3. Entrepreneurship

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Mellor, Robert B. (2019): Entrepreneurship. In: Mellor, R.B. (ed). Management for Scientists, p33-48. Emerald Publishing Limited, Bingley, UK

What we will learn

In this chapter we explore what entrepreneurship is and how new companies start and grow, and how the world (especially the "developed economies") rely on entrepreneurship to develop better ways of working and new industries. Entrepreneurship is contrasted with traditional economics and compared across various industries.

The importance of entrepreneurship

The world is a web of trade: Without entrepreneurs everyone would be looking after themselves and their immediate group or family at a level around subsistence. This may sound idyllic but if all are at subsistence level then it is hard to make larger-scale improvements that help everyone, like hospitals, clean water, sewers and roads, let alone the Internet. Clearly by virtue of climate or geography many communities exist where transactions are based on barter and "mutual aid" (those interested may like to look up e.g. Pyotr Kropotkin), and there is nothing wrong with this once one accepts that such an economy is unlikely to produce e.g. the International Space Station. Thus, in many parts of the world at some point, everyone will need something that they cannot produce themselves. In that case they will have to produce more of what they can produce and swap that excess for what they cannot produce. At some point two things will happen; firstly part of the population will concentrate on producing what they produce best in order to exchange it, and secondly a class of people will emerge who spend most of their time exchanging goods produced by others. We call this a "positive sum game" according to the Nash equilibria explained in Chapter 7, as opposed to "zero sum games" caused by conflict. Well before Nash, this effect caught the attention of Adam Smith (please refer back to the chapter 1 on economics) who wrote that when an individual pursues their own trading self-interests, under conditions of justice, then the "good of society" is promoted because competition in the free market tends to benefit society as a whole by broadly satisfying demand while keeping prices low. This is a not a blanket approval of capitalism, because at this point Adam Smith also warned against big business, pointing out that their self-interest is different; their interest is to form cartels, monopolies or similar in order to artificially raise prices, thus working diametrically against the "good of society".

Nonetheless, individuals pursuing their own trading self-interests, under conditions of justice, can be called entrepreneurs (although at this early stage one could use many other expressions; middle-men, traders, merchants etc). Clearly this has had a tremendous global importance. If one were to take away entrepreneurs and entrepreneurship, then what would be left is a kind of economic serfdom for the many, and corrupt big business for the rest. This also points to the often-overlooked phrase "conditions of justice", meaning that strong institutions of law and regulation, most often at the national level, must be in place to ensure equality amongst. Clearly even small deviations from

this, like being able to bribe officials, can have large effects and these will most likely be negative for the majority. One example could be e.g. someone bribing an official to buy sub-standard filters for municipal water purification plants. Countries with strong laws tend to be better-off.

Thinkbox 1: Conditions of justice, the case of the EU.

The 1957 Treaty Establishing the European Community: "*Resolved to ensure the economic and social progress of their countries by common action to eliminate the barriers which divide Europe. Affirming as the essential objective of their efforts the constant improvement of the living and working conditions of their peoples. Recognising that the removal of existing obstacles calls for concerted action in order to guarantee steady expansion, balanced trade and fair competition. Intending to confirm the solidarity, which binds Europe and the overseas countries and desiring to ensure the development of their prosperity, in accordance with the principles of the Charter of the United Nations. Resolved by thus pooling their resources to preserve and strengthen peace and liberty, and calling upon the other peoples of Europe who share their ideal to join in their efforts*." (Cited from https://ec.europa.eu/romania/sites/romania/files/tratatul_de_la_roma.pdf)

The above extract from the Treaty of Rome highlights justice and solidarity for all as the founding principle for the EU. Over 60 years later one may ask "what went wrong, why do we not have e.g. one 'state' old-age pension across Europe, one road tax for cars (after all, a car has the same emissions independently of location) or one international school system so all children can learn in many countries? Is this because populist "Me First" attitudes prefer local protectionism? If so, what could this mean for justice and entrepreneurship? Could there be knock-on effects for the economy and concepts of 'progress'?

Entrepreneurship often seizes upon new technologies and introduces these or associated products to the market i.e. to everyone else. Clearly many mercantile explorers like Christopher Columbus and Marco Polo were acting in an entrepreneurial fashion (and incidentally playing parts in developing insurance services!). The time of the great engineer-entrepreneurs was the Victorian period in Britain, around 1800-1890, when entrepreneurs invented an astounding range of machines and their private ventures laid hundreds of miles of railway track, built great steamships and laid the first trans-Atlantic communications cable. These technologies had enormous economic repercussions. Indeed, economic cycles are often associated with the discovery and exploitation of new technologies. The Russian economist Nicholai Kondratieff (see thinkbox 2) correlated monetary and technology cycles and showed that each cycle consists of around 20 years that were needed to perfect and use a series of related technologies, followed by around 20 years where these growth industries appear to be doing well, but what looks like record profits are actually repayments on capital in industries that have ceased to grow. This situation is quite perilous and can easily turn to crisis, often precipitated by a relatively minor panic. After the crash there is a trough or period of stagnation during which new, emergent technologies cannot yet generate enough jobs to make the economy grow again. One sometimes-overlooked consequence of supreme importance is that Kondratieff showed us that we cannot go backwards.

Thinkbox 2: Kondratieff cycles, a STEM perspective?

In the late 1700s, technical inventions like the 'spinning jenny' reduced the price of cloth to around 0.1% of what it previously was, making cotton cloth affordable for all. Water power and later steam power helped all these waves of inventions become practical propositions. Later Nicholai Kondratieff started to look back to analyse technology cycles and, as a soviet economist, he was interested when he saw a correlation with the "cyclical nature of capitalism" attributed broadly to Karl Marx (although Marx is not very clear on what causes capitalist downturns). Look up Kondratieff cycles (or Kondratieff waves) and one can see that, as interpreted by many later authors, the cycles seem to consist of:

A. Steam & agriculture (1820-1870)

B. Rail & steel & textile (1870-1930)

C. Electrical & auto & rubber & petroleum (1930-1980)

D. Information technology & communications (1980-2020)

This of course begs the question; what will wave "E" consist of? Environmental engineering, nanotechnology, biomedicine, space manufacturing? Have you any other ideas? How does your STEM interest and education fit into this scheme?

Reference: Kondratieff (1926)

Entrepreneurs are rather forced to be nimble, because with typically few resources they need to exploit cracks in the economic landscape and cover their minimal start-up costs. This is the strata that seizes on innovations and, if successful, uses them to revolutionize the whole industry (or even start a new industry). Names like Amazon, Google and Microsoft typify this phenomenon. Existing large firms are seldom capable of using innovation, e.g. of the Fortune 100 companies from 1930, only one (General Electric) still exists. Others including American Motors, Brown Shoe, Studebaker, Collins Radio, Detroit Steel, Zenith Electronics, and National Sugar Refining are long gone. When companies become large and established, they build a bureaucracy to administer their burgeoning production and then they enjoy the profits. Traditionally, they take little notice of new innovations e.g. railroad companies never took serious interest in the motorcar. By the time the newcomers have made sufficient inroads into the market and the incumbents wake up, it is hard for them to change; the newcomers are racing ahead while the incumbents are disadvantaged by e.g. organizational inertia and switching costs. This is often called 'the incumbents curse' and avoiding this is the reason why many large companies today try to establish flexible attitudes e.g. a bookstore that develops driverless cars, a search engine in the biomed sector and what has a payment gateway to do with the space industry? Large companies try now to act in an entrepreneurial fashion and not get complacent or caught out by new developments. As part of this strategy they may also pursue an active M&A policy (Mergers and Acquisitions), buying up small companies with potentially interesting technology.

Put briefly; new industries evolve out of entrepreneurial start-ups. Very few of these succeed, but as these few grow rapidly and new industries arise, they displace the old. Entrepreneurship can thus be seen as the engine of change and progress.

In a world characterized today by 'globalisation', imitation is more rapid than ever before. This means that "first world" technologies are being copied everywhere, meaning in turn that "first world" countries must constantly improve efficiency AND must create new industries in order to survive (Mellor, 2018).

What entrepreneurship is and how it uses innovation

Entrepreneurship is often confused with simply opening new companies ('new venture creation') or going self-employed. This may be complicated by the misconceptions around management and entrepreneurship, possibly gained from watching popular TV series that have not much to do with reality. So before looking at the central concept – Michael Porters concept of value chains, see thinkbox 3 – let us look at what an owner is and what an entrepreneur is, and contrast that with a capitalist.

INVENTION

A. Owner: May be an inventor (they will own their inventions) and could set up a firm on the basis of this, however a glance at the yellow pages shows the vast majority of small businesses are not based on inventions.

B. Entrepreneur often works closely together with an inventor but entrepreneurs are better known for uncovering e.g. business models and themselves posses few patents.

C. Capitalists: May seek to invest in others inventions, but is rarely an inventor

CREATIVITY

A. Owner: The process of new business formation is per definition a creative act, and sometimes the idea (e.g. a restaurant or art gallery) can be creative.

B. Entrepreneur: is often creative.

C. Capitalist: Is mostly a profit maximizer rather than being creative, although the capitalist may invest heavily in creative ventures.

INNOVATION

A. Owner: May well use external innovation (the newest tools etc.) but will rarely innovate or use innovation in systematic way to improve their product.

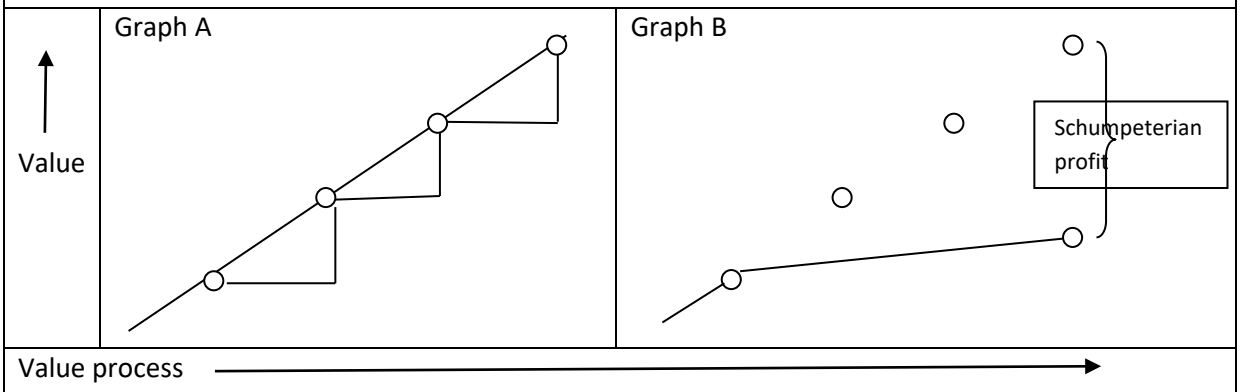
B. Entrepreneur: is often highly innovative, and it is entrepreneurial innovation that drives the process of forming new value chains.

C. Capitalist: Is rather a risk-minimiser than an innovator, although again the capitalist may invest in innovations.

Entrepreneurial economics is different to classical economics. As a broad generalisation, classical economics focuses on the creation of demand, then satisfying this with a slightly lower supply i.e. reaping Ricardian profits (or "Ricardian rents", as economists say). This is often called input-output ("I-O") economics. This is in contrast to an entrepreneur, who today would be described as a person who uses innovative methods to restructure a value chain so as to reap an entrepreneurial (or Schumpeterian) profit. Thus, entrepreneurship is often seen as an important exception to I-O economics.

Thinkbox 3: Value Chains.

The concept of a value chain belongs originally to Michael Porter and entails that goods increase in value (this may be e.g. price per kilo) as they move along a manufacturing or process chain. For example iron ore has a certain price, when smelted to pig iron the value increases, when refined to steel the value increases again, as it does again when the steel is rolled to sheets, and again when the sheets are pressed into car bodies or cutlery. The companies involved in these steps are often separate, the output from one being the input for the next (I-O economy!). The graph A below illustrates this value chain. If an entrepreneur can work with an innovation that creates cutlery out of pig iron, there is a product worth the high value of cutlery, at the low price of pig iron. Clearly there is a very large profit potential, and this lasts until all of the companies on the old value chain adapt or go bankrupt (this is called "creative destruction"), whereupon the new price of cutlery would tend towards being around the same as for pig iron. The new value chain is shown in graph B.



Graph A shows 4 companies on a value chain, where the output from one is the input of the next (I/O). In graph B company one has made an innovation completing the process and the difference in end value is their potential profit, the Schumpeterian profit. The other companies on the original value chain are suspended outside the value chain and have been subjected to creative destruction.

Reference: Porter, (1985).

The concept of value chains is central to understanding entrepreneurship because, put simply, entrepreneurship is establishing better value chains. This concept can be used everywhere e.g. consultants do this for their clients. Curious people with logical experimental methods are scientists, thus scientists, by striving to do things in better ways, are inherently entrepreneurial. Obviously if a value chain can be capitalized on, then a new venture can be created for it and entrepreneurship can

lead to new businesses, but entrepreneurship should never be confused with simply opening new businesses.

Better value chains are made continually, often using innovations. A good example of serial disruptions (and serial creative destruction) is the music industry. In 1970-71 “Virgin Records and Tapes” started selling vinyl records by mail order, instead of in physical high street shops. Using the Internet as an innovation Amazon improved this by enabling purchases of CD or vinyl records on-line, 10 years before Virgin got around (briefly) to doing this. By 1999 operators like CD Universe offered customers the opportunity to order on-line individual track selection mixes that they then burnt onto a bespoke CD sent to the customer, an innovation that was soon followed by single track downloads from e.g. Napster and iTunes. By 2005 YouTube had added the video aspect, heralding the end of domestic music centre with its CDs, vinyl records as well as magnetic tapes and cassettes. At this time you still had to know what you wanted to hear, but by the twenty-teens predictive services like Pandora, Soundcloud and Pitchfork were guiding customers towards new music. Most recently services like Choon (based on Ethereum blockchain) advertise that the blockchain innovation helps musicians be paid more fairly. This illustrates that new value chains are constantly being made and that incumbents are disrupted

Between 1912 and 1948 Joseph A. Schumpeter introduced Entrepreneurship theory and practice. Schumpeter directed the attention of economists away from static systems and towards economic advancement. Schumpeterian rents are those arising from using innovation and new technology to restructure a value chain, making it more efficient. For example from 1990 – 2003 the Human Genome Project costing around 3 billion dollars sequenced 98% of the human genome. In 2017 an Oxford-based firm announced it can sequence your personal genome in 2 hours for around 0.000005% of that cost. As the example of the music industry (above) shows, Schumpeterian profits are by their nature dynamic and transitory, and accrue in the time between the initial innovation and the rise of imitation. Nevertheless, they may generate high returns for considerable periods of time. Examples include cost savings like Internet banking or breakthroughs like the rise of digital cameras (when is the last time you saw roll film for sale?) or the publishing industry (look up createspace.com). Following on from Schumpeter, in 1985, Peter F. Drucker contrasted the employment situation in Europe and in the USA, because at that time the USA was booming, whilst Europe showed all the symptoms of being at the stagnation end of a Kondratieff cycle. Whilst there could be little doubt that the western economy had entered the "post Fordist" stage (the end of the "smokestack" industries and beginning of the "sunrise" industries), Drucker argued that the difference was due to the entrepreneurial culture in the USA, which was more flexible and thus better able to take advantage of the change. The impact of Druckers book is hard to overestimate; by 1993 the EU had instituted DGXIII “Enterprise” (which today lives on as DG Enterprise and Industry) plus that similar structures, ministries etc were being put in place in almost every European country. By the 2000-05 many Universities had introduced entrepreneurship lectures into even STEM degrees.

Discovery, invention and innovation.

Finding out new and better ways of doing things is a natural part of human endeavour. These can be divided thus:

1. Discovery is a new addition to knowledge, finding out something that science has not known before.

2. Invention is a new device or process, often protected by Intellectual Property Rights (IPR).

3. Innovation is a better way of doing things, sometimes the application of the above two.

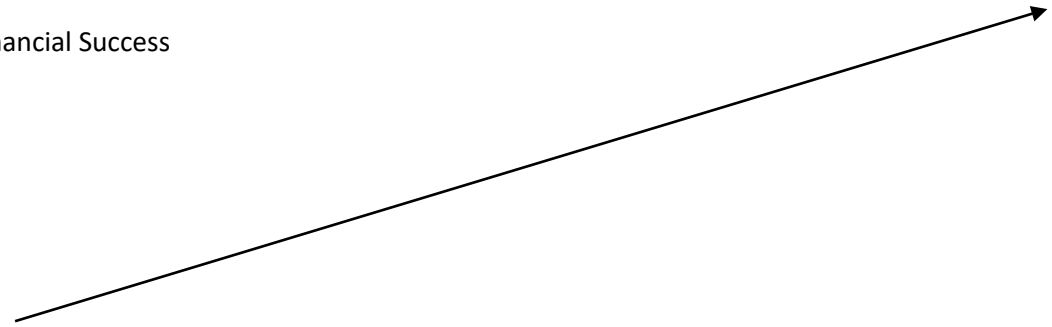
Discoveries in microelectronics led to the computer being invented, software like spreadsheets is also an invention. Using spreadsheets to plan e.g. office workload is an innovation. There are many overlap and one can speak of a continuum or spectrum between discovery and innovation. Clearly STEM-type work and science tend to be at the discovery end of this spectrum, however as shown in Thinkbox 4, there is a definite tendency for financial rewards falling towards the opposite end of the spectrum.

Thinkbox 4: Rewards along the discovery-innovation spectrum

← Discovery end of the spectrum — Innovation end of the spectrum →

Curie	Edison	Richard Branson
Einstein	Stephenson	Anita Roddick
Pasteur	Brunel	Stelios Haji-Ioannou
Whittle	Mullis	Madonna

Financial Success



Look up the people named above and estimate fortune plotted against their scientific honours.

Thinkbox 4 also illustrates that innovation actively erodes class distinction because the power and money in the state is radically differently distributed when compared to 100 years ago. Like trading generally, entrepreneurship is anti-war. At this point it is useful to realize that entrepreneurship (in its capacity to create better value chains) does not need to be performed in a commercial environment. Indeed the Peter F. Drucker foundation (www.pfdf.org) reliably estimates that the value of “social entrepreneurs”, charities, churches, not-for-profit, etc form the largest proportion of entrepreneurial ventures, with a total value far exceeding that of commercial entrepreneurship.

Entrepreneurs often use innovations. Innovators need anti-totalitarian environments (you may like to check the life story of e.g. Galileo Galilei in this respect) and a go-it-alone head-on battle against the incumbents can be extremely conflict-laden and take a huge toll on the individuals involved.

Examples could be the thousands of dot.com firms started by owner-inventors around the turn of the century, the vast majority of which failed and are largely forgotten. If the new entrant looks like succeeding, then incumbents may offer improved or "lookalike" services or products at comparable prices, or one of the incumbents may try to acquire the entrant by a process known generically as "Mergers and Acquisitions" (M&A). One current example is Tesla Motors, at the high end of the auto market, founded in 2003 and briefly having a market valuation exceeding that of Ford. Many established automotive companies responded to some degree to Teslas entry, notably Toyota with its 2007 hybrid models. The future of Tesla may either be a long battle for market significance in the main (e.g. Toyota) price bracket, or acquisition by a large incumbent.

One characteristic of companies that are built around new technology is that they rarely have a "cash cow". The reason for this is the relentless force of research – often conducted at other companies. An example is the operating system Windows 95 which was very popular, however its 16 bit architecture meant several drawbacks in its usability e.g. that users had to choose 8-character file names. Clearly the manufacturer could have continued selling this software, but would have gone bankrupt the moment any competitor developed the superior 32 bit architecture (where file names can be longer and it is much easier to have different characters, like Greek), so Microsoft had to cannibalise its own major product and junk Windows 95 as soon as its research labs had made the improvement (which was marketed as Windows 98 SE) because once it becomes technically feasible, then a competitor can beat you to it. Indeed, companies like Ford are wondering what will happen to the market for human-driven cars once self-driving cars become widespread?

A further factor in technology-oriented innovation is compatibility. In 1988 Apple/NeXT marketed a PC with 25MHz chip & 8 MB RAM. But it was not IBM compatible (the dominant standard), so the technological utility was small. UNIX has fallen out of favour because there is no one body protecting the standards, so there are many versions ("flavours") of UNIX that are cross-incompatible. Conversely, some believe that part of the success of the Sony PlayStation (PS1, 2 & 3) over Sega and Nintendo was backward compatibility (note that PS4 is not backwardly compatible with earlier versions).

The people angle

Figure 1 shows that there are very few individuals that can master technical innovation as well as being good business people.

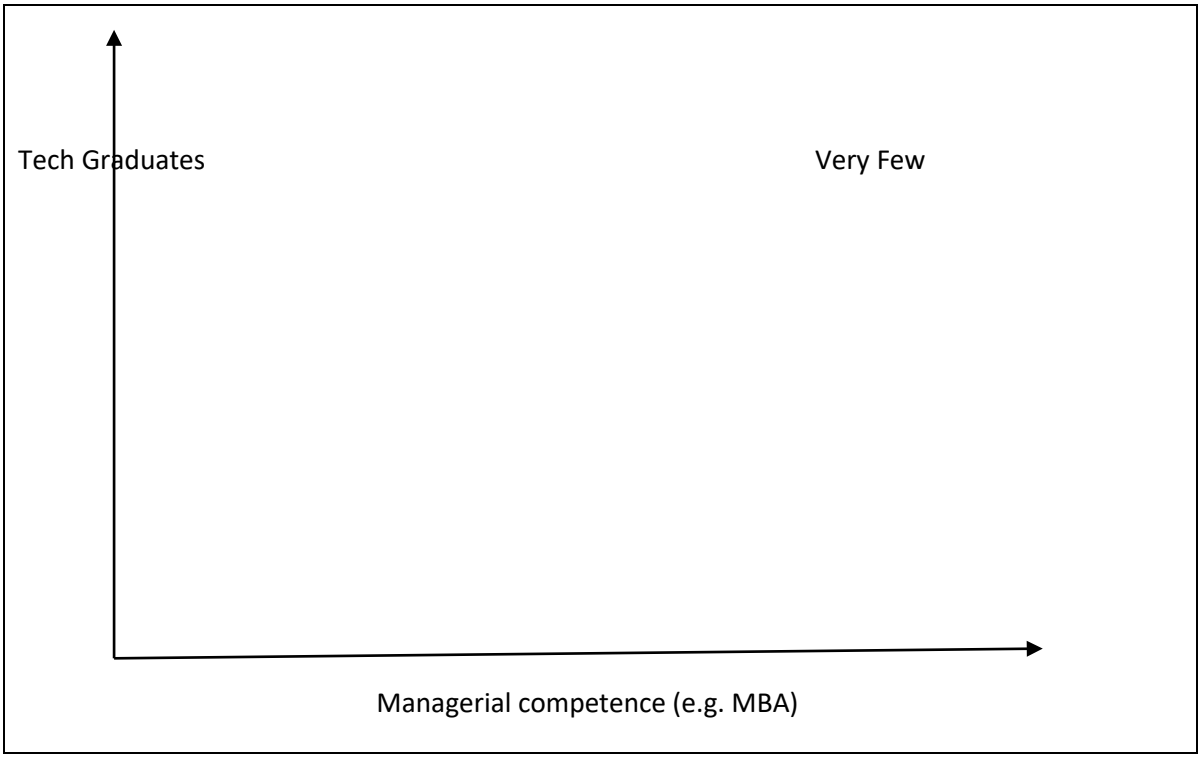


Figure 1: Showing the dearth of multi-skilled experts (from Mellor, 2008).

Statistics show that of all potential investors, 88% believe that the technology angle in a new start-up is satisfactory, but only 48% think the business management is satisfactory. Thus because of the challenges of starting up a new firm around a new innovation or invention, the inventor will often partner up with someone who is more experienced in business or entrepreneurship. This is especially important when trying to attract investments from professional sources like Venture Capitalists.

What investors say they are looking for in a new firm	What investors are actually looking for in a new firm
• A grade A++ management team • A large addressable market with a need/opportunity • A cogent strategy to attack the market • A defensible competitive position • A product that can be built and should work • A business model with manageable capital intensity	• A grade A++ management team • A grade A++ management team • A grade A++ management team • The potential to exit at full value • Something that some day might be worth a lot • A grade A++ management team • A grade A++ management team

• A 'plan B' • The potential to exit at full value	• Something they can afford

There are many examples of this partnering up, with probably the most influential being the partnership between the engineer James Watt and businessman Matthew Boulton, whose steam engines powered the Industrial Revolution. More contemporary examples are Boyer and Swanson (founders of the biotech company Genentech), Wozniak and Jobs (Apple Computers), Hewlett and Packard (Printers) or Epstein, the business brain behind the Beatles. Anecdotally professional investors are said to believe "Better to back an A++ grade management team with a B grade technology than a B grade management team with an A++ grade technology".

After looking at how inventors, or innovator-entrepreneur partnerships can start new companies, it is time to consider another combination; the adoption of innovations by already-established companies. In this case the difference is between innovations in the company core (like a new IT system) or innovations in the periphery.

Thinkbox 5: The adoption of innovations in peripheral areas.

Injection moulded plastic parts are used in a wide variety of industries, for biomedical research consumables to mobile phones. Moulds for mass production of these parts in injection moulding machines, are made usually of steel and are very expensive to make. Because the making of the mould is highly precise, the construction of a prototype was previously a critical and time-consuming exercise. Now 3D printing makes prototype construction a rapid and more flexible process. This means that manufacturers can produce a range of prototypes and test these under working conditions, before finally committing to the expense of making the mould.

Forming an overview of large construction sites, or checking for damage on the exterior of high building by e.g. lightning strikes, are traditionally endeavours that are undertaken infrequently due to danger and cost. Now the use of specialized drones makes building inspection and site security much easier and cheaper than previously. Think of other areas that can improved using drones, like journalism and real estate.

Thinkbox 5 shows that innovations originating elsewhere can relatively easily be stuck onto the periphery of existing organizations. When considering innovations, it should be noted that innovations can readily fail (van der Panne et al., 2003, Sevens & Burley, 1997) or may otherwise turn out to be unsuitable for an organization e.g. too expensive for the company to realize, or not in alignment with the predominant core competencies at that time, etc, and thus endanger the organization. Indeed a recent survey of 5,400 software projects revealed that half of all projects significantly fail while 17 % of projects actually threaten the very existence of the client company (Bloch et al. 2013). Clearly a new IT system is not a particularly radical innovation, and this in turn gives some idea of the scale of the problem, which is that helpful innovations bring about a certain benefit, but "bad" innovations cost much more, as illustrated in Figure 2.

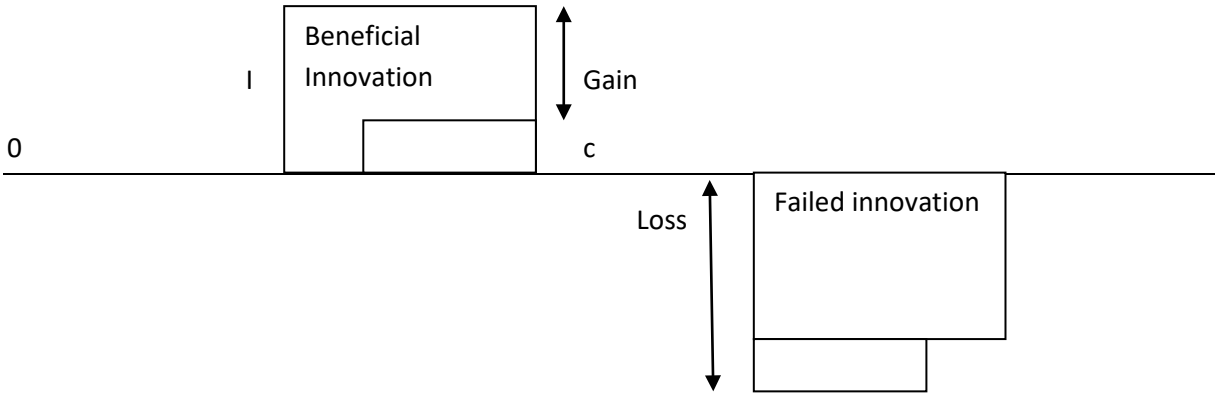


Figure 2: Showing the financial effect of beneficial innovations and of "bad" innovations. The value of the innovation is "I" and it can be positive or negative. Implementing an innovation involves costs (c) which are always negative. Thus the final gain of a "good" innovation is I minus c and the cost of failure is the loss –(I+c), a much larger figure.

Interestingly if a manager responsible for accepting or rejecting core innovations in an established company was to make random decisions by flipping a coin, then the result would be success overall, because although the benefits would be halved, so would the damage, and the damage would be more extensive. Figure 2 shows a very simple example but it does explain why important changes are always accompanied by risk management and other control/mitigating techniques (see Chapter 13). One hopes that managers have better judgement than random, but it is also interesting to consider the opposite, when managers reject and even punish new innovations, as was (and still in some instances is) in some countries around the world, a factor which correlates well with the low living standard of these countries (cf North Korea).

Raising finance

Figure 3 shows that starting a company needs money, and that this need occurs before revenues (sales etc) bring money in. This deficit has to be addressed. The first and most immediate source of funding is the so-called FFF, which stands for friends, family & fools, and these sources may cover the first few thousand pounds.

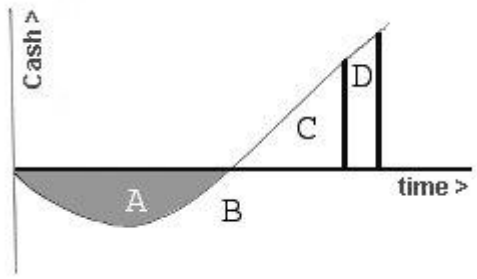


Figure 3: A start time financing will be needed and that curve will be always negative. At some point sales will take place, the gradient of the sales curve being (hopefully) steeper than the outlay curve. Offsetting the two gives rise to the "hockey stick" curve. The area A represents the amount of

investment needed. At B there is actuarial break-even and when the area C is the same as A, repayment on the investment has been reached. The time needed to reach D (D is approximately 35% the size of A) is the time needed to reach a (in this case 35%) Return on Investment (RoI). Taken from Mellor (2008) with permission.

Many will thereafter write a Business Plan and with this, approach a Bank for a business loan. More recently a separate early-financing model has appeared, called Crowdfunding.

An exercise in Crowdfunding:

Investigate some crowdfunding sites like fundingcircle, Crowd Supply, Quirky.com, Kickstarter, startr, eYeka, Crowdcube, CrowdUni, Rockethub, IndieGoGo and anymore crowdsource financing initiatives you can find. These may be educational like hubbub.net and try to put them into the following 4 broad categories:

1. Equity Based: Fundraisers will offer portions of their 'equity' to their investors
2. Lending based: Investors are able to lend money and gain interest on this money
3. Reward Based: This allows entrepreneurs to give investors non-monetary rewards; these rewards may include: acknowledgements, or products (free tickets etc) and services. Compare the business models of sellaband.com and lunarmissionone.com
4. Donation Based: the crowd receives no 'explicit' rewards

Compare "the other side", incoming crowdsourcing like Crowdspring, oDesk and IdeaBounty. For music that could be e.g. www.2bawards.com.

What are the advantages of crowd-models over conventional models? Will the new model succeed and if yes, what could banks etc do to retain their position. What could the Social impact be (start at globalcitizen.net? There are thoughts that you will get an annual tax bill from the government and you will be allowed to spend some of it on specific areas (like more money for research, health and education?). What is your view? Look at other "alternative" banks like www.surreysave.co.uk and think about what you may like to implement in your local area.

At around this point the team will have to make a decision about their future. Statistically only 30% of start-ups survive after five years, and only 4% become profitable "gazelles". So is the strategy going to be one of 'go it alone', growing their own firm and financing growth from profits (and possibly loans)? Or will the team look for investment, meaning a much higher growth rate? These two strategies are compared below:

VC-backed expansion strategy	**'Grow your own' strategy**
Have to exit	Do not have to exit
BIG risk, BIG reward	LOWER risk, LOWER reward
24/7 existence – 'full on'	Higher quality of life
Maximise the potential of your business	Possibly a family business for your offspring

You will lose control of your business But you will be part of the team Own ~10% of a €500m Company in 7-10 years Change the industry forever……then do it again!	Maintain control of your business Accept gradual/constrained growth Own 50% of a €10M Company in 15-20 years Exit via an earn-out to retirement!

Assuming the high growth strategy is adopted, then the next source of funding is usually "Business Angels". These are often previously-successful entrepreneurs who are willing to invest around 50-150 thousand pounds in ventures, either alone or as part of a business angel syndicate, in return for typically 10-20% of shares. Some may even work in the company on a part-time basis, giving the company access to valuable networks and experience. Obviously working together is easier if the investor is someone you like, or would appreciate 'in the trenches' with you when the going gets tough.

At some point, however, the demand for funding to support rapid expansion exceeds the capacity of one or several Angels and Venture Capital (VC) is needed. VCs are extremely busy people and finding a "warm introduction" can often be the only way forward. From 1000 such introductions, one investment may succeed. The various stages and approximate times are shown below:

Initial response to warm leads (2 weeks: 90% attrition)	1000 – 100
Initial presentation (2 weeks: 80% attrition)	100 – 20
Initial due diligence (4 weeks: 50% attrition)	20 – 10
Term sheet (2 weeks: 50% attrition)	10 – 5
Final due diligence (6 weeks: 20% attrition)	5 – 4
Documentation & completion (6 weeks: 20% attrition)	4 – 3
Investment (2 weeks: 60% attrition)	1

VC money is often in large pools ("venture fund" or "private equity fund") to be invested within a limited lifetime, this may be e.g. £20 million to invest over 6-10 years. Clearly one wants to be in at the start of a round (years 1-4), rather than the end, unless a portion is retained for follow-on. A deal may be 2 million in exchange for 40% of shares, the VC will also put directors on the company Board and make sure the company is working hard. The VC model is built on ~20% annual return meaning if the VC fund invests in 10 companies, they will expect 3-4 to fail, 3-4 to break even and the remaining 2-3 to be so successful that they pay for the failures and generate the ~20% profit. When the company exceeds 10 million in annual revenue, then the VCs will look typically for an investment banker to sell their shares to. When the company has grown to minimum £0.5 billion the investment bank will organize an Initial Public Offering (IPO) on one of the various stock markets, like NASDAQ, and shares will be sold to the general public.

Entrepreneurship in various sectors

Some knowledge is more readily acquirable than others; it is relative simple to become an entrepreneur by opening a kebab shop or a hairdresser. For areas where knowledge in more hard to

imitate, intellectual property rights (IPR, see chapters 12 and 13) become more important. How these factors differ across specialist areas is shown below (Figure 4)

	Knowledge barriers	**External network**	**Regulatory barriers**	**High-end IPR like patents**	**Low-end IPR like copyright**
Technical	High	Low	Low	High	Low
Biomed	High	Low	High	High	Low
Green	Medium	Low	Medium	Low	Low
Health & Social	Medium	Medium	Medium	Low	Low
Journalism	Low	High	Low	Low	High
Entertainment & Art	Low	High	Low	Low	High

Figure 4: The importance of various factors in specialist areas (modified from Mellor, 2008)

Figure 4 shows that e.g. for arts, entertainment and journalism, knowledge barriers are low (anyone can start a blog etc) yet the importance of being seen in the right places is enormous (compare the media coverage of the Oscars with that of the Nobel Prize). Biomed sees legal, professional and ethical regulations take a high priority and (as with technical areas) patents are much more important than e.g. copyright, which conversely is the lifeblood of e.g. journalism.

Summary

Entrepreneurship is about doing things better (creating superior value chains). Curious people often seek better ways of doing things, thus you don't have to open a company (new venture creation) to be entrepreneurial, although you may do if your new value chain looks promising, and if you can defend it (see Chapter 10). Mutual inspiration and open curiosity are contributing factors to peace and prosperity.

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Further Reading

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Useful web-links

About opting for a growth strategy http://www.bbc.co.uk/news/business-42959138

The Business Entrepreneurs & Enterprise Federation https://thebeef.biz

StartUp Britain http://startupbritain.org

FSB, The Federation of Small Businesses https://www.fsb.org.uk