

# 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 parties.

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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](http://www.ipaustralia.gov.au)  
[www.delphion.com](http://www.delphion.com)

### **PATENT ATTORNEYS**

We recommend that you consult with a patent attorney.

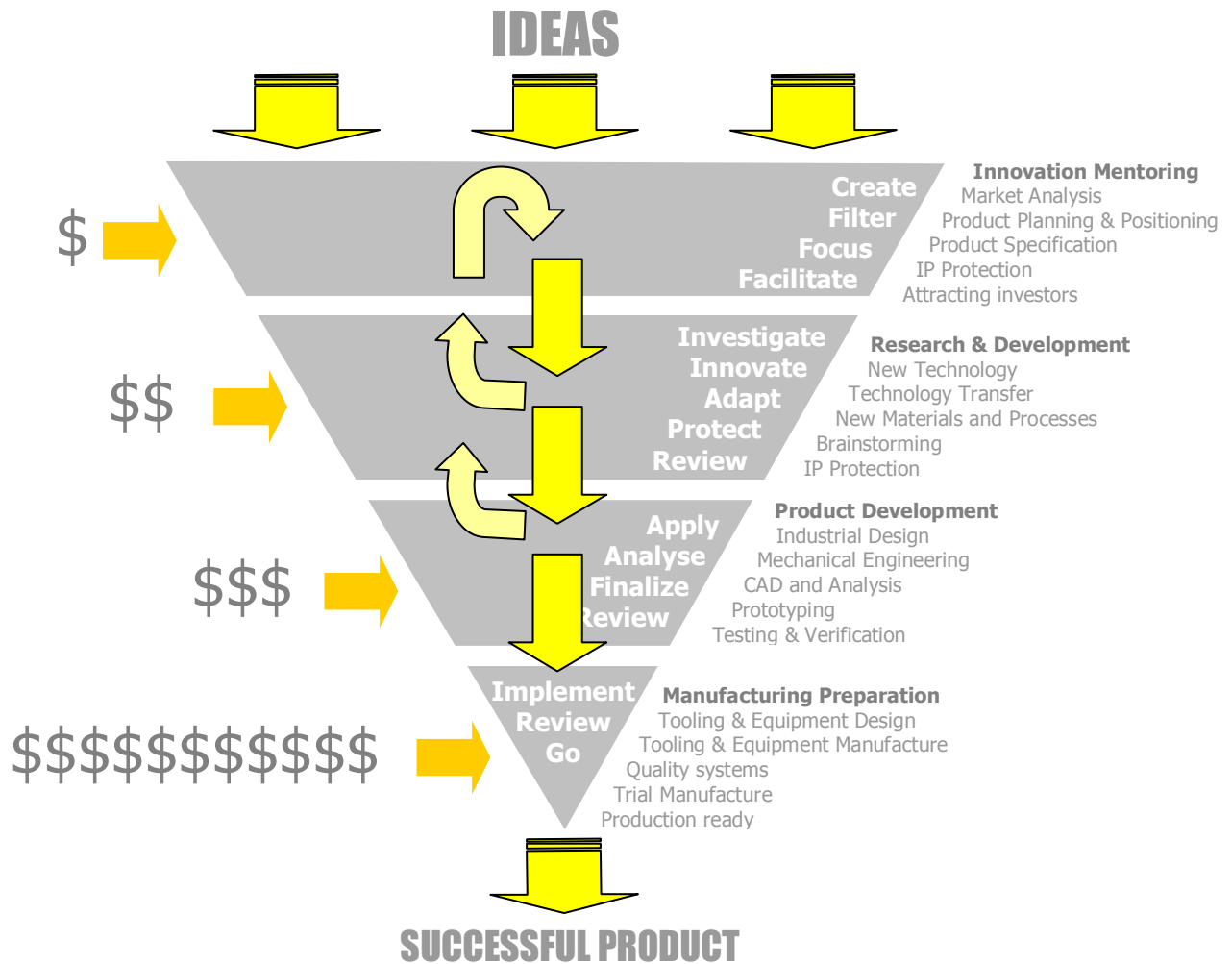
Some are listed below.

- 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**