

A BEGINNERS GUIDE TO PRODUCT DEVELOPMENT

INTRODUCTION

The creation of an idea represents only 1% to 5% of the total effort required to commercialize a product. The following information is intended as a guide only and has been based on the "Ideas & Inventions Seminar" series presented quarterly on behalf of the South Australian Government (CIBM) by the following speakers.

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OBJECTIVES

- To provide an understanding of the steps involved in commercializing a new idea or invention
- To underscore the risks and pitfalls - the idea is the easy part!
- To outline the possible next steps should you choose to proceed to commercialization

THE BIG MISTAKES

- Overvaluing the idea (premature evaluation)
- Under committed
- Under financed
- Fragmented effort (Stopping & Starting)
- Do not understand the true cost of product development
- Poor project management

YOUR CHANCES OF SUCCESS

- 60% of new businesses fail in the first 3 years
- Only 2-4% of businesses seeking external equity achieve it
- All of the resources and financial strength of the Ford Motor Co were not enough to successfully commercialize the Edsell
- No matter how good your idea or invention seems, chances are it will fail

HOW YOU MIGHT SUCCEED

- By taking a realistic attitude
- By losing your emotional attachment to your idea or invention
- By taking professional advice
- By being prepared to relinquish some (or even all) control of your venture
- Remember that part of something is better than all of nothing!

TOPICS COVERED

- Steps to Commercialization
- Intellectual property protection
- Product design and development
- Marketing
- Introduction to Business Planning
- Finance and capital raising
- Next steps

STEPS TO COMMERCIALISATION

- Idea
- Information
 - Patent search
 - Desk research
 - Competitors
- Scoping study
- IP protection
- Product development
 - Product testing
 - Prototype
- Feasibility study
- Market research
- Business plan
- Marketing
 - Logo, packaging
 - Promotion
- Funding
 - Capital raising
 - Overdraft
- Product Launch

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INTELLECTUAL PROPERTY (IP) PROTECTION

WHAT IS THE DIFFERENCE?

- Patents relate to an invention or manner of manufacture.
- Trade Marks relate to a sign used to indicate trade origin of goods or services.
- Designs relate to external visual appearance, shape.
- Copyright relates to literary, artistic, dramatic and musical works, and neighbouring rights.

TRADE MARKS

- Registered for 10 years - renewable indefinitely
- Some 'signs' not registrable as trade marks
- First to use in Australia is owner of trade mark
- Common law trade marks
- Must search for availability
- Business names v trade marks

REGISTERED DESIGNS

- Protect shape and configuration, pattern and ornamentation - thus, only visual aspects
- Protection for 16 years
- Must be new or original
- Narrower form of protection than patents

WHAT IS A PATENT?

- A right to exclude others from using - thus, a 'negative' right.
- 20 year term - but on condition that idea is given to public at the end of term.
- Patent specification is vehicle for giving idea to public.
- Innovation Patent - 8 year term - no exam

A PATENT MUST EXHIBIT A NOVELTY & INVENTIVE STEP

Novelty

- Newness
- Comparison with documents publicly available anywhere in world, and acts of use in Australia
- Your invention must be different by a feature which is of substance to the way the invention works
- Reasonably simple test

NOVELTY & INVENTIVE STEP

Inventive Step

- Your invention must be an advance over the prior art
- The advance must not be an obvious step for a skilled person to take when faced with the same problem
- Restricted prior art database - documents must be able to be ascertained, understood and regarded as relevant (by skilled addressee)

PROBLEMS WITH EARLY DISCLOSURE

- Patent law is very harsh on early disclosures
- Your own disclosures before lodgement of a patent application will be considered.
- Therefore, any publication of invention must wait until after information is included in a patent specification.
- Even confidential disclosures may be damaging - be very careful. Consult a patent attorney!

PROBLEMS WITH OWNERSHIP

- Important to clarify whilst non-contentious.
- Employee/employer relationship.
- Dealings with external consultants.
- Dealings with external research bodies.
- Dealings with external Universities.

USEFUL IP WEBSITES

The following websites provide more detail.

- www.ipaustralia.gov.au
- www.delphion.com

PATENT ATTORNEYS

We recommend that you consult with a patent attorney.

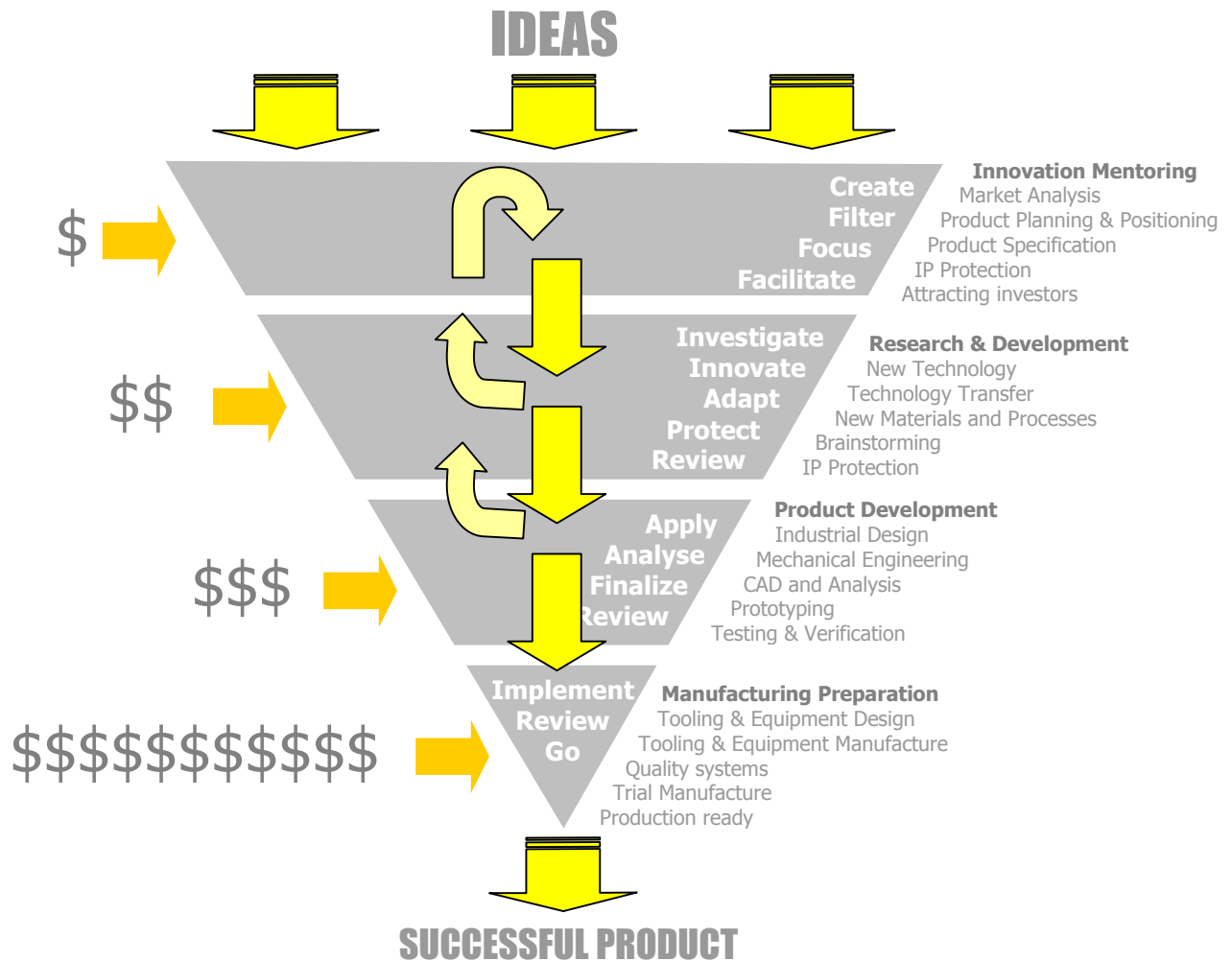
Some are listed below.

- Phillips Ormond & Fitzpatrick
- Madderns
- Collisons
- Lessicar Perrin
- APT Patent Attorneys

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PRODUCT DESIGN AND DEVELOPMENT

The following process diagram is indicative of a typical product development project.



EXAMPLES OF SUCCESSFUL AUSTRALIAN IDEAS

- Commercial Penicillin
- Refrigeration
- Pacemaker
- Black box flight recorder
- Rotary lawnmower
- All plastic toilet cistern
- Plastic syringe
- Photocopier
- Torpedo
- Wine cask
- Microsurgery
- Permanent press fabric
- Car radio
- Ready mix concrete
- Lawn mower
- Invitro fertilization
- Wave Piercing Catamaran
- Speed packer garbage collector
- Mechanized brick production
- Snake bite antivenin
- Machine gun
- Laser light house
- Various agricultural machinery
- Guided anti aircraft weapons
- Furniture castors
- Sound proof windows
- Snail killer
- Beamed radar
- Tubular sheet metal
- Water meter
- Plastic banknotes
- Spun concrete pipe
- Super magnets

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MARKETING

Marketing is an often misunderstood term. It is much more than advertising and promotion. It involves a thorough understanding of your market, from the product through to the sale and the customer relationship beyond the sale.

THE FOUR PS

The traditional definition of marketing:

- Product
- Price
- Place (= distribution)
- Promotion

So, promotion has only ever been one part of the marketing mix - and cannot succeed if the other parts are not addressed

FOUR MORE PS

Contemporary business and marketing strategists have added four more Ps:

- People (internal staff and external customers)
- Positioning (= brand)
- Physical (= resources)
- Profit

If all eight Ps were addressed, chances are you would have a successful business!

MARKETING: THE QUESTIONS

- Is there a market for your product?
- Who will buy it, and how to reach them?
- How will it be distributed and sold?
- How will it be packaged and promoted?
- Who are your competitors and what is your competitive advantage?
- What is the size of the market and what market share can you achieve?

TARGET MARKET

- Who is the target market?
- Can you identify them in detail?
- Why will they buy your product/service?
- What is the value proposition?
- Can you define it in *their* terms?
- How does it compare with your competition?
- How can we quantify the size of the potential market?

MARKET RESEARCH

- Desk research
 - Internet
 - Australian Bureau of Statistics
 - Other (trade journals, industry groups, etc)
 - Bizline (State Library of SA)

- Quantitative research – eg survey
- Qualitative research – eg focus groups
- Market testing

THE MARKETING PLAN

- Executive summary. A brief, ideally one page, overview
- Vision: where you want to be
- Mission: how you will get there
- Objectives. the key objectives of the Marketing Plan.
- Product/service description including sustainable competitive advantage.

Market analysis

- Overview of the market
- Market size, market shares
- Market trends
- Competitor analysis

Market research as previously described.

SWOT analysis

- Strengths, weaknesses (internal)
- Opportunities, threats (external)

The business opportunity

- Current sales and market share
- Proposed/desired sales and market share
- What it would take to achieve

Sales/distribution strategy including pricing strategy
Promotional and brand strategy including target market definition

Financial analysis

- The "bottom line" outcomes

Implementation plan

- Timing
- Budget
- Benchmarks and review process
- "Who does what, how and when"

EXPORT MARKETING

In today's global economy, no business should ignore export opportunities

Export offers size and scale, but also demands new and greater disciplines

- Export marketing analysis must consider:
- Cultural differences
- Exchange rate and freight costs
- Customs duties and import controls
- International competition
- Different distribution channels
- Target market analysis
- Promotional costs

Conclusion: export offers great rewards, but also comes with greater risks

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INTRODUCTION TO BUSINESS PLANNING

Whether you need finance or not, you will need to clearly articulate your business plan on paper.

An important part of the business planning process is the preparation of a budget.

1. A Profit & Loss Statement
2. A Balance Sheet
3. Cash flow Projections

The key elements within the Profit & Loss Statement include

REVENUE

total number of units sold x selling price

COST OF SALES

total number of units sold x cost price

GROSS MARGIN

revenue less cost of sales

OPERATING COSTS

the costs of running the business (rent, phone, etc)

NET PROFIT

gross margin less operating costs

Key issues

- The key driver is how many units sold
- Need to take account of development costs
- Need to take account of cash flow issues – credit terms, bad debts, stock control, etc
- Need to take account of tax, etc

Professional accounting advice essential

FINANCE/CAPITAL RAISING

SOURCES OF FINANCE

- Own funds
- Family and friends
- Banks and other financial institutions
- Seed/venture capital - eg business angels
- Government grants
- Strategic investors
- Public listing

THE “MOMENT OF TRUTH”

- Are you prepared to invest (= risk) your own funds in your business?
- Can your family and/or friends afford to lose their funds if your business should fail?
- Are you prepared to put up (= risk) the family home as security?
- If not, you will have to be prepared to lose some control to external equity investors

EQUITY INVESTMENT

Equity investors seek a return which is relative to the risk involved

	%	Risk	Return
Treasury bonds, cash, etc	6%	Low	Low
Stock Exchange	15%		
Established unlisted co's	25%		
Early stage unlisted co's	>50%	High	High

WHAT EQUITY INVESTORS LOOK FOR

- Vision, passion and work ethic
- The ability to clearly articulate the venture
- The ability to manage, and to manage change
- Demonstrated market need
- A validated product idea
- Business plan
- Exit strategy

NEXT STEPS

- If your idea or invention is sufficiently developed, you may choose do it yourself
- You may seek professional help
- You may seek Government assistance - from advice to possible funding
- You may seek a mentor, someone who has “been there and done that” and is prepared to share their experience
- Instead of seeking to commercialize your idea or invention yourself:
- You may choose to sell it outright, or
- Licence it under a royalty agreement - as low as 1% but rarely as high as 10%
- Professional advice is recommended – eg
 - You will still need to protect your IP
 - Preparation of a professional presentation

GOOD LUCK