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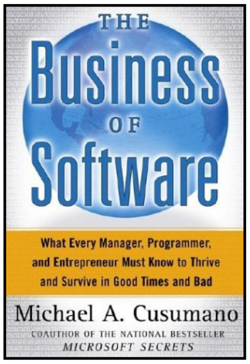

The Business of Software

What Every Manager, Programmer, and Entrepreneur Must Know to Thrive and Survive in Good Times and Bad

by Michael A. Cusumano
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Take-Aways

- Software is one of the few industries whose players believe they can change the world — and sometimes they can.
- In Europe, software is a science. In Japan, it's a process. In the U.S., it's a business.
- Software companies must decide whether to focus on products or services.
- Product firms sell software; service firms sell consulting, training and integration.
- Successful product companies enjoy huge profit margins, thanks in part to low costs; selling one copy or a million copies of the product costs roughly the same.
- Product companies inevitably transform into hybrid companies that sell both products and services.
- Horizontal markets offer the potential for outsized revenues, but also the threat of business-killing setbacks.
- Recurring revenues are the Holy Grail of any software firm.
- Very few software firms receive venture capital and go on to become publicly traded.
- The companies that successfully go public boast strong management teams, compelling business models and sustained growth.

Rating (10 is best)

Overall	Applicability	Innovation	Style
9	**9**	**8**	**9**

Relevance

What You Will Learn

In this Abstract, you will learn: 1) Which strategic questions software firms must answer; 2) What common pitfalls software companies face; and 3) What characterizes companies that win venture capital funding, go public and succeed.

Recommendation

Even after the dot-com boom and bust, software remains the business world's glamour industry. In this insightful study, professor and industry expert Michael A. Cusumano skips the glitz and goes straight for the nuts and bolts. The result is a clear rendering of exactly what makes one software firm hit it big while dozens of others go broke. Despite a slight, occasional tendency to sound academic, Cusumano really explains why a well-run software company can be a gold mine. He carefully covers the best practices in the software development industry in depth and offers plenty of real-world case histories to add juice to what could have been a dry recitation. He even explains why you have to hold on so long when you call a mass-market software firm's toll-free number. *getAbstract.com* recommends this detailed book to software pros seeking insight into their industry, as well as to investors and to those who like inside stories about entrepreneurial adventures.

Abstract

Perceptions of the Software Industry

Software is one of the few unique industries in the business world. For starters, its visionaries often set out to change the world — and succeed. For instance, as far back as the mid-1970s, the founders of Microsoft Corporation looked at the future expecting to see personal computers in every home and office, and also expecting to see their software running those PCs. Moreover, the software industry ultimately sells little more than binary zeros and ones that tell computers what to do. Unlike traditional companies in the manufacturing and service sectors, software firms spend about the same amount of money to sell one version or a million versions of their products. Companies that are founded to make and sell products invariably morph into service companies. And in what other industry would companies rush products onto shelves in spite of known flaws?

"The goal of every software company should be to establish large and growing revenues that are recurring."

While the American software companies are the best known, it's instructive to look at the software cultures in other places. In Europe, for example, software is considered a science. This viewpoint leads companies such as Germany's SAP to create complex, intricately detailed applications. In contrast to Europe, with its strong educational system in computer science, Japan has relatively weak university programs in computer programming. That's part of the reason Japanese software companies such as NEC, Toshiba and NTT view software less as a science and more as a production challenge. The Japanese firms are software factories.

"Vertical markets that are exactly right for your solution must be easier to conquer than horizontal markets that require general-purpose solutions that anybody can use."

In the United States, software firms are anything but factories. Company founders aim to change the world and to make themselves immensely rich in the process, even if their products are less than pristine. Microsoft and Netscape provide prime examples. Both companies rushed "good enough" versions of their killer apps to market, creating immediate industry standards and worrying about the fixes later.

As the wealth created by both Microsoft and Netscape attests, American firms have succeeded by treating software not as a science or as a production challenge but as a business. This approach is prone to excesses, as evidenced by the tech boom of the late '90s and the devastating bust of 2000. Even after that shakeout, the software industry remains overcrowded, a fact that emphasizes the need for proper strategic thinking.

"Publishers, like software products companies, can make enormous profits from just one best-selling product. In practice, though, it is probably just as hard to write a best-selling software product as it is to write a best-selling book."

The Strategy of Software

Making a killing in software requires more than just writing a flashy, world-changing business plan. To survive, entrepreneurs must answer many questions about their strategies, including:

Question One: Will You Offer a Product or a Service?

A products company typically sells shrink-wrapped boxes containing CD-ROMs. Microsoft and Adobe Systems, an imaging and design software maker, provide prime examples of the products approach. A services company focuses instead on selling labor-intensive intangibles such as strategic advice, training, technical support and network integration. Think of PricewaterhouseCoopers, EDS and Accenture. Many good products companies eventually evolve into a service model as they build up lists of clients who need custom software and maintenance. PeopleSoft and SAP are examples of these hybrid companies. Many products companies resist this inevitable transformation into service mode, primarily because products companies enjoy such fat profit margins. Consider Business Objects' income statement. The product side of the hybrid software firm collected $244 million in license fees in 2002 with only $3 million in costs, a gross profit margin of almost 99%. Revenues from services totaled $211 million, but required $71 million in expenditures, a gross profit margin of "only" 61%.

"If it costs you roughly the same to make one copy or one million copies of a product, you would be a fool not to want to make and sell a million copies of every product you make."

Clearly, the products business can be hugely lucrative, because selling a software product requires only tiny outlays for CDs, cardboard boxes and shrink wrap. But support, such as training and hiring the staff to handle your calls to that toll-free customer service number, can boost costs. A services business can help protect the product side of the company during an economic downturn.

Question Two: Will You Appeal to the Mass Market or a Niche?

The mass market is just that: the huge number of computer users in the world. A success in this market can pay off big, but competition abounds, such as Microsoft. Niche players target more specialized markets, like specific hardware and operating system platforms or certain industries. In the mass market, the customers are typically individuals, though there is a corporate mass market. Niche market buyers are usually organizations.

"Software has the power to change the world, especially when treated as a business by managers, programmers and entrepreneurs who also want to change the world."

Question Three: Will You Reach for a Horizontal Market or a Vertical Market?

A horizontal market segment potentially covers all computer users. A vertical segment focuses on a particular industry, such as software for the healthcare industry; on a technical specialty, such as computer-aided design programs for engineers or on a platform-specific market, such as software produced for a single operating system and hardware set-up. Horizontal markets exude an undeniable allure, given their potential to yield a blockbuster product. But software companies grow starry-eyed about horizontal markets too often and are left with feeble products. This approach can eat up huge investments. Consider the story of SkyFire Technologies, a startup that figured out how to move data-intensive applications quickly over slow wireless connections, making their product ideal for users of handheld devices. SkyFire could have focused on a few areas, such as providing stock quotes or selling inventory and delivery management systems to food distributors. Instead, SkyFire tried to tackle a much broader market. But too many

"In the United States, we have companies like Microsoft and Netscape, both of which tried to and succeeded in changing the world."

competitive products were available, and SkyFire went broke. It could have thrived by focusing on a few vertical markets that fit its specialty.

"There are now too many software companies in the world by a factor of three or more, and far too many of them are public and have received venture capital funding."

Question Four: Where Will You Earn Recurring Revenue?

Sure, scoring with a hit product is profitable in the short term, but what happens when sales of that product decline? To survive over the long term, software companies need predictable recurring revenues. Long-term maintenance contracts provide a surefire revenue stream. Corporate clients pay now for consulting, training and support they'll receive in the future — making these contracts like money in the bank. Such recurring revenues can make up for all but the most disastrous business missteps.

Consider the case of Infinium Software, Inc., founded in 1981. Its human resource management, financial management and process management software ran on the IBM AS/400 hardware. These back office operations appealed to casinos and healthcare firms. But when the AS/400 market stagnated, Infinium branched into the Windows NT market, acquiring firms that wrote applications for that hardware. For a few years, revenues spiked, but there was a catch. These newly acquired companies had weaker NT applications than their IBM competitors. And as Infinium refocused on NT, it ignored its core AS/400 market, alienating long-term customers. Infinium hemorrhaged money in 1999 and 2000, when it decided to abandon NT and get back to the AS/400 market. In spite of these ill-conceived moves, Infinium quickly returned to profitability, thanks in large part to the recurring revenues from its original AS/400 clients.

"It is too easy to overestimate the potential of horizontal markets and end up with products that have too few customers or that are too weak to combat the competition."

Taking the Leap

Plenty of potential pitfalls threaten software developers who see entrepreneurship as their path to Bill Gates-like riches. The tech boom of 1998 to 2000 helped fuel such dreams, creating as it did countless dot-com millionaires. For a time, software entrepreneurship was simply too smooth a path. Then, from 2001 to 2003, building a valuable software company became nearly impossible. Venture capitalists weren't interested in funding startups and investors had no appetite for shares of software companies. Software entrepreneurship had grown too difficult. These booms and busts made starting a software firm a risky venture.

"Not even long-standing customers seemingly locked into your software will remain loyal if they believe that the vendor has stopped investing in the products and is not willing to help them incorporate new technologies."

Given that pattern, entrepreneurs learned to focus on making their own businesses profitable rather than worrying too much about periods of euphoria and depression. Achieving the much-touted dream of taking a software company public remains a remote possibility. The odds are roughly equivalent to those faced by schoolyard athletes who hope to sign hefty pro contracts. Out of a million high-tech businesses, only six become stable, publicly traded companies. Venture capitalists typically reject 994 business plans for every six they agree to fund. And only about one in ten VC-backed start-ups ever goes public; six in 10 go broke. Even the firms that go public aren't necessarily bonanzas for the founders. VCs typically own 60% of a company by the time of the IPO, while the CEO usually owns less than 4%.

"The willingness and ability of enterprise customers to pay money in the present for products or services they will receive in the future is a major reason why enterprise sales contracts resemble assets on deposit."

Of course, it's quite possible to build a profitable software company without ever seeking venture capital or selling shares on the NASDAQ. Some firms are financed internally or by "angel" investors. An angel is a wealthy individual who takes a stake in a company. That course offers a wiser choice for many entrepreneurs.

Two moves often signal impending doom for a software company: seeking venture funding it doesn't need and going public too soon. In both cases, the cash is used to hire too many people and pay them too much, not to mention to move into fancy offices and overspend on development projects that are more fantasy than reality. Companies that beat the odds and achieve the Holy Grail of VC funding and a hot IPO share eight characteristics:

"Success stories are rarely planned exactly in advance."

1. A stellar management team — Venture capitalists bet on people first and ideas second. VCs look for experience and balance. If the founder is young or inept at day-to-day management tasks, the company needs a mature CEO who can persuade investors of the wisdom of investing in this new technology. The firm must balance between the technical side and the marketing and financial operation. Founders who lack management experience need to learn to listen, to delegate, to allocate resources and to keep an eye firmly on the big picture.
2. A lucrative market — Characteristics include high barriers to entry and a lack of cutthroat competition. Don't make the mistake of describing your market in terms of size. Too often, tech entrepreneurs point to an eye-popping statistic such as the billions of dollars of revenue produced by the United States financial service sector, and then say they want only 1% to 2% of the market. A startup will get none of that market unless it presents solid real value to its customers.
3. A promising product — The startup's service or product should be compelling. In the case of Netscape, it was the browser. For Microsoft, it was an operating system.
4. Willing customers — This is tricky: You can't be sure consumers will buy your product until it's on the shelves. But investors want evidence, such as letters of intent from customers, that your product will sell.
5. A bridge over the credibility gap — Ninety percent of all startups fail. Investors want to know how your company is different. To address this all-too-common credibility gap, be sure to have customers in place, even if you have to give away your product to early clients.
6. A compelling business model — It takes more than an idea and a few customers. You also need to convince investors that you'll grow quickly and turn profitable soon. Most software companies are nothing more than small consulting firms that rely on the knowledge of two or three employees. That business model offers little promise of long-term growth. Investors look for "scalability," the potential to increase productivity and sales exponentially.
7. Flexibility — No matter how detailed and persuasive your business blueprint is, reality won't conform exactly to your plans. So you and your product need to be able to adapt to a changing world.
8. A hefty payday in the future — Venture capitalists want an exit strategy. More specifically, they want ultimately to sell your company to investors in an initial public offering.

"Between 1998 and early 2000, we experienced a once-in-a-century event, equivalent to and perhaps surpassing the introduction of the transcontinental railroad, commercial electricity, the telephone, the television and the computer."

About The Author

Author Michael A. Cusumano is the Sloan Management Review Distinguished Professor at the Massachusetts Institute of Technology's Sloan School of Management. A leading expert on the software industry, he wrote the bestsellers *Microsoft Secrets* and *Competing on Internet Time*. His other titles include *Japan's Software Factories* and *Platform Leadership*.

