




# THE NEXT BIG THING: YOU

So you have an idea for an invention that the world can't do without? Here's how to take your idea and make it a reality.

BY TIM DEAN



**“FROM THE MOMENT I HEARD WHAT IT WAS**, it was all over,” says Mark Pesce, a youthful-looking 46-year-old software engineer and inventor from Massachusetts, USA. He’s talking about virtual reality, something he’s always had a passion for. Or an obsession, one might say. In the early 1990s, he’d spent nights, weekends and holidays slaving away on one idea in particular: A way to liberate virtual reality from the proprietary systems that kept it locked away from the mainstream. And ultimately, his effort bore fruit.

In 1993, Pesce invented VRML (Virtual Reality Modelling Language), a language that enabled three-dimensional environments to be created within a web browser, bringing virtual reality to the people. Since then, VRML, and technologies that have sprung from it, have been used for a huge range of applications, from computer gaming to digital

art through to NASA using VRML to follow the Mars Pathfinder in its meanderings over the surface of the red planet. “One of the things I found using VRML, even before Wikipedia, was an encyclopaedia done entirely in 3D,” says Pesce. “It brought tears to my eyes.”

This is what being an inventor is all about: Starting with the spark of an idea, and seeing it grow to enable new things that would never have been possible otherwise. Pesce and hundreds of other successful inventors around the world are proof it can be done. Perhaps you could do it, too.

But the road from the spark of an idea to roaring success is a treacherous one. So, we’ve spoken to some successful inventors who have been through it all to get some tips on how to turn your inspiration into reality.

## 1 THINKING OF IT

### HOT TIPS

- Your idea needs to be useful, not just clever
- Make sure a market exists for your invention
- There are organisations that can help you out

**A great idea** can come from many sources – imagination, inspiration, irritation – but crucially, it must do something for which there’s a need, and something existing products don’t already do. Dean Cameron, inventor of the award-winning Biolytix, a sewage treatment system that mimics natural processes, finds his inspiration in waste. Yep, waste. “Whenever I see waste in any form – in a process, a service, a system – I find it’s one of the biggest indicators of an inefficient process. If you can define waste, you’re almost certainly on to an imperative for a good invention.”

And for Cameron, the solution often comes from nature. “There’s very little waste in nature,” he says. It was natural processes that inspired Biolytix, which emulates the same processes found in the soil to break down waste products, and has gone on to become a highly successful product worldwide.

However, a great idea sometimes isn’t enough, says Cameron. “Just because it’s fascinating and absorbs energy to nut it out, doesn’t mean it’s a product for which there’s demand right now.”

Cameron suggests you do your homework before you take your idea to the next step. Find out what’s available in the market, what it costs and see whether there’s a demand for something new. “There’s no point creating some marvellous thing for a market that doesn’t exist.”

There are even services out there which can help you determine if there’s a market for your invention. Organisations

such as the not-for-profit Innovic and National Invention Centre are a great places to get helpful advice on how to take your invention to the next step.

It’s crucial that you don’t spread the word of your invention – at least, not yet. If you’re planning to protect your invention with a patent, it needs to be ‘novel’, meaning it isn’t an idea already floating around in the world. Even demonstrating a prototype of your invention to a few people can be enough to make it no longer novel. If you do want to consult other people, maybe to seek advice or perform market research, get them to sign a non-disclosure agreement (NDA) first – you can download a handy NDA template from Innovic’s website.



**BIOLYTIX** mimics natural processes in order to treat sewage.

## 2

### DEVELOPING IT

#### SPECIALISED TOOLS?

Apply for a government grant to fund your venture



#### HOT TIPS

- Building a prototype yourself at home allows you to tinker
- Or you can outsource the prototype and testing to a specialist
- There may be grants that can help you fund development

**So you have your idea**, you're sure there's a market for it, what next? Well, you need to make sure it works; there aren't many manufacturers who'll license a sketch on the back of a napkin.

There are a number of ways you can go about building and testing your idea. One popular route is to do it yourself. "This part takes some ingenuity," says Cameron. "You have to get in there and make a few mistakes before you know you're on to something. That's why it helps to be a tinkerer."

For many budding inventors, their garage – or kitchen table – is their workshop and prototyping facility. It's a great way to play around with the idea and try new things, taking the time you need to get it right. However, there are some things you just can't do at home and professional equipment is called for.

Another approach is to outsource your prototyping. There are services to be found in most major cities around Australia that will collaborate with you to build and test your invention, for a price. This can be as simple as taking a CAD (computer aided design) file and building a scale model, or it can be fully fledged research into materials and manufacturing processes.

How do you pay for all this – especially when your invention might be years from generating any revenue? Many inventors carry the costs on their own in the hope of recouping their

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### PATENTING IT

#### HOT TIPS

- Don't patent your invention too early or too late
- Keep details of your invention secret before you patent
- Get the best patent attorney you can afford

**There's a certain point** where you're sure you're on to a winner of an idea, you've built a few prototypes and it looks like it'll work. At this point, you'll likely start thinking about getting a patent.

When should you patent? The right time can vary from case to case, says Victor Portelli, general manager of the Patents and Plant Breeders' Rights Group at IP Australia.

"As a general rule, inventors should start thinking of patenting their invention if they are confident the invention does what it is proposed it does and they have undertaken research into the potential market viability of their invention."

You don't need a final prototype to file for a patent, you just need enough detail for the patent examiners to see in detail what it is, how it works and whether it is indeed novel.

Next, you need to decide whether to hire a patent attorney. Patent attorneys can be expensive, so it might be tempting to fly solo, but anyone who's done it before will tell you unequivocally: Get an attorney.

Stuart Smith, councillor at the Institute of Patent and Trade Mark Attorneys of Australia (IPTA), agrees that it's a job

for professionals. "Although the initial application process can seem quite straightforward, the effectiveness of a patent hinges on the form and content of the complex patent specification documents. The commercial usefulness, and even the ultimate validity of a patent, can hinge on the interpretation of one or two critical words or phrases in the specification."

Patent attorneys are often engineers or scientists themselves. They're the best qualified to understand exactly what your invention does and to advise you on whether it's ready for a patent. It's worth paying for the best patent attorney you can afford.

Don Morgan offers this advice from his own bitter experience. In the 1990s, Morgan opted for a budget operator, although this



# 4 WHICH PATENT?

investment down the track. Alternatively, you can apply for a state or federal government grant to get you started.

This is exactly what Don Morgan did to get his idea for cone-head, an innovative new motorcycle and bicycle helmet, off the ground. "I got to the stage where I had to prove it would work. So in 2000, I applied for a grant from the Australian Safety Transport Bureau and was successful."

That \$20,000 grant helped Morgan develop a tool to build a prototype of the helmet and test the idea. Even though that sum was gobbled up pretty fast, and Morgan ploughed a significant amount of his own money into the project, every little bit helps, especially in the early stages.



**HOT TIPS**

- Innovation patents are good for small steps or ideas
- A provisional patent gives you 12 months to research before you apply for a full patent
- A full patent will protect your idea for 20 years, but it's costly

**Next you need to decide** what flavour of intellectual property protection is right for you. In Australia alone we have patents, which apply to products or processes; trade marks, for logos, packaging, slogans and so on; designs, covering the unique appearance of goods; copyright, which spans books, music and drama; and other specific ones that cover circuit layouts, new plant varieties and trade secrets. Most inventors will opt for a patent, although it might be worth considering the others if you think they might apply as well. You also don't need to patent your entire invention in one go. There might be a few significant innovations in its design, and you can patent them individually – although with a commensurate increase in cost and effort to do so.

If you do opt for a patent, there are three further types to choose from. The most basic is an innovation patent, which enables you to protect a simple innovation that wouldn't normally qualify as a full-blown invention. Innovation patents are relatively easy to apply for, and often take only around a month to be granted. However, they are only valid for eight years, unlike a regular patent, which will protect your work for 20 years. Also, it's not examined in detail

ended up costing him far more in the long run. Morgan's attorney gave some poor advice and made some costly errors early on in the process, errors that sometimes took years to become evident.

According to Smith, such problems are common. "One of the biggest issues relates to the fact that potentially fatal defects may not come to light until years later, when the rights are sought to be commercialised or enforced. By that stage, it is often not possible to obtain solid intellectual property protection or to rectify the initial defects retrospectively."

If Morgan had his chance to invent and patent cone-head again, one of the things he would certainly do differently is hook up with a large and experienced patenting firm and get the patent right, the first time.

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COMMONWEALTH OF AUSTRALIA  
PATENTS ACT 1990

**COMPLETE SPECIFICATION**  
(ORIGINAL)

Short Title: *Rotary engine.*

Application Number: 30650/71  
Lodged: 6/2/70

Complete Specification Lodged: 20/6/71  
Accepted: 14/11/75  
Published: 11/1/75.

Priority: —

Related Art: 265403 38234/63 662, 667, 678, 677.  
223208 39496/58 677.

Name of Applicant: **TOMT RALPH BARTON**

Address of Applicant: **491 Walter Road, SAYSWATER, in the State of Victoria, Commonwealth of Australia.**  
TOMT RALPH BARTON

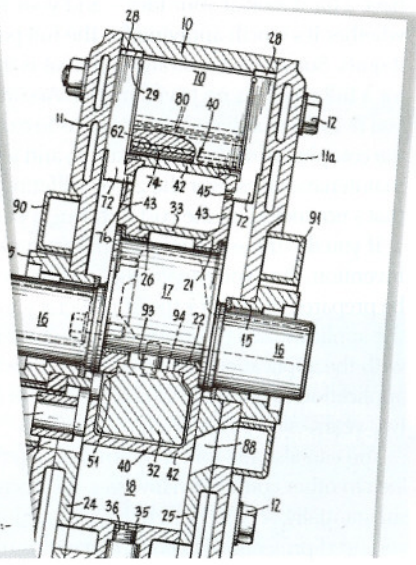
Actual Invention: —

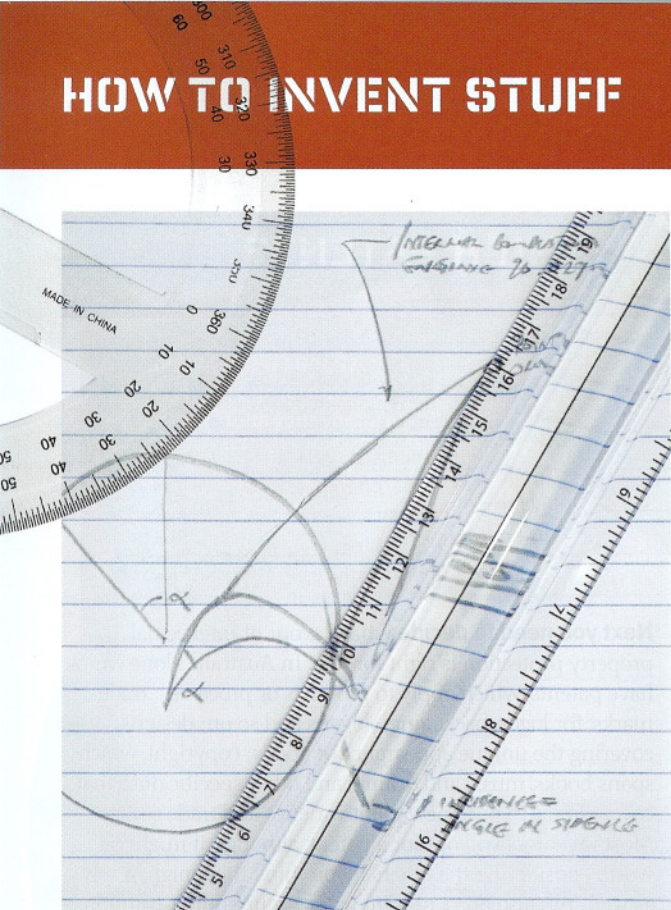
Address for Service: **LEWIS, WATERS & SONS, 80 RANGHILL STREET, MELBOURNE, AUSTRALIA 3000**  
CO. QUEENSLAND, AUSTRALIA

Complete Specification for the invention entitled:  
**"AN IMPROVED ROTARY MOTOR"**

8760 - 75 - 40 - 118C

**PROTECT YOUR INVENTION** Patents won't protect an idea — you need to build it (or have a complete design) before the law will protect you.





when you file, only if there's a challenge, so it's harder to sell or license until you can guarantee that it's valid.

The next step up is a provisional patent, which is often the precursor to a full patent application. A provisional patent will establish the so-called 'priority date' for your idea, which means you can start talking about it publicly and still declare it belongs to you. A provisional application only lasts 12 months, and reserves full patent protection, but it gives you an opportunity to get out in the market and see if you can drum up any commercial interest before you make the hefty investment in a full patent. "It gives you 12 months to develop it and get it to the stage where it's either ready to market, or you're ready for a full patent. Or you've found someone who's ready to take it on and license it," says Cameron.

If you find that interest is low, it might be a good time to have a hard look at your idea – and your finances – and decide whether it's worth applying for the full patent, or just calling it quits. Sometimes, a strategic retreat is the right thing to do, for a full patent is no trivial matter. According to IP Australia, you're looking at between \$6,000 to \$10,000, depending on the complexity of your application, and a further \$8,000 in maintenance fees over the 20-year lifetime of the patent. And that's not including the cost of hiring a patent attorney.

If you do find some interest in the market for your invention, then you can go ahead with the full patent. But be prepared to wait for the bureaucracy to do its thing. "If the applicant acts promptly and there are no complications with the application, the time taken from lodgement of an application to grant for a standard patent is normally around two years," says Portelli.

You can also file for an international patent to protect your idea in other countries. However, this increases your costs substantially, so you need to have a good idea of exactly where you need protection. There are many countries, however, that

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## THE REWARDS

### HOT TIPS

- Manufacturing yourself gives you full control, but is expensive
- Licensing your invention to other manufacturers is another option
- Don't expect a return on your investment for some time

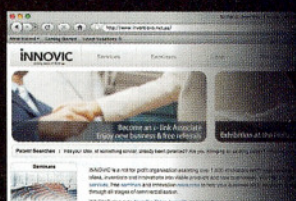
**So you have your idea**, a few working prototypes and a nice shiny new patent staking your territorial claim. How do you actually make money out of it? One route is to go into business for yourself, manufacturing, marketing and selling the product from a company that you control. This is a tempting proposition for many inventors, particularly ones who want to maintain some kind of control over their baby.

This is the avenue pursued by Dean Cameron with Biolytix. Originally, Cameron sought to outsource manufacturing for Biolytix, but found that most manufacturers lacked the expertise to handle his unique design. So, instead, he went it alone and established his own manufacturing arm. It took a lot of work – and a lot of money – but for Cameron, it was worth it. "No-one else is going to do it for you. You've basically got to get in there and do it yourself."

When confronting the notion of setting up a manufacturing plant himself, Cameron did have reservations. "You have to decide whether it's business you want to be in, or whether you want to stay with technology development. That's probably

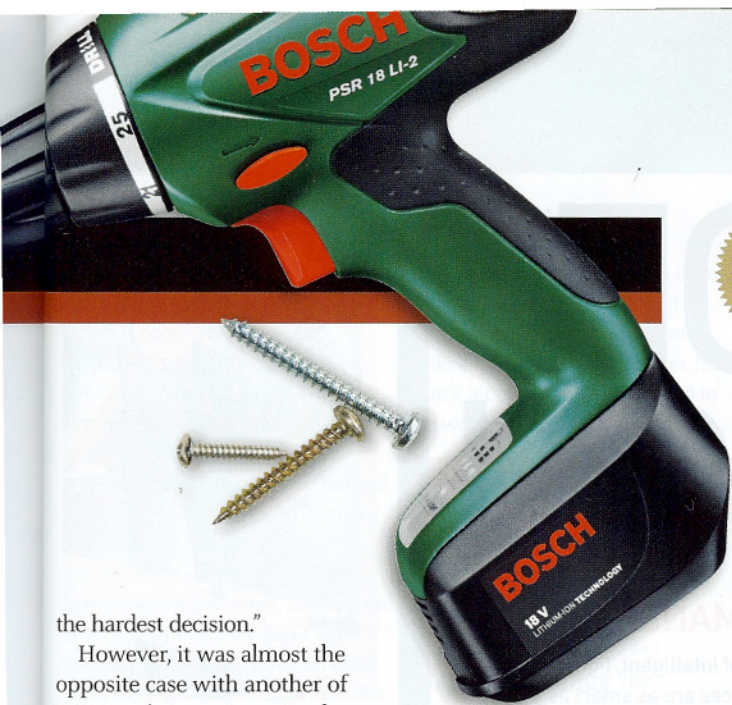


**PLUG IT** Shows such as *The New Inventors* help plug your ideas



## KEY RESOURCES

**Innovic**  
Not-for-profit organisation that helps turn ideas into businesses.  
[innovic.com.au](http://innovic.com.au)



## 6 THE SUCCESS

the hardest decision."

However, it was almost the opposite case with another of Cameron's inventions, Joinlox, which is an innovative way of joining and locking together assemblies such as water tanks. "Joinlox is so broadly applicable, there's no way we could get involved in everything that will use it." So in this case, Cameron chose to license the technology to other manufacturers who can use it. "We provide the technology, and they do the manufacturing. In some ways, it's a cleaner model."

Don Morgan followed a similar route with cone-head. Setting up a manufacturing plant for helmets is a multi-million dollar venture, so he partnered with Hong Kong manufacturer, Strategic Sports, and licensed cone-head to them. However, one pitfall in this process was that by signing a license agreement to a large manufacturer, Morgan no longer qualified for 'small entity status' for his United States patent. This immediately doubled the maintenance costs for his patent. Another reason to get a top-notch patent attorney who can advise you on these issues so you can negotiate a license agreement that will keep you ahead of your patent costs. Alternatively, you can sell your patent entirely, although you then lose control over what happens to your creation – an unpalatable idea for many inventors.

Can you make money from an invention? According to the experts, it's possible, especially if it's a simple but innovative idea that has wide application in a variety of industries. But don't expect to become a millionaire overnight. "If you're an inventor, you can't be doing it for the love of money," says Morgan. Both Cameron and Morgan are nurturing intellectual property that they hope will be very valuable in the years to come and have both continued to invest in growing the business over short-term dividends.

### HOT TIPS

- It's a long hard road from idea to final product
- The New Inventors can help promote your invention
- The life of an inventor can be rich, if not wealthy

**What do you need** to become a successful inventor – besides a great idea? "Perseverance," says Pesce.

"Although for true inventors, you don't need to stress the perseverance."

Morgan is the perfect example. "The road is going to be hard. You've got to have determination. If one door closes, keep on trying. You have to see it right through to the end, even if it fails."

According to Cameron, you also need to know what you're good at, and what you're not. Focus on your strengths, and outsource your weaknesses.

And go on the ABC's *The New Inventors*. The publicity it provides can open new doors and even convince wary partners that there's a demand for your product. The show proved a boon for both Cameron and Morgan. "Part of our initial success was down to *The New Inventors*. The number of enquiries was phenomenal. You couldn't buy that sort of publicity," says Cameron.

And ultimately, you need to have faith in your idea. It might take years, but if you have genuinely good idea and have driven it as hard as you can, there can be great rewards at the end of the tunnel. It may be riches, it may be making a difference, or it could open doors you never expected.

Mark Pesce has enjoyed a fulfilling career in teaching, lecturing and writing books, all because of the start given to him by VRML. "Do I have piles of money? No. Have I had a very rich life because of VRML? Yes."



#### National Invention Centre

Not-for-profit organisation focussing on commercialising intellectual property.  
[inventions.net.au](http://inventions.net.au)

#### IP Australia

Government body that is responsible for issuing patents in Australia.  
[ipaustralia.gov.au](http://ipaustralia.gov.au)

#### GrantsLINK

The Federal Government site that lists grants for which inventors can apply.  
[grantslink.gov.au](http://grantslink.gov.au)

#### United States Patent and Trademark Office

The US government body responsible for issuing patents.  
[uspto.gov](http://uspto.gov)

#### The New Inventors

ABC television show profiling and promoting Australian inventors and inventions.  
[abc.net.au/tv/newinventors/](http://abc.net.au/tv/newinventors/)