

How to decide on a business that will work for you

Your idea will work if you focus your energy, respect your competitors, and make a commitment to achieve your goal.

Your mind is made up — you're going to start your own company. But making the move is tough. You wonder if you have an idea that's going to work. How do you decide what kind of business to start?

Fortunately your decision aren't cast in stone; once you've built a stable business, you'll have options and find new opportunities. Even so, you can minimize risk by doing a lot of soul searching and thinking at the beginning. This installment of Business Engineering offers a winning formula for making good decisions and a capsule look at several individuals whose companies have become successful in their own right (see "Ideas that worked," p. 7).

What makes a good idea work

One common characteristic of all entrepreneurs is passion. Passion translates into commitment. You'll let nothing stand in your way to achieve your goal. You block and tackle, and you change your approach when you encounter insurmountable difficulties. Given that, how can you fail if the goal is realistic and you're in expert in some specific area? Commitment is your most important competitive advantage.

Small companies enjoy some other inherent advantages: they can be flexible, fast moving, and relationship-oriented. If your business Concept exploits these advantages, you'll probably find it easier to succeed in the early stages. Large companies, because of their size and overhead, find it hard to compete effectively in selling products that require a high degree of customization or customer support.

Each company must differentiate itself in some way. Companies that muddle around in the middle generally will fail because they're subject to attack from both sides. Take the restaurant business, for example. In good times, fancy restaurants (selling a place to feel good) are jam-packed, and cheap restaurants (selling food) are jam-packed, but middle-of-the-road restaurants are shutting down.

The same applies to any business. Small companies usually have to specialize — manufacture fewer products, serve a limited range of customers so well that no one can take them away, then expand from that base.

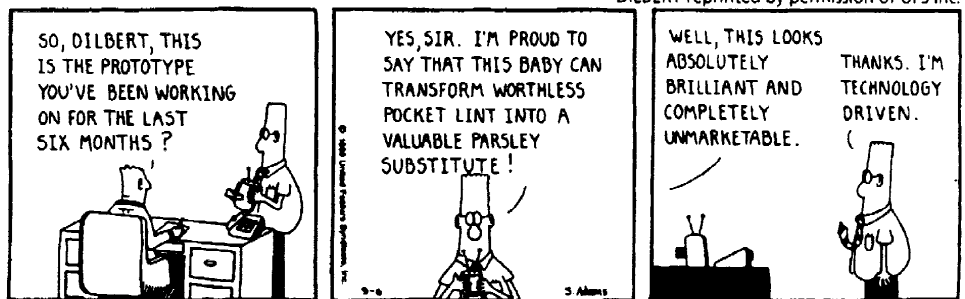
At New Focus, our differentiation is captured in the motto "Simply Better Photonics Tools." When we started the company in 1990, we were competing against several well-established companies. Since we didn't have enough capi-

Common mistakes

Your business needs a sustainable competitive advantage, something that's hard for your competitors to attack. People often want to start a company because they think they can build something better or cheaper. Those really aren't sustainable competitive advantages.

If you can build something better, somebody else can probably build it better still. If you build something cheaper, your competitors can usually lower the price. Their prices aren't always directly related to their costs. They can always say, "Let's not burden this product with that cost, let's assign that cost somewhere else." People already in the business will react when you threaten their market share.

Beware of ideas that are self-limiting. For example, I've heard people say, "My costs are low because I'll have a simple operation. I don't have all that



tal to build a broad range of products, we had to differentiate everything we we had sold, or else people would have had no reason to switch.

We decided to focus on customers who required mechanical stability and to forego those who didn't. As a result, our sales were quite small in the first year. But the emphasis on clever engineering allowed us to serve a small group of customers that particularly cared about performance. As it turned out, these customers were opinion leaders who helped us get the word around.

high overhead." They may very well find they'll have the same disadvantage as their business grows. Have the utmost respect for your competitors.

People often overestimate the importance of a patent, a specific technology, or a contract. Certainly these factors can be important, but often they're insufficient drivers for success. What about Manufacturing capability, distribution channels, and customer recognition? If these other drivers loom large or if your idea requires substantial investment, you may do well by struc-

turing your business to team with a company that has already invested in the right kind of business infrastructure.

Finding and assessing your idea

Good ideas can come from anywhere. Each of us has a unique set of experiences that allow us to see opportunities or problems that others don't see. On the other hand, sometimes a problem is obvious — everyone sees it, but nothing happens until someone decides to do something about it.

More than 25 years ago, I talked about the idea of driving over a trench to change the oil in a car instead of having the car lifted. What did I do with that idea? Nothing. Neither do I own a piece of Jiffy-Lube, a thriving business started not too long ago, that does exactly that. An idea about what to do is worth nothing until you do it. Commitment makes it work, more than the idea itself.

By the way, even if I had tried to implement that idea, I probably would have failed, because at that time I didn't realize that Jiffy-Lube isn't about driving cars over holes and servicing them; it's about financing and franchising. You not only need to go after an idea—you also need to know what drives a business and makes it successful, and that may not always be what comes to mind first.

We laser jocks are blessed because many people come to us looking for solutions, motivated by their fascination with what they think lasers can do. But we're more likely to come up with an optimum solution if we consider all technologies. And we're more likely to come up with ideas of our own if we see ourselves as clever engineers rather than clever electro-optics engineers. We'll consider more options if we approach the problem even more broadly, as a technical business person. Technology is the business of the future, and technology is delivering significant competitive advantages in almost all businesses. We engineers, more than people with only a business education, are in position to take advantage of that trend.

Are there systematic ways to search for ideas? Certainly major trends, like the information highway, bring opportunities. Optics should find ample applications, in the fields of health, personal security, and entertainment.

These are important human needs, and optics has played a major role to make possible a lot of the applications. Many business ideas can't be realized without the right technology.

To test the potential for your idea, you must talk to potential customers. Try to understand what knowledgeable people say, then extrapolate to see statistically how many more people would want your widget. The accuracy of your projection improves significantly as you talk to more people and to different kinds of people. Marketing is not hard, it's just hard work.

You are much more likely to succeed if you focus your energy. An understanding of the characteristics of the different kinds of markets for your product can help you select your focus (see "Entrepreneur's guide to markets").

Taking over existing businesses

What we've discussed so far is about starting a new business. You can also be a "solution" for an existing business. Big companies sometimes need to sustain a losing business to service the needs of another part of the company. They may be willing to sell it to you cheaply, or even subsidize you, if you can assure them that the operation would remain viable. You can create a win-win situation by turning it into a lean and mean entrepreneurial organization. Often these business are service-intensive or require customizing.

You may also find opportunities when a company formed on the venture-capital model fails to grow at the expected rate. When the venture capitalists perceive one of their investments as one of the "walking dead," that is, companies that won't grow big enough to go public, they often "pull the plug." You may have the opportunity to salvage the pieces and turn it into a small but solid business until a growth opportunity comes along.

Yet another possibility is to negotiate an equity position in a company with an established infrastructure. A lot of people who founded small companies in our industry are now in their late fifties to early seventies. Some of them want to retire, but they can't sell their company for an attractive price because the laser industry is struggling. A bright, energetic young engineer with a good reputation might be able to cut a deal in which he or she takes on

Entrepreneur's guide to markets

• Scientific (R&D) market

- Niche business divided by technical disciplines
- Customers are easy to reach
- Some customer allegiance
- Total market is small
- Ready acceptance of products that improve performance
- Engineers make "buy" decisions
- High tolerance for problems, as long as facts are known
- Better performance justifies higher prices
- Low price / volume elasticity
- Product line is short—innovate or die

• Industrial / commercial markets

- Market potential is large, break down by function, cuts across industries
- Customers are hard to reach
- Strong brand recognition
- Technology is evolutionary — if it works, don't change it
- Engineers, influenced by buyers, make "buy" decisions
- Low tolerance for problems
- Some price / volume elasticity

• OEM market

- Total business can be large
- A few large customers, but can be readily identified and reached
- Long gestation period
- Purchasing agents make "buy" decisions
- Zero tolerance for deficiencies in quality and delivery
- Price sensitivity is high, supplier allegiance is low
- Slowly changing market conditions

a lot of responsibility in return for an engineer's salary plus stock options to earn ownership over time.

Consider yourself

It's essential that you find and structure a business that's right for you and those around you. By all means, take your family's wishes into consideration. You can handle the demands only if you have the support and understanding of everyone involved. The bottom line is that we all are constantly trying to find the path of least resistance to happiness. What makes us happy is feeling good about ourselves, and that usually means doing something well or being nice to other people. If you do what you're good at, you're more likely to do it well, which often brings success. So understand your strengths and weaknesses, decide what you and those around you are willing to sign up for, and pick a business that's tailor-made for you.

Ideas that worked

■ Zygo (Middlefield, CT) was founded by Paul Forman, Carl Zanoni, and Sol Laufer. As Paul tells it, "We believed that if you make products that customers need, and if the quality of those products exceeds the customers' expectations, and if you have an energized organization, then you're likely to succeed. We didn't have a product idea, but we felt the emergence of the laser and the growth of microelectronics would create a market for precision optics. So we decided to build the best optics shop for plano optics in the world.

"To realize that goal, we needed a precise way to measure what we built. Since we didn't find the right measurement instrument in the marketplace, we designed and built a laser interferometer. I sold the second one, and we put the money from that sale into the kitty to develop a more universal instrument. A customer paid for some of the development of what became a product.

"Our laser interferometer was the right product at the right time," Paul says. "It was flexible and easy to use, and it gave quantitative answers about the flatness of optical surfaces. It moved the capability for high-precision measurements down the organization from the QC manager to the manufacturing workers."

Zygo is now a public company with \$25 million in annual sales. Paul Forman serves as chairman of Zygo's board of directors and also has his own consulting business.

■ Ron Schmidt, one of the founders of SynOptics, now Bay Networks, tells his story: "When I worked at Xerox PARC, we were looking at fiberoptic Ethernet. We developed a piece of network equipment that corresponds to today's intelligent hub, although it wasn't intelligent in those days. Xerox was eager to commercialize it, but it didn't fit the Xerox business model. So we spun off

SynOptics, giving Xerox an equity position in return for their R&D investment. We raised venture-capital financing about six months later.

"We enlarged the potential market by modifying the equipment so it would run on the cabling system which IBM developed for Token Ring," Ron says. "It saved money for

Technology is not the endpoint. Return to your shareholders is the endpoint.

customers that had both Ethernet and Token Ring, because it enabled them to cable just once. Later we modified the equipment again to run on unshielded telephone cable, and that was the real hit in the marketplace. We knew we were going to run on telephone wire even before we left Xerox PARC — we didn't know how, but laboratory experiments had given us the feeling that it was a tractable problem.

"Most of the people reading this article may be technologists. To be an entrepreneur, you need technology, but technology is not the endpoint. Business is the endpoint. Return to your shareholders is the endpoint. The technology is just a vehicle."

Today Ron Schmidt is chief technical officer for Bay Networks Inc.

■ Bob Lambert is an expert at manipulating chemical processes to produce desirable H-D curves in photographic films. With the right exposure compensation, he can produce patterns with sinusoidal transmittance. These patterns are very useful for specialized MTF measurements as well as for moiré contouring, and he's about the only person that knows how to make them. After retiring from Kodak, he started Sine Patterns, working out of his home,

proud that NASA needed his products for a project.

He explains: "The gestation period is long. You produce as high quality an item as you can. People find it works, and you sell it by word of mouth. My business grew naturally at its own pace." Bob maintains a viable business by not overextending himself, and he has fun doing it.

■ Steve Fantone, founder of Optikos (Cambridge, MA), has a passion for optics. He founded Optikos to leverage a broad set of engineering skills to develop low-cost consumer products. Believing that the market expands exponentially as the price of the product drops, he acquired design skills to allow low-cost manufacturing in high volume. He was responsible for several toys based on optics, and his latest success is a CD cover that will blink different images using a moldin lenticulate screen. The "solution" here is that you're more likely to buy a CD once you've picked it up. Optikos is a base from which Steve can hunt for opportunities.

■ Duncan MacVicar has had a technical marketing consulting business for nearly 20 years. He started as an engineer marketing laser interferometers at Hewlett-Packard but decided that independence was important to him. He works out of his home and teams up with other consultants for larger projects. He sells his cumulative knowledge to benefit many companies. Duncan says a consultant's job is to provide additional capacity, specific expertise, and an outsider's viewpoint. To make his business work, he says, "You need genuine expertise, confidence, and a reputation for integrity. You also need a year's salary in the bank. If you do good work, maybe in three or four years you'll make more money than you used to."