

ZERO

TO

ONE

NOTES ON STARTUPS, OR

HOW TO BUILD THE FUTURE

Peter Thiel

with BLAKE MASTERS

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ZERO TO ONE

EVERY MOMENT IN BUSINESS happens only once. The next Bill Gates will not build an operating system. The next Larry Page or Sergey Brin won't make a search engine. And the next Mark Zuckerberg won't create a social network. If you are copying these guys, you aren't learning from them.

Of course, it's easier to copy a model than to make something new. Doing what we already know how to do takes the world from 1 to n , adding more of something familiar. But every time we create something new we go from 0 to 1. The act of creation is singular, as is the moment of creation, and the result is something fresh and strange.

Unless they invest in the difficult task of creating new things, American companies will fail in the future no matter how big their profits remain today. What happens when we've gained everything to be had from fine-tuning the old lines of business that we've inherited? Unlikely as it sounds, the answer threatens to be far worse than the crisis of 2008. Today's "best practices" lead to dead ends; the best paths are new and untried.

In a world of gigantic administrative bureaucracies both public and private, searching for a new path might seem like hoping for a miracle. Actually, if American business is going to succeed, we are going to need hundreds, or even thousands, of miracles. This would be depressing but for one crucial fact: humans are distinguished from other species by our ability to work miracles. We call these miracles *technology*.

Technology is miraculous because it allows us to do *more with less*, ratcheting up our fundamental capabilities to a higher level. Other animals are instinctively driven to build things like dams or honeycombs but we are the only ones that can invent new things and better ways of making them. Humans don't decide what to build by making choices from some cosmic catalog of options given in advance; instead, by creating new technologies, we rewrite the plan of the world. These are the kind of elementary truths we teach second graders, but they are easy to forget in a world where so much of what we do is repeat what has been done before.

Zero to One is about how to build companies that create new things. It draws on everything I've learned directly as a co-founder of PayPal and Palantir and then an investor in hundreds of startups, including Facebook and SpaceX. But while I have noticed many patterns, and I relate them here, this book offers no formula for success. The paradox of teaching entrepreneurship is that such a formula necessarily cannot exist because every innovation is new and unique, no authority can prescribe in concrete terms how to be innovative. Indeed, the single most powerful pattern I have noticed is that successful people find value in unexpected places, and they do this by thinking about business from first principles instead of formulas.

This book stems from a course about startups that I taught at Stanford in 2012. College students can become extremely skilled at a few specialties, but many never learn what to do with those skills in the wider world. My primary goal in teaching the class was to help my students see beyond the tracks laid down by academic specialties to the broader future that is theirs to create. One of those students, Blake Masters, took detailed class notes, which circulated far beyond the campus, and in *Zero to One* I have worked with him to revise the notes for a wider audience. There's no reason why the future should happen only at Stanford, or at college, or in Silicon Valley.

THE CHALLENGE OF THE FUTURE

WHenever I interview someone for a job, I like to ask this question: “What important truth do very few people agree with you on?”

This question sounds easy because it’s straightforward. Actually, it’s very hard to answer. It’s intellectually difficult because the knowledge that everyone is taught in school is by definition agreed upon. And it’s psychologically difficult because anyone trying to answer must say something she knows to be unpopular. Brilliant thinking is rare, but courage is in even shorter supply than genius.

Most commonly, I hear answers like the following:

“Our educational system is broken and urgently needs to be fixed.”

“America is exceptional.”

“There is no God.”

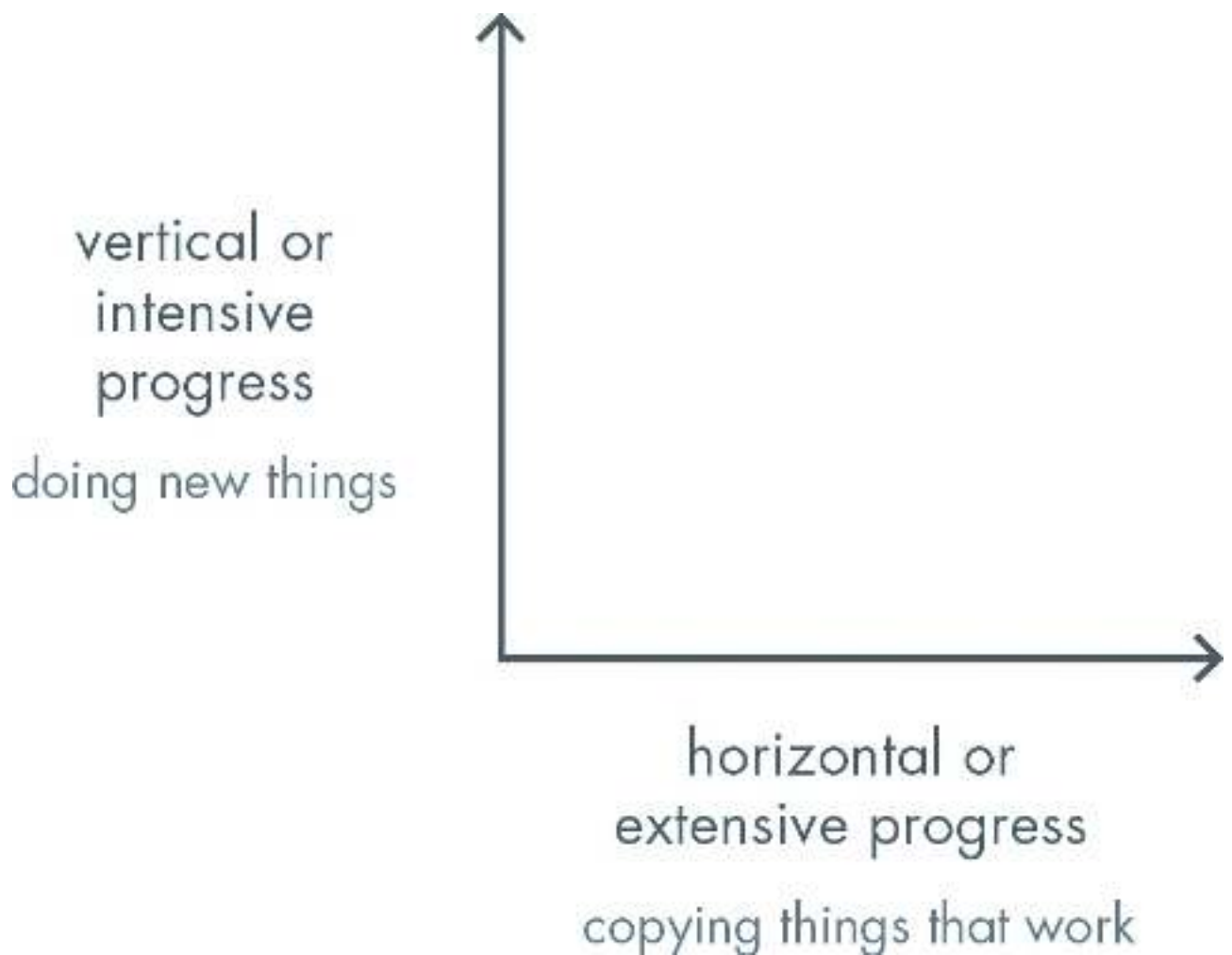
Those are bad answers. The first and the second statements might be true, but many people already agree with them. The third statement simply takes one side in a familiar debate. A good answer takes the following form: “Most people believe in x , but the truth is the opposite of x .” I’ll give my own answer later in this chapter.

What does this contrarian question have to do with the future? In the most minimal sense, the future is simply the set of all moments yet to come. But what makes the future distinctive and important isn’t that it hasn’t happened yet, but rather that it will be a time when the world looks different from today. In that sense, if nothing about our society changes for the next 100 years, then the future is over 100 years away. If things change radically in the next decade, then the future is nearly at hand. No one can predict the future exactly, but we know two things: it’s going to be different, and it must be rooted in today’s world. Most answers to the contrarian question are different ways of seeing the present; good answers are as close as we can come to looking into the future.

ZERO TO ONE: THE FUTURE OF PROGRESS

When we think about the future, we hope for a future of progress. That progress can take one of two forms. Horizontal or extensive progress means copying things that work—going from 1 to n . Horizontal progress is easy to imagine because we already know what it looks like. Vertical or intensive progress means doing new

things—going from 0 to 1. Vertical progress is harder to imagine because it requires doing something nobody else has ever done. If you take one typewriter and build 100, you have made horizontal progress. If you had a typewriter and build a word processor, you have made vertical progress.



At the macro level, the single word for horizontal progress is *globalization*—taking things that work somewhere and making them work everywhere. China is the paradigmatic example of globalization; its 20-year plan is to become like the United States is today. The Chinese have been straightforwardly copying everything that has worked in the developed world: 19th-century railroads, 20th-century air conditioning, and even entire cities. They might skip a few steps along the way—going straight to wireless without installing landlines, for instance—but they’re copying all the same.

The single word for vertical, 0 to 1 progress is *technology*. The rapid progress of information technology in recent decades has made Silicon Valley the capital of “technology” in general. But there is no reason why technology should be limited to computers. Properly understood, any new and better way of doing things is technology.



technology

0 to 1

globalization

1 to n

Because globalization and technology are different modes of progress, it's possible to have both, either, or neither at the same time. For example, 1815 to 1914 was a period of both rapid technological development and rapid globalization. Between the First World War and Kissinger's trip to reopen relations with China in 1971, there was rapid technological development but not much globalization. Since 1971, we have seen rapid globalization along with limited technological development, mostly confined to IT.

This age of globalization has made it easy to imagine that the decades ahead will bring more convergence and more sameness. Even our everyday language suggests we believe in a kind of technological end of history: the division of the world into the so-called developed and developing nations implies that the "developed" world has already achieved the achievable, and that poorer nations just need to catch up.

But I don't think that's true. My own answer to the contrarian question is that most people think the future of the world will be defined by globalization, but the truth is that technology matters more. Without technological change, if China doubles its energy production over the next two decades, it will also double its air pollution. If every one of India's hundreds of millions of households were to live the way Americans already do—using only today's tools—the result would be environmentally catastrophic. Spreading old ways to create wealth around the world will result in devastation, not riches. In a world of scarce resources, globalization without new technology is unsustainable.

New technology has never been an automatic feature of history. Our ancestors lived in static, zero-sum societies where success meant seizing things from others. They created new sources of wealth only rarely, and in the long run they could never create enough to save the average person from an extremely hard life. The world after 10,000 years of fitful advance from primitive agriculture to medieval windmills and 16th-century astrolabes, the modern world suddenly experienced relentless technological progress from the advent of the steam engine in the 1760s all the way up to about 1970. As a result, we have inherited a richer society than any previous generation would have been able to imagine.

Any generation excepting our parents' and grandparents', that is: in the late 1960s, they expected the

progress to continue. They looked forward to a four-day workweek, energy too cheap to meter, and vacations on the moon. But it didn't happen. The smartphones that distract us from our surroundings also distract us from the fact that our surroundings are strangely old: only computers and communications have improved dramatically since midcentury. That doesn't mean our parents were wrong to imagine a better future—they were only wrong to expect it as something automatic. Today our challenge is to both imagine and create the new technologies that can make the 21st century more peaceful and prosperous than the 20th.

STARTUP THINKING

New technology tends to come from new ventures—startups. From the Founding Fathers in politics to the Royal Society in science to Fairchild Semiconductor's "traitorous eight" in business, small groups of people bound together by a sense of mission have changed the world for the better. The easiest explanation for this is negative: it's hard to develop new things in big organizations, and it's even harder to do it by yourself. Bureaucratic hierarchies move slowly, and entrenched interests shy away from risk. In the most dysfunctional organizations, signaling that work is being done becomes a better strategy for career advancement than actually doing work (if this describes your company, you should quit now). At the other extreme, a lone genius might create a classic work of art or literature, but he could never create an entire industry. Startups operate on the principle that you need to work with other people to get stuff done, but you also need to stay small enough so that you actually can.

Positively defined, a startup is the largest group of people you can convince of a plan to build a different future. A new company's most important strength is new thinking: even more important than nimbleness, small size affords space to think. This book is about the questions you must ask and answer to succeed in the business of doing new things: what follows is not a manual or a record of knowledge but an exercise in thinking. Because that is what a startup has to do: question received ideas and rethink business from scratch.

PARTY LIKE IT'S 1999

OUR CONTRARIAN QUESTION—*What important truth do very few people agree with you on?*—is difficult to answer directly. It may be easier to start with a preliminary: what does everybody agree on? “Madness is rare in individuals—but in groups, parties, nations, and ages it is the rule,” Nietzsche wrote (before he went mad). If you can identify a delusional popular belief, you can find what lies hidden behind it: the contrarian truth.

Consider an elementary proposition: companies exist to make money, not to lose it. This should be obvious to any thinking person. But it wasn't so obvious to many in the late 1990s, when no loss was too big to be described as an investment in an even bigger, brighter future. The conventional wisdom of the “New Economy” accepted page views as a more authoritative, forward-looking financial metric than something as pedestrian as profit.

Conventional beliefs only ever come to appear arbitrary and wrong in retrospect; whenever one collapses we call the old belief a *bubble*. But the distortions caused by bubbles don't disappear when they pop. The internet craze of the '90s was the biggest bubble since the crash of 1929, and the lessons learned afterward define and distort almost all thinking about technology today. The first step to thinking clearly is to question what we think we know about the past.

A QUICK HISTORY OF THE '90S

The 1990s have a good image. We tend to remember them as a prosperous, optimistic decade that happened to end with the internet boom and bust. But many of those years were not as cheerful as our nostalgia holds. We've long since forgotten the global context for the 18 months of dot-com mania at decade's end.

The '90s started with a burst of euphoria when the Berlin Wall came down in November '89. It was short-lived. By mid-1990, the United States was in recession. Technically the downturn ended in March '91, but recovery was slow and unemployment continued to rise until July '92. Manufacturing never fully rebounded. The shift to a service economy was protracted and painful.

1992 through the end of 1994 was a time of general malaise. Images of dead American soldiers in Mogadishu looped on cable news. Anxiety about globalization and U.S. competitiveness intensified as jobs flowed to Mexico. This pessimistic undercurrent drove then-president Bush 41 out of office and won Ross Perot nearly 20% of the popular vote in '92—the best showing for a third-party candidate since Theodore Roosevelt in 1912. And whatever the cultural fascination with Nirvana, grunge, and heroin reflected, it wasn't hope or confidence.

Silicon Valley felt sluggish, too. Japan seemed to be winning the semiconductor war. The internet had yet to take off, partly because its commercial use was restricted until late 1992 and partly due to the lack of user-friendly web browsers. It's telling that when I arrived at Stanford in 1985, economics, not computer science, was the most popular major. To most people on campus, the tech sector seemed idiosyncratic or even provincial.

The internet changed all this. The Mosaic browser was officially released in November 1993, giving regular people a way to get online. Mosaic became Netscape, which released its Navigator browser in late 1994. Navigator's adoption grew so quickly—from about 20% of the browser market in January 1995 to almost 80% less than 12 months later—that Netscape was able to IPO in August '95 even though it wasn't yet profitable. Within five months, Netscape stock had shot up from \$28 to \$174 per share. Other tech companies were booming, too. Yahoo! went public in April '96 with an \$848 million valuation. Amazon followed suit in May '97 at \$438 million. By spring of '98, each company's stock had more than quadrupled. Skeptics questioned earnings and revenue multiples higher than those for any non-internet company. It was easy to conclude that the market had gone crazy.

This conclusion was understandable but misplaced. In December '96—more than three years before the bubble actually burst—Fed chairman Alan Greenspan warned that “irrational exuberance” might have led to “unduly escalated asset values.” Tech investors were exuberant, but it's not clear that they were so irrational. It is too easy to forget that things weren't going very well in the rest of the world at the time.

The East Asian financial crises hit in July 1997. Crony capitalism and massive foreign debt brought Thailand, Indonesian, and South Korean economies to their knees. The ruble crisis followed in August '98 when Russia, hamstrung by chronic fiscal deficits, devalued its currency and defaulted on its debt. American investors grew nervous about a nation with 10,000 nukes and no money; the Dow Jones Industrial Average plunged more than 10% in a matter of days.

People were right to worry. The ruble crisis set off a chain reaction that brought down Long-Term Capital Management, a highly leveraged U.S. hedge fund. LTCM managed to lose \$4.6 billion in the latter half of 1998, and still had over \$100 billion in liabilities when the Fed intervened with a massive bailout and slashed interest rates in order to prevent systemic disaster. Europe wasn't doing that much better. The euro launched in January 1999 to great skepticism and apathy. It rose to \$1.19 on its first day of trading but sank to \$0.80 within two years. In mid-2000, G7 central bankers had to prop it up with a multibillion-dollar intervention.

So the backdrop for the short-lived dot-com mania that started in September 1998 was a world in which nothing else seemed to be working. The Old Economy couldn't handle the challenges of globalization. Something needed to work—and work in a big way—if the future was going to be better at all. By indirect proof, the New Economy of the internet was the only way forward.

MANIA: SEPTEMBER 1998–MARCH 2000

Dot-com mania was intense but short—18 months of insanity from September 1998 to March 2000. It was Silicon Valley gold rush: there was money everywhere, and no shortage of exuberant, often sketchy people to chase it. Every week, dozens of new startups competed to throw the most lavish launch party. (Landing parties were much more rare.) Paper millionaires would rack up thousand-dollar dinner bills and try to pay with shares of their startup's stock—sometimes it even worked. Legions of people decamped from their well-paying jobs to found or join startups. One 40-something grad student that I knew was running six different

companies in 1999. (Usually, it's considered weird to be a 40-year-old graduate student. Usually, it's considered insane to start a half-dozen companies at once. But in the late '90s, people could believe that was a winning combination.) Everybody should have known that the mania was unsustainable; the most "successful" companies seemed to embrace a sort of anti-business model where they *lost* money as they grew. But it's hard to blame people for dancing when the music was playing; irrationality was rational given that appending ".com" to your name could double your value overnight.

DOT-COM BOOM



PAYPAL MANIA

When I was running PayPal in late 1999, I was scared out of my wits—not because I didn't believe in our company, but because it seemed like everyone else in the Valley was ready to believe anything at all. Everywhere I looked, people were starting and flipping companies with alarming casualness. One acquaintance told me how he had planned an IPO from his living room before he'd even incorporated his company—and he didn't think that was weird. In this kind of environment, acting sanely began to seem eccentric.

At least PayPal had a suitably grand mission—the kind that post-bubble skeptics would later describe as grandiose: we wanted to create a new internet currency to replace the U.S. dollar. Our first product let people beam money from one PalmPilot to another. However, nobody had any use for that product except the journalists who voted it one of the 10 worst business ideas of 1999. PalmPilots were still too exotic then, but email was already commonplace, so we decided to create a way to send and receive payments over email.

By the fall of '99, our email payment product worked well—anyone could log in to our website and easily transfer money. But we didn't have enough customers, growth was slow, and expenses mounted. For PayPal

to work, we needed to attract a critical mass of at least a million users. Advertising was too ineffective to justify the cost. Prospective deals with big banks kept falling through. So we decided to pay people to sign up.

We gave new customers \$10 for joining, and we gave them \$10 more every time they referred a friend. This got us hundreds of thousands of new customers and an exponential growth rate. Of course, this customer acquisition strategy was unsustainable on its own—when you pay people to be your customers, exponential growth means an exponentially growing cost structure. Crazy costs were typical at that time in the Valley. But we thought our huge costs were sane: given a large user base, PayPal had a clear path to profitability by taking a small fee on customers' transactions.

We knew we'd need more funding to reach that goal. We also knew that the boom was going to end. Since we didn't expect investors' faith in our mission to survive the coming crash, we moved fast to raise funds while we could. On February 16, 2000, the *Wall Street Journal* ran a story lauding our viral growth and suggesting that PayPal was worth \$500 million. When we raised \$100 million the next month, our lead investor took the *Journal's* back-of-the-envelope valuation as authoritative. (Other investors were in even more of a hurry. A South Korean firm wired us \$5 million without first negotiating a deal or signing any documents. When I tried to return the money, they wouldn't tell me where to send it.) That March 2000 financing round bought us the time we needed to make PayPal a success. Just as we closed the deal, the bubble popped.

LESSONS LEARNED

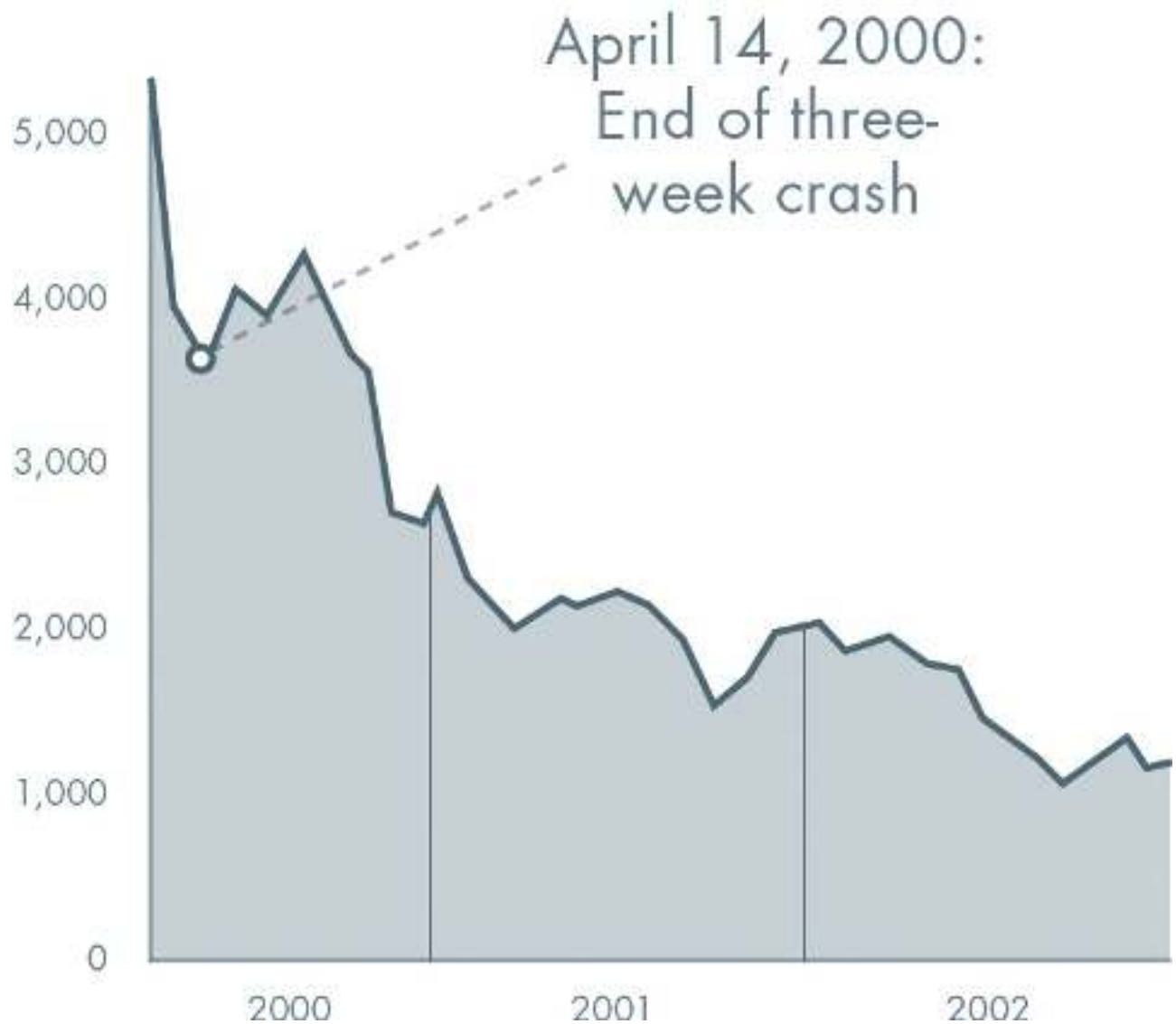
*'Cause they say 2,000 zero zero party over, oops! Out of time!
So tonight I'm gonna party like it's 1999!*

—PRINCE

The NASDAQ reached 5,048 at its peak in the middle of March 2000 and then crashed to 3,321 in the middle of April. By the time it bottomed out at 1,114 in October 2002, the country had long since interpreted the market's collapse as a kind of divine judgment against the technological optimism of the '90s. The era of cornucopian hope was relabeled as an era of crazed greed and declared to be definitely over.

Everyone learned to treat the future as fundamentally indefinite, and to dismiss as an extremist anyone with plans big enough to be measured in years instead of quarters. Globalization replaced technology as the hope for the future. Since the '90s migration "from bricks to clicks" didn't work as hoped, investors went back to bricks (housing) and BRICs (globalization). The result was another bubble, this time in real estate.

DOT-COM BUST



The entrepreneurs who stuck with Silicon Valley learned four big lessons from the dot-com crash that still guide business thinking today:

1. Make incremental advances

Grand visions inflated the bubble, so they should not be indulged. Anyone who claims to be able to do something great is suspect, and anyone who wants to change the world should be more humble. Small, incremental steps are the only safe path forward.

2. Stay lean and flexible

All companies must be “lean,” which is code for “unplanned.” You should not know what your business will do; planning is arrogant and inflexible. Instead you should try things out, “iterate,” and treat entrepreneurship as agnostic experimentation.

3. Improve on the competition

Don't try to create a new market prematurely. The only way to know you have a real business is to ~~start with an already existing customer, so you should build your company by improving on~~ recognizable products already offered by successful competitors.

4. Focus on product, not sales

If your product requires advertising or salespeople to sell it, it's not good enough: technology is primarily about product development, not distribution. Bubble-era advertising was obviously wasteful, so the only sustainable growth is viral growth.

These lessons have become dogma in the startup world; those who would ignore them are presumed to invite the justified doom visited upon technology in the great crash of 2000. And yet the opposite principles are probably more correct:

1. It is better to risk boldness than triviality.

2. A bad plan is better than no plan.

3. Competitive markets destroy profits.

4. Sales matters just as much as product.

It's true that there was a bubble in technology. The late '90s was a time of hubris: people believed in going from 0 to 1. Too few startups were actually getting there, and many never went beyond talking about it. But people understood that we had no choice but to find ways to do more with less. The market high of March 2000 was obviously a peak of insanity; less obvious but more important, it was also a peak of clarity. People looked far into the future, saw how much valuable new technology we would need to get there safely, and judged themselves capable of creating it.

We still need new technology, and we may even need some 1999-style hubris and exuberance to get it. To build the next generation of companies, we must abandon the dogmas created after the crash. That doesn't mean the opposite ideas are automatically true: you can't escape the madness of crowds by dogmatically rejecting them. Instead ask yourself: how much of what you know about business is shaped by mistaken reactions to past mistakes? The most contrarian thing of all is not to oppose the crowd but to think for yourself.

ALL HAPPY COMPANIES ARE DIFFERENT

THE BUSINESS VERSION of our contrarian question is: *what valuable company is nobody building?* The question is harder than it looks, because your company could create a lot of value without becoming very valuable itself. Creating value is not enough—you also need to capture some of the value you create.

This means that even very big businesses can be bad businesses. For example, U.S. airline companies serve millions of passengers and create hundreds of billions of dollars of value each year. But in 2012, when average airfare each way was \$178, the airlines made only 37 cents per passenger trip. Compare them to Google, which creates less value but captures far more. Google brought in \$50 billion in 2012 (versus \$1 billion for the airlines), but it kept 21% of those revenues as profits—more than 100 times the airline industry’s profit margin that year. Google makes so much money that it’s now worth three times more than every U.S. airline combined.

The airlines compete with each other, but Google stands alone. Economists use two simplified models to explain the difference: perfect competition and monopoly.

“Perfect competition” is considered both the ideal and the default state in Economics 101. So-called perfectly competitive markets achieve equilibrium when producer supply meets consumer demand. Even a firm in a competitive market is undifferentiated and sells the same homogeneous products. Since no firm has any market power, they must all sell at whatever price the market determines. If there is money to be made, new firms will enter the market, increase supply, drive prices down, and thereby eliminate the profits that attracted them in the first place. If too many firms enter the market, they’ll suffer losses, some will fold, and prices will rise back to sustainable levels. Under perfect competition, in the long run *no company makes an economic profit*.

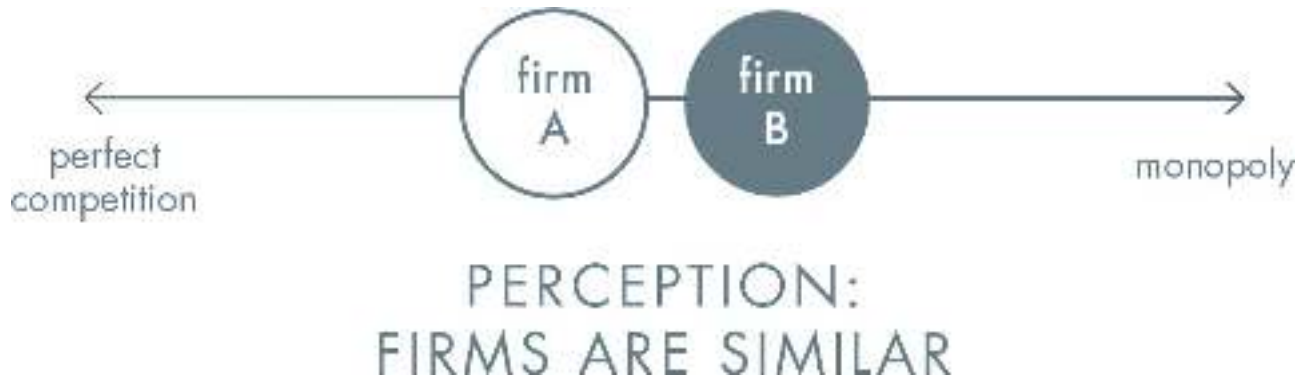
The opposite of perfect competition is monopoly. Whereas a competitive firm must sell at the market price, a monopoly owns its market, so it can set its own prices. Since it has no competition, it produces at the quantity and price combination that maximizes its profits.

To an economist, every monopoly looks the same, whether it deviously eliminates rivals, secures a license from the state, or innovates its way to the top. In this book, we’re not interested in illegal bullies or government favorites: by “monopoly,” we mean the kind of company that’s so good at what it does that no other firm can offer a close substitute. Google is a good example of a company that went from 0 to 1: it hasn’t competed in search since the early 2000s, when it definitively distanced itself from Microsoft and Yahoo!

Americans mythologize competition and credit it with saving us from socialist bread lines. Actually, capitalism and competition are opposites. Capitalism is premised on the accumulation of capital, but under perfect competition all profits get competed away. The lesson for entrepreneurs is clear: *if you want to create and capture lasting value, don’t build an undifferentiated commodity business.*

LIES PEOPLE TELL

How much of the world is actually monopolistic? How much is truly competitive? It's hard to say, because our common conversation about these matters is so confused. To the outside observer, all businesses can seem reasonably alike, so it's easy to perceive only small differences between them.



But the reality is much more binary than that. There's an enormous difference between perfect competition and monopoly, and most businesses are much closer to one extreme than we commonly realize.



The confusion comes from a universal bias for describing market conditions in self-serving ways: both monopolists and competitors are incentivized to bend the truth.

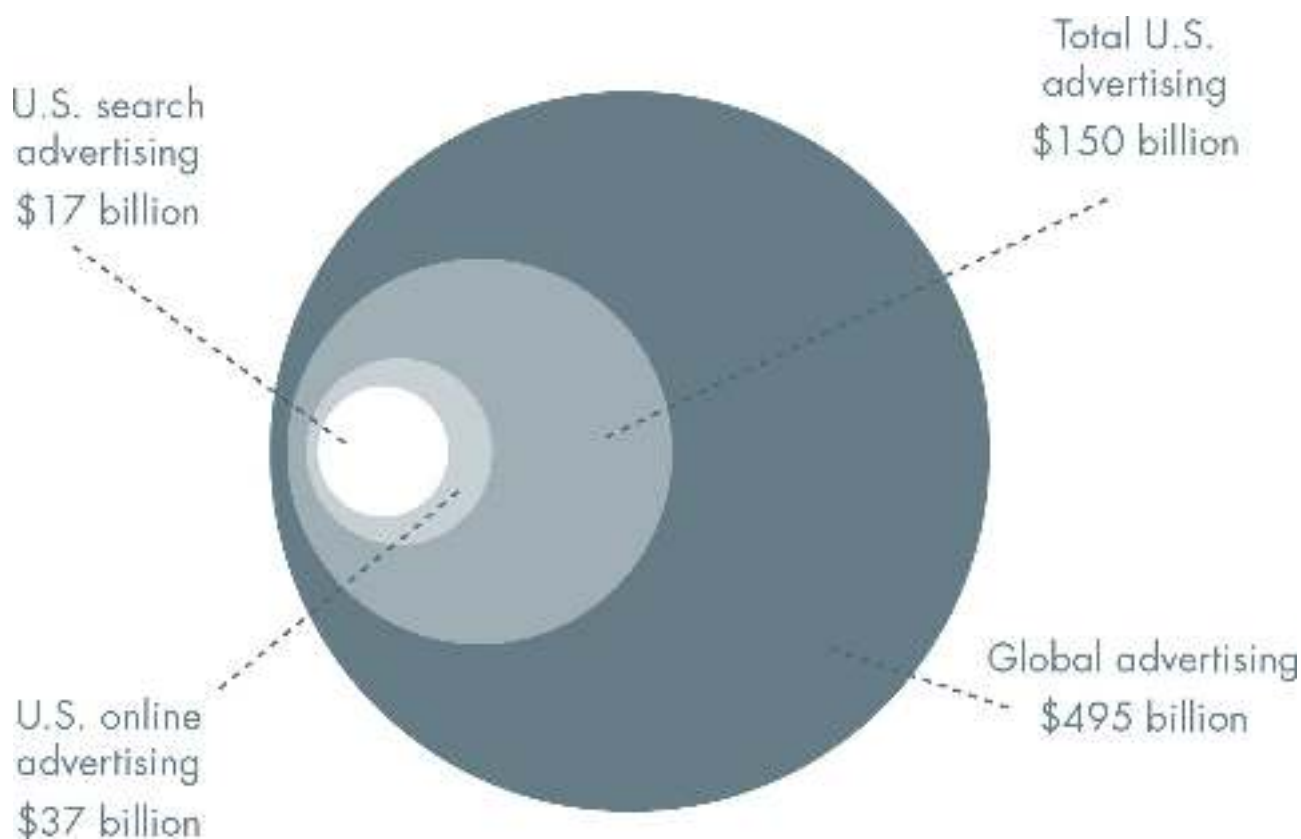
Monopoly Lies

Monopolists lie to protect themselves. They know that bragging about their great monopoly invites being audited, scrutinized, and attacked. Since they very much want their monopoly profits to continue unmolested, they tend to do whatever they can to conceal their monopoly—usually by exaggerating the power of their (nonexistent) competition.

Think about how Google talks about its business. It certainly doesn't *claim* to be a monopoly. But is it one? Well, it depends: a monopoly in *what*? Let's say that Google is primarily a search engine. As of May 2014, it owns about 68% of the search market. (Its closest competitors, Microsoft and Yahoo!, have about 19% and 10%, respectively.) If that doesn't seem dominant enough, consider the fact that the word "google" is now an official entry in the *Oxford English Dictionary*—as a verb. Don't hold your breath waiting for that to happen to Bing.

But suppose we say that Google is primarily an advertising company. That changes things. The U.S. search engine advertising market is \$17 billion annually. Online advertising is \$37 billion annually. The entire U.S.

advertising market is \$150 billion. And *global* advertising is a \$495 billion market. So even if Google completely monopolized U.S. search engine advertising, it would own just 3.4% of the global advertising market. From this angle, Google looks like a small player in a competitive world.



What if we frame Google as a multifaceted technology company instead? This seems reasonable enough in addition to its search engine, Google makes dozens of other software products, not to mention robotic cars, Android phones, and wearable computers. But 95% of Google’s revenue comes from search advertising; other products generated just \$2.35 billion in 2012, and its consumer tech products a mere fraction of that. Since consumer tech is a \$964 billion market globally, Google owns less than 0.24% of it—a far cry from monopoly, let alone monopoly. Framing itself as just another tech company allows Google to escape all sorts of unwanted attention.

Competitive Lies

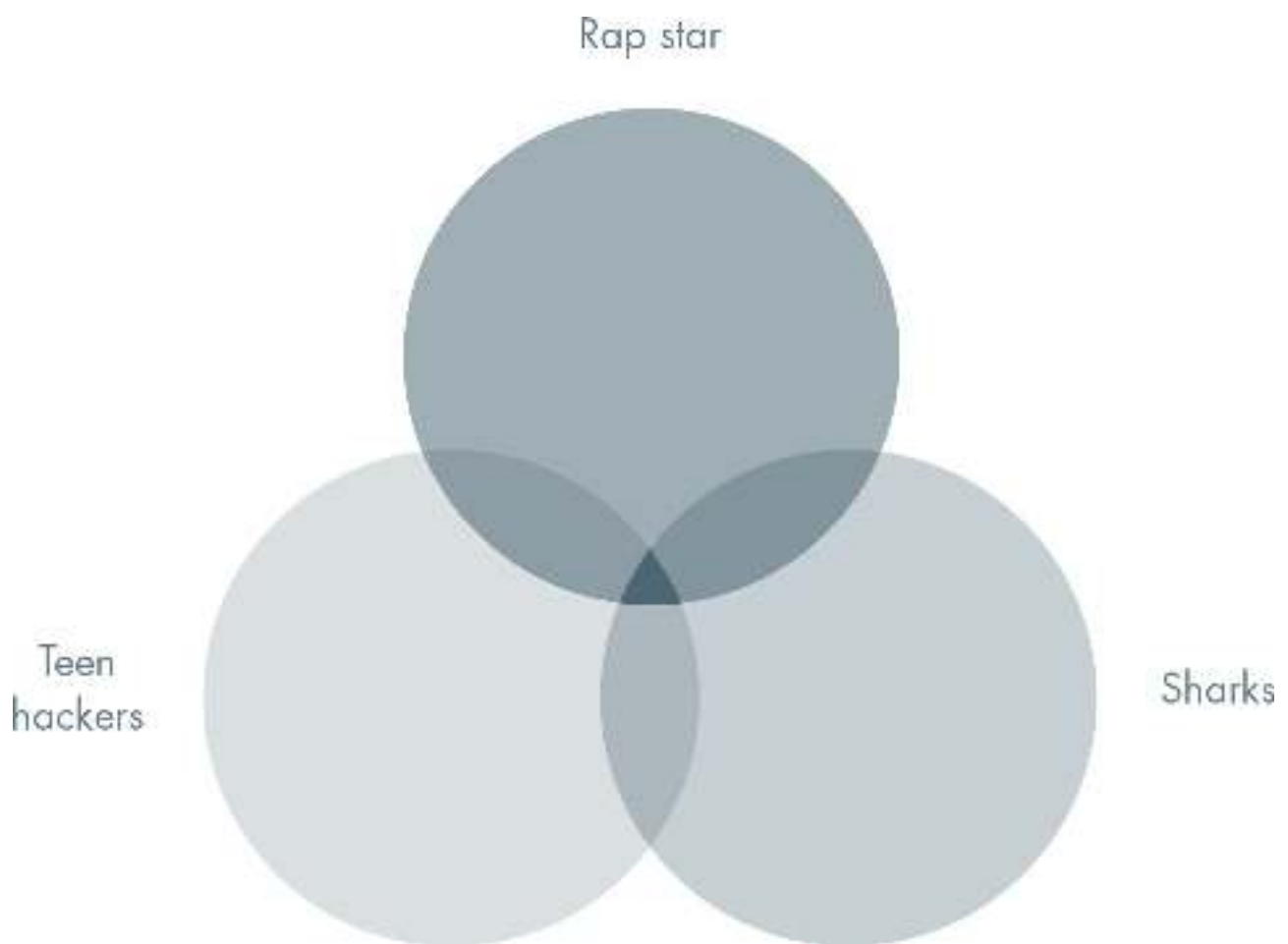
Non-monopolists tell the opposite lie: “we’re in a league of our own.” Entrepreneurs are always biased to understate the scale of competition, but that is the biggest mistake a startup can make. The fatal temptation is to describe your market extremely narrowly so that you dominate it by definition.

Suppose you want to start a restaurant that serves British food in Palo Alto. “No one else is doing it,” you might reason. “We’ll own the entire market.” But that’s only true if the relevant market is the market for British food specifically. What if the actual market is the Palo Alto restaurant market in general? And what if all the restaurants in nearby towns are part of the relevant market as well?

These are hard questions, but the bigger problem is that you have an incentive not to ask them at all. When you hear that most new restaurants fail within one or two years, your instinct will be to come up with a story about how yours is different. You’ll spend time trying to convince people that you are exceptional instead of seriously considering whether that’s true. It would be better to pause and consider whether there are people in Palo Alto who would rather eat British food above all else. It’s very possible they don’t exist.

In 2001, my co-workers at PayPal and I would often get lunch on Castro Street in Mountain View. We had our pick of restaurants, starting with obvious categories like Indian, sushi, and burgers. There were more options once we settled on a type: North Indian or South Indian, cheaper or fancier, and so on. In contrast to the competitive local restaurant market, PayPal was at that time the only email-based payments company in the world. We employed fewer people than the restaurants on Castro Street did, but our business was much more valuable than all of those restaurants combined. Starting a new South Indian restaurant is a really hard way to make money. If you lose sight of competitive reality and focus on trivial differentiating factors—maybe you think your naan is superior because of your great-grandmother’s recipe—your business is unlikely to survive.

Creative industries work this way, too. No screenwriter wants to admit that her new movie script simply rehashes what has already been done before. Rather, the pitch is: “This film will combine various exciting elements in entirely new ways.” It could even be true. Suppose her idea is to have Jay-Z star in a crossover between *Hackers* and *Jaws*: rap star joins elite group of hackers to catch the shark that killed his friend. *The* has definitely never been done before. But, like the lack of British restaurants in Palo Alto, maybe that’s a good thing.



Non-monopolists exaggerate their distinction by defining their market as the *intersection* of various small markets:

British food \cap restaurant \cap Palo Alto

Rap star \cap hackers \cap sharks

Monopolists, by contrast, disguise their monopoly by framing their market as the *union* of several large

markets:

search engine U mobile phones U wearable computers U self-driving cars

What does a monopolist's union story look like in practice? Consider a statement from Google chairman Eric Schmidt's testimony at a 2011 congressional hearing:

We face an extremely competitive landscape in which consumers have a multitude of options to access information.

Or, translated from PR-speak to plain English:

Google is a small fish in a big pond. We could be swallowed whole at any time. We are not the monopoly that the government is looking for.

RUTHLESS PEOPLE

The problem with a competitive business goes beyond lack of profits. Imagine you're running one of the restaurants in Mountain View. You're not that different from dozens of your competitors, so you've got to fight hard to survive. If you offer affordable food with low margins, you can probably pay employees on minimum wage. And you'll need to squeeze out every efficiency: that's why small restaurants put Grandmama to work at the register and make the kids wash dishes in the back. Restaurants aren't much better even at the very highest rungs, where reviews and ratings like Michelin's star system enforce a culture of intense competition that can drive chefs crazy. (French chef and winner of three Michelin stars Bernard Loiseau was quoted as saying, "If I lose a star, I will commit suicide." Michelin maintained his rating, but Loiseau killed himself anyway in 2003 when a competing French dining guide downgraded his restaurant.) The competitive ecosystem pushes people toward ruthlessness or death.

A monopoly like Google is different. Since it doesn't have to worry about competing with anyone, it has a wider latitude to care about its workers, its products, and its impact on the wider world. Google's motto—"Don't be evil"—is in part a branding ploy, but it's also characteristic of a kind of business that is successful enough to take ethics seriously without jeopardizing its own existence. In business, *money is either an important thing or it is everything*. Monopolists can afford to think about things other than making money; non-monopolists can't. In perfect competition, a business is so focused on today's margins that it can't possibly plan for a long-term future. Only one thing can allow a business to transcend the daily brutal struggle for survival: monopoly profits.

MONOPOLY CAPITALISM

So, a monopoly is good for everyone on the inside, but what about everyone on the outside? Do outsiders

profits come at the expense of the rest of society? Actually, yes: profits come out of customers' wallets, and monopolies deserve their bad reputation—but *only in a world where nothing changes*.

In a static world, a monopolist is just a rent collector. If you corner the market for something, you can jack up the price; others will have no choice but to buy from you. Think of the famous board game: dice are shuffled around from player to player, but the board never changes. There's no way to win by inventing a better kind of real estate development. The relative values of the properties are fixed for all time, so all you can do is try to buy them up.

But the world we live in is dynamic: it's possible to invent new and better things. Creative monopolies give customers *more* choices by adding entirely new categories of abundance to the world. Creative monopolies aren't just good for the rest of society; they're powerful engines for making it better.

Even the government knows this: that's why one of its departments works hard to create monopolies (by granting patents to new inventions) even though another part hunts them down (by prosecuting antitrust cases). It's possible to question whether anyone should really be awarded a *legally enforceable* monopoly simply for having been the first to think of something like a mobile software design. But it's clear that something like Apple's monopoly profits from designing, producing, and marketing the iPhone were a reward for creating greater abundance, not artificial scarcity: customers were happy to finally have the choice of paying high prices to get a smartphone that actually works.

The dynamism of new monopolies itself explains why old monopolies don't strangle innovation. With Apple's iOS at the forefront, the rise of mobile computing has dramatically reduced Microsoft's decades-long operating system dominance. Before that, IBM's hardware monopoly of the '60s and '70s was overtaken by Microsoft's software monopoly. AT&T had a monopoly on telephone service for most of the 20th century, but now anyone can get a cheap cell phone plan from any number of providers. If the tendency of monopoly businesses were to hold back progress, they would be dangerous and we'd be right to oppose them. But the history of progress is a history of better monopoly businesses replacing incumbents.

Monopolies drive progress because the promise of years or even decades of monopoly profits provides a powerful incentive to innovate. Then monopolies can keep innovating because profits enable them to make the long-term plans and to finance the ambitious research projects that firms locked in competition could never dream of.

So why are economists obsessed with competition as an ideal state? It's a relic of history. Economists copied their mathematics from the work of 19th-century physicists: they see individuals and businesses as interchangeable atoms, not as unique creators. Their theories describe an equilibrium state of perfect competition because that's what's easy to model, not because it represents the best of business. But it's worth recalling that the long-run equilibrium predicted by 19th-century physics was a state in which all energy was evenly distributed and everything comes to rest—also known as the heat death of the universe. Whatever your views on thermodynamics, it's a powerful metaphor: in business, equilibrium means stasis, and stasis means death. If your industry is in a competitive equilibrium, the death of your business won't matter to the world; some other undifferentiated competitor will always be ready to take your place.

Perfect equilibrium may describe the void that is most of the universe. It may even characterize many businesses. But every new creation takes place far from equilibrium. In the real world outside economic theory, every business is successful exactly to the extent that it does something others cannot. Monopoly is therefore not a pathology or an exception. *Monopoly is the condition of every successful business.*

Tolstoy opens *Anna Karenina* by observing: "All happy families are alike; each unhappy family is unhappy in its own way." Business is the opposite. All happy companies are different: each one earns a monopoly by solving a unique problem. All failed companies are the same: they failed to escape competition.

THE IDEOLOGY OF COMPETITION

CREATIVE MONOPOLY means new products that benefit everybody and sustainable profits for the creator. Competition means no profits for anybody, no meaningful differentiation, and a struggle for survival. So why do people believe that competition is healthy? The answer is that competition is not just an economic concept or a simple inconvenience that individuals and companies must deal with in the marketplace. More than anything else, competition is an ideology—the ideology—that pervades our society and distorts our thinking. We preach competition, internalize its necessity, and enact its commandments; and as a result, we trap ourselves within it—even though the more we compete, the less we gain.

This is a simple truth, but we've all been trained to ignore it. Our educational system both drives and reflects our obsession with competition. Grades themselves allow precise measurement of each student's competitiveness; pupils with the highest marks receive status and credentials. We teach every young person the same subjects in mostly the same ways, irrespective of individual talents and preferences. Students who don't learn best by sitting still at a desk are made to feel somehow inferior, while children who excel on conventional measures like tests and assignments end up defining their identities in terms of this weird, contrived academic parallel reality.

And it gets worse as students ascend to higher levels of the tournament. Elite students climb confidently until they reach a level of competition sufficiently intense to beat their dreams out of them. High school education is the place where people who had big plans in high school get stuck in fierce rivalries with equally smart peers over conventional careers like management consulting and investment banking. For the privilege of being turned into conformists, students (or their families) pay hundreds of thousands of dollars in skyrocketing tuition that continues to outpace inflation. Why are we doing this to ourselves?

I wish I had asked myself when I was younger. My path was so tracked that in my 8th-grade yearbook one of my friends predicted—accurately—that four years later I would enter Stanford as a sophomore. After a conventionally successful undergraduate career, I enrolled at Stanford Law School, where I competed even harder for the standard badges of success.

The highest prize in a law student's world is unambiguous: out of tens of thousands of graduates each year, only a few dozen get a Supreme Court clerkship. After clerking on a federal appeals court for a year, I was invited to interview for clerkships with Justices Kennedy and Scalia. My meetings with the Justices went well. I was so close to winning this last competition. If only I got the clerkship, I thought, I would be set for life. But I didn't. At the time, I was devastated.

In 2004, after I had built and sold PayPal, I ran into an old friend from law school who had helped me prepare my failed clerkship applications. We hadn't spoken in nearly a decade. His first question wasn't "How are you doing?" or "Can you believe it's been so long?" Instead, he grinned and asked: "So, Peter, aren't you glad you didn't get that clerkship?" With the benefit of hindsight, we both knew that winning that ultimate competition would have changed my life for the worse. Had I actually clerked on the Supreme

Court, I probably would have spent my entire career taking depositions or drafting other people's business deals instead of creating anything new. It's hard to say how much would be different, but the opportunity costs were enormous. All Rhodes Scholars had a great future in their past.

WAR AND PEACE

Professors downplay the cutthroat culture of academia, but managers never tire of comparing business to war. MBA students carry around copies of Clausewitz and Sun Tzu. War metaphors invade our everyday business language: we use *headhunters* to build up a sales *force* that will enable us to take a *captive market* and *make a killing*. But really it's competition, not business, that is like war: allegedly necessary, supposedly valiant, but ultimately destructive.

Why do people compete with each other? Marx and Shakespeare provide two models for understanding almost every kind of conflict.

According to Marx, people fight because they are different. The proletariat fights the bourgeoisie because they have completely different ideas and goals (generated, for Marx, by their very different material circumstances). The greater the differences, the greater the conflict.

To Shakespeare, by contrast, all combatants look more or less alike. It's not at all clear why they should be fighting, since they have nothing to fight about. Consider the opening line from *Romeo and Juliet*: "Two households, both alike in dignity." The two houses are alike, yet they hate each other. They grow even more similar as the feud escalates. Eventually, they lose sight of why they started fighting in the first place.

In the world of business, at least, Shakespeare proves the superior guide. Inside a firm, people become obsessed with their competitors for career advancement. Then the firms themselves become obsessed with their competitors in the marketplace. Amid all the human drama, people lose sight of what matters and focus on their rivals instead.

Let's test the Shakespearean model in the real world. Imagine a production called *Gates and Schmidt* based on *Romeo and Juliet*. Montague is Microsoft. Capulet is Google. Two great families, run by alpha nerds, sure to clash on account of their sameness.

As with all good tragedy, the conflict seems inevitable only in retrospect. In fact it was entirely avoidable. These families came from very different places. The House of Montague built operating systems and office applications. The House of Capulet wrote a search engine. What was there to fight about?

Lots, apparently. As a startup, each clan had been content to leave the other alone and prosper independently. But as they grew, they began to focus on each other. Montagues obsessed about Capulets, Capulets obsessed about Montagues. The result? Windows vs. Chrome OS, Bing vs. Google Search, Explorer vs. Chrome, Office vs. Docs, and Surface vs. Nexus.

Just as war cost the Montagues and Capulets their children, it cost Microsoft and Google their dominance. Apple came along and overtook them all. In January 2013, Apple's market capitalization was \$500 billion while Google and Microsoft combined were worth \$467 billion. Just three years before, Microsoft and Google were *each* more valuable than Apple. War is costly business.

Rivalry causes us to overemphasize old opportunities and slavishly copy what has worked in the past. Consider the recent proliferation of mobile credit card readers. In October 2010, a startup called Square released a small, white, square-shaped product that let anyone with an iPhone swipe and accept credit cards. It was the first good payment processing solution for mobile handsets. Imitators promptly sprang into action.

A Canadian company called NetSecure launched its own card reader in a half-moon shape. Intuit brought a cylindrical reader to the geometric battle. In March 2012, eBay's PayPal unit launched its own copycat card reader. It was shaped like a triangle—a clear jab at Square, as three sides are simpler than four. One gets the sense that this Shakespearean saga won't end until the apes run out of shapes.



The hazards of imitative competition may partially explain why individuals with an Asperger's-like social ineptitude seem to be at an advantage in Silicon Valley today. If you're less sensitive to social cues, you're less likely to do the same things as everyone else around you. If you're interested in making things, programming computers, you'll be less afraid to pursue those activities single-mindedly and thereby become incredibly good at them. Then when you apply your skills, you're a little less likely than others to give up your own convictions: this can save you from getting caught up in crowds competing for obvious prizes.

Competition can make people hallucinate opportunities where none exist. The crazy '90s version of this was the fierce battle for the online pet store market. It was Pets.com vs. PetStore.com vs. Petopia.com vs. what seemed like dozens of others. Each company was obsessed with defeating its rivals, precisely because there were no substantive differences to focus on. Amid all the tactical questions—Who could price chew dog toys most aggressively? Who could create the best Super Bowl ads?—these companies totally lost sight of the wider question of whether the online pet supply market was the right space to be in. Winning is better than losing, but everybody loses when the war isn't one worth fighting. When Pets.com folded after the dot-com crash, \$300 million of investment capital disappeared with it.

Other times, rivalry is just weird and distracting. Consider the Shakespearean conflict between Larry Ellison, co-founder and CEO of Oracle, and Tom Siebel, a top salesman at Oracle and Ellison's protégé before he went on to found Siebel Systems in 1993. Ellison was livid at what he thought was Siebel's betrayal. Siebel hated being in the shadow of his former boss. The two men were basically identical—hard-charging Chicagoans who loved to sell and hated to lose—so their hatred ran deep. Ellison and Siebel spent the second half of the '90s trying to sabotage each other. At one point, Ellison sent truckloads of ice cream sandwiches to Siebel's headquarters to try to convince Siebel employees to jump ship. The copy on the wrappers? "Summer is near. Oracle is here. To brighten your day and your career."

Strangely, Oracle intentionally accumulated enemies. Ellison's theory was that it's always good to have an enemy, so long as it was large enough to *appear* threatening (and thus motivational to employees) but not large as to actually threaten the company. So Ellison was probably thrilled when in 1996 a small database

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