

NEW FOREWORD BY ERIC SCHMIDT, EXECUTIVE CHAIRMAN OF GOOGLE

THE NEW YORK TIMES BESTSELLER

THE DIGITAL ECONOMY

Rethinking Promise
and Peril in the Age of
Networked Intelligence

Anniversary
Edition
—After 20 Years,
a New Look
Forward

THE ORIGINAL GROUNDBREAKING TEXT
WITH BRAND-NEW ESSAYS AND UPDATES

DON TAPSCOTT

Bestselling author of *Wikinomics* and *Grown Up Digital*

Praise for *The Digital Economy* 20th Anniversary Edition

“1994 was a good year. We released Netscape Navigator and the web took off. It was also the year that Don Tapscott wrote *The Digital Economy*, prophetically explaining how the Web would change business. With this anniversary edition, Tapscott provides lucid insights for the next stage of these amazing times.”

Mark Andreessen, Cofounder and General Partner, Andreessen Horowitz

“We’re now into three decades of terrific insights and analysis from Don Tapscott about the digital revolution! Read this book!”

Ajay Banga, President and Chief Executive Officer, Mastercard

“Twenty years ago this book gave us an invaluable and clear roadmap for an emerging revolution. In this timely update, Don Tapscott reminds us how far we have come, but, more importantly, the extent of the transformation that still lies ahead.”

Dominic Barton, Chief Executive Officer, McKinsey

“Don Tapscott has produced powerful new insights that make the Anniversary Edition of *The Digital Economy* worthwhile reading for anyone seeking to understand both the promise and challenges of the digital age.”

George Cope, CEO, Bell Canada

“Twenty years of hindsight prove how deeply Tapscott understood the impact the Internet would have on the way we live, work, play, and learn. The ‘Age of Networked Intelligence’ he accurately predicted two decades ago is what we call the Internet of Everything, in which all the new and better connections between us are making amazing things happen for people, businesses, communities, and countries. This important book, now updated, is just as relevant today as it was then.”

John Chambers, Chairman and CEO, Cisco

“The digital forces of social media, mobility, cloud computing, robotics, and big data will fundamentally change all aspects of our lives. There is no better starting point to understand this shift than Don Tapscott’s prescient *The Digital Economy*. I am happy to see the release of the Anniversary Edition of *The Digital Economy*. It will benefit many who are trying to fathom the extent of the impact of digital technologies.”

**N. Chandrasekaran, Chief Executive Officer and Managing Director,
Tata Consultancy Services**

“Don was one of the first and most important theorists on the importance and impact of networks. *The Digital Economy* contains important lessons for how we work in a networked age. And, as networks accelerate transformation, his new updates are critical advice for how best to navigate the new world of work.”

Reid Hoffman, Executive Chairman and Cofounder, LinkedIn

“Don Tapscott defined the digital economy, through which connected individuals and organizations could transport dominant structures to networks. His concept of collective intelligence that changes how we innovate, produce, buy, communicate, and learn was profound. In this new edition, he shows how new generations can shape a sustainable social, technological, and economic future. Read this book.”

Juan Hurtado, Chairman, Entel Chile

“No one has better explained the vast power of networks to tackle humanity’s problems than Don Tapscott. *The Digital Economy* was a pioneering work—a watershed. The 20th Anniversary Edition has unsettling reflections on the past and profound insights for our collective future.”

Georg Kell, Executive Director, UN Global Compact

“*The Digital Economy* was the book that defined the future 20 years ago. Tapscott charted the course in the early days of business on the Internet, and this new look forward is equally insightful.”

Dave Kepler, EVP and CIO, Dow Chemical Company

“It’s hard to believe 20 years have flown by since the publication of *The Digital Economy*. The prescience of Don Tapscott’s views of how the Internet would change our professional and personal lives was unparalleled. Don and I spent considerable time discussing how the world would transform itself and how I could use this perspective to help transform Oracle. Looking back, I’m thankful to have such a visionary as part of my life.”

Raymond Lane, Former President, Oracle Corporation; Partner Emeritus, Kleiner Perkins Caufield and Byers; Chairman, Carnegie Mellon University

“Over the last 20 years, *The Digital Economy* has had a significant impact on my leadership of, and strategic planning for, Seagate. The new chapters in this 20th Anniversary Edition once again provide unique insights as to the next evolution of our digital world and will serve as excellent guideposts for anyone leading a company or who is responsible for strategy.”

Stephen Luczo, CEO, Seagate

“Information is the currency of the 21st century, and nobody understands and explains the transformational implications, both wonderful and wicked, better than Don Tapscott.”

Tiff Macklem, President, University of Toronto

“As Canada’s Industry Minister through much of the 90s, Don Tapscott’s *The Digital Economy* and earlier *Paradigm Shift* energized me and my officials to try to turn the Canadian economy on its head! They were mandatory reading for senior staff and caused us to redirect the strategy and resources of our department in fundamental ways. It was the early days of the digital revolution, and we were fortunate that Don provided us with such an accurate roadmap to navigate the changing global environment.”

John Manley, President and Chief Executive Officer, Canadian Council of Chief Executives

“Twenty years ago Don Tapscott showed again that he had his finger on the pulse of the digital world. His new perspective, insights, and analysis should be required reading for everyone from students to CEOs.”

Bill McDermott, Chief Executive Officer, SAP

“It’s amazing how a single person can influence the course of history. Europe is now committed to evolving a digital economy strategy that can have a material impact on prosperity and our future. This concept originated with and dates back to Don Tapscott’s seminal work of 20 years ago.”

Ann Mettler, Executive Director and Cofounder of The Lisbon Council

“Every business is a digital business, and leaders must take action now to ensure their organizations remain relevant. Don Tapscott offers practical new insights to help us understand and unleash the power of digital.”

Pierre Nanterme, Chairman and CEO, Accenture

“Don Tapscott was the first to describe how our shared human experience is being reinvented by the emergence of the digital economy and the networked society in which we live today. Twenty years later Don is as insightful and profound as ever.”

Joe Natale, President and CEO, TELUS

“The most important enabler of social, economic and human development today is a connected world; connecting people to each other, to better sources of information and to new business opportunities. Governments can learn from *The Digital Economy* how to democratize access to prosperity, minimize social and economic divides, and transform government and democracy.”

Enrique Peña Nieto, President of Mexico

“I still remember reading *The Digital Economy* two decades ago. It opened my mind to the world of possibilities and threats made possible by a digital world. Today every business must become, as Don Tapscott says, a ‘digital business.’ The Anniversary Edition is teeming with fresh insights relevant to business leaders in every industry.”

Indra K. Nooyi, Chairman and CEO, PepsiCo

“More than 20 years after writing *The Digital Economy*, Don’s thinking on business strategy, organizational transformation, and the role of technology in business and society is more relevant than ever. Don gave us a glimpse into our future that has amazingly stood the test of time, and now he’s at it again, pointing the way forward.”

Filippo Passerini, Group President—GBS and CIO, Procter & Gamble

“As Don rightly predicted 20 years ago, the Internet has transformed many things that people do. But beyond that, it has disrupted many long-standing industries as basic as books and telephones, and has become the defining invention of our time. Given his foresight over the last 20 years, businesses that do not carefully monitor the trends he outlines about the next few years will do so at their own peril.”

Paul Polman, Chief Executive Officer, Unilever

“Twenty years later, Don’s insights into the age of networked intelligence and its impact on industry are like a journey “back to the future.” Today more than ever, technology continues to disrupt the way we manufacture goods, power our communities, treat diseases, and, most importantly, interact with each other.”

Eric Spiegel, CEO, Siemens Corporation

“In this fascinating reflection of predictions and trends from the past 20 years, Don Tapscott continues to provide valuable insights into the opportunities and challenges for business, government, and wider society in our increasingly digital and connected world. It is indeed sobering to see how the “age of networked intelligence” is in many ways just beginning to truly transform our world.”

David Thodey, CEO, Telstra

“Twenty years ago HP’s CEO Lew Platt endorsed *The Digital Economy* saying ‘Read this book. It will scare you and excite you and teach you how to succeed.’ His words were wise then and remain appropriate for today. The Anniversary Edition shines with important insights.”

Meg Whitman, CEO, HP

“The networked society has arrived, and there has been no better chronicler and scrutinizer than Don Tapscott. Read this book and heed his advice!”

Hans Vestberg, CEO, Ericsson

THE DIGITAL ECONOMY

— 20TH ANNIVERSARY EDITION —

Rethinking Promise And Peril
In The Age Of Networked Intelligence

DON TAPSCOTT

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Foreword to *The Digital Economy*: 20th Anniversary Edition

by Eric Schmidt, Executive Chairman, Google

I'm pleased Don asked me to say a few words about the update to his landmark book, *The Digital Economy*, if for no other reason than to place it in context. Twenty years ago, I was at Sun Microsystems, a company that in its time was pushing the boundaries of hardware, software, and network architecture in a similar way to what Google is doing today.

But even with the advances Sun and other tech companies were developing, the Information Age was still in its infancy. It was a time of dial-up modems and bulletin board systems, CDs and VHS, books sold in bookstores, and phones hardwired to your home or, if you were lucky, your car. The world wide web was just slowly beginning to emerge.

Who could have foreseen the next two decades? Who could have seen the way open platforms like the Web would transform nearly every part of our society and economy? That the power of networking would redefine collaboration and leadership, expanding both humanity's productivity and its potential? That technology would suddenly begin to uproot major industries and challenge the power of incumbents? Who could have possibly known all that?

Well, to a large degree, Don did.

Don remains one of the most perceptive thinkers about the way technology is transforming business and society. Several of his predictions—from networked intelligence to the demands on leaders to embrace technology—have taken permanent hold, giving rise to what Jared Cohen and I describe in our own book as a “New Digital Age.”

The age we live in now is one filled with opportunity and promise. The digital revolution was a once-in-a-generation event that continues to transform every corner of the global economy, allowing businesses to run more efficiently, increase productivity and develop entirely new and enriching business models. It's blown entrepreneurship wide open, lowering the cost

for someone to deliver on the next great idea. It is transforming science and education, slowly but surely spreading knowledge and strengthening education worldwide. And it's even changing the way governments—those hidebound bureaucracies—interact and deliver services to their citizens.

But just as Don described the benefits of our new digital age, he was also clear-sighted about the perils. Like any revolution, the digital revolution depends on steady leadership and informed and empowered citizenry to guide it.

Already we've seen repressive governments use technology to spread propaganda and limit the flow of information amongst the public. We've seen countries as free and open as our own succumb to the temptation of widespread surveillance and indiscriminate data collection, with chilling implications for our personal freedoms. The idea of living as a private citizen these days seems quaint.

And then there's the way technology has accelerated what I believe will be the next great generational challenge: job scarcity and its implications for social inequality. We pay a price for our efficiency and our productivity gains and that is the uprooting of jobs and previously secure ways of life. For those content to write this off as a consequence only faced by blue collar workers or manual laborers, you need only look to the increased outsourcing and automation of fields like law, medicine, accounting and finance—domains long thought safe.

Still, we must remember that technology remains a tool of humanity—that it is up to us to use it to create new economic opportunities, expand freedoms and expression, strengthen governance and global education. It's not man vs. machine. It's man, tapping into the immense potential of machines to give everyone globally a better way of life.

That will take strong leadership and it will take people who fully understand the implications of the digital age: that growth and profit must be tempered with the needs of society; that privacy must not be a casualty of a networked citizenry; that we use the great potential that we are unlocking to beat back the threats of a new digital age.

As we enter the new age, the future won't just happen. It will be created.

If those words sound both prescient and familiar, it's no surprise. They're Don's.

Eric Schmidt, September 2014

Not everything I've written holds up well. I'd love to retract the Enron case study from one of my books, or at least add in the sentence: "Note to Enron leadership—don't commit fraud."

But in rereading *The Digital Economy* for this 20th Anniversary Edition I'm struck by how the book has withstood the test of time. I'm also struck by how far we've come since then.

The book was published in 1995. Flash back to the fall of 1994 when I was writing the book. Netscape, the first commercial Web browser, was released in October of that year and the first Web sites had started to appear. Web sites only published content and none did transactions. People accessed the Internet and the Web through dial-up connections, and they were fortunate to have a 9,600 bit per second (bps) connection. Today a typical home connects at 10 million bits per second.

Mobile phones were clunky and performed a single function—telephony. The first Research in Motion (RIM) pager did not appear until 1999, and it was well into the next decade that the mobile Web was available broadly. In fact it wasn't until 2007, 13 years after the book was written, that the first iPhone appeared on the market.

In 1994, primitive search engines made it very difficult, if not impossible, to search the Web and it was half a decade later that Google became available. There were no online auctions, let alone the vast marketplaces of today. In 1996, my company researched a little company called AuctionWeb and reported that they had huge potential to change retail, price discovery, and create a vast community of people who make a living through selling stuff. The company later changed its name to eBay (no I did not invest in it, but our report was very good.) Books were still sold in bookstores and nobody had heard of Amazon, as it was founded in July of that year. The concept of social media had not been invented and 1994 was a decade

before the first glimmer of MySpace and YouTube, and 15 years before Twitter came on the scene.

It's tempting to wish you could be transported back then with today's knowledge. If you had carefully invested \$100,000 then, you would be the wealthiest person in history. But I digress.

THE DIGITAL ECONOMY—THE BIG IDEAS

The book introduced a number of big ideas, some of which have become part of the vernacular, and others that companies and governments are still struggling to implement.

1. *Introducing Ronald Coase.* The book introduced the writings of Nobel Prize–winning economist Ronald Coase as key to understanding the meaning of the Internet. Coase died in 2013 at the age of 102. He was awarded the 1991 Nobel Prize in Economics, largely for his inspiring 1937 paper “The Nature of the Firm,” which argued that transaction costs in open markets caused companies to bring business functions within the boundaries of the firm. After reading Coase, I was thunderstruck how his insights from 50 years ago could explain the impact of the Internet on the architecture of businesses. (See *Chapter 2*.)

2. *Themes of the Digital Economy.* Prior to the widespread use of the Web there was no language or taxonomy to discuss this revolution. The first attempt to elucidate a set of Themes holds up well today with presumption, immediacy, molecularization, discordance, and disintermediation along with its flipside “re-intermediation” standing out. (See *Chapter 2*.)

3. *The concept of Networked Intelligence.* This concept is still central to my current writing. It's great to read today:

The Age of Networked Intelligence is an age of promise. It is not simply about the networking of technology but about the networking of humans through technology. It is not an age of smart machines but of humans who through networks can combine their intelligence, knowledge, and creativity for breakthroughs in the creation of wealth and social development. It is not just an age of linking computers but of internetworking human ingenuity.

The book mused about Nathaniel Hawthorne, who inspired the development of the telegraph, wrote in 1851 that through electricity, the world of matter had become a great brain, instinct with intelligence. I concluded by arguing:

For over a century humanity has been taking steps to realize Hawthorne's vision of a world where human intelligence could be networked. That age has arrived. Organizations can become conscious on a global scale. Perhaps societies and even humanity can as well.

I still hold today that this is not primarily an information age. It's an age of networked intelligence.

4. *Taxonomy and Language.* In the early days of the Internet there was no taxonomy or language to discuss this emerging revolution. There is a “cascading hierarchy” to describe the potential of the Net for enterprises that is still helpful. It begins at the lowest level with enabling effective individuals, cascading to high-performance teams, then integrated organizations, then extended enterprises, and finally to the internetworked business—essentially a business ecosystem. (See *Chapter 3*.)

I remember at that time my company had a neologism committee. We employed so many smart and creative people that the proliferation of newly invented words was not helpful. I chaired the committee so I probably had undue influence and some of those early terms, including “The Digital Economy” itself, were adopted. I note that today several countries, and the European Union (EU) as a whole, are working on creating a “Digital Economy Strategy.”

You'll read other terms that never took hold too. But today it's striking to think of the vast language that has emerged to describe this new age, with its thousands of conceptual models and neologisms.

5. *Industry Impact.* The discussion of the technology itself is interesting but mainly for historical purposes as all these trends, seemingly revolutionary at the time, played out with a vengeance: the rise of digital, microprocessor-based systems, network computing, high-bandwidth communications, smart information appliances, multi-media, open systems, intelligent networks, and high-level object-oriented programming languages. The last shift made me chuckle reading it today: The Shift from GUIs to MUIs, MOLEs, MUDs, MOOs, AVATARS, AND VR. (See *Chapter 4*.)

There are also interesting discussions of the impending transformations of many industries, including health care, government, manufacturing, retail, and the travel industry, along with some key business functions—logistics, design, sales, marketing, and human resources (HR). The discussion of the transformation of the media industries, in particular broadcasting, unbelievably provides a pretty good framework for today. Broadcasters are still struggling to embrace most of these themes. (See *Chapters 5 to 8*.)

6. *The Challenge of Leadership.* This is a dominant theme throughout the book. Some good advice for today's leaders: *Leadership Can Come from Anywhere in an Organization*; *Leadership in the New Economy Is Leadership for Learning*; *Collective Leadership Is Becoming Possible*; *Internetworked Leadership Can Be (enhanced) Digital*; *Internetworked Leadership Is Incomplete Without the CEO*.

7. *Privacy.* I honestly don't remember why I chose to write an entire chapter on Privacy, many years before social networking and big data. But it was clear at the time there was "a coming firestorm" on this issue. However my conclusions on how to safeguard our privacy in a networked world has been obviated by recent developments. (See Chapter 11 for the update.)

8. *The Dark Side.* The book was pretty breathless about the opportunities, but equally it warned of the huge dangers ahead. It's worth reflecting whether the digital revolution has fulfilled its vast potential or if our disruptions and problems are deepening:

The Age of Networked Intelligence is also an age of peril. For individuals, organizations, and societies that fall behind, punishment is swift. It is not just old business rules but also governments, social institutions, and relationships among people that are being transformed. The new media is changing the ways we do business, work, learn, play, and even think. Far more than the old western frontier, the digital frontier is a place of recklessness, confusion, uncertainty, calamity, and danger.

Some signs point to a new economy in which wealth is even further concentrated, basic rights like privacy are vanishing, and a spiral of violence and repression undermine basic security and freedoms. Pervasive evidence exists that indicates the basic social fabric is beginning to disintegrate. Old laws, structures, norms, and approaches are proving to be completely inadequate for life in the new economy. While they are crumbling or being smashed, it is not completely clear what should replace them. Everywhere people are beginning to ask, "Will this smaller world our children inherit be a better one?"

9. *The Call to Action.* The book appeals to business leaders to step up. This challenge is as relevant today as it was then.

The digital economy requires a new kind of businessperson: one who has the curiosity and confidence to let go of old mental models and old paradigms; one who tempers the needs for business growth and profit with the requirements of employees, customers, and society for privacy, fairness, and a share in the wealth he or she creates; one who has the vision to think socially, the courage to act, and the strength to lead in the face of coolness or even ridicule. The digital economy requires yesterday's managers to become tomorrow's leaders. As we enter the new age, the future won't just happen. It will be created. And if we all get involved, our values, aspirations, and growing expectations will shape and drive the transformation of our businesses and our world.

REVIEWING THE DARK SIDE

If there has been one criticism of my work over the years it is that I have been too positive about the digital revolution, emphasizing only the upside. It's true that I have been hopeful, even optimistic. This is particularly true when it comes to my polemics with the pundits who attack the first generation to grow up digital as being somehow inferior to past generations. My research shows that we can be very hopeful about the "Net Generation" (as I dubbed them in 1997 in *Growing Up Digital*) as the smartest generation ever, having the mental processes that equip them well for the digital age.

However as the subtitle of *The Digital Economy* indicates "Promise and Peril in the Age of Networked Intelligence," I don't accept the criticism that I have been a digital Pollyanna. As this chapter states:

There is a vast new promise but also new perils. A looming dark side holds the potential for severe social stratification, unprecedented invasion of privacy and other rights, structural unemployment, and massive social dislocation and conflict. The future will depend on what we as businesses and as a society do—on our decisions and our actions.

In hindsight, the book pretty much nailed the tough issues, and looking forward today these problems are now unfolding with a pace and force that is

shocking and sometimes bewildering. My somewhat discouraging conclusion is that the “promise” of a new, more fair, equal, just and sustainable world is in balance unfulfilled. The topics the book summarized in this chapter are pretty much the issues each of us must address today.

1. “Dislocations in labor markets, with old industries and jobs disappearing.”

The fact that we’re entering a new economy is of little consolation to that displaced worker and his or her family. How will we manage the transition to new types of work and a new knowledge base for the economy?

Today: For the first time in history, economic growth is not generating a meaningful number of new jobs. Young workers are taking the biggest hit. Google’s Executive Chairman Eric Schmidt says that job scarcity will be the biggest public policy issue for the next two or three decades. We are still suffering the hangover of the obscene American subprime mortgage crisis, and Nobel prize–winning economist Paul Krugman argues persuasively that major government stimulus will be needed for years to come.

However the biggest culprit is digital technologies. We’ve already seen knowledge work such as accounting and legal services being shipped offshore to cheaper employees. Soon the work will stay here, but be done by computers. A recent McKinsey report noted that IBM’s Watson computer diagnoses cancers with much higher levels of speed and accuracy than skilled physicians do. The same software combined with robotics, 3D printing, and myriad other innovations will eliminate jobs throughout the workforce.

Technology is also the foundation of new species of businesses that are capable of wiping out entire industries. Digital Conglomerates such as Google are achieving leadership roles in a dozen industries, where they do a better job with a fraction of the employees. The New Aggregators like Uber, Lyft, and Airbnb hold the power to wipe out jobs in industries ranging from taxis to hotels. Data Frackers like Facebook are acquiring vast treasure troves of data that position them to dominate multiple industries.

Factor in the hangover from the financial collapse of 2008 and we’re witnessing youth unemployment levels across the Western world from 15 to 60 percent. This situation is not only immoral it is creating a massive powder keg.

2. “The destruction of privacy in an unprecedented and irrevocable manner.”

I believed this topic to be so important 20 years ago that I devoted an entire chapter about it (*Chapter 11*):

Most of us believe we have the right to decide what personal information we divulge, to whom, and for what purpose. Left unchecked, the Internet could render such thinking irrelevant. As human communications, business transactions, working, learning, and playing increasingly come onto the Net, unimaginable quantities and types of information become digitized and networked. How can we safeguard privacy in an economy that is digital?

Today: This is a major topic on the minds of most thoughtful people. But since the book was written there has been profound changes in how we need to safeguard privacy. So-called “data minimization” (limiting what information we give away) is no longer feasible. New approaches are required. (*I outline my new thinking on this topic in the introductory essay in Chapter 11.*)

3. The danger of “a severe bipolarization of wealth.”

An ill-conceived transition to the digital economy could foster a two-tiered society... Is there an emerging ‘revolt of the elites’ who will use the new infrastructure to further cocoon themselves—children in private schools, paying for their own social services, surrounded by high-perimeter fences, identifying closer with friends and business associates in cyberspace, losing any sense of responsibility to others in their physical communities or country?

Today: Income inequality is one of the hottest topics on the planet. It was listed as the number one global risk by the World Economic Forum’s 2014 meeting in Davos, Switzerland. It is the topic of the *New York Times* number 1 bestseller *Capital in the Twenty-First Century* by the French economist Thomas Piketty. While many disagree with his socialist conclusions, Piketty’s scholarship has been pretty much unassailable, showing that growing social inequality is endemic to capitalism, even in the digital age. And reasonable people today are questioning whether the digital revolution might actually accelerate inequality.

4. “What impact will the digital economy have on quality of life?”

Will telework create new, flexible, enjoyable working environments, or will it enslave people to piecework done in isolation? Will we, as some pundits

argue, drown in data or amuse ourselves to death? As technology invades our offices, homes, cars, hotel rooms, airplane seats, kitchens, and wash-rooms, is there a danger of the separation of work and leisure vanishing?

Today: This is a hotly debated topic and the jury is still out. As for technology making us stupid, many measures of smartness (improving IQ, standardized test scores, university graduates, etc.) suggest otherwise. However the quote from the brilliant Alan Kay in *The Digital Economy* seems prophetic: “Another way to think of roadkill on the information highway will be the billions who will forget that there are off-ramps to destinations other than Hollywood, Las Vegas, the local bingo parlor, or shiny beads from a shopping network!”

5. “What will be the impact of the new media on the family?”

“The new media hold the promise of strengthening the family by moving many family activities dispersed by industrial society back into the home... But are there other dangers? Despite its unhealthy impact on people, television at least brought families together around an electronic hearth. But in my family today, it’s not unusual for the four of us to be clicking away on our keyboards in separate rooms.”

Today: Many people are conflicted about such matters. On the one hand, they agree with some technology critics. On the other hand, they assert that the new media have brought them bounty, new connections, knowledge, and even joy. But as you sit in a restaurant and observe families silently staring into their devices, or get to the end of a day searching the Internet and answering e-mails, texts, and social media posts, you would reasonably question the digital balance sheet of the human condition. Alarmist voices are growing in number and volume. They represent more than a neo-Luddite backlash against change or a choir of “nattering nabobs of negativism” (as Spiro Agnew might say). Instead, it is clear that the digital revolution is outpacing our capacity as humans to effectively exploit and integrate it into our economies, social structures, and relationships, work and play, and our families.

6. “Many governments seem slow to comprehend the shift.”

“Bureaucracies by definition resist change, thinking that heads-down is the route to survival. Can government become electronic, transforming the way government services are delivered? The so-called reinvention of government

is not possible without reinventing the delivery system for government, and in doing so, dramatically reducing costs and improving the services government provides to its customers.”

Today: Most governments spent a decade making existing models of government digital—“paving the cowpaths”—by putting existing services online through Web sites. However the economic crisis of 2008 has created a burning platform, causing governments to think seriously about using open data and social media to alter the deep structures of government and how we orchestrate capability to create public value.

8. “How can (we) change the democracy?”

“Will the electronic town hall become an electronic mob? Will cyber-democracy become hyper-democracy? Or can we craft a new age in which networked intelligence can be applied for the good of the people?”

Today: The problem is hardly too much citizen engagement through digital media, as I worried. The opposite is occurring. Industrial-Age governments have clung to the “you vote I rule” model. This is leading to a crisis of legitimacy for democratic institutions around the Western world as voting among young people declines. As I discuss later, during the past 20 years, voter turnout has dropped in most Western democracies, in some cases quite dramatically. In the 1992 U.S. presidential election, 89.9% of voters went to the polls. In the 2012 contest, the turnout plunged to 66.6%. Voter turnout has also fallen in countries such as the United Kingdom, France, Germany, Italy, Sweden, and Canada. In particular, young people are looking for ways other than voting to bring about social change and a new youth radicalization is fully underway.

Being elected to the U.S. House of Representatives is frequently a step into the revolving door to a K Street lucrative lobbying career. With two-year terms, these members of Congress spend their time in constant pre-election mode, and devote most of their time in office raising funds to fight the next election. Egregious gerrymandering is now common so that politicians can hold on to their seats regardless of the electorate’s mood.

Politicians are increasingly beholden to wealthy contributors and interest groups. The health-care insurance industry thwarted the United States from joining the rest of the developed world with a single payer health-care system. Fully 92 % of Americans want background checks of people buying guns, but the “will of the people” cannot be realized because the National Rifle Association’s (NRA’s) clout prevents that from happening.

The American political sociologist Seymour Martin Lipset wrote that legitimacy is “the capacity of a political system to engender and maintain the belief that existing political institutions are the most appropriate and proper ones for the society.” The ongoing abuse of trust by officeholders is not simply a series of isolated incidents, but manifestations of a deep and widespread rot. The result is a full-blown crisis in legitimacy.

To restore legitimacy and trust we need to do what *The Digital Economy* advised two decades ago—build a second era of democracy based on integrity and accountability, and with stronger, more open institutions, active citizen citizenship, and a culture of public discourse and participation.

9. “Can the formal education system transform itself?”

Can we create a virtual college or university system for all the other faculties that eliminates the lineups of tens of thousands of prospective students across the country? Will teachers and administrators be able to reinvent education? Talk to the students; they’re willing. As Geoffrey Bannister, president of Butler University, says: “Just wait till the generation of teenage Internet users hit the universities where the average age of a tenured professor is 50. Sparks are going to fly!”

Today: Ironically, no institution has been more resistant to change than the schools and universities. They have used technology primarily to improve administration rather than changing the model of pedagogy.

In higher education this is all changing rapidly today, not because faculty and administrators have awoken to the new opportunities, but because the entire model of higher education is being bludgeoned by Massive Open Online Courses (MOOCs). Major universities are putting recorded lectures and course content online for free. Some analysts say that half of the universities in the United States will be gone within a couple of decades. Some universities want to develop a way to give students credit for the MOOCs they complete.

In a similar vein, a new kind of online training program, designed by businesses, will prepare thousands of workers and job seekers for high-demand jobs in the tech industry. AT&T and Udacity have launched the first “nanodegree” program using the MOOC format.

The first courses focus on entry-level software skills. Udacity will manage the program with personalized coaching and career services. AT&T will provide direction on course content and offer 100 paid internships for nanodegree graduates. Students will be certified for the skills they learn,

and the nanodegree will be fully recognized for entry-level software jobs at AT&T.

Developments such as these underscore why educators must acknowledge that the current model of pedagogy is obsolete. The traditional Industrial-Age model has the teacher as the broadcaster. This may have worked for the past four centuries, but it fails woefully to meet the needs for today's students who are entering the global knowledge economy.

With technology, it is now possible to offload rote learning to multimedia computers or tablets that are used outside of class time. The computer customizes the material to each student's pace and abilities. Rather than devoting class time to a lecture, it can be used to discuss material that the students have learned. So it is now possible to embrace new collaboration models that emulate the nature of the small seminar and capture its benefits. The technology gives educators opportunities to develop a deeper and richer relationship with their students.

For sure, the model of collaborative learning existed before the Internet. For many years, some learning institutions offered small seminars where students learned by discussing topics in the subject being studied. The educator was less the fountain of knowledge and more the moderator. Such seminars were effective, but they were rare and only offered to advanced students.

READING THIS BOOK

The original manuscript for *The Digital Economy* is published below in its entirety. I have made one change. It's amazing to think that 20 years ago there was no certainty regarding what we would name this new network. The leading candidates were the Internet, the Web, and the Information Highway (which I not so cleverly attempted to dub as the "internet.") The term "Internet" didn't exactly take hold, and it's such a jarring term appearing in several chapters that I felt it would distract you as the reader. So I've done a global "search and replace" to substitute it with a more modern term.

As for things I got wrong or didn't anticipate, the biggest was mobility. The mobile revolution has intersected with the Web to revolutionize many aspects of business and personal lives. My only defense is that the mobile Web really kicked in a decade later, and the book was not intended to be a forecast but rather a guide for practitioners at the time. If you read these pages, you'll also see the notions of internetworking and collaboration throughout. The first time I heard the words "social network," was in

the early 2000s from the brilliant Silicon Valley diva Kim Polese. I asked her what was next and when she said those magic words “social network” I just shrugged, wondering what the fuss was all about. After all, I thought, isn’t that what we’ve been doing all along? In hindsight, I missed a hell of an opportunity there too.

You’ll find much of this material relevant to today, but much has also become part of the vernacular and reads to be old-school or even naïve. You decide. However this Anniversary edition is not intended to be a history text.

For each of the 12 chapters I have written a preamble—a new introductory essay that reflects on how the world has changed, raises new issues and insights for today, and projects forward to the next 20 years. I hope you find the new material helpful in figuring out how the ever-accelerating digital revolution can be harnessed for you, your organization, and for your planning for the future.

Don Tapscott, September 2014

Today we are witnessing the early, turbulent days of a revolution as significant as any other in human history. A new medium of human communications is emerging, one that may prove to surpass all previous revolutions – the printing press, the telephone, the television – in its impact on our economic and social life. The computer is expanding from a tool for information management to a tool for communications. The Internet (Net) and World Wide Web (Web) are enabling a new economy based on the networking of human intelligence. In this digital economy, individuals and enterprises create wealth by applying knowledge, networked human intelligence, and effort to manufacturing, agriculture, and services. In the digital frontier of this economy, the players, dynamics, rules and requirements for survival and success are all changing.

Such a shift in economic and social relationships has occurred only a handful of times before on this planet. It is causing every company to think far beyond the likes of “reengineering” to transform itself. A new enterprise is emerging – the internetworked business—which is as different from the corporation of the twentieth century as the latter was from the feudal craft shop.

The Digital Economy attempts to answer the question: What does it all mean for *my* business? Whereas businesspeople are inundated with information, ideas, and theories on new technologies and new organizational forms as well as changing business conditions and strategies, there has been little success in developing a coherent view that synthesizes these factors. *The Digital Economy* explains the new economy, the new enterprise, and the new technology, and how they link to one another—how they enable one another. If you and your organization understand these relationships—the role of the new technology in creating the new enterprise for a new economy—you can be successful.

The Age of Networked Intelligence is an age of promise. It is not simply about the networking of technology, but about the networking of humans through technology. It is not an age of smart machines but of humans who

work through networks to combine their intelligence, knowledge, and creativity for breakthroughs in the creation of wealth and social development. It is not just an age of linking computers but of internetworking human ingenuity. It is an age of vast new promise and unimaginable opportunity.

Think about scientific research. In the past, scientists would work with a powerful supercomputer to, say, simulate mechanisms of a biological cell membrane as a way of understanding the structure of biological molecules. But as networking permeates the planet, computers everywhere can be marshaled concurrently to attack the problem. Rather than a single expensive computer supporting a single group of scientists, a global network of computers can be internetworked to support distributed teams of scientists. The network becomes the computer—infininitely more powerful than any single machine. And networked human intelligence is applied to research, thus creating a higher order of thinking, knowledge—and maybe even internetworked consciousness—among people.

The same networking can be applied to business and almost every other aspect of human endeavor—learning, health care, work, entertainment.

Networking can change the intelligence of a business by bringing collective know-how to bear on problem solving and innovation. By dramatically opening the channels of human communication, consciousness can be extended from individuals to organizations. Unconscious organizations, like people, cannot learn. Through becoming conscious, organizations can become able to learn—and that's a precondition for survival. Networked intelligence is the missing link in organizational learning, and the conscious organization may be the foundation for the elusive learning organization. And perhaps networked intelligence can be extended beyond organizations to create a broader awakening—social consciousness—in communities, nations, and beyond.

But the Age of the Networked Intelligence is also an age of potential peril. For individuals, organization, and societies that fall behind, punishment is swift. It is not only old business rules but governments, social institutions, and relationships among people that are being transformed. The new media is changing the ways we do business, work, learn, play, and even think. Far more than the old western frontier the digital frontier is a place of recklessness, confusion, uncertainty, calamity, and danger. Some signs point to a new economy in which wealth is even further concentrated, basic rights like privacy are vanishing, and a spiral of violence and repression undermine basic security and freedoms.

Pervasive evidence exists that indicate the basic social fabric is beginning to disintegrate. Old laws, structures, norms, and approaches are proving to be completely inadequate for life in the new economy. While they are crumbling or being smashed, it is not completely clear what should replace them. Everywhere people are beginning to ask, “Will this smaller world our children inherit be a better one?”

Unfortunately, when people look at the new age, they tend to focus on one side or the other – the promise or the peril. Two camps have emerged: those exhilarated by the promise and those terrified by what the new technology and economy are bringing.

I have attempted to present both sides and some new directions, perhaps to break down walls between these two extremes. My goal is to equip you – today’s emerging business leader – with the insights you need to transform your business for success in the new economy.

If you accept the mantle of leadership, you can participate in achieving, for yourself and all of us, a world of unrequited peril and promise fulfilled. If we all do it right, and do the right thing, the Age of Networked Intelligence can be an age of unprecedented wealth, fairness, true democracy, and social justice. Read on.

Don Tapscott, 1995

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ABOUT THE AUTHOR

Don Tapscott is one of the world's leading authorities on innovation, media, and the economic and social impact of technology. Named one of the world's most important living management thinkers by Thinkers50, he advises business and government leaders around the globe. Tapscott is the author or coauthor of some of the most widely read and cited books on technology in society, including *Paradigm Shift*, *Growing Up Digital*, *Grown Up Digital*, *The Naked Corporation*, *Digital Capital*, *Wikinomics*, and *Macrowikinomics*

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