CHAPTER ONE

"Will It Happen to Us?" A Trillion-Dollar Opportunity or an Extinction Event

"Software is eating the world."

—Marc Andreessen[1]

Over the past decade, six technology-led companies have collectively generated more than $1 trillion of market value. Amazon, Apple, Facebook, Google, Netflix, and Pandora have leveraged consumer technologies in new ways—and in the process, have transformed customer expectations, established new operating models, and violently upended roughly a dozen mature industries. In the process, prior industry leaders—such as Nokia, Motorola, Borders, Barnes & Noble, AOL, Blockbuster, Tower Records, and HMV—lost, on average, more than 90% of their 2003 enterprise values. This value migration from one set of companies to another could not have been more forceful or final.

Most people have heard that part of the story. What they don't fully appreciate is the common denominator that sits at the heart of the business models of the Trillion-Dollar Club: the creation and management of Code Halos.

What Is a Code Halo?

A Code Halo is the field of digital information that surrounds any noun—any person, place, or thing. More often than not, that virtual self can provide more insight into—and thus generate more value from—the physical entity alone.

Take a simple but important example. There are tens of millions of people in the United States alone with some form of chronic respiratory condition who need to use inhalers every day. Mobile health platform Propeller Health has created a sensor that fits on these inhalers.[2] The system links to users' mobile devices to help track and manage their use of medication, and to send data to healthcare providers. The raw materials for each unit probably cost only a few dollars, but the value to users (and healthcare providers)—based on the data and information provided—could be literally priceless.

The members of the Trillion-Dollar Club have mastered the ability to create and manage the Code Halos surrounding their customers, products, services, and entire organizations to establish new thresholds of performance. In wrapping those widgets with digits, they have created highly personalized customer experiences, products, and services that deliver not just utility but also insight and meaning at unassailable levels of efficiency. It's how Pandora, without ever having met you, can play hours of your favorite music and how Netflix can recommend just the right film for your Sunday evening.

The First Trillion Is Always the Hardest

The first trillion dollars of market value these six companies have generated with this approach certainly won't be the last. Competing on the code that surrounds all products and people will continue to drive significant opportunity. W. Brian Arthur of the Santa Fe Institute and the Palo Alto Research Center (PARC) suggests that a vast, unseen digital economy is quickly emerging. This Second Economy—launched in 1995 with the commercialization of the Internet—will surpass the world's first (or industrial) economy in scale and scope by 2025.[3] That is, a virtual, digital economy will exceed the industrial economy—the cumulative output of mankind's development over several millennia—in terms of transactions, revenues, and value creation, in a mere *30 years*. It's clear that the Trillion-Dollar Club's accomplishments—over a relatively short space of time—are simply the beginning of this economic journey.

How Significant Was the Impact of the First Trillion Club?

The answer? *Very*. Consider the results of Apple, Amazon, Google, Facebook, Netflix, and Pandora, which in 2003 had a combined market capitalization of $34.3 billion. By 2013, this figure had exceeded $1.2 trillion. Apple's 2003 stock traded at $10 per share. By 2013, it was at least 40 times higher. Amazon went from $22 per share to $350. Netflix had just gone public with a sub-billion-dollar valuation in 2003; Google and Pandora were still venture-backed start-ups; and Facebook didn't even yet exist.

Ten years later, there had been a massive migration in value from one group of six companies to another (see Figure 1.1). And, of course, this simple analysis doesn't include other widget-based market leaders—such as Barnes & Noble, Motorola, Ericsson, Dell, and HMV—that suffered terribly in the face of Code Halo competitors.

The Trillion-Dollar Club

Code Halo Company	2003 Value (in Billions)[4]	2013 Value (in Billions)	Industrial Model Competitor	2003 Value (in Billions)	2013 Value (in Billions)
Amazon	$23.90	$180.20	**Borders**	$1.78	Bankrupt
Apple	$8.90	$515.40	**Nokia**	$87.50	$30.30
Facebook	Not yet founded	$132.00	**MySpace**[5]	$0.58	$0.04
Google	Private, four years old	$355.20	**Yahoo!**	$29.60	$37.50
Pandora	Private, three years old	$6.00	**HMV**[6]	$1.25	Bankrupt
Netflix	$1.5	$21.70	**Blockbuster**	$4.00	Bankrupt
Total	**$34.30**	**$1,210.50**	**Total**	**$124.71**	**$67.84**

Figure 1.1

Historical Sources of Competitive Advantage Don't Hold Up Well Against Code Halos

What is particularly noteworthy about this migration of value is that the Code Halo upstarts were competing against established leaders in their industries. We call these companies Widget Winners because their business models were based on traditional industrial approaches to making, distributing, selling, and managing physical goods and services. Once Code Halos took hold in their markets, a profound and unstoppable shift from widget-based business models to the digit-based Code Halo models took place.

In every case, the Widget Winners initially looked like they should have clobbered the digit-focused newcomers. The incumbents had all the advantages: brand awareness, established customer relationships, extensive distribution channels, research and development capabilities, management experience, employee depth, balance sheets, and market valuation.

In addition, what the Widget Winners and the new disrupters were selling was the same product in most cases. After all, Netflix and Blockbuster rented the same films; Amazon and Borders sold the same books; and the iPod and Microsoft's Zune were comparable machines. The Widget Winners held all the advantages, except the key one: they neglected to wrap their widgets with digits, to build digital business ecosystems, and to learn how to compete with Code Halos. As a result, the Widget Winners were vanquished by 2013—either bankrupt or mere shadows of their former selves. Blockbuster founder David Cook articulated this collapse well, lamenting that "It didn't have to be this way. They [Blockbuster] let technology eat them up."[7]

In hindsight, it wasn't even a fair fight. It was slaughter.

More Industries Heading to the Crossroads

All of these Widget Winner incumbents believed that their strategic and tactical positions meant that they were immune to the changes they could see happening all around them in the marketplace. They assumed the disruption others were suffering in the face of digitization wouldn't affect them. We often hear;

> "It won't happen to us. Our industry is different."
>
> No, it's not.

This value migration will not be contained to a handful of Silicon Valley *wunderkinds*. Although Code Halos first took hold in these highly technology-aware companies, they're becoming a universal platform for competition across most *all industries*.

For example: What provides you with more insight when choosing the right hospital for a particular surgery? Do you focus on the building's physical façade, its lobby, its marketing brochure, and what friends or family have told you about it? Or would you prefer to examine the rich halo of information—found on myriad online sources—providing objective and detailed views on its strongest practices, success rates on particular surgeries and physician quality? If you had a life-threatening condition, wouldn't you also want access to all of this information?

Code Halos Go Mainstream

The good news—for shareholders and employees—is that many traditional winners are already focusing on Code Halos. This is not because they are losing ground, but because they see this transition already happening and the scale of the opportunity ahead, as the Second Economy grows (see Figure 1.2). GE is not seriously threatened by an upstart builder of jet engines or power turbines, nor is Disney too worried about a venture-backed amusement park being built in Orlando. However, these firms recognize the power of Code Halos and the opportunity to insert these new capabilities into their existing business models to extend their market leadership.

Companies like these recognize that the Code Halo has become the key structural element of today's business models. It's what leads executives like GE CEO Jeff Immelt to comment, "Industrial companies, not just GE, but all industrial companies, are no longer just about the big iron.… All of us are going to seek to interface with the analytics, the data, [and] the software that surround our products."[8] And Mark Parker, the CEO of Nike, states, "The digital and physical worlds are starting to come together more seamlessly—it's only the tip of the iceberg in terms of what's coming."[9]

Code Halo Innovation in Established Leaders

Company	Industry and Initiative
GE	**Industrial goods** Through its "Industrial Internet" and "Brilliant Machines" initiatives, GE is creating Code Halos around industrial machines such as jet engines, locomotives, and power turbines.
Disney	**Hospitality** With its "MagicBands," Disney is creating a wearable wristband to generate Code Halos around its park guests, creating unique tailored experiences for these customers.
Allstate	**Insurance** Through its "Drivewise" in-car mobile telematics device, Allstate is building Code Halos around drivers and their cars, thus providing personalized auto insurance and rates.
Nike	**Fitness** With the Nike+ FuelBand—a wearable activity monitor—Nike is putting Code Halos around its customers, helping to analyze and improve their levels of personal fitness.

Figure 1.2

Code Halos: The Building Blocks of the Second Economy

Code Halos are becoming the key building blocks of the Second Economy. The industrial economy—from Watt's steam engine of 1775 through to Airbus's A380 of 2007—has been all about the design, manufacture, selling, and servicing of increasingly sophisticated physical products and services. The coming phase of commerce is now all about the virtual fields of information that surround people, products, places, and organizations. However, it is not only about building Code Halos around people and products. We must reimagine and reengineer the supporting organizational models and business processes to thrive in the new digital economy. In many cases, this transition will be a heavy lift, as established businesses will have to manage traditional ways along with the new. Yet ultimately, there is no choice for managing in these times of tremendous change.

Harnessing the Power of Code Halos in Your Industry

Would you rather have an iPhone or a BlackBerry? Work at Netflix or Blockbuster? Own stock in Facebook or Kodak? These questions seem silly. However, would you rather fly on United or Delta? Work at Aetna or The Hartford? Those are harder to answer. Yet in 10 years, the answers may be as easy as iPhone vs. BlackBerry. It will all boil down to which firms can master the new Second Economy and participate in their own Code Halo transformation, and which ones do not.

So the question is, "Will it happen to *us*?" We've seen what can happen if you do not embrace Code Halos: your organization can quickly find itself on the unrecoverable path to irrelevancy. On the other hand, if you do leverage these ideas and wrap your products, services, people, and devices with Code Halos, your organization will be well positioned for the extraordinary new commercial opportunities ahead.

As a first step in that journey, we'll take a closer look at our own personal Code Halos in Chapter 2.