products to the market. Conversely, management specialists can only rarely invent breakthrough devices. Forming partnerships between business-minded people and technical-minded people can rectify this. This is the reason why group work is favoured.

A good marker for possessing a high degree of business expertise is being able to produce a good business plan. Most business plans fail to attract funding and the major reason is because they reflect the lack of managerial and business ability of the authors.

Business plans are needed not only by entrepreneurs – including entrepreneurs in the social sector – but also increasingly often by employees, especially in more innovative companies.

An extensive network – ‘social capital’ – can help enormously both to produce the business plan, as well as to realize its aims, including raising finance.

References

- Hughes, T. P. (1971) *Elmer Sperry: Inventor and Engineer*. Baltimore, MD: Johns Hopkins University Press.
- Mellor, R. B. (2003) *Innovation Management*. Copenhagen: Globe.
- Mellor, R. B. (2005) *Achieving Enterprise: Teaching Entrepreneurship and Innovation in Business and Academia*. Cologne: Eul Verlag.
- OECD (2003) *Entrepreneurship and Local Economic Development: Programme and Policy Recommendations*. Available at: www.oecd.org/document/27/0,3343,en_2649_33956792_2502299_1_1_1_1,00.html.
- Wang, E. L. and Kleppe, J. A. (2001) ‘Teaching invention, innovation, and entrepreneurship in engineering’, *Journal of Engineering Education*, October: 565–70.

Further reading

- De Bono, E. (1996) *Serious Creativity*. London: HarperCollins.
- Drucker, P. F. (1999) *Management Challenges of the 21st Century*. Oxford: Butterworth-Heinemann.
- Kirby, D. A. (2003) *Entrepreneurship*. Maidenhead: McGraw-Hill.
- McDonald, M. (1999) *Marketing Plans*. Oxford: Butterworth-Heinemann.
- Mellor, R. B. (2003) *Innovation Management*. Copenhagen: Globe.

Web links

The Financial Times. www.ft.com/businesslife/entrepreneurship

The National Council for Graduate Entrepreneurship: www.ncge.org.uk

Global Entrepreneurship Monitor: www.gemconsortium.org

What's happening in the EU: http://ec.europa.eu/enterprise/entrepreneurship/index_en.htm

Suggestion for exercises

Google the terms 'added value', 'organic growth', 'grey gold' and 'elevator pitch'.