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Introduction

How to use this book

Our aim is to give you the equivalent of a workshop manual of invention. We've therefore divided the essential aspects of invention into ten Projects, followed by a Checklist to help you turn each Project into practical activity.

We've called them Projects, rather than steps or chapters, mainly because these are distinct areas of activity that may not all need tackling in the sequence we've given them. In your own interests you **must** prioritise Projects 1-3 (see below), but circumstances may justify changing our running order thereafter, or working on two or more Projects at the same time. (Circumstances may also justify quietly shelving this book after Project 3, but we won't dwell on that.)

Invent with a friend

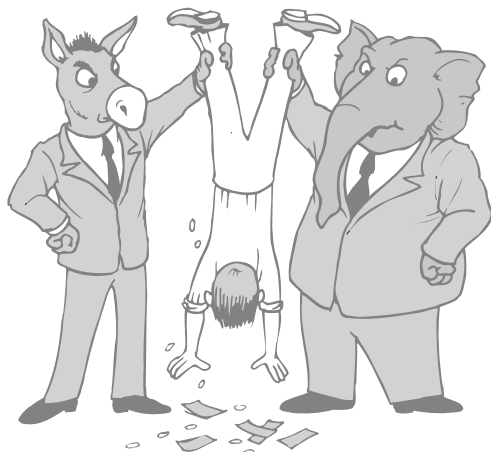
If possible, don't tackle these Projects unaided. Invention can do strange things to otherwise intelligent people. Some become so emotionally attached to their inventions that their common sense shuts down and they don't see problems or awkward facts that may be blindingly obvious to others. So wherever you can, enlist an invention buddy you can trust to act as a sounding board and second opinion. If you have a choice of (a) your best mate or (b) someone who doesn't give a monkey's about your idea and nit-picks constantly, choose (b). The chances are that (b) will be more diligent, truthful and useful than (a), though it's entirely feasible that both could be the same person.

Stakeholders

We use the term 'stakeholder' throughout the book as shorthand for anyone with a financial interest or stake in your invention – essentially, anyone who stands to win or lose from it. This can be an individual such as an investor, business associate or shareholder, or an organisation such as a licensee or supplier company, university or funding body. But perhaps the most important stakeholder is **the inventor**. Thinking of yourself as a stakeholder rather than an inventor may help you detach yourself emotionally from your invention at key moments of decision. 'If I weren't me, would I do this?' is a question that the smart inventor must constantly ask, even if the answer is usually 'No, but I'm going to do it anyway'.

Reducing risk and controlling costs

A theme that we never miss an opportunity to hammer home is **reducing risk**. Any business venture is risky, but invention carries added risk because there are fewer familiar paths to follow and so hardly any outcomes are predictable. Every inventor must therefore make all reasonable efforts to reduce risk to a level that stakeholders can accept. Some risk stems from a lack of information, so simply being meticulous in your research and planning can be a big help. Most risk though is financial, so **controlling costs** is vital. Only partly because we're from Yorkshire, how to spend wisely and thriftily is a thread running through this book. Many inventors get their personal spending so out of proportion that even if their invention were to be successful, they'd never make their money back. It's one thing to gamble an affordable sum on an invention to at least get it out of your system - you may regret it forever if you don't - but another thing altogether to bankrupt yourself over it.



Projects 1, 2 and 3

These are without doubt the three most important Projects. In the interests of your own safety and your credibility with other stakeholders you can't afford to skip or skimp them.

Project 1 matters because without a significant degree of novelty your idea may be worth little or nothing. Most ideas proposed as inventions - in our experience around 90 per cent - get holed and sink right here. **Project 2** matters because the fate of most inventions depends not on their inventiveness but on their profit potential. And **Project 3** matters because it's a watershed. If you go past it, what has thus far been low on risk, cost and commitment becomes much higher on all three.

Throughout the book we also try to convey how inventors and invention are seen by businesses generally and by potential stakeholders in particular. It's vital to understand how they think, because in all likelihood their opinions and decisions will determine whether or not you succeed. Ultimately, the technical merits of your invention may have very little to do with it.

Where do inventors go wrong?

Statistically, most inventions fail. According to research, only one in a hundred more than covers its costs, only one in 300 makes a significant difference to a company and only one in 1400 is a world beater. This isn't the luck of the draw. Most failures are either inevitable because the idea is flawed, or made inevitable by the mishandling of some aspect of development or exploitation. **Inventors who strive positively to avoid mistakes have a much better time of it** - and that's what this book is all about.

Lack of novelty (Project 1) is by far the most common cause of invention failure, followed by a lack of market potential (Project 2). Other causes of failure include:

- Not analysing a problem or design fully, resulting in an invention that isn't the best solution to the problem it addresses.
- Not budgeting carefully enough. This particularly endangers good ideas as they pick up speed. Often, so much is spent on one aspect, such as prototyping, that nothing is left for other priorities such as testing the prototype.
- Failing to impress potential stakeholders, often by not presenting the idea well enough or by missing the point that companies and investors primarily want profit, not technical wizardry.

- Overestimating sales potential, often by assuming demand rather than proving it. A tell-tale sign is a statement in lieu of research such as: 'We only need to get one per cent of the market to be profitable'. In many markets, even a fraction of one per cent is a serious challenge.
- Messing up negotiations. Even when a decent deal is on the table, some inventors can find ways to blow it, usually by being too greedy or making impossible demands.

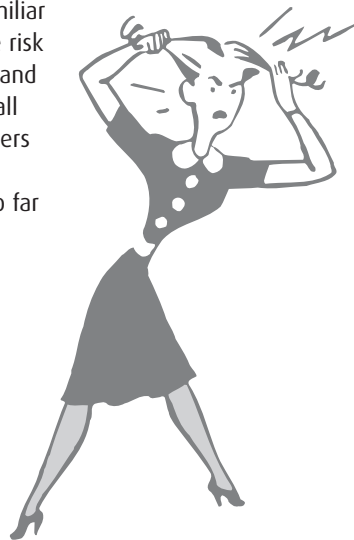
Where do companies go wrong?

Innovation is widely regarded as an awfully good thing, but mainly by those who don't have to do it. On the ground, innovation = uncertainty = risk, and few companies or investors want either uncertainty or risk. Most innovation is therefore incremental, based on modifying existing components or designs. You know where it's come from and you know where it's going. It may be unadventurous but it's safe.

Inventions on the other hand involve unfamiliar elements, one of which is the inventor. The risk is immediately greater and less calculable, and so will often be deemed unacceptable. Small companies may fear the cost, while managers in large companies tend to shy away from anything that might elevate their heads too far above the parapet.

None the less, if they're to stand a chance of competing, more companies need to risk the occasional bold leap that inventions represent and that the innovation-by-evolution process may never produce. More companies need to want to be first to market with a brilliant new idea, not second or third with a watered-down imitation. More companies need to encourage and support inventors, not treat them like street beggars. More big companies need to break the habit of using blatant infringement and fear of financial ruin to rip off small owners of valuable IP. Overall, there needs to be a culture change so that inventors don't feel they're being punished and preyed upon for having a good idea.

There are plenty of good inventions waiting for a taker, and no shortage of talent capable of producing more. The problem is a distinct lack of encouragement and support for invention from business and government. That's not just tough on inventors - it's everyone's loss.



Project 5

Protect your idea - and yourself

Why do it?

If you don't legally protect your intellectual property (IP) you can't safely disclose it, profit from it or defend it. There are several forms of protection known as intellectual property rights (IPR). Some are free and others affordable, while a patent - the best known but least well understood - can be a highly expensive double-edged sword. Usually, the best way to protect an idea as it evolves is to use a strategic combination of the cheaper forms of IPR for as long as possible, and consider patenting only when it's both commercially justifiable and unavoidable. This Project can help you plan your protection strategy. Be aware though that IPR is a complex area of law that holds many dangers for amateurs. A key aim of this Project is to help you make better use of patent attorneys, **not** do without them.

What you're going to do

- Learn something about the different ways of legally protecting IP.
- Think how you can best use them strategically.
- Understand the role and importance of patent attorneys.
- Get patents in perspective.

Resources you may need

- A patent attorney.

Time, cost and risk

- Potentially lots of each. The more you think and act strategically, the lower the cost and risk.



Checklist

The following checklist is partly an action planner and partly a reminder of what matters. If you're tempted to think 'I don't need to do all this stuff', it may help to point out that we've modeled the checklist on questions professionals are very likely to ask if you want their advice, support or money. We therefore have to be stern and say that if you aim to be a respected and successful inventor, you can't afford to duck any of it.

Project 1 Is your idea really an invention?

Professional patent search:

- Who did you use (patent attorney, Intellectual Property Office etc)?
- Summarise their findings.

Own patent search using Espacenet:

- What keywords or strings gave you your most relevant search results?
- What's the most relevant ECLA for your inventive step and how many patents does it contain?
- List any other relevant ECLAs searched.
- List all patents that you consider relevant to your inventive step, either as prior or competing art.
- List any that you can't yet make a decision about (for example, because they're in a foreign language or there's too little information available).
- Short-list the patents that you think pose the biggest threat to your inventive step or the claims you might want to make for it.

Product search:

- List the sources you used to find information.
- Which were the most useful, and why?
- Give details of all products (past, present or proposed) that are relevant to your idea, either as prior or competing art.

Assessment of findings:

- How confident are you, on a scale of 1 (low) to 5 (high), that your inventive step is novel and not threatened by prior art?
- If you've scored below 5, what makes you think you can keep your idea alive?
- Most ideas proposed as inventions turn out not to be novel. Can you honestly say you've made all reasonable efforts to find prior art?

Remember:

If you discover early on that your idea isn't novel, no harm is done and you may still be able to exploit it. If however you carry on as though it's novel, you could be heading for serious financial and legal trouble.