

# Entrepreneurship for Everyone

A Student Textbook

**Robert B Mellor** with **Gary Coulton, Anne Chick,  
Antonia Bifulco, Noha Mellor** and **Alan Fisher**



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# List of abbreviations

4Cs	Consumer wants, Convenience, Cost and Communication
4Ps	The 4Ps of innovation: Product, Process, Position and Paradigm, or the 4Ps of marketing: Product, Place, Price and Promotion
ACE-Chase	An action audit tool
A-I	Adaption-Innovation
ALUO	Advantages, Limitations, Uniqueness and Opportunity
BA	Business angel
CDA	Compact Disk Audio
CEO	Chief Executive Officer
CGI	Computer Generated Images
CPS	Creative Problem Solving
CSF	Critical Success Factor
DoI	Diffusion of Innovations
DRM	Digital Rights Management
DVD	Digital Video Disk
FFF	Friends, Family and Fools
GM foods	Foodstuffs produced from genetically modified sources
HOTPLOT	See SWOTPLOT
IPO	Initial Public Offering
IPR	Intellectual Property Rights
ISP	Internet Service Provider
M&A	Mergers and Acquisitions
MALDI-TOF	Matrix Associated Laser Desorption & Ionization-Time of Flight
MBA	Master of Business Arts
MPG	Moving Picture (Experts) Group
MTFC	Multidimensional Treatment Foster Care
NGO	Non Governmental Organization
NHS	National Health Service
OHP	Overhead Projector
PCR	Polymerase Chain Reaction
PLC	Product Life Cycle (not to be confused with plc, public limited company)
PR	Public Relations
QoS	Quality of Service
R&D	Research & Development
RiP	Research in Practice
RoI	Return on Investment

SDS-PAGE	Sodium Duodecyl Sulphate-Poly Acrylamide Gel Electrophoresis
SEARCH	Scan, Expand, Adapt, Revise, Create and Harvest
SELDI-TOF	Surface Enhanced Laser Desorption & Ionization-Time of Flight
SGM	Strategic Group Mapping
SIP	Session Initiation Protocol
SLC	Social Learning Cycle
SLEPT	Social, Legal, Economic, Political and Technological
SME	Small and Medium-sized Enterprise
SWOT	Strengths, Weaknesses, Opportunities and Threats
SWOTPLOT	A development based on SWOT
TBL	Triple Bottom Line
TD	Trickle Down Theory
TQM	Total Quality Management
TROTLOT	See SWOTPLOT
TTM	Time To Market
UGC	User Generated Content
UNIX	Software commonly used as a server platform
USB	Universal Serial Bus
USP	Unique Selling Proposition
VC	Venture Capitalist
VHS	Video Home System
VoIP	Voice over Internet Protocol

# Introduction

## Why entrepreneurship?

Robert B. Mellor

Entrepreneurship gives birth to new commodities, techniques and goods, booting human progress forward and rendering the old obsolete, leading to the extinction of whole branches of industry and the creation of new ones. It is the use of innovation that makes many of our goods today not only better, but also cheaper, than they were even a decade ago. This process is so powerful that many large corporations are beginning to ask how they can use their employees' talents for innovation.

### **Innovation and the evolution of business**

Existing large firms are seldom capable of using innovation, e.g. of the largest ('Fortune 100') companies from 1930, only one – General Electric – still exists. New industries evolve out of start-ups. Few succeed. As new industries arise, they displace the old. The 'first world' technologies are being copied globally, meaning that 'first world' countries must constantly improve efficiency and create new industries in order to survive. In order to succeed, companies must constantly change and innovate; this is not impossible, but examples are few, e.g. the Preussische Bergwerks und Hutten Aktiengesellschaft (Prussian Society for Mining and Steel) became tourist giant TUI and the Nokianvirta Paper Mill became the mobile telephony giant Nokia.

Traditionally, the focus of classical microeconomics is price; capitalists, owners and other businessmen choose labour-intensive production when labour is cheap and interest rates high, or capital-intensive production techniques in the opposite circumstances. Guided by price, then they can choose to make fewer goods, or more. However, they rarely invent new goods or



radicalize production; those who use innovation to introduce something new are often called entrepreneurs. But introducing new products is a risky business; experience shows that less than 10 per cent of all inventions will result in a product and indeed only 0.5 per cent will return a significant profit. Clearly this is not an area that interests a manager of any traditional company, where stability, smooth adjustments and uninterrupted production are of the utmost priority. Most organizations or individuals do not want to change unless forced to – and logical, rational reasons alone are certainly insufficient to generate and sustain change. It is mostly the entrepreneurs, following their visions, who are ready to tackle such odds.

If entrepreneurs – using innovation – take this step, then the question may be ‘How can we get more of them?’. That is the aim of this book – to teach and inform about entrepreneurship both those who wish to start a business, large or small, and those who wish to work in innovative companies. Fortunately, however, learning entrepreneurship goes further than that; entrepreneurship training teaches you how to be more enterprising, more creative, more innovative, more commercially aware and more self-motivated. These are skills that can have a profound positive effect on your employability, as well as on your private life.

Some years ago there was a debate among academics about whether entrepreneurs are ‘born or made’. Obviously, if entrepreneurs became so by virtue of their genes, then there would be little point in trying to teach it – one cannot teach blue-eyed people to have brown eyes! However, as I discussed in one book (Mellor, 2005: Chapter 1.4), entrepreneurial behaviour does not follow Mendelian inheritance patterns and I believe that the data in question (for review, see Bridge et al., 2002: Chapter 3) can best be explained by social imprinting – similar to a Pavlovian reflex – from entrepreneurial role models during childhood.

Entrepreneurship during one’s early twenties is also relatively popular; ‘nothing ventured, nothing gained’ is an attractive philosophy when you have little to lose. However, there is a dip in numbers of new entrepreneurs in their thirties and forties; risking everything is less attractive when your house and family are part of the stakes. A relatively recent noted phenomenon is later-life entrepreneurship among the 45+ age group (‘senior entrepreneurship’). Such mature people often have some financial resources, but more importantly, they master their subject with massive competence and expertise, are psychologically very stable and have realistic expectations. Companies started by entrepreneurs in this category show a higher average success rate and above-normal growth rates. Indeed, the Australian organization EGC ([www.egc.net.au](http://www.egc.net.au)) specializes in venturing with mature and experienced returning ex-pats.

Thus it can be seen that anybody can be an entrepreneur at any stage in their life and indeed it could be argued that learning the tools of business creation is a skill that, if learnt now, may come in useful if not in the immediate future, then perhaps in 20 years time. Indeed, one factor this book expressly covers is entrepreneurial management; the overlap between entrepreneurship and management, in the realization that individuals can shift from one to the other (Figure 0.1).

To illustrate its importance, 1,500 colleges and universities in the USA offer some form of entrepreneurship training. Growth in the UK has been even more explosive, with over 500 courses being offered at over 100 UK universities and interest in entrepreneurship education spreading to non-business disciplines, where students in engineering, life sciences and liberal

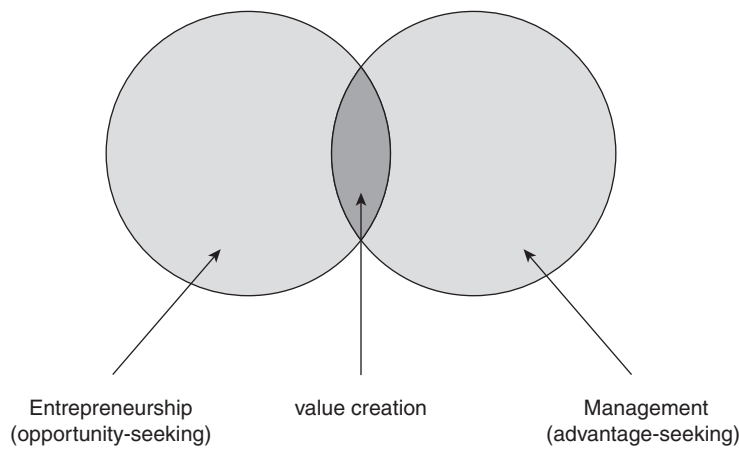


Figure 0.1 A Venn diagram illustrating that efficient value creation often occurs at the overlap of entrepreneurial and managerial behaviour (often called ‘strategic innovation’, ‘entrepreneurial management’ or ‘strategic entrepreneurship’)

arts are interested in becoming entrepreneurs, fostering a ‘comparative entrepreneurship’ approach. This module will give you a good grounding in entrepreneurship, regardless of your background.

A sound mastery of technical fundamentals is needed for success and the core competencies for new ventures must include the technical skills involved. This has led to a bit of a quandary, because the Business Schools claim ‘ownership’ regarding the teaching of the commercial activity called entrepreneurship, but unfortunately the Business Schools – per definition – are incapable of teaching the wide variety of deeply technical skills needed for successful entrepreneurship. These technical skills are provided by what I call ‘the ABC Schools’ e.g. Architecture, Biology, Chemistry, etc., where A, B and C can be any academic discipline. Thus this book is aimed at technical experts learning technical ‘ABC’ subjects and it is hoped that the number of disciplines covered will expand with subsequent editions, so ‘A’ may cover Aerospace, Architecture, Art and Archaeology; ‘B’, Building, Beauty and Biology; ‘C’, Chemistry, Cloning and Clothing, etc. We call this approach ‘Embedded Entrepreneurship’ and feel that only in this way – offering optional modules as ‘Entrepreneurship & X’ – can we ensure that aspiring student entrepreneurs possess the required technical background.

Teaching innovation, like innovation itself, flourishes on discontinuities, e.g. sudden unemployment. For final-year students one major discontinuity involves ‘employability’; leaving the cosy education system behind and graduating into the cold harsh world. Experience shows clearly that – especially for non-business students – entrepreneurship courses are by far most effective in the final year, or final semester and this module will help prepare you as a new graduate for this large discontinuity. The module instructor will guide participants through the course in such a way that you, upon graduation, will be in a better position to be able to see more clearly the choices and paths open to you.

This book follows the European concept of ‘course book’, with a chapter for each class lesson. To Anglo-Saxons this may appear as lecture notes expanded into a standalone text and indeed optimal value will be gained when you read it during a module where your lecturer uses the presentations and instructor guides downloaded from the companion web site. The text itself is divided into four generic parts for all students, and a specialist part. This structure uses the first three generic parts – Principles, Practice and Context – to introduce concepts common for students of all disciplines. In Part IV, you then concentrate on the chapter most related to the discipline you are studying and you may like to read the extra case studies related to the specialist chapters in Appendix B. The specialist strands re-join in Part V (‘Action’), which is about the young venture and academically forms a connection between the disciplines of entrepreneurship and small business research.

There is much to learn, so you must read the appropriate chapter before each class lesson; first, Chapters 1–9, then the chapter on your specialist discipline, then Chapter 16. If you are not certain what an acronym stands for, look it up in the list of abbreviations. If you do not understand a piece of jargon, e.g. ‘market shakeout’, ‘entropy’ or ‘goodwill’, then Google it and try find out before asking your instructor. The text is sprinkled with ‘think boxes’ containing cases, definitions, etc. that illustrate the surrounding text and prompt you to investigate the subject further. This is also the point of the references, the further reading lists and web links contained at the end of every chapter. It is a challenge, but only by reading around the subject will you master it!

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).

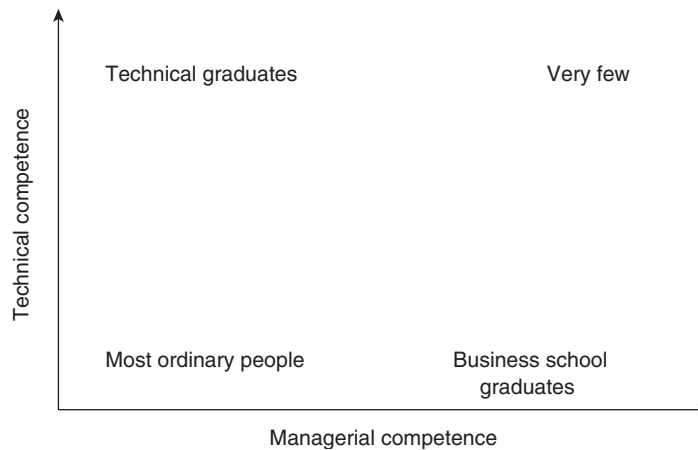


Figure 1.1 Plot of technical versus managerial competence. Very few inhabit the top right quadrant, although the multi-skilled (e.g. an engineer with an MBA) will tend away from the axes towards the middle and thus may be more innovative (see Chapter 2)

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



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.