

1 INNOVATION IS THE CHALLENGE - DESIGN IS THE PROCESS

Those who successfully exploit an idea (an Invention or Innovation) often follow a similar journey (the Design Process) to that outlined below:

- Identify a need - spot a problem.
- Find an innovative solution to this problem.
- Analyse the possible market(s).
- Explore the commercial options.
- Produce a business plan.
- Prove the idea (e.g. Design, Prototyping and Testing).
- Protect the innovation - Intellectual Property rights (IPR): Patent, Registered Design, Registered Trade Mark, Copyright, etc.
- Develop to pre-production (Design for Manufacture).
- Take your innovation to market - many options here (sometimes by licensing).

We are told continually that the market demands innovative products, yet it can be very difficult to persuade companies to accept a new idea. Most companies are cautious and prefer a **low risk** option in which to invest their money. In general, many 'new' products evolve from existing ones. Inventions are by definition risky and the chances of success are difficult to predict. About one idea in 100 has true merit, and about one in 300 is a potential winner. The majority of innovations fail to become a commercial success and there are a number of reasons for this:

- The idea is not original.
- Nobody wants it.
- It is good, but not good enough.
- It is too complex or expensive.
- The innovator has insufficient technical or commercial expertise.
- There is not enough money to complete the process.
- The innovator chooses an unsatisfactory path of collaboration or exploitation.
- The innovator's motives are suspect - vanity or fantasy rather than commercial reality.

Money

Because the odds against success are so high, it is best to keep your financial outlay to a minimum. It is common to see large amounts of money spent with little hope of recovery, so money becomes spent on servicing a debt instead of developing the idea. Hence before spending any significant sums:

Prove that the idea:

- Is original (and protectable) and has a potential market;
- Will work;
- Is saleable and that people will buy it (at the right price).

2 ORIGINALITY

An innovation or invention must contain some element or combination that is completely original and novel. Many innovations fail because they aren't original or cannot demonstrate a significant step change from a similar product. They can also fail because the innovator did not bother to find out about competitive or established products.

If you find out at an early stage that your idea isn't new, then little harm is done and you can turn your creative efforts to



something more promising. Don't carry on developing an existing product as though it were original. It may seem a negative step, but it is worth taking the trouble to try to **disprove** your own originality.

Some of the channels you can use are:

1. **Product search** - look at what is already in the market place - catalogues, adverts, trade publications, reference libraries, the Internet etc.

2. **Patent search** - Patent offices hold information on, or have access to, every patent in the world. Searching existing patents will tell you a huge amount about what has been done in a particular market sector. Performing a patent search (which is also a very valuable source of ideas and inspiration) can be a complex and time-consuming process, which is usually (but not always) best left to experts. Bear in mind it is very easy to miss something, which may be filed in an unlikely category. There are a number of ways to search the patents databases, namely:

- Use a Chartered Patent Attorney;
- Do it yourself, using the Internet, British Library etc.
- Use the Patent Office search facilities;
- Use a patent searching service (see Patent Office publications).

It is often advisable to file a UK patent application first and at the same time request an early search. This way you establish both a "priority date and application number" and get a comprehensive search carried out by the Patent Office on your claims of novelty all for a reasonable fee. An important part of this process is the interpretation of the results. It is easy to be put off at this stage, so discuss the results with a qualified Patent Attorney before you make any decision (e.g. to go ahead or to drop the application).

3 DEMAND

Will anybody buy it? You need market information for:

- **Yourself** - to prevent spending time and money on an idea that has no commercial value.
- **Potential partners** - to encourage partners to co-operate in developing your idea you must first demonstrate to them that a suitable and profitable market exists.
- **Investors** - you will need to demonstrate to any financial investor that your idea can be produced and sold at a price that will give a profit to all parties.

Market research means you *must* investigate:

The **real** identity of your customer(s);

The potential market for your product;

Who will actually buy or specify (not necessarily use) your product?

The size of the market;

Is the market moving up, down or is it static?

Why will people want your product? (Is it better, cheaper, new and competitive?)

Who are your competitors?

How your product is different;

What market share do the competition have?

How big a market share might you have?

Manufacturing costs;

What retail price and in what numbers will your product sell profitably?

Where will it be sold, by whom and how?

Etc.

Sources of information

- The British Library is an excellent place to start (www.bl.uk).
- The Forum Library (Norwich) business information section, where you should be able to use their services to search several proprietary databases (01603 774779).
- Local reference libraries.
- Market/industry information - use commercial information service organisations e.g. Keynote, Mintel, ICC, Market Research Society (0207 4904911) etc.
- Market/consumer information - publications from HMSO on economic and social trends, industry reports, market research publications etc.
- Government support agencies.
- Local Enterprise Agencies.
- Prince's Youth Business Trust.
- Trade magazines, professional publications etc.
- The Internet www.google.co.uk etc.

4 WILL IT WORK?

Having established that if you had such a product, people would buy it, you must now prove that it works by building a working model or prototype. This is necessary to prove the principle both to yourself, so that you can demonstrate the device to other companies, or to investors.

The basic model or prototype should be simple and can be inexpensively made to prove the function. However, when looking for help - financial, technical or manufacturing - you will need to demonstrate your idea to a third party. At this stage you may need something that looks closer to the finished product and should consider using a professional design consultancy.

This is where it is worth spending some money if you can, so that you will then have something to persuade others to help you. If you cannot afford to make a prototype, then you may have to think of other ways of approaching potential partners. It is very difficult to induce someone to make a model or prototype for nothing, or in return for a part share of profits. However, you could make an inexpensive functional prototype to show the workings and a simple model to show the form. Try applying for one of the regional R&D grants, contact your regional development agency or the Design Hub at ip21 Limited. You should also think about manufacturing costs, hence you need to investigate:

- What it will cost to make - tooling, processing, materials, packaging, despatch, standards etc.
- Who will make it, also where, how, why and in what quantities?
- What price will people pay for it - all the way to market (including margins at each stage)?
- What profit will this give - gross — nett?

It is a common mistake to underestimate the difference between:

- Cost price;
- Sale price (retail and/or wholesale);
- Gross margin (that is needed to pay for all business overheads and still give a profit).
- Be realistic!

5 INTELLECTUAL PROPERTY

Intellectual Property (IP) is the particular aspect of the product or service that establishes ownership of your unique idea. It has to be defined in a manner that enables it to be protected legally and in a way that would enable you to sell or license the idea to a third party. Hence it is vital that you discuss your idea with a qualified Patent Attorney in order to:

- Identify the potential of your Intellectual Property clearly and correctly.
- Use the most appropriate form of protection e.g. patent, registered trade mark, registered design, copyright, trade secrets, know-how etc.
- ip21 can provide all necessary services towards the protection of your idea (including licensing) and will provide a free meeting with an attorney and a fixed-price quote for any work so that you can budget accurately for a significant time ahead.

Initially your patent application will probably comprise drawings, sketches and a description, which explains what your innovation does and how it works. In order to comply with the requirements of the patenting process, an application needs enough information to describe the innovation in sufficient detail so that anyone with the necessary skill or art would be able to make a version of your invention, using the information contained within the application, albeit imperfect. The sketches do not need to be as detailed as an engineering drawing.

If your IP is not properly protected and you discuss or publish your idea, this is classed as 'disclosure'. **Anybody** may then exploit your idea, and it is highly unlikely that you would be able to get the protection of a Patent or Registered Design at a later date. Therefore, as soon as possible you should:

- Take care **not** to discuss or publish your idea without the use of a Confidentiality or Non-Disclosure Agreement.
- Obtain legal protection in the appropriate format, e.g. patent, registered design, registered trade mark®, copyright©, unregistered design right, trade secrets etc.
- ip21 will provide you with a free fixed-price quotation for most IPR work.

You may find it difficult to develop your idea if you cannot discuss it with potential investors, manufacturers etc. Until your idea is protected you must not discuss it with anyone until they have signed a 'Non-Disclosure Agreement'. You may find that not all contacts or companies are prepared to sign such a document and in this case you should start the protection of your idea before disclosure.

Legal advice and protection will help you to define and demonstrate the following:

- Who owns the idea?
- Is it original?
- What is its date of origin?

- How does it work?

The five main forms of legal protection are summarised below. However, it is important to consider the most appropriate form and level of protection. Please contact ip21 for a free assessment of your idea. The various forms of IP (patents, trade marks etc) provide varying degrees of legal protection should you decide to take action against someone who tries to exploit your idea without your permission. To take action takes time and money, and should not be embarked upon lightly. Much can be achieved without resort to the Courts. You may like to consider insuring your patent against the need to protect it in the Courts.

Patent

If your idea is genuinely new (novel) and market research indicates good commercial potential, then you should consider applying for patent protection.

A patent is a monopoly right to the exclusive use of an invention. In the UK it can last for up to 20 years if annual renewal fees are paid. Patent systems exist in most countries and can be accessed once UK application has been made.

Before applying for a patent, it may be advisable to carry out a search (see comments earlier). It is very cost effective and sound practice to request an "early search" when making a patent application. This could tell you whether anything similar has been registered before. If it has, it may be that the existing patent has lapsed, or could be augmented and hence you may exploit it. You may also find that patent searches can be valuable as a source of new ideas. Be aware that your creative abilities may be repeating ideas that others have had!

Following the filing of the initial patent application, no action is performed by the Patent Office for one year (unless specifically requested) and publication does not take place until 18 months have elapsed following application. Use this valuable time to continue to work on the development and decide whether or not to take the innovation further. A patent application in one country only gives protection in that precise geographical location. However a UK application provides the potential for "nationalisation" into any country in the world, provided that the correct steps are taken at the "12 month stage" and beyond.

Harmonisation of patents within Europe is now in force and Europe-wide protection can be sought. Worldwide protection involves a more complex patent application process, considerable effort and expense, so you should not embark on this course without due consideration. Remember that there is no such thing as a **world-wide patent** - each country (or Europe as a group) must be secured independently.

A PCT (Patent Co-operation Treaty) application, administered by the World Intellectual Property Office is a well-established mechanism for delaying or offsetting costs in other geographical areas and must be sought no later than the first anniversary of your application (the 12 month stage). This is a legal mechanism for extending your decision and market research time by up to 18 months and can prove to be very useful when seeking partners in different parts of the world.

Registered Design

This protects the visual appearance of an object, in terms of what the eye sees, e.g:

- Shape and configuration (3D)
- Pattern and surface ornament (2D)

Registration is administered and controlled by the Designs Registry at the UK Intellectual Property Office and has no bearing on the function of a product. The process is similar to patent application, but much less expensive and ideally should be secured before your idea enters the public domain or at the latest within 12 months of going on sale. A European design registration can prove to be very cost effective, and in the USA the equivalent is referred to as a "Design Patent".

Registered Trade Marks®

This is an important area and relatively easy to secure. These instruments can last indefinitely if used and renewed properly to give significant endorsement to branding, company image etc. They can be applied to ideas which may not necessarily satisfy the requirements of a patent. Be aware that when considering a registered trade mark, your chosen word or device (logo or symbol) must not be descriptive and must be distinctive and novel in that context. Registration can be sought in most countries of the world and there exists a European (Community) Trade Mark that covers the whole of the EU.

Copyright©

This applies to 2D objects and it protects the expression of an idea rather than the idea itself. It applies to graphic or artistic works such as paintings, sketches, photographs, drawings, including novels, plays and music. This is one of the methods of protecting computer software (some can also be protected using patents); this protection sector is moving rapidly, it is best to check with ip21 or another qualified patent attorney.

Copyright (which in general lasts for 70 years after the originator's death), is recognised internationally, but there is no central registry. Copyright doesn't need renewing; no fees or application are needed. You must police your own copyright yourself. To ensure copyright, the work (drawings, sketches, computer programmes etc) must be shown to have existed from a particular date. Hence you must endorse all drawings, sketches, photos etc with a name (company or individual), the ©, the word "copyright" and the date. Ideally a certified document needs to be prepared and lodged with a third party (acceptable to the Courts) e.g. patent attorney (ip21), solicitor or bank) so that it can be produced to resolve a dispute.

In summary:

- A patent may or may not be the most appropriate form of protection for you; this needs clarification by a patent expert. At ip21 we offer a free session with an attorney to explore your idea. Remember if you are seeking to license your innovation to potential partners they will (in general) not be interested in unprotected ideas. By the same token, you cannot license out that which you do not own, or demonstrate belongs to you only.
- Your idea may not be innovative, or there may be other, more appropriate ways to protect it (e.g. registered design, registered trade mark).
- Patents can cost significant sums of money - although the cost of drafting and filing the initial application is relatively modest, fees etc can add up. By working with a qualified patent attorney you can manage this process to make the most of your money and keep costs to a minimum. You may make a patent application yourself, but this can

become a distraction to the development and selling of your idea and may lead to inappropriate cover due to lack of expertise. International applications need the involvement of professionals both in the UK and within the country(s) of your choice.

- The granting of a patent does not mean that your innovation is necessarily a good idea commercially - it simply means that it is novel and inventive.
- Contact the Patent Office www.ipo.gov.uk for free and comprehensive information booklets on all aspects of IPR; also the Chartered Institute of Patent Agents www.cipa.org.uk for information on how patent attorneys operate.

If you would like a free and confidential discussion on any IPR topic (including licensing) please contact ip21.

6 COMMERCIAL OPTIONS

There are several options for taking your innovation from prototype stage to commercial development. Sound business advice can be sought from enterprise agencies, RDAs, the Princes Youth Business Trust etc, and new products should be viewed in cold, clinical business terms. The lone innovator often needs help with finance and resources for manufacturing, marketing, distribution and other business functions. Options include:

- Self management, with equity or other finance.
- Licensing.
- Joint venture.

a) Some innovators feel they must keep 'ownership' of their project e.g. for reasons of possession (vanity) and maximum financial return. However it is unrealistic (and unreasonable) to expect an investor to put significant sums of money into a

project without a marked degree of ownership. It is also unusual for the personal experience of an inventor to include all of the many technical and business skills necessary to take a product to market.

b) A license is an agreement which specifies the conditions allowing one party (the licensor - i.e. the inventor) to grant a second party (the licensee) to exploit the IPR of the licensor. The licensee can then sell the product or service to their customers and in return pay the innovator (licensor) a royalty of some type. A license can be:

Exclusive License - here the licensor allows only one person to exploit the innovation. This is where one company takes on the responsibility for manufacture and marketing, investing time and money in the process. Beware, exclusive means it can also exclude the inventor from further exploitation!

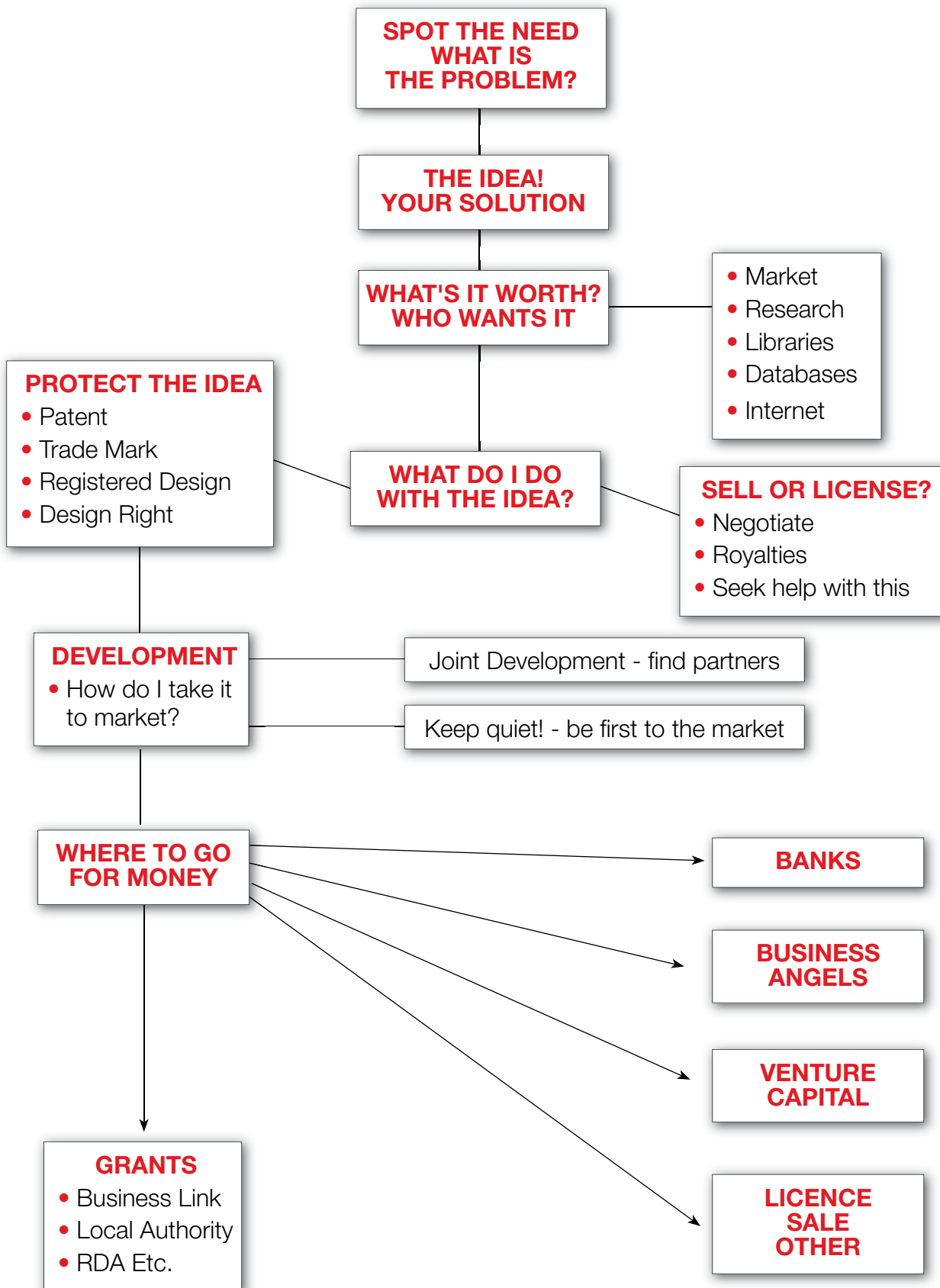
Sole License - similar to Exclusive License, but the innovator may also be allowed to exploit the idea himself, or with other licensees but in, for example, different geographical and/or product and market sector areas.

Multi-User License - this is generally more advantageous to the licensor in terms of freedom to exploit the idea and less advantageous to the licensee in terms of risk and control.

Licensing is a specialist area which needs careful consideration to a number of issues. If this route is appropriate of interest, you should seek professional guidance from a member of the International Institute of Licensing Practitioners, e.g. ip21.

In a joint venture the IPR is shared between the parties. This can happen where more resources (design, development etc) are needed to advance the idea to a stage where it can be promoted further. A separate leaflet on licensing is available from ip21.

KEY ISSUES



APPENDIX A - USEFUL NAMES AND ADDRESSES

Business Link East

Customer Service Centre 0845 171615
www.businesslink.gov.uk/east

Learning Skills Council

www.lsc.gov.uk/norfolk/Corporate

Norfolk Chamber of Commerce

01603 729713
www.norfolkchambernetwork.co.uk

Eastern Region Disabled Workshops

Useful contacts for limited production, assembly or despatch services.

Prison workshops www.hmprisonservice.gov.uk

Disabled workshops www.remploy.co.uk and

www.norfolk.gov.uk/social/disability

Sheltered workshops www.charitynet.org

Workshops for the blind www.rnib.org.uk

Chartered Institute of Patent Attorneys (CIPA)

Publishes an information pack on exploitation of patents, also has the directory of patent agents.

Chartered Institute of Patent Attorneys

95 Chancery Lane

London WC2A 1DT

Tel: 0207 4059450

www.cipa.org.uk

Institute of International Licensing Practitioners

The Institute provides information and advice on the issues of licensing IP.

Suite 73, Kent House

87 Regent Street

London W1R 7HF

Tel: 0207 2870200

www.iilp.net

Institute of Patentees and Inventors

Supports, helps and promotes innovation in general.

Suite 505a, Triumph House

189 Regent Street

London W1R 7WF

Tel: 0207 2427812

www.invent.org.uk

Materials Information Service

This provides a reference point for companies interested in improving their use of engineering materials and processing methods. A range of services is provided including consultancy advice and information services.

The Institute of Materials, Minerals & Mining

1 Carlton House Terrace

London SW1Y 5DB

Tel: 0207 8394071

www.iom3.org

NESTA

The National Endowment for Science, Technology and the Arts
Possible source of aid for innovators with technical projects.

1st Floor, Gainsborough House

33 Throgmorton Street

London EC2N 2BR

Tel: 0207 8619765

www.nesta.org.uk

MAS East

Manufacturing and Advice Service

Assistance with manufacturing issues.

PO Box 2694

Chelmsford

Essex CM1 1QH

Tel: 0845 3004443

www.mas-east.org.uk

Also see the following websites:

www.ipa.gov.uk

www.ipr-helpdesk.org

www.cordis.lu/ipr-helpdesk

www.j4b.co.uk (a site for grant and other information)

www.bl.uk

USEFUL BOOKS

"Imagine Your Way to a Fortune"

Adam S Pope, ACE Images, 104 The Causeway, Quedgeley,
Glos. GL2 4LH

Tel: 01452 558520

info@aceimages.co.uk

"The Business of Invention" and "A Better Mousetrap"

Peter Bissell & Graham Parker

ISBN0-951-3856-31 and 978-0-9513856-0-9

www.abettermousetrap.co.uk

APPENDIX B - INNOVATION AND DESIGN CHECKLIST

A) Why is your product being developed?

- What is the primary use?
- What is the secondary use?
- What are the product features and benefits?
- Who is the anticipated customer?
- What (if any) would be associated products?
- What is the intended market?
- What are the applicable standards and regulations?
- What is the competitive situation?
- What is the anticipated production rate?
- What are the anticipated production quantities (hour/day/week/month/year)?
- What is the launch date?
- What is the anticipated product life?
- What room exists for future developments?
- What would be (or is) the pricing strategy?
- What (if any) are the visual and aesthetic aspects?
- What will be the graphic identification and markings?
- What are the routes to market - distribution, sales, marketing, licensing, etc?
- What is the situation vis-à-vis models, prototypes etc?

B) How does it work

- How does the product work or function?
- What elements does it comprise?
- How are they related?
- Does the technology exist for it to function, or to be made?

C) How is it (or will) it be made?

- What production facilities are available?
- What are the preferred materials, availability, cost etc?
- What would be an economical batch size or minimum production run?
- How will it be packed, materials, quantities, type of protection?
- What methods of transportation are preferred, available or economical?
- Are there any size or weight restrictions or parameters?
- What levels or degrees of reliability are needed?
- What national or international standards apply - EC directives etc?
- Are there any health & safety connotations?
- Will there be a need for instruction manuals?
- Are there any nationality concerns?

D) How will it be sold and used?

- How is it to be stored (before despatch, warehouse, distributor, end user)?
- How will it be installed or prepared for use?
- Will it need special installation staff and equipment?
- What are the operational sequences?
- How will it be used?
- How often will it be used?
- When will it be used?
- Where will it be used?

- Why will it be used?
- Who will use it - primary or secondary?
- Will the user need supervision?
- In what conditions will it be used?
- Are there any toxicity, temperature or humidity constraints?
- Is the product suitable for able-bodied, disabled, colour-blind users etc?
- Are there language connotations?

E) How will it be maintained?

- What (if any) maintenance is needed?
- How often is maintenance required?
- Who performs the work and are spares available?
- Are special tools or locations needed for maintenance?

F) Environmental aspects

- Can the product or its components be dismantled and recycled readily?
- Are there waste products from manufacturing?
- Can recycled packaging be used?
- Can the packaging be recycled?
- What is the life cycle of this product?
- Where will it be sent at the end of its life?
- Are there any environmental implications in its use?
- What will the energy requirements be for production and use?
- Are there any effluents from the product?

G) Intellectual Property issues

- Patent
- Registered Design
- Registered Trade Mark
- Copyright
- Know-how / Licensing / un-registered Design Right.