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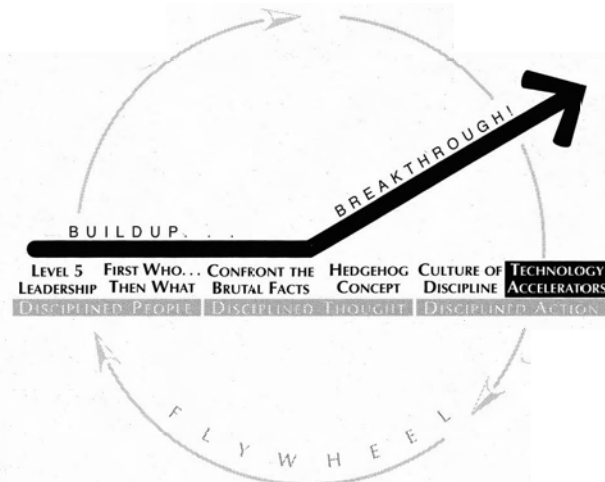
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## TECHNOLOGY ACCELERATORS



Most men would rather die, than think. Many do.

—BERTRAND RUSSELL<sup>1</sup>

On July 28, 1999, drugstore.com—one of the first Internet pharmacies—sold shares of its stock to the public. Within seconds of the opening bell, the stock multiplied nearly threefold to \$65 per share. Four weeks later, the stock closed as high as \$69, creating a market valuation of over \$3.5 billion. Not bad for an enterprise that had sold products for less than nine months, had fewer than 500 employees, offered no hope of investor dividends for years (if not decades), and deliberately planned to lose hundreds of millions of dollars before turning a single dollar of profit.<sup>2</sup>

What rationale did people use to justify these rather extraordinary numbers? "New technology will change everything," the logic went. "The Internet is going to completely revolutionize all businesses," the gurus chanted. "It's the great Internet landgrab: Be there first, be there fast, build market share—no matter how expensive—and you win," yelled the entrepreneurs.

We entered a remarkable moment in history when the whole idea of trying to build a great company seemed quaint and outdated. "Built to

Flip" became the mantra of the day. Just tell people you were doing something, anything, connected to the Internet, and—presto!—you became rich by flipping shares to the public, even if you had no profits (or even a real company). Why take all the hard steps to go from buildup to breakthrough, creating a model that actually works, when you could yell, "New technology!" or "New economy!" and convince people to give you hundreds of millions of dollars?

Some entrepreneurs didn't even bother to suggest that they would build a real company at all, much less a great one. One even filed to go public in March of 2000 with an enterprise that consisted solely of an informational Web site and a business plan, nothing more. The entrepreneur admitted to the Industry Standard that it seemed strange to go public before starting a business, but that didn't stop him from trying to persuade investors to buy 1.1 million shares at \$7 to \$9 per share, despite having no revenues, no employees, no customers, no company.<sup>3</sup> With the new technology of the Internet, who needs all those archaic relics of the old economy? Or so the logic went.

At the high point of this frenzy, drugstore.com issued its challenge to Walgreens. At first, Walgreens' stock suffered from the invasion of the dot-coms, losing over 40 percent of its price in the months leading up to the drugstore.com public offering. Wrote *Forbes* in October 1999: "Investors seem to think that the Web race will be won by competitors who hit the ground running—companies like drugstore.com, which trades at 398 times revenue, rather than Walgreen, trading at 1.4 times revenue."<sup>4</sup> Analysts downgraded Walgreens' stock, and the pressure on Walgreens to react to the Internet threat increased as nearly \$15 billion in market value evaporated.<sup>5</sup>

Walgreens' response in the midst of this frenzy?

"We're a crawl, walk, run company," Dan Jorndt told *Forbes* in describing his deliberate, methodical approach to the Internet. Instead of reacting like Chicken Little, Walgreens executives did something quite unusual for the times. They decided to pause and reflect. They decided to use their brains. They decided to think!

Slow at first (crawl), Walgreens began experimenting with a Web site while engaging in intense internal dialogue and debate about its implications, within the context of its own peculiar Hedgehog Concept. "How will the Internet connect to our convenience concept? How can we tie it to our economic denominator of cash flow per customer visit? How can we use the Web to enhance what we do better than any other company in

the world and in a way that we're passionate about?" Throughout, Walgreens executives embraced the Stockdale Paradox: "We have complete faith that we can prevail in an Internet world as a great company; yet, we must also confront the brutal facts of reality about the Internet." One Walgreens executive told us a fun little story about this remarkable moment in history. An Internet leader made a statement about Walgreens along the lines of, "Oh, Walgreens. They're too old and stodgy for the Internet world. They'll be left behind." The Walgreens people, while irked by this arrogant comment from the Internet elite, never seriously considered a public response. Said one executive, "Let's quietly go about doing what we need to do, and it'll become clear soon enough that they just pulled the tail of the wrong dog."

Then a little faster (walk), Walgreens began to find ways to tie the Internet directly to its sophisticated inventory-and-distribution model and—ultimately—its convenience concept. Fill your prescription on-line, pop into your car and go to your local Walgreens drive-through (in whatever city you happen to be in at the moment), zoom past the window with hardly a moment's pause picking up your bottle of whatever. Or have it shipped to you, if that's more convenient. There was no manic lurching about, no hype, no bravado—just calm, deliberate pursuit of understanding, followed by calm, deliberate steps forward.

Then, finally (run!), Walgreens bet big, launching an Internet site as sophisticated and well designed as most pure dot-coms. Just before writing this chapter, in October 2000, we went on-line to use Walgreens.com. We found it as easy to use and the system of delivery as reliable and well thought out as Amazon.com (the reigning champion of e-commerce at the time). Precisely one year after the Forbes article, Walgreens had figured out how to harness the Internet to accelerate momentum, making it just that much more unstoppable. It announced (on its Web site) a significant increase in job openings, to support its sustained growth. From its low point in 1999 at the depths of the dot-com scare, Walgreens' stock price nearly doubled within a year.

And what of drugstore.com? Continuing to accumulate massive losses, it announced a layoff to conserve cash. At its high point, little more than a year earlier, drugstore.com traded at a price twenty-six times higher than at the time of this writing. It had lost nearly all of its initial value.<sup>6</sup> While Walgreens went from crawl to walk to run, drugstore.com went from run to walk to crawl.

Perhaps drugstore.com will figure out a sustainable model that works and become a great company. But it will not become great because of snazzy technology, hype, and an irrational stock market. It will only become a great company if it figures out how to apply technology to a coherent concept that reflects understanding of the three circles.

#### TECHNOLOGY AND THE HEDGEHOG CONCEPT

Now, you might be thinking: "But the Internet frenzy is just a speculative bubble that burst. So what? Everybody knew that the bubble was unsustainable, that it just couldn't last. What does that teach us about good to great?"

To be clear: The point of this chapter has little to do with the specifics of the Internet bubble, *per se*. Bubbles come and bubbles go. It happened with the railroads. It happened with electricity. It happened with radio. It happened with the personal computer. It happened with the Internet. And it will happen again with unforeseen new technologies.

Yet through all of this change, great companies have adapted and endured. Indeed, most of the truly great companies of the last hundred years—from Wal-Mart to Walgreens, from Procter & Gamble to Kimberly-Clark, from Merck to Abbott—trace their roots back through multiple generations of technology change, be it electricity, the television, or the Internet. They've adapted before and emerged great. The best ones will adapt again.

Technology-induced change is nothing new. The real question is not, What is the role of technology? Rather, the real question is, How do good-to-great organizations *think differently* about technology?

We could have predicted that Walgreens would eventually figure out the Internet. The company had a history of making huge investments in technology long before other companies in its industry became tech savvy. In the early 1980s, it pioneered a massive network system called Intercom. The idea was simple: By linking all Walgreens stores electronically and sending customer data to a central source, it turned every Wal-

greens outlet in the country into a customer's local pharmacy. You live in Florida, but you're visiting Phoenix and need a prescription refill. No problem, the Phoenix store is linked to the central system, and it's just like going down to your hometown Walgreens store.

This might seem mundane by today's standards. But when Walgreens made the investment in Intercom in the late 1970s, no one else in the industry had anything like it. Eventually, Walgreens invested over \$400 million in Intercom, including \$100 million for its own satellite system.<sup>7</sup> Touring the Intercom headquarters — dubbed "Earth Station Walgreen" — "is like taking a trip through a NASA space center with its stunning array of sophisticated electronic gadgetry," wrote a trade journal.<sup>8</sup> Walgreens' technical staff became skilled at maintaining every piece of technology, rather than relying on outside specialists.<sup>9</sup> It didn't stop there. Walgreens pioneered the application of scanners, robotics, computerized inventory control, and advanced warehouse tracking systems. The Internet is just one more step in a continuous pattern.

Walgreens didn't adopt all of this advanced technology just for the sake of advanced technology or in fearful reaction to falling behind. No, it used technology as a tool to accelerate momentum after hitting breakthrough, and tied technology directly to its Hedgehog Concept of convenient drugstores increasing profit per customer visit. As an interesting aside, as technology became increasingly sophisticated in the late 1990s, Walgreens' CIO (chief information officer) was a registered pharmacist by training, not a technology guru.<sup>10</sup> Walgreens remained resolutely clear: Its Hedgehog Concept would drive its use of technology, not the other way around.

The Walgreens case reflects a general pattern. In every good-to-great case, we found technological sophistication. However, it was never technology per se, but the pioneering application of carefully selected technologies. Every good-to-great company became a pioneer in the application of technology, but the technologies themselves varied greatly. (See the table on page 150.)

Kroger, for example, was an early pioneer in the application of bar code scanners, which helped it accelerate past A&P by linking frontline purchases to backroom inventory management. This might not sound very exciting (inventory management is not something that tends to rivet readers), but think of it this way: Imagine walking back into the warehouse and instead of seeing boxes of cereal and crates of apples, you see stacks and

stacks of dollar bills—hundreds of thousands and millions of freshly minted, crisp and crinkly dollar bills just sitting there on pallets, piled high to the ceiling. That's exactly how you should think of inventory. Every single case of canned carrots is not just a case of canned carrots, it's *cash*. And it's cash just sitting there useless, until you sell that case of canned carrots.

Now recall how Kroger systematically shed its dreary old and small grocery stores, replacing them with nice, big, shiny superstores. To accomplish this task ultimately required more than \$9 billion of investment—cash that would somehow have to be pulled out of the low-margin grocery business. To put this in perspective, Kroger put more than *twice* its total annual profits into capital expenditures on average every year for *thirty* years.<sup>11</sup> Even more impressive, despite taking on \$5.5 billion of junk bond debt to pay a onetime \$40-per-share cash dividend plus an \$8 junior debenture to fight off corporate raiders in 1988, Kroger continued its cash-intensive revamping throughout the 1980s and 1990s.<sup>12</sup> Kroger modernized and turned over all its stores, improved the customer's shopping experience, radically expanded the variety of products offered, and paid off billions of dollars of debt. Kroger's use of scanning technology to take hundreds of millions of crisp and crinkly dollar bills out of the warehouse and put them to better use became a key element in its ability to pull off its magic trick—pulling not one, not *two*, but *three* rabbits out of a hat.

Gillette also became a pioneer in the application of technology. But Gillette's technology accelerators lay largely in *manufacturing* technology. Think about the technology required to make billions—literally billions—of low-cost, high-tolerance razor blades. When you and I pick up a Gillette razor, we expect the blade to be perfect *and* we expect it to be inexpensive per shave. For example, to create the Sensor, Gillette invested over \$200 million in design and development, most of it focused on manufacturing breakthroughs, and earned twenty-nine patents.<sup>13</sup> It pioneered the application of laser welding on a mass scale to shaving systems—a technology normally used for expensive and sophisticated products like heart pacemakers.<sup>14</sup> The whole key to Gillette's shaving systems lay in manufacturing technology so unique and proprietary that Gillette protected it the way Coca-Cola protects its secret formula, complete with armed guards and security clearances.<sup>15</sup>

**TECHNOLOGY ACCELERATORS IN THE  
GOOD-TO-GREAT COMPANIES**

Company	Technology Accelerators Linked to Hedgehog Concept during Transition Era
Abbott	Pioneered application of computer technology to increase economic denominator of profit per employee. Not a leader in pharmaceutical R&D—leaving that to Merck, Pfizer, and others that had a different Hedgehog Concept.
Circuit City	Pioneered application of sophisticated point-of-sale and inventory-tracking technologies—linked to the concept of being the "McDonald's" of big-ticket retailing, able to operate a geographically dispersed system with great consistency.
Fannie Mae	Pioneered application of sophisticated algorithms and computer analysis to more accurately assess mortgage risk, thereby increasing economic denominator of profit per risk level. "Smarter" system of risk analysis increases access to home mortgages for lower-income groups, linking to passion for democratizing home ownership.
Gillette	Pioneered application of sophisticated manufacturing technology for making billions of high-tolerance products at low cost with fantastic consistency. Protects manufacturing technology secrets with the same fanaticism that Coca-Cola protects its formula.
Kimberly-Clark	Pioneered application of manufacturing-process technology, especially in nonwoven materials, to support their passionate pursuit of product superiority. Sophisticated R&D labs; "babies crawl about with temperature and humidity sensors trailing from their tails."
Kroger	Pioneered application of computer and information technology to the continuous modernization of superstores. First to seriously experiment with scanners, which it linked to the entire cash-flow cycle, thereby providing funds for the massive store-revamping process.

Nucor	Pioneered application of the most advanced mini-mill steel manufacturing technology. "Shop the world over" for the most advanced technology. Willing to make huge bets (up to 50 percent of corporate net worth) on new technologies that others viewed as risky, such as continuous thin slab casting.
Philip Morris	Pioneered application of both packaging and manufacturing technology. Bet on technology to make flip-top boxes—the first packaging innovation in twenty years in the industry. First to use computer-based manufacturing. Huge investment in manufacturing center to experiment with, test, and refine advanced manufacturing and quality techniques.
Pitney Bowes	Pioneered application of advanced technology to the mailroom. At first, it took the form of mechanical postage meters. Later, Pitney invested heavily in electrical, software, communications, and Internet engineering for the most sophisticated back-office machines. Made huge R&D investment to reinvent basic postage meter technology in the 1980s.
Walgreens	Pioneered application of satellite communications and computer network technology, linked to its concept of convenient corner drugstores, tailored to the unique needs of specific demographics and locations. A "swallow your tonsils" big investment on a satellite system that links all stores together, like one giant web of a single corner pharmacy. "Like a trip through NASA space center." Led the rest of the industry by at least a decade.
Wells Fargo	Pioneered application of technologies that would increase economic denominator of profit per employee. Early leader in twenty-four-hour banking by phone, early adopter of ATMs, first to allow people to buy and sell mutual funds at an ATM, pioneer in Internet and electronic banking. Pioneered sophisticated mathematics to conduct better risk assessment in lending.

### **Technology as an Accelerator, Not a Creator, of Momentum**

When Jim Johnson became CEO of Fannie Mae, following David Maxwell, he and his leadership team hired a consulting firm to conduct a technology audit. The lead consultant, Bill Kelvie, used a four-level ranking, with four being cutting edge and one being Stone Age. Fannie Mae ranked only a two. So, following the principle of "first who," Kelvie was hired to move the company ahead.<sup>16</sup> When Kelvie came to Fannie Mae in 1990, the company lagged about ten years behind Wall Street in the use of technology.

Over the next five years, Kelvie systematically took Fannie Mae from a 2 to a 3.8 on the four-point ranking.<sup>17</sup> He and his team created over 300 computer applications, including sophisticated analytical programs to control the \$600 billion mortgage portfolio, on-line data warehouses covering 60 million properties and streamlined workflows, significantly reducing paper and clerical effort. "We moved technology out of the back office and harnessed it to transform every part of the business," said Kelvie. "We created an expert system that lowers the cost of becoming a home owner. Lenders using our technology reduced the loan-approval time from thirty days to thirty minutes and lowered the associated costs by over \$1,000 per loan." To date, the system has saved home buyers nearly \$4 billion.<sup>18</sup>

Notice that the Fannie Mae transition began in 1981, with the arrival of David Maxwell, yet the company lagged behind in the application of technology until the early 1990s. Yes, technology became of prime importance to Fannie Mae, but after it discovered its Hedgehog Concept and after it reached breakthrough. Technology was a key part of what Fannie Mae leaders called "the second wind" of the transformation and acted as an accelerating factor.<sup>19</sup> The same pattern holds for Kroger, Gillette, Walgreens, and all the good-to-great companies—the pioneering application of technology usually came late in the transition and never at the start.

This brings us to the central point of the chapter. When used right, technology becomes an *accelerator* of momentum, not a creator of it. The good-to-great companies never began their transitions with pioneering technology, for the simple reason that you cannot make good

use of technology until you know which technologies are relevant. And which are those? Those—and *only* those—that link directly to the three intersecting circles of the Hedgehog Concept.

To make technology productive in a transformation from good to great means asking the following questions. Does the technology fit directly with your Hedgehog Concept? *If yes, then you need to become a pioneer in the application of that technology.* If no, then ask, do you need this technology at all? If yes, then all you need is parity. (You don't necessarily need the world's most advanced phone system to be a great company.) If no, then the technology is irrelevant, and you can ignore it.

We came to see the pioneering application of technology as just one more way in which the good-to-great companies remained disciplined within the frame of their Hedgehog Concept. Conceptually, their relationship to technology is no different from their relationship to any other category of decisions: disciplined people, who engage in disciplined thought, and who then take disciplined action. If a technology doesn't fit squarely within their three circles, they ignore all the hype and fear and just go about their business with a remarkable degree of equanimity. However, once they understand which technologies are relevant, they become fanatical and creative in the application of those technologies.

In the comparison companies, by contrast, we found only three cases of pioneering in the application of technology. Those three cases—Chrysler (computer-aided design), Harris (electronics applied to printing), and Rubbermaid (advanced manufacturing)—were all unsustained comparisons, which demonstrates that technology alone cannot create sustained great results. Chrysler, for instance, made superb use of advanced computer-aided and other design technologies but failed to link those technologies to a consistent Hedgehog Concept. As Chrysler strayed outside the three circles in the mid-1980s, from Gulfstream jets to Maserati sports cars, no advanced technology by itself could save the company from another massive downturn. Technology without a clear Hedgehog Concept, and without the discipline to stay within the three circles, cannot make a company great.

## THE TECHNOLOGY TRAP

Two incidents stand out in my mind as I write this chapter. The first is Time magazine's selection in 1999 of Albert Einstein as "Person of the 20th Century." If you frame the person-of-the-century selection around the question, How different would the world be today if that person had not existed? the choice of Einstein is surprising, compared to leaders like Churchill, Hitler, Stalin, and Gandhi—people who truly changed the course of human history, for better or worse. Physicists point out that the scientific community would have reached an understanding of relativity with or without Einstein, perhaps five years later, certainly ten, but not fifty.<sup>20</sup> The Nazis never got the bomb, and the Allies would have won the Second World War without it (although it would have cost more Allied lives). Why did Time pick Einstein?

In explaining their selection, Time editors wrote: "It's hard to compare the influence of statesmen with that of scientists. Nevertheless, we can note that there are certain eras that were most defined by their politics, others by their culture, and others by their scientific advances. . . . So, how will the 20th century be remembered? Yes, for democracy. And, yes, for civil rights. But the 20th century will be most remembered for its earthshaking advances in science and technology . . . [which] . . . advanced the cause of freedom, in some ways more than any statesman did. In a century that will be remembered foremost for its science and technology. . . one person stands out as the paramount icon of our age . . . Albert Einstein."<sup>21</sup>

In essence, the Time editors didn't pick the person of the century so much as they picked the theme of the century—technology and science—and attached the most famous person to it. Interestingly, just a few days before the Einstein announcement, Time announced its person of the year for 1999. Who did it pick? None other than the poster child of e-commerce, Jeff Bezos of Amazon.com—reflecting yet again our cultural obsession with technology-driven change. Let me be clear. I neither agree nor disagree with Time's choices. I simply find them interesting and illuminating, because they give us a window into our modern psyche. Clearly, a key item on our collective mind is technology, and its implications.

Which brings me to the second incident. Taking a short break from the rigors of writing this book, I traveled to Minnesota to teach sessions at the Masters Forum. The Masters Forum has held executive seminars for nearly fifteen years, and I was curious to know which themes appeared

repeatedly over those years. "One of the consistent themes," said Jim Ericson and Patty Griffin Jensen, program directors, "is technology, change—and the connection between the two."

"Why do you suppose that is?" I asked.

"People don't know what they don't know," they said. "And they're always afraid that some new technology is going to sneak up on them from behind and knock them on the head. They don't understand technology, and many fear it. All they know for sure is that technology is an important force of change, and that they'd better pay attention to it."

Given our culture's obsession with technology, and given the pioneering application of technology in the good-to-great companies, you might expect that "technology" would absorb a significant portion of the discussion in our interviews with good-to-great executives.

We were quite surprised to find that fully 80 percent of the good-to-great executives we interviewed didn't even mention technology as one of the top five factors in the transition. Furthermore, in the cases where they did mention technology, it had a median ranking of fourth, with only two executives of eighty-four interviewed ranking it number one.

If technology is so vitally important, why did the good-to-great executives talk so little about it? Certainly not because they ignored technology: They were technologically sophisticated and vastly superior to their comparisons. Furthermore, a number of the good-to-great companies received extensive media coverage and awards for their pioneering use of technology. Yet the executives hardly talked about technology. It's as if the media articles and the executives were discussing two totally different sets of companies!

Nucor, for example, became widely known as one of the most aggressive pioneers in the application of mini-mill steel manufacturing, with dozens of articles and two books that celebrated its bold investments in continuous thin slab casting and electric arc furnaces.<sup>22</sup> Nucor became a cornerstone case at business schools as an example of unseating the old order through the advanced application of new technologies.

But when we asked Ken Iverson, CEO of Nucor during its transition, to name the top five factors in the shift from good to great, where on the list

do you think he put technology? First? No. Second? No. Third? Nope. Fourth? Not even. Fifth? Sorry, but no. "The primary factors," said Ken Iverson, "were the consistency of the company, and our ability to project its philosophies throughout the whole organization, enabled by our lack of layers and bureaucracy."<sup>23</sup>

Stop and think about that for a moment. Here we have a consummate case study of upending the old order with new technology, and the CEO who made it happen doesn't even list technology in the top five factors in the shift from good to great.

This same pattern continued throughout the Nucor interviews. Of the seven key executives and board members that we interviewed, only one picked technology as the number one factor in the shift, and most focused on other factors. A few executives did talk about Nucor's big bets on technology somewhere in the interview, but they emphasized other factors even more—getting people with a farmer work ethic on the bus, getting the right people in key management positions, the simple structure and lack of bureaucracy, the relentless performance culture that increases profit per ton of finished steel. Technology was part of the Nucor equation, but a secondary part. One Nucor executive summed up, "Twenty percent of our success is the new technology that we embrace . . . [but] eighty percent of our success is in the culture of our company."<sup>24</sup>

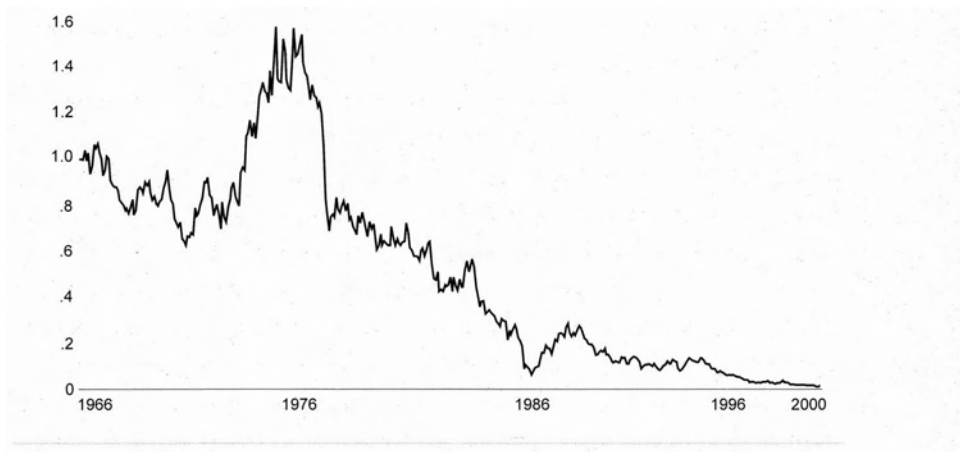
Indeed, you could have given the exact same technology at the exact same time to any number of companies with the exact same resources as Nucor—and even still, they would have failed to deliver Nucor's results. Like the Daytona 500, the primary variable in winning is not the car, but the driver and his team. Not that the car is unimportant, but it is secondary.

Mediocrity results first and foremost from management failure, not technological failure. Bethlehem Steel's difficulties had less to do with the mini-mill technology and more to do with its history of adversarial labor relations, which ultimately had its roots in unenlightened and ineffective management. Bethlehem had already begun its long slide before Nucor and the other mini-mills had taken significant market share.<sup>25</sup> In fact, by the time Nucor made its technological breakthrough with continuous thin slab casting in 1986, Bethlehem had already lost more than 80 percent of its value relative to the market. This is not to say that technology played no role in Bethlehem's demise; technology did play a role, and ultimately a significant one. But technology's role was as an accelerator of

Bethlehem's demise, not the cause of it. Again, it's the same principle at work—technology as an accelerator, not a cause—only in this comparison case it is operating in reverse.

### BETHLEHEM STEEL'S LONG DECLINE

Ratio of Cumulative Stock Returns to General Market,  
June 1966 – December 2000



· Indeed, when we examined the comparison companies, we did not find a single example of a comparison company's demise coming primarily from a technology torpedo that blew it out of the water. R. J. Reynolds lost its position as the number one tobacco company in the world not because of technology, but because RJR management thrashed about with undisciplined diversification and, later, went on a "let's make management rich at the expense of the company" buyout binge. A&P fell from the second-largest company in America to irrelevance not because it lagged behind Kroger in scanning technology, but because it lacked the discipline to confront the brutal facts of reality about the changing nature of grocery stores.

The evidence from our study does not support the idea that technological change plays the principal role in the decline of once-great companies (or the perpetual mediocrity of others). Certainly, technology is important—you can't remain a laggard and hope to be great. But technology by itself is never a primary cause of either greatness or decline.

Throughout business history, early technology pioneers rarely prevail in the end. VisiCalc, for example, was the first major personal computer spreadsheet.<sup>26</sup> Where is VisiCalc today? Do you know anyone who uses it? And what of the company that pioneered it? Gone; it doesn't even exist. VisiCalc eventually lost out to Lotus 1-2-3, which itself lost out to Excel.<sup>27</sup> Lotus then went into a tailspin, saved only by selling out to IBM.<sup>28</sup> Similarly, the first portable computers came from now-dead companies, such as Osborne computers.<sup>29</sup> Today, we primarily use portables from companies such as Dell and Sony.

This pattern of the second (or third or fourth) follower prevailing over the early trailblazers shows up through the entire history of technological and economic change. IBM did not have the early lead in computers. It lagged so far behind Remington Rand (which had the UNIVAC, the first commercially successful large-scale computer) that people called its first computer "IBM's UNIVAC."<sup>30</sup> Boeing did not pioneer the commercial jet. De Havilland did with the Comet, but lost ground when one of its early jets exploded in midair, not exactly a brand-building moment. Boeing, slower to market, invested in making the safest, most reliable jets and dominated the airways for over three decades.<sup>31</sup> I could go on for pages. GE did not pioneer the AC electrical system; Westinghouse did.<sup>32</sup> Palm Computing did not pioneer the personal digital assistant; Apple did, with its high-profile Newton.<sup>33</sup> AOL did not pioneer the consumer Internet community; CompuServe and Prodigy did.<sup>34</sup>

We could make a long list of companies that were technology leaders but that failed to prevail in the end as great companies. It would be a fascinating list in itself, but all the examples would underscore a basic truth: Technology cannot turn a good enterprise into a great one, nor by itself prevent disaster.

History teaches this lesson repeatedly. Consider the United States debacle in Vietnam. The United States had the most technologically advanced fighting force the world has ever known. Super jet fighters. Helicopter gunships. Advanced weapons. Computers. Sophisticated communications. Miles of high-tech border sensors. Indeed, the reliance on technology created a false sense of invulnerability. The Americans lacked not technology, but a simple and coherent concept for the war, on which to attach that technology. It lurched back and forth across a variety of ineffective strategies, never getting the upper hand.

Meanwhile, the technologically inferior North Vietnamese forces

adhered to a simple, coherent concept: a guerrilla war of attrition, aimed at methodically wearing down public support for the war at home. What little technology the North Vietnamese did employ, such as the AK 47 rifle (much more reliable and easier to maintain in the field than the complicated M-16), linked directly to that simple concept. And in the end, as you know, the United States—despite all its technological sophistication—did not succeed in Vietnam. If you ever find yourself thinking that technology alone holds the key to success, then think again of Vietnam.

Indeed, thoughtless reliance on technology is a *liability*, not an asset. Yes, when used right—when linked to a simple, clear, and coherent concept rooted in deep understanding—technology is an essential driver in accelerating forward momentum. But when used wrong—when grasped as an easy solution, without deep understanding of how it links to a clear and coherent concept—technology simply accelerates your own self-created demise.

#### TECHNOLOGY AND THE FEAR OF BEING LEFT BEHIND

The research team ferociously debated whether this topic merited its own chapter.

"There must be a technology chapter," said Scott Jones. "We're bombarded by the importance of technology these days at the business school. If we don't address it, we'll leave a huge hole in the book."

"But it seems to me," countered Brian Larsen, "that our technology finding is just a special case of disciplined action, and it belongs in the previous chapter. Disciplined action means staying within the three circles, and that's the essence of our technology finding."

"True, but it is a *very* special case," pointed out Scott Cederberg. "Every one of the companies became extreme pioneers in the application of technology long before the rest of the world became technology obsessed."

"But compared to other findings like Level 5, the Hedgehog Concept, and 'first who,' technology feels like a much smaller issue," retorted Amber Young. "I agree with Brian: Technology is important, but as a subset of discipline or perhaps the flywheel."

We argued throughout the summer. Then Chris Jones, in her typically

quiet and thoughtful way, asked a key question: "Why did the good-to-great companies maintain such a balanced perspective on technology, when most companies become reactionary, lurching and running about like Chicken Little, as we're seeing with the Internet?"

Why indeed.

Chris's question led us to an essential difference between great companies and good companies, a difference that ultimately tipped the balance in favor of including this chapter.

If you had the opportunity to sit down and read all 2,000+ pages of transcripts from the good-to-great interviews, you'd be struck by the utter absence of talk about "competitive strategy." Yes, they did talk about strategy, and they did talk about performance, and they did talk about becoming the best, and they even talked about winning. But they never talked in reactionary terms and never defined their strategies principally in response to what others were doing. They talked in terms of what they were trying to create and how they were trying to improve relative to an absolute standard of excellence.

When we asked George Harvey to describe his motivation for bringing change to Pitney Bowes in the 1980s, he said: "I've always wanted to see Pitney Bowes as a great company. Let's start with that, all right? Let's just start there. That's a given that needs no justification or explanation. We're not there today. We won't be there tomorrow. There is always so much more to create for greatness in an ever-changing world."<sup>35</sup> Or as Wayne Sanders summed up about the ethos that came to typify the inner workings of Kimberly-Clark: "We're just never satisfied. We can be delighted, but never satisfied."<sup>36</sup>

Those who built the good-to-great companies weren't motivated by fear. They weren't driven by fear of what they didn't understand. They weren't driven by fear of looking like a chump. They weren't driven by fear of watching others hit it big while they didn't. They weren't driven by the fear of being hammered by the competition.

No, those who turn good into great are motivated by a deep *creative* urge and an *inner* compulsion for sheer unadulterated excellence *for its own sake*. Those who build and perpetuate mediocrity, in contrast, are motivated more by the fear of being left behind.

Never was there a better example of this difference than during the technology bubble of the late 1990s, which happened to take place right smack in the middle of the research on good to great. It served as an almost perfect stage to watch the difference between great and good play itself out, as the great ones responded like Walgreens—with calm equanimity and quiet deliberate steps forward—while the mediocre ones lurched about in fearful, frantic reaction.

Indeed, the big point of this chapter is not about technology per se. No technology, no matter how amazing—not computers, not telecommunications, not robotics, not the Internet—can by itself ignite a shift from good to great. No technology can make you Level 5. No technology can turn the wrong people into the right people. No technology can instill the discipline to confront brutal facts of reality, nor can it instill unwavering faith. No technology can supplant the need for deep understanding of the three circles and the translation of that understanding into a simple Hedgehog Concept. No technology can create a culture of discipline. No technology can instill the simple inner belief that leaving unrealized potential on the table—letting something remain good when it can become great—is a secular sin.

Those that stay true to these fundamentals and maintain their balance, even in times of great change and disruption, will accumulate the momentum that creates breakthrough momentum. Those that do not, those that fall into reactionary lurching about, will spiral downward or remain mediocre. This is the big-picture difference between great and good, the gestalt of the whole study captured in the metaphor of the fly-wheel versus the doom loop. And it is to that overarching contrast that we now turn.

## CHAPTER SUMMARY

### TECHNOLOGY ACCELERATORS

#### KEY POINTS

- Good-to-great organizations *think* differently about technology and technological change than mediocre ones.
- Good-to-great organizations avoid technology fads and bandwagons, yet they become pioneers in the application of *carefully selected* technologies.
- The key question about any technology is, Does the technology fit directly with your Hedgehog Concept? If yes, then you need to become a pioneer in the application of that technology. If no, then you can settle for parity or ignore it entirely.
- The good-to-great companies used technology as an *accelerator* of momentum, not a creator of it. *None* of the good-to-great companies began their transformations with pioneering technology, yet they *all* became pioneers in the application of technology once they grasped how it fit with their three circles and after they hit breakthrough.
- You could have taken the exact same leading-edge technologies pioneered at the good-to-great companies and handed them to their direct comparisons for free, and the comparisons still would have failed to produce anywhere near the same results.
- How a company reacts to technological change is a good indicator of its inner drive for greatness versus mediocrity. Great companies respond with thoughtfulness and creativity, driven by a compulsion to turn unrealized potential into results; mediocre companies react and lurch about, motivated by fear of being left behind.

#### UNEXPECTED FINDINGS

- The idea that technological change is the principal cause in the decline of once-great companies (or the perpetual mediocrity of others) is not supported by the evidence. Certainly, a company can't remain a laggard and hope to be great, but technology by itself is never a primary root cause of either greatness or decline.

- Across eighty-four interviews with good-to-great executives, fully 80 percent didn't even mention technology as one of the top five factors in the transformation. This is true even in companies famous for their pioneering application of technology, such as Nucor.
- "Crawl, walk, run" can be a very effective approach, even during times of rapid and radical technological change.