CHAPTER 1

From Land to Information

Where is the wisdom we have
lost in knowledge? Where is the
knowledge we have lost in information?
—T. S. Eliot

Sometimes, to look ahead we must look back, in this case, way back, to feudal Europe circa 1335 A.D. In the 1330s, England needed wine. It needed wine because in the century before, Norman fashions had become all the rage and your average noble Joe had given up his daily pint of beer for a glass of *vin rouge*. It needed wine because wine provided vitamins, yeast, and calories to get the English through the long winters. And it needed wine because, well, wine is fun. Given that England was too cold to grow a decent grape, the English required a system of foreign exchange to get their spirits from France. They traded English fleece to Flanders for Flemish cloth (the good stuff at the time), then brought that to southern France to trade for the fruit of the vine. Luckily, the English controlled both Flanders and Gascony (on the west coast of France) at the time. Thus they were able to trade freely, transport safely, and drink to their hearts' content. For these reasons, and a million other feudal details, the French hated the Brits. In 1337, they attacked Flanders to regain control of the mainland, beginning the Hundred Years' War, which really lasted 116 years until 1453, when the Brits were finally

expelled from continental Europe and went back to drinking beer, a habit they largely retain to this day.[1]

What does all that have to do with us, doing business in a high-technology information age? Well, beer is not the only habit that has hung around since the Middle Ages. Back then we were a land-based world, and the people who controlled more high-value land than anyone else ruled. Land is a zero-sum game: The more I have, the less you have; and the more I have, the more powerful I am relative to you. Land meant crops, and land meant rent from serfs—tradesmen, farmers, and craftspeople—who created the goods and consumables that drove the economy. There was a one-to-one correlation between the most powerful people and the ones who had the most land. To this day, Queen Elizabeth remains one of the richest people in the United Kingdom based on her family's landholdings.[2] In a time of finite resources, feudal nobility learned that to succeed and gain more power, they needed to protect and hoard what they had. They built castles with moats around them to protect their fiefdoms, conquered everything they could, and built their wealth one furlong at a time, habits that served them well for centuries.

Fast-forward a few hundred years to the birth of the industrial revolution. The invention of machines, powered mainly by the steam engine, brought a host of innovative ways to make things. The rate and scale of manufacturing increased exponentially. A savvy entrepreneur could suddenly mass-produce goods efficiently and bring them to market at lower prices than his craft-guild cousin. Machines created a systematic way to get rich relatively quickly. One no longer needed a lifetime to amass wealth or had to risk a dangerous voyage in search of treasure. Anyone with money to invest could identify cutting-edge inventions, build an efficient factory to make them (or make with them), and take market share from his old-world rivals. Initiative and innovation became wealth, and old gave way to new, all powered by a new investor class able to make money with money. In 1776, Adam Smith wrote *The Wealth of Nations*, and capitalism was born.[3] The word *capital*, by the way, comes from the Latin word *capitalis*, meaning head. Under capitalism, you could use your head to get ahead.

As we shifted from land to capital as the engine of wealth, however, the zero-sum mentality of feudal times remained. Capital, too, is finite, and the more capital I had the less you had. With more, I could innovate, expand, and do things that you could not. Capitalists developed

habits of power, certain rules of thumb about how to succeed in the new economy. When we had stuff, we hoarded it; we did not share. We did not give it away; we meted it out and only for high returns. We extracted interest. For hundreds of years, assets meant power, and to succeed we controlled them zealously. Generally, we built a fortress around our holdings and defended them against all invaders. We dominated markets, protected trade secrets, and made sure everything we did received a patent or copyright. We could also control information flow to the market, and so developed a host of one-way communication habits to control how it viewed us. We invented the press release, perfected the arts of *messaging* and *spin*, and learned to divide and conquer, telling one thing to Customer A in one market and something different to Customer B in another. Company structures mirrored these impulses with command-and-control structures and top-down hierarchies. The habits of fortress capitalism soon permeated every facet of enterprise.

LINES OF COMMUNICATION

Let's pause in our brief rush through history to note a couple of specific industrial age events whose significance to our discussion will become quickly apparent. With the coming of the telegraph to the United States in the mid-1850s, some savvy entrepreneurs tried to strike it rich by stringing up thousands of miles of copper cable connecting both the established mercantile centers of the East and the rapidly developing Midwest. In their helter-skelter pursuit of wealth, the enterprise produced a glut of transmission capacity without the market to sustain the infrastructural costs of its installation. Prices collapsed, as did the fortunes of those who invested. Call it the dot-dash explosion. Suddenly, the cost of transmitting a word of text dropped to a then-unheard-of penny per word. This leap in connectivity and economy had some unintended consequences, as journalist Daniel Gross reported in *Wired* magazine: "Reporters could file long stories from the Civil War battlefields, fueling the great newspaper empires of William Randolph Hearst and Joseph Pulitzer. Likewise, the spread of the ability to send cheap telegraphs spurred a national market in stocks and commodities and made it much easier to manage international business."[4] These were world-altering developments. Half a century later, American Telephone and Telegraph extended that network dramatically when it introduced

the telephone, although they were savvy enough to protect themselves by soliciting monopoly protection from the U.S. government in 1913, thus assuring profitability. The telephone was the telegraph on steroids, and its impact on business was similarly huge.

Fast-forward to 1994, and reflect on the birth of the information age. Technology again allowed multifold leaps in the way we did things. Opportunity was everywhere, and though few had a clear vision of where it would lead, inventions, products, and processes made things possible that were previously only a dream. Once again, entrepreneurs jumped in all over the place. A host of entrepreneurs (seemingly ignoring the lessons of the dot-dash era) invested heavily, laying fiber-optic cable around the world. Fiber-optic cable provided a quantum leap in transmission capacity from the copper cable originally installed by Ma Bell and her telegraph brethren. A single pair of optical fibers can carry more than 30,000 telephone conversations for distances of hundreds of kilometers, whereas a pair of copper wires twice as thick carries 24 conversations about 5 kilometers. When you apply new technologies like wavelength division multiplexing (WDM), fiber capacity increases by up to 64 times. With the new technologies on the horizon, scientists believe fiber-optic cable's theoretical transmission capacity to be infinite. Laying fiber-optic cable was like replacing every bathroom faucet with something the size of a missile silo. Suddenly, total global electronic communications consumed just 5 percent of transmission capacity. Transmission prices again collapsed (along with a lot of the companies hatched with the idea of getting rich quick on the back of this new technology), and we found ourselves in a world in which information flowed around the world instantly and cheaply like light through a darkened room.

GETTING FLATTENED

This changed everything. Information, unlike land and capital, is not zero-sum; it's infinite. The more I have, the more you can have, too. And, unlike money, it is elastic; a dollar is worth a dollar no matter how much you desire it. Knowledge, in contrast, becomes more valuable directly in proportion to your need or desire for it. If you were told that you had a disease, for instance, you would pay much more for the information to cure it than you would if you were healthy.

In the days of fortress capitalism, a professional class of lawyers, doctors, accountants, and other gatekeepers of knowledge took advantage of information's elasticity and profited from it in two significant ways: They hoarded knowledge (like any other commodity) and meted it out in small doses for high fees (typically, to people who really needed it because they were in trouble, ill, or their metaphoric houses were otherwise on fire). Simultaneously, they built indecipherably specialized language and complex codes—like legalese, the tax code, and other "fine print"—as barriers to keep people from gaining easy access to what they knew. This increased their value. The more someone needed certain information, the more they were willing to pay a specialist to explain it.

The wired world, by conducting information so quickly and cheaply, in contrast removed the layers between individuals and knowledge, making the professional specialist somewhat less valuable and the information itself more so. The unit cost of information dropped dramatically, from the $300 you might pay a private investigator to locate a deadbeat dad, for instance, to the $50 or so you might spend to do a nationwide online records search yourself. Power and wealth shifted from those who hoard information to those who could make it available and accessible to the most people.

This simple fact makes the habits of fortress capitalism obsolete. With the ascent of information as the engine of commerce, power has shifted to those who open up, who share information freely. The young titans of the information economy—Yahoo, Google, Amazon, eBay—understand that it is no longer about hoarding, no longer about creating secrets, no longer about keeping things private; it is about reaching people. Google, now a company with one of the largest market capitalizations in the world, trumpets its corporate mission as nothing less than "to organize the world's information and make it universally accessible and useful."[5] Think about it: a multibillion-dollar enterprise organized around giving stuff away. Amazon.com also gives it away: not its products—it sells books and other stuff, just like thousands of others—but its knowledge. Its success lies in the novel and inventive ways it has developed to share information. Wish Lists, Search Inside!, and Listmania Lists use information to powerfully connect Amazon customers in common-interest communities. EBay takes this idea a step further, organizing its entire market into a self-governing community based on the free flow of

information about its users. The new information-based economy affects everyone, not just those in the information business. Every business, in almost every industry, has undergone a major transformation in how it accomplishes its goals. Manufacturers no longer employ assembly-line workers; they employ trained knowledge workers who can keep the automated manufacturing systems running.

Pulitzer Prize–winning *New York Times* journalist Thomas L. Friedman, in his seminal book *The World Is Flat*, comprehensively details the global effects of this newly unfettered flow of information. He describes some of the unprecedented possibilities suddenly available to us, many of which are being exploited by the business world: new paradigms of collaboration, specialization, supply and distribution, and expansion of core competencies.[6] We can partner, "plug and play," and work together in totally new ways because we can share information as never before. Collaboration itself—our heightened ability to *connect*—serves as an engine of growth and innovation. Sharing not only drives the relationships companies maintain with customers, it also drives the companies themselves. Friedman details many forward-thinking companies pursuing new business paradigms to exploit this new reality: UPS uses the efficiency of its shipping system to run the repair center for Toshiba less expensively than Toshiba can itself; call centers in Bangalore seamlessly provide Dell Inc. computer customers vital product support; housewives from the comfort of their own homes in Salt Lake City interface directly with JetBlue Airways' central booking computers to take and process reservations. Clearly, the maglev bullet train of zeros and ones has left the station and no one knows where it will stop.

Friedman's macroeconomic and social analysis of our newly "flat," interconnected world presents a vision of the forces reshaping global business in the twenty-first century. The free flow of information significantly changes the way internal business units perform and are governed, and how individuals work together every day. Fading away are the days of the vertical silo model, when departments and programs within a corporation ran independent fiefdoms organized in top-down, command-and-control hierarchies in the spirit of feudal systems. Increasingly, our typical workday involves relating to people of relatively equal status in an ever-evolving array of teams and partnerships between units throughout the globe. Since knowledge allows people to act, companies that can instantly deliver

more high-value information to their workers can enable more of them to act on it.

Companies are flattening, like our world, so that many activities that were once the province of one department are now everyone's job. In 2005, for example, Computer Associates International, Inc., a company struggling to rehabilitate itself after being tainted by scandal, product deficiencies, and management problems, eliminated all 300 of its customer advocate positions worldwide.[7] CEO John Swainson explained that the goal was to make the company's sales workers "more accountable," but the underlying message was clear: Advocating for the customer is no longer the special responsibility of customer advocates; it is now a part of everyone's job description.[8] In company after company, managers are eliminating so-called "Centers of Excellence" and "Centers of Innovation," making these jobs the province of all workers. Everyone now must increase company excellence and everyone must innovate. How can you make a Wave of innovation if only the 20 or so people in your Skunk Works stand up?

As traditional job silos break down and become horizontal, command-and-control hierarchies begin to lose their relevance. A new model emerges: connect and collaborate. To succeed in this new model, workers and companies alike need to develop new skills and harness new powers within themselves. Companies—and the people who comprise them—need to recontextualize how they do business. Individuals must develop new approaches to the sphere of human relations. Both companies and employees must learn to share in whole new ways.

The world has become even more like the game of chess. Every piece on a chessboard is highly specialized, with virtues and vices, strengths and weaknesses, assets and liabilities. Some move diagonally and some move straight; some roam free and unfettered while others are tightly regimented. But, with a few exceptions, you can't typically achieve checkmate with fewer than three pieces. Most accomplishments in chess are team-based; only when you position pieces properly—and in communication with one another—do they start to win. Two rooks, if communicating, are very powerful, even if they are very far apart; without close communication, rooks are far less powerful. Business is now much more like that. Success depends on how people of diverse backgrounds and skills communicate with and complement one another. In a connected world, power shifts to those best able to connect.

Six hundred years ago, people succeeded with barter arrangements on street corners. Today, most business takes place in formalized organizations; a corporation, for the most part, is nothing more than a society of individuals who share a common interest to get something done. (The corporation itself is for the most part a legal fiction. Many of them are incorporated in Delaware, but few of us commute to Delaware every morning, do we?) While not everyone works in a company—some people are independents: accountants, contractors, agents, consultants, entrepreneurs, and the like—everyone working in the world of exchange and commerce needs to connect with others, be they customers, clients, vendors, suppliers, team members within our companies, or subcontractors. No man or woman, as poet John Donne famously said, "is an island, entire of itself"; we are all part of a larger landscape of people, because most of what we do cannot be done alone.

I cannot accomplish anything by myself. I find myself a member of an organization. I find myself in a marketplace, competing, trying to do something that depends on other people. That is quite a place to find yourself. It stands to reason that, in such a world, your success will depend on your ability to relate to others in powerful ways. The information economy places new emphasis on how we bridge the spaces between us. How do we reach out? How do we create strong synapses capable of making our action potentials real? With the fundamental shift from land to capital to knowledge and information as the currency of business, we've seen a concurrent shift from the power of command-and-control hierarchies to the power of collaborative, horizontal effort. The necessity to work together like pieces on a chessboard places a new premium on our ability to conduct ourselves successfully in the sphere of human affairs.

More profoundly than just getting things done, strong connections with others represent a value unto themselves. Relationships lie at the heart of who we are as humans; they give our lives meaning and significance. When we die our headstones seldom read SYLVIA JONES, 1960–2042, VP OF STRATEGIC PLANNING AND IMPLEMENTATION. MADE THE NUMBERS 16 QUARTERS IN A ROW. Instead, we write STAN SMITH, BELOVED HUSBAND, FATHER, BROTHER, UNCLE. HE MADE THE WORLD WARMER WITH HIS SMILE. Though our jobs may make us wealthy, our relationships give us lasting value and enduring worth. Building stronger relationships, then, can lead to more than success: It can lead to a kind of significance.