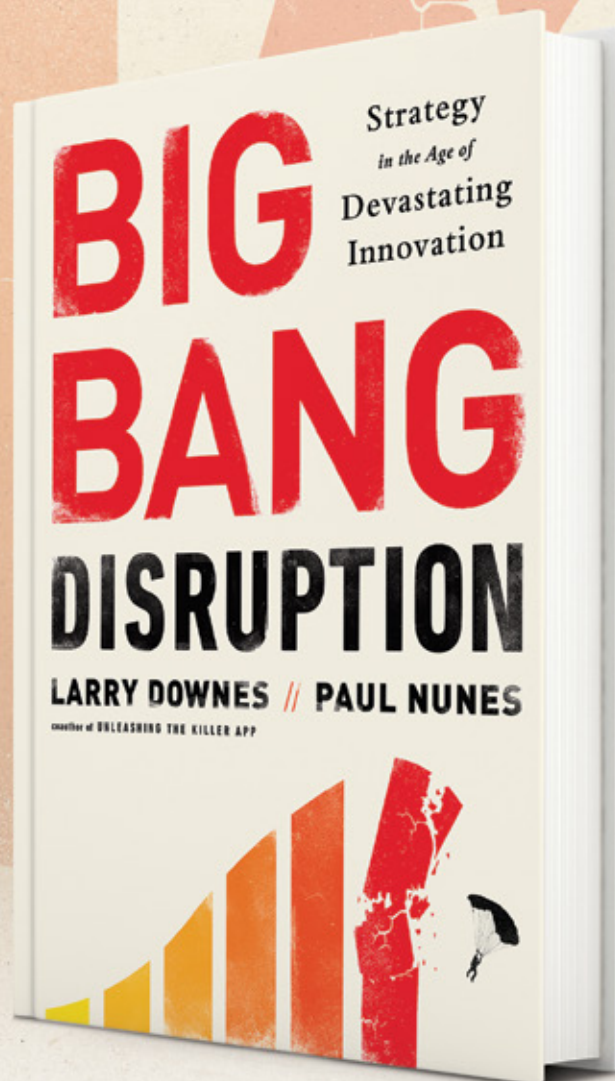


Strategy in the Age of
Devastating Innovation

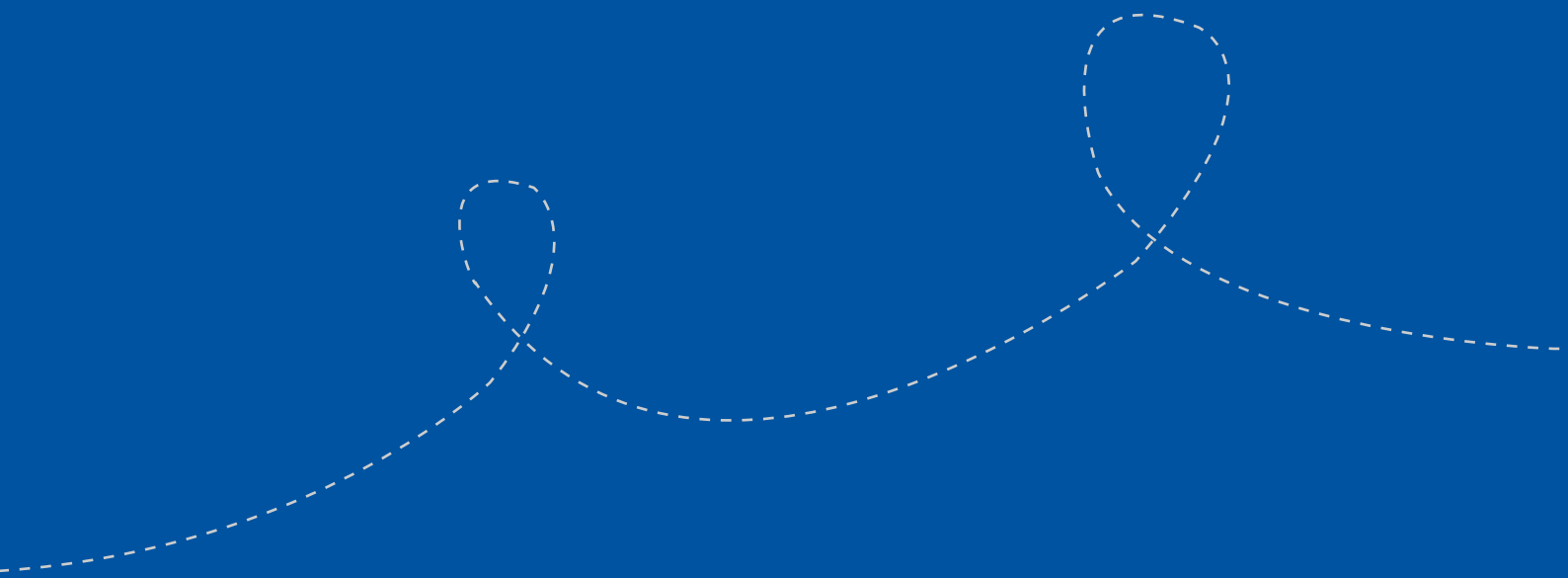
BIG BANG DISRUPTION

High performance. Delivered.



It used to take years or even decades for disruptive innovations to displace dominant products and services and destabilize incumbent industries. Now any business can be devastated virtually overnight by something better AND cheaper.

HOW CAN EXECUTIVES PROTECT THEIR BUSINESS AND LEARN TO HARNESS **THE** **POWER OF BIG BANG** **DISRUPTION?**



Just a few years ago, drivers happily spent more than \$200 for a GPS unit. But as smartphones exploded in popularity, free navigation apps exceeded the performance of standalone devices. Eighteen months after the debut of the navigation tools, leading GPS manufacturers had lost 85 percent of their market value.

Consumer electronics and computer makers have long struggled in ultra-competitive markets where exponential technology improvements mean even the newest products often have short lives. But until recently, hotels, taxi services, doctors and energy companies had little to fear from the information revolution.

Those days are gone forever. It's now the age of Big Bang Disruption, where every business is a digital business. Software products are replacing physical goods. And every service provider must compete with cloud-based tools that offer customers a better way to interact.

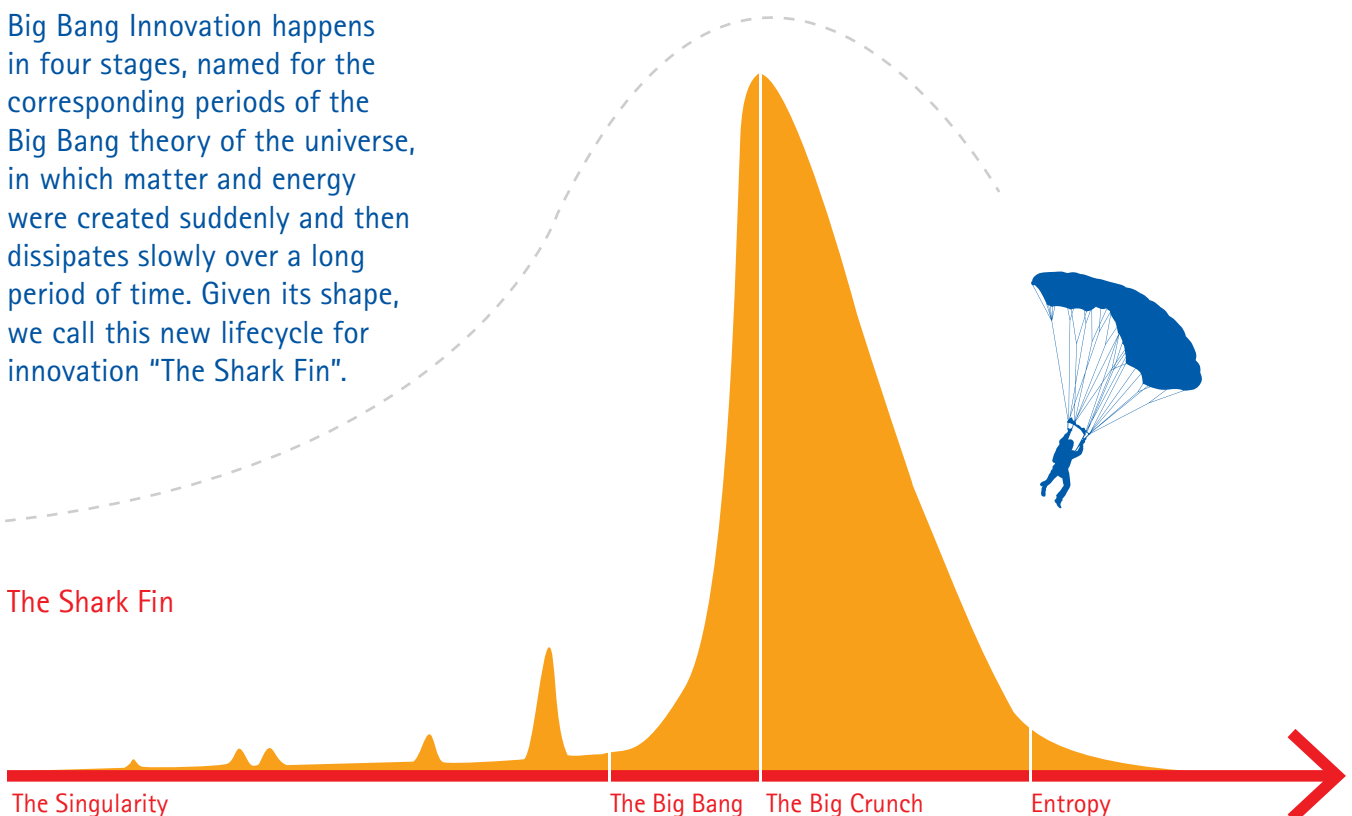
Today, startups with minimal experience and no capital can unravel your strategy before you even begin to grasp what's happening. Never mind the "innovator's dilemma"—this is the innovator's disaster. And it's happening in nearly every industry.

Worse, Big Bang Disruptors may not even see you as competition. They don't share your approach to customer service, and they're not sizing up your product line to offer better prices. You may simply be collateral damage in their efforts to win completely different markets.

But any business can master the strategy of the startups. Larry Downes and Paul Nunes analyze the origins, economics and anatomy of Big Bang Disruption. They identify four key stages in the new innovation lifecycle, helping you spot potential disruptors in time. And they offer 12 rules for defending your markets, launching disruptors of your own, and getting out while there's still time—and profit.

Based on extensive research by the Accenture Institute for High Performance and in-depth interviews with entrepreneurs, investors, and executives from more than 30 industries, Big Bang Disruption will arm you with strategies and insights to thrive in this brave new world.

Big Bang Innovation happens in four stages, named for the corresponding periods of the Big Bang theory of the universe, in which matter and energy were created suddenly and then dissipates slowly over a long period of time. Given its shape, we call this new lifecycle for innovation "The Shark Fin".



PART 1:

BIG BANG DISRUPTION

CHAPTER 1: What Is Big Bang Disruption?

Big Bang Disruption is a dramatic new kind of innovation. Instead of entering the market as a product that is either inferior to or more expensive than those of established incumbents, a Big Bang Disruptor is both better and cheaper from the moment of creation. Using new technologies including broadband networks, cloud-based computing and increasingly powerful and ubiquitous mobile devices, Big Bang Disruptors can destabilize mature industries in record time, leaving incumbents and their supply-chain partners dazed and devastated.

The accelerating pace of Big Bang Disruption is driven by core technologies that become better and cheaper with each iteration. The most familiar of these "exponential technologies" is the computer processor, which, according to the formulation known as Moore's Law, continually becomes faster, cheaper, and smaller. But a new generation of exponential technologies in fields as diverse as chemistry, optics, materials, and energy promises to undermine industries for decades to come. Capitalism's "perennial gales of creative destruction" are now Category Five hurricanes.

CHAPTER 2: The Economics of Big Bang Disruption

How are Big Bang Disruptors transforming the lives of consumers, redefining transactions that may not have changed much since the Industrial Revolution? And why, after decades of computerization and other technological innovation, are disruptors suddenly arriving with such alarming frequency?

The short answer is that the continued application of exponential technologies has created a series of transformative changes in market economies. They are simultaneously driving down the three core costs of products and services:

The Declining Cost of Creation

Steep declines in the cost of key raw materials, including computer hardware and software, along with increasingly efficient supply chains, empowers innovators large and small to compete on all three traditional strategic dimensions at once: products and services can begin life with higher quality, at a lower price and more easily customized than those of traditional competitors.

The Declining Cost of Information

As social networks, microblogging, and independent review services proliferate, consumers now have easy access to near-perfect market information. Successful product and service experiments

can be discovered and adopted instantaneously by customers across every traditional segment. Innovators no longer need to cultivate "early adopters" to establish new markets.

The Declining Cost of Experimentation

Thanks to global broadband networks and ubiquitous computing devices, innovators and users can now be connected in an environment optimized for collaboration. New products and services often begin life as simple combinations of existing components, tested with little cost or risk directly in the market with real consumers. Compared to traditional proprietary R&D, the "cost of combine" increasingly beats the "cost of design."

CHAPTER 3: The Shark Fin

Big Bang Disruptors come and go in relatively short blasts of market penetration and market saturation. The longstanding bell curve of technology adoption first proposed by Everett Rogers now appears placid and predictable by comparison. When Big Bang Disruptors take off, they do so quickly, rising and falling less like a curve and more like a shark's fin. Where traditional technology marketing moves through five distinct market segments, Big Bang Disruption has only two—trial users and everybody else.

Big Bang Disruption begins with a series of seemingly random experiments, as innovators work with different combinations of component technologies and business models. Most experiments fail, giving incumbents the false sense that disruption is still far off.

Yet, when the right combination of technologies is combined with the right business model, take-off is immediate. Customers adopt the disruptor as quickly as its producers can supply it. Market penetration is often nearly instantaneous. For software-based products, innovators may sign up millions of users in a matter of days.

Then, as the disruptor quickly approaches saturation, adoption drops at nearly the same pace with which it took off, leading to a period of rapid if uneven decline.

CASE IN POINT: Microsoft's Kinect, an add-on to the company's Xbox 360 that brought voice and motion activation to high-end home game consoles, introduced sensing technologies far from gaming. Some, in fact, came from military applications.

The result was a revolution in video gaming that looked less like its immediate predecessors and more like a technology from the future. Perhaps the real precursor for Kinect was the computer interface used

by Tom Cruise in a famous scene from the futuristic movie "Minority Report," where projected displays of data were manipulated by hand motions that simulated swiping, grabbing, and dropping virtual items.

Kinect was an enormous hit, selling 8 million units in just the first 60 days. A little over a year after launch, 24 million Kinects had been sold, pushing sales of Xbox 360 consoles and games along with it. Though stragglers would continue to buy the Kinect in peaks and valleys over the next year, the product had largely fulfilled its mission in its first 10 months. For Microsoft—and other game developers—it was time for another innovation.

Big Bang Disruption Upends Conventional Wisdom

CONVENTIONAL WISDOM

Focus on only one strategic "discipline" or "generic strategy" - low cost, premium product, or customer intimacy.



BIG BANG WISDOM

Compete on all three strategic dimensions at once. Enter the market better, cheaper and customized; innovate constantly.

First target a small group of early adopters and later enter the mainstream market.



Market to all customer segments immediately, and be ready to scale up and then exit - swiftly.

Seek innovation in lower-cost, feature-poor technologies that meet the needs of underserved customer segments.



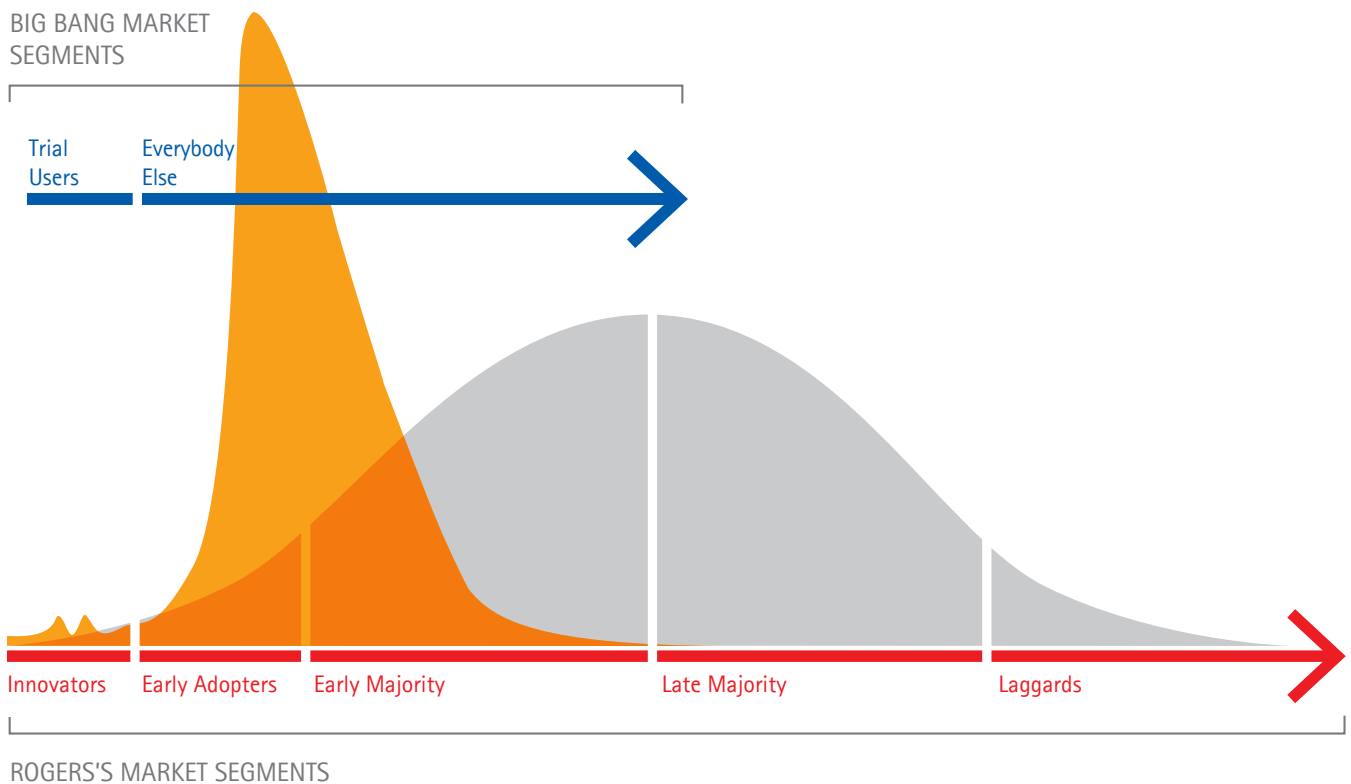
Launch low-cost experiments directly in the market. Combine reusable components rather than designing from scratch.

Big Bang Disruption collapses Everett Rogers's classic bell curve of five distinct customer segments—innovators, early adopters, early majority, late majority, and laggards. Now there are only two groups: trial

users, who often participate in product development, and everybody else. Once the right combination of technologies and business model come together in a successful market experiment, mainstream

consumers move en masse to the winner. The adoption curve has become something closer to a straight line that shoots up, and then falls rapidly when saturation is reached or a new disruptor appears.

Big Bang Market Adoption



PART 2:

STRATEGY IN THE AGE OF DEVASTATING INNOVATION

CHAPTER 4: The Singularity

The Singularity is the primordial ooze from which Big Bang Disruptors emerge. It is populated by weird experiments and often weirder experimenters, who fling together seemingly bizarre combinations of off-the-shelf parts and loosely connected service providers to launch new enterprises without a business model, let alone carefully crafted strategic plans with paths to profitability. They collaborate on design, testing, and even funding with customers. Not their customers—your customers.

This is the home of unencumbered development, where time **to** market now exceeds time **in** market. Right now, disruptors of all kinds are brewing, driven by programming “hackathons,” open source components,

and venture-backed incubators. Their developers, increasingly financed by early users, sift through crowdsourced modifications and implement them directly into their products.

Because experimentation has become so cheap and the risk of failure so low, it's very likely that some market experiments aimed at the heart of your business are running right now. Most will fail. But it only takes one to devastate your business.

CASE IN POINT: MakerBot, a leader in the emerging 3D printing industry, emerged from the growing community of do-it-yourself innovators who raise money for their projects on crowdfunding sites such as Kickstarter and share their designs using open source protocols. MakerBot was

founded by a former school teacher with tinkerers he met at a hackathon. They recognized that off-the-shelf components were readily available to assemble a low-cost home 3D printer years before traditional industrial prototype manufacturers were ready to enter the market.

CHAPTER 5: The Big Bang

The Singularity, the wild period of failed early market experiments, signals the imminent arrival of true disruption. When the Big Bang comes, everything is sudden, including success and failure. Customers either arrive at once or not at all.

Big Bang markets are by their nature “winner take all.” In this stage of the shark fin, time seems to move at an accelerated pace—for entrepreneurs,

Twelve Rules for Big Bang Disruption

THE SINGULARITY

1. Consult your truth-tellers
2. Pinpoint your market entry
3. Launch seemingly random experiments

THE BIG BANG

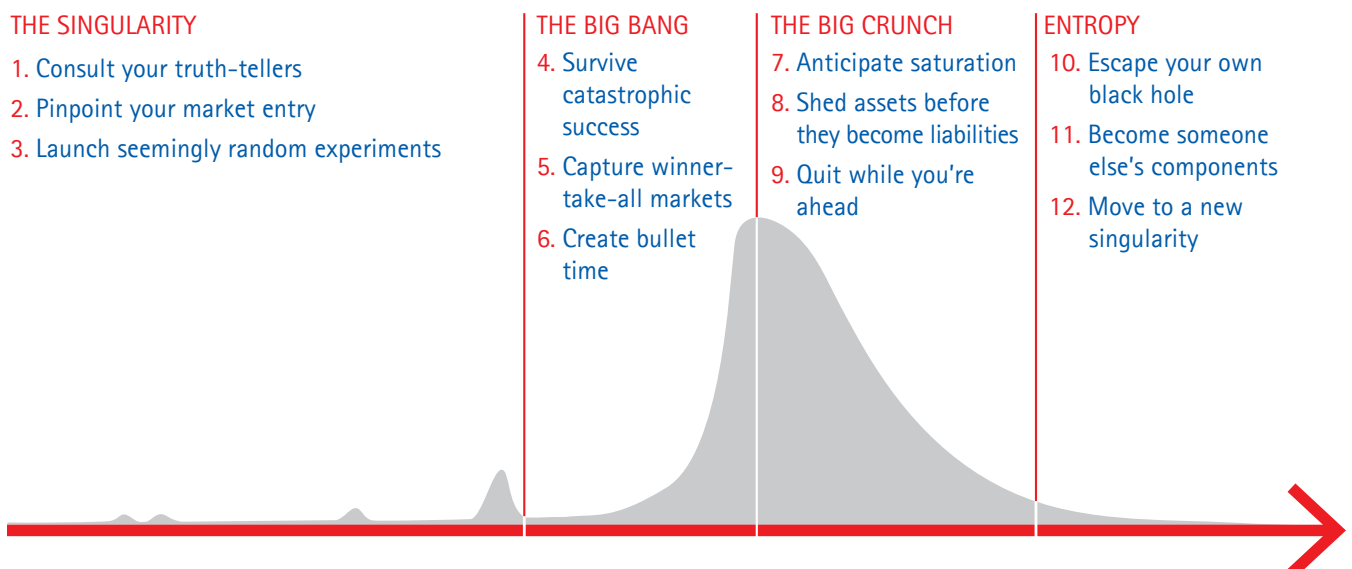
4. Survive catastrophic success
5. Capture winner-take-all markets
6. Create bullet time

THE BIG CRUNCH

7. Anticipate saturation
8. Shed assets before they become liabilities
9. Quit while you're ahead

ENTROPY

10. Escape your own black hole
11. Become someone else's components
12. Move to a new singularity



their customers, and most of all for incumbents who may wake up one morning to find their core products and technologies displaced by something better and cheaper.

Because Big Bang Disruptors are driven by near-perfect market information, new products and services spread virally. Customers generate extreme market demand even as they continuously rewrite the business case for the disrupter. Innovators, whether start-up or incumbent, must learn to see the signs of "catastrophic success," and develop skills to survive the rapid acceleration that accompanies it.

CASE IN POINT: Even companies whose service is entirely digital can experience growing pains when catastrophic success arrives. Consider Twitter, which famously began its commercial life as an experiment launched during a tech conference in 2007. Five years later, the company boasted over 200 million users. Even the most cockeyed optimist couldn't predict that kind of growth, and in early years the company struggled with a technical architecture that didn't scale fast enough. Investors quickly brought in seasoned management. The newly-public company's deceptively simple user interface is now backed up by nearly 1,000 engineers. And a market cap of \$22 billion.

CHAPTER 6: The Big Crunch

Success in winner-take-all markets can be dangerously deceptive. Innovators believe themselves invincible, even as competitors quickly imitate their best ideas. Innovators quickly turn into incumbents, more concerned about preserving market share than in anticipating what consumers want next. Growth stalls; revenue declines.

That's the trap that characterizes the Big Crunch. While the Big Bang stage is filled with excitement and exuberance, the Big Crunch is the sober morning after. It is the most dangerous stage of the shark fin.

In the Big Crunch, start-ups and incumbents alike are frequently caught unprepared for the rapid market saturation that occurs when near-perfect market information brings every interested customer to their door all at once, to be quickly served either by them or aggressive imitators.

In their exuberance, they often overlook the unpredictable tastes of increasingly faddish consumers, whose preferences can shift overnight in the opposite direction. With the arrival of a better and cheaper alternative, abandonment can be spontaneous, even immediate. Markets that once took years and even decades to saturate can now reach their natural capacity in months or even weeks.

When the Big Crunch comes, markets contract, pulling down start-ups and incumbents alike.

For those who manage to soldier on, strategy shifts dramatically. Here it's all about survival of the fastest—the fastest to recognize impending market saturation, the fastest to scale down, and the fastest to shed assets that are soon to become liabilities.

The winners are invariably companies that know how to temper Big Bang success with the pragmatic reality that the party can't and won't last long.

CASE IN POINT: Philips Lighting has been a pioneer and leader in incandescent bulbs for over a century. Yet in 2006, the company announced the end was near for its core product and the source of much of the profits for its parent company, industrial giant Philips. But exponential improvements in energy-efficient LEDs made it clear to management: the end was only a matter of time. By working with governments and NGOs to mandate the retirement of incandescents, Philips ensured its competitors would need to go through the same wrenching transformation—on a timetable set by Philips. Meanwhile, the company initiated a full-scale assault on the future market.

CHAPTER 7: Entropy

By the end of the Big Crunch, customers have abandoned the old industry and migrated en masse to the new. Most incumbents leave the dying industry and its supply chain, taking with them whichever of their inventories, assets, and intellectual property have retained value in the new ecosystem and selling, as quickly as they can, those that do not. Some old enterprises find profitable homes in the new world; some pivot to other industries. And some simply disappear.

The final stage of Big Bang Disruption is Entropy, where the matter and energy of the old industry are so dissipated they are barely capable of productive work—if at all.

In Entropy, a few stragglers often remain, electing to serve a small but consolidated group of legacy customers who can't or won't adopt better and cheaper products, and who, for whatever reason, are content to remain with goods—pocket calendars, home telephones, cash registers—that are worse and more expensive, if only because they are more familiar.

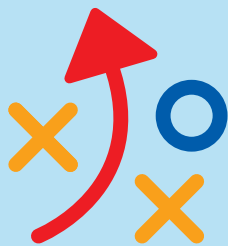
By carefully managing costs, legacy providers can thrive in Entropy, or at least find ways to manage a profit. For the rest, there's still a chance to salvage remaining assets, and to make a delayed but life-saving exit.

CASE IN POINT: For electronics giant Texas Instruments, the decline of its home computer business in the early 1980s was sudden enough to put the company in serious jeopardy. As TI shut down its consumer products business, a single part in a single product became the source of a dramatic resurrection. Inside the Speak & Spell, a children's toy, the company's pioneering digital signal processor proved to be a component part flexible enough to translate analog to digital signals in everything from weather systems to smartphones. DSPs still represent \$2 billion in annual revenue for TI. But more important, the company found a comfortable new home for itself as the provider of parts to other manufacturers—an arms merchant rather than a combatant in volatile electronics markets.

THE THREE CHARACTERISTICS OF A BIG BANG DISRUPTOR

Big Bang Disruption is different not just in speed but in kind from traditional forms of innovation. It is defined by three unique characteristics that drive radical new approaches to strategy, marketing, and product development. Together, these features of Big Bang Disruption create new ecosystems, more adaptable and resilient to future disruption than older supply chains.

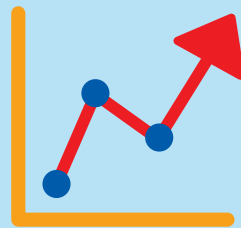
1



Undisciplined Strategy

Thanks to exponential technologies, Big Bang Disruptors enter the market simultaneously better and cheaper, and more customized than the products and services of incumbents. Yet decades of academic thinking on strategic planning warned businesses to focus on only one "market discipline"— to compete on cost, differentiation, or customization. Big Bang Disruptors are thoroughly undisciplined.

2



Unconstrained Growth

When Big Bang Disruptors arrive, the slope of market adoption is nearly vertical. Big Bang markets exhibit winner-take-all results and short product lives. So there's little point to carefully timed marketing campaigns addressed to different customer groups over a controlled product release. Instead of paying a premium price, today's early adopters now expect to be part of product design, marketing, and even ownership.

3



Unencumbered Development

Big Bang Disruptors are often little more than the combination of off-the-shelf components, parts and software, launched as a series of low-cost experiments supported, when necessary, by third-party infrastructure partners. These product tests are carried out directly in the market, with real users serving as collaborators. A Big Bang Disruption is simply an experiment that goes very well.

TWELVE RULES FOR BIG BANG DISRUPTION

THE SINGULARITY

1. Consult your truth-tellers

Find industry visionaries who see the future more clearly than you do, and who won't sugarcoat it even when you want them to.

2. Pinpoint your market entry

Learn to separate the little bumps from the Big Bangs, choosing just the perfect moment to enter a new ecosystem.

3. Launch seemingly random experiments

Practice combinatorial innovation directly in the market, collaborating with suppliers, customers, and investors—who may be one and the same.

THE BIG BANG

4. Survive catastrophic success

Prepare to scale up from experiment to global brand in the space of months, if not weeks, and to redesign your technical and business architecture even while running at full speed.

5. Capture winner-take-all markets

Sacrifice everything, including short-term profits, to ensure victory in winner-take-all markets, especially when success with one disruptor can be leveraged into follow-on products that can be created and launched even faster than the original.

6. Create bullet time

Judiciously employ litigation and legislation to slow the progress of disruptors, even as you proceed with your own experiments, partnerships, and well-timed acquisitions.

THE BIG CRUNCH

7. Anticipate saturation

When consumers adopt and then abandon new products and services all at once, it's essential not to be caught with excess capacity or inventory.

8. Shed assets before they become liabilities

Knowing the right time to sell, and to whom, can mean the difference between your ability to develop the next disruptor and bankruptcy.

9. Quit while you're ahead

Courageous executives accept the inevitable, and announce their exit from current markets while they are still strong.

ENTROPY

10. Escape your own black hole

Beware the deadly legacy of your older products and services once better and cheaper alternatives are readily available.

11. Become someone else's components

As humbling as the idea may sound, companies trapped in Entropy often find their best hope is to shut down a retail business and transform into a supplier of parts and other resources for innovators in ecosystems emerging elsewhere.

12. Move to a new singularity

Co-opt the tools of the disruptors and their investors, and use them to relocate your remaining assets to a healthier ecosystem.

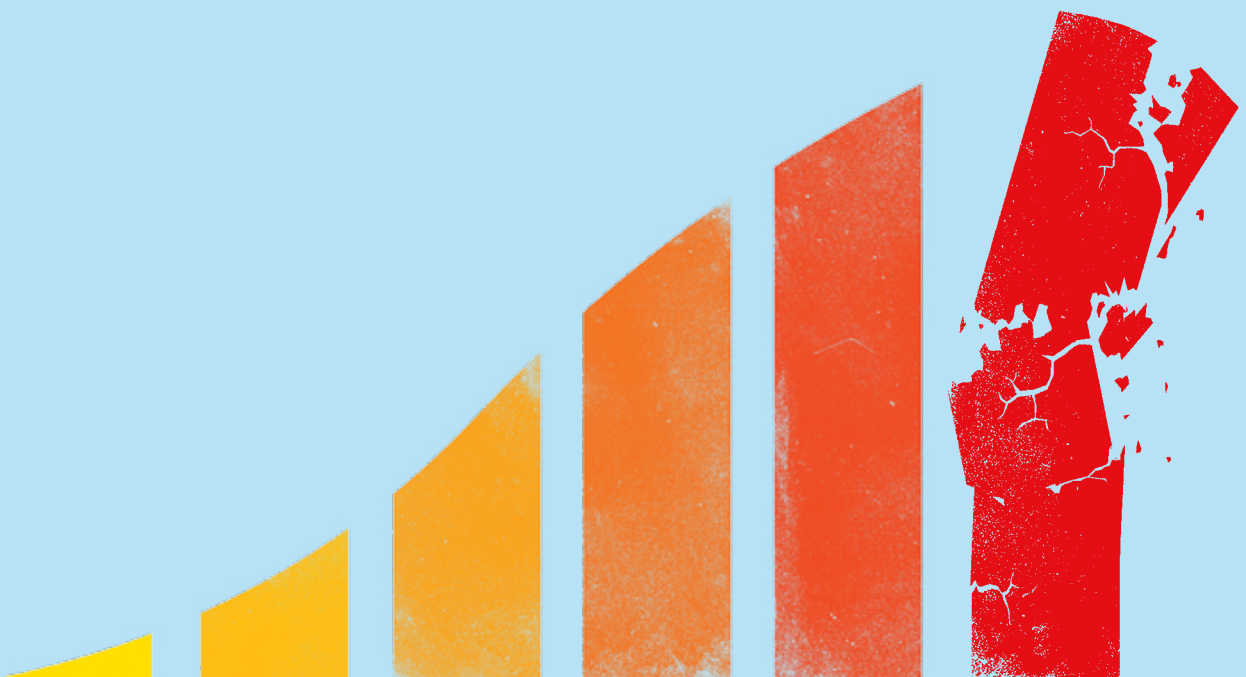
CONCLUSION

As exponential technologies and the disruptors they spawn remake your industry in ever-shorter cycles, the most valuable asset you can have is speed. You have to be quick to spot the failed early market experiments of the Singularity, to survive catastrophic success in the Big Bang, to maximize the residual value of declining assets in the Big Crunch, and to abandon legacy customers before you're crushed by the intense gravity of Entropy.

Few companies can operate for long at the pace of exponential change, but they don't really have to. Recall the old joke about two campers who awake to hear a bear rummaging around outside their tent. One of the campers begins to put on his shoes. "What are you doing?" the other asks incredulously. "You can't outrun a bear." "I don't have to," the first one replies. "I just have to outrun you."

How fast do you need to be to outrun the other campers?

Here's a good rule of thumb. The companies that thrive in Big Bang Disruption are those with the energy to work at the pace of a young entrepreneur pulling an all-nighter at a hackathon, fueled by unrealistic hopes and too much caffeine. So get ready—and make sure you're wearing your running shoes.



ABOUT THE AUTHORS



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