

The Fourth Economy

Inventing Western Civilization

By Ron Davison

Copyright 2011 Ron Davison

ISBN: 978-0-9838232-0-9

Contact: ron@thefourtheconomy.com

To Sandi who has waited for what must seem like centuries for this book to be done.

To Jordan & Blake who grew up with the story of the fourth economy and will hopefully grow old with the reality of it.

Table of Contents

Table of Contents 3

Introduction 5

1 Social Invention 9

2 Limits to Progress 23

3 The Pattern of Social Invention & Revolution 39

The First Economy Error! Bookmark not defined.

4 Land Error! Bookmark not defined.

5 The Agricultural Economy Error! Bookmark not defined.

6 The Renaissance Error! Bookmark not defined.

7 Inventing the Nation-State Error! Bookmark not defined.

8 Protestant Revolution Error! Bookmark not defined.

9 State Trumps the Church Error! Bookmark not defined.

The Second Economy Error! Bookmark not defined.

10 Capital Error! Bookmark not defined.

11 The Industrial Economy Error! Bookmark not defined.

12 The Enlightenment Error! Bookmark not defined.

13 Inventing the Bank Error! Bookmark not defined.

14 Democratic Revolution Error! Bookmark not defined.

15 Bank Dictates to the State Error! Bookmark not defined.

The Third Economy Error! Bookmark not defined.

16 Knowledge Workers Error! Bookmark not defined.

17 The Information Economy Error! Bookmark not defined.

18 Pragmatism Error! Bookmark not defined.

19 Inventing the Corporation Error! Bookmark not defined.

20 Financial Revolution Error! Bookmark not defined.

21 The Corporation Eclipses the Bank Error! Bookmark not defined.

The Fourth Economy Error! Bookmark not defined.

22 Entrepreneurship Error! Bookmark not defined.

23 Imagining the Entrepreneurial Economy Error! Bookmark not defined.

24 Systems Thinking Error! Bookmark not defined.

25 Inventing Self Error! Bookmark not defined.

26 Business Revolution Error! Bookmark not defined.

27 The Rise of the Individual Error! Bookmark not defined.

Acknowledgements Error! Bookmark not defined.

Bibliography Error! Bookmark not defined.

The Author Error! Bookmark not defined.

Introduction

As I write this, the West is in the midst of persistent economic problems. In the US, during the 1960s, 1970s, 1980s, and 1990s, the economy created an average of 2.5 million jobs per year. In the first decade of the 21st century, it averaged job *losses* of 100,000 per year. In Spain, unemployment rates are at 25% (50% for young adults). The UK begins a second dip into a recession. The euro is threatened by unsustainable levels of debt in various countries. Even Japan, which had so brilliantly adapted Western economic models, is in its second decade of economic stagnation.

It might be that we're simply facing a particularly painful global recession. It is also possible that we're in a new economy.

The West has invented three market economies: an agricultural, an industrial, and an information economy. Beyond these three a fourth, entrepreneurial economy is emerging, but realizing this new potential (and it really is an economy of incredible potential) will require a variety of big, sweeping changes.

Period (roughly)	Market Economy	Develop & Acquire
1300 - 1700	First, Agricultural	Land
1700 - 1900	Second, Industrial	Capital
1900 - 2000	Third, Information	Knowledge Workers
2000 - 2050	Fourth, Entrepreneurial	Entrepreneurship

Each economy has required communities to focus on developing a new factor of production. An agricultural economy is defined by developing land, an industrial economy by developing capital, and an information economy by developing knowledge workers. In the fourth, entrepreneurial economy we'll need to develop and popularize entrepreneurship just as we did knowledge work last century.

Develop in this context is a big word. It encompasses technological invention and social invention (a notion we'll explore more fully in the first chapter). An agricultural economy may develop land by adopting three-field rotations and seed drills (examples of technological

inventions) or by developing private property rights (a social invention). Both kinds of inventions always force a change in thinking and sometimes in institutions, neither of which is particularly welcome. Talk of revolution in this book is not a metaphor.

Land, capital, and knowledge workers have each – in turn – limited progress. (And this notion of a limit to progress we'll explore more in the second chapter.) Communities that focused on overcoming these limits by developing more of them prospered. Once the limit shifted to something new – that is, once communities succeeded at overcoming the old limit – strategies had to radically change. To stay with the same technological and social inventions that made you prosper in an agricultural economy once capital had become the new limit was to stagnate, or worse. In the transition from an agricultural to industrial economy, land barons give way to capitalists and the power of aristocrats becomes yet another casualty of gales of creative destruction. Farm land is covered with factories and the world changes.

The pattern of progress, this matter of adapting to overcome new limits to progress, drives big social inventions like the nation-state or corporation, and revolutions like the Protestant and democratic revolutions. It is a pattern that has defined the history of Western Civilization since about 1300 and will probably define our future. Patterns let us predict. If this pattern is genuine and has yet to play its final cycle, *The Fourth Economy* predicts your future, a future that includes a transformation of the corporation and a new definition of self. It will challenge the efficacy of what we've learned from the information economy. It will necessitate a reinvention of our society as sweeping as the changes from agricultural to industrial, or industrial to information. And if you're unsure just how sweeping that is, you can read about it here. This change shows little respect for popes, kings, bankers, or even the modern CEO, persons divinely appointed or board appointed. It changes lifestyles and incomes, brings new and previously unimagined products into the world, and in the process creates what can only be considered a new individual. (The impoverished peasant without any choice about her beliefs and not even the concept of a career, voting, or shopping can scarcely be compared to her 21st century counterpart.)

It seems as though the limit has again shifted. The old strategies in the West are proving much more effective at creating debt than jobs. Our economic progress seems at odds with the environment. And the centuries old belief in progress is beginning to falter. It seems as though the rich always get richer; when a community is focused on the

real limit, though, so do the middle class and poor. That's no longer happening, and is just one more clue that something significant may have changed.

There is a big difference between an agricultural economy and an industrial economy. One has people scratching out a living with hoes and the next has factories billowing smoke. Among other things, the industrial economy automates work and makes people richer. In an agricultural economy, it might take 90 percent of the population to work farms to feed everyone. In an industrial economy, that percentage might drop to 30 percent or less, freeing up people to make new products.

But there is so much more to a change from an agricultural to industrial economy. Society is hugely different. In the history of the West – and even around the world so often today – the transition from agricultural to industrial economies fed and was fed by a rise in banks and financial markets and a transformation from tyranny to something more democratic.

Economic change is never just about economic change.

The progress through the first three economies has transformed how the West defines religion, politics, and finance. The fourth economy will change how we define business, redefining notions like work, ownership and wealth creation. The disruption is not done yet.

Back in 2005, there was a tsunami in the Indian Ocean. It began with an underwater earthquake that people did not notice and ended with a tsunami that people could not avoid. Economic change seems to work in the same way. The underwater earthquake that gets little noticed is the shift in the limit to progress; the tsunami that people cannot avoid comes in the form of social change that triggers the invention of new institutions and a revolution of others. It even changes how people think.

The book you are about to read is a history book that uses a pattern of change to predict the future.

The introductory section, including the first three chapters, explains social invention, limits to progress, and the pattern of progress. The first chapter argues that social invention is as important to progress as technological invention. The second chapter defines limits to progress and how they shift and the disruptions that follow. The third and final chapter of the section briefly tells the story to follow – the history of Western Civilization since the Dark Ages told as a pattern of revolutions

in the space of a few thousand words.

After that introductory section, I have four sections to tell the story of the four economies. The first three economies likely describe some mix of fresh and familiar stories from history but told as part of a pattern of change. I tell you this history for a number of reasons, among them the fact that it illustrates how sweeping are the changes of a new economy and the simple fact that the story of Western Civilization is an extraordinary tale worth knowing. The last section of the book predicts the future through roughly 2050 based on this same pattern of progress.

The next chapter explores the acts of social invention that give us institutions like the nation-state, bank, or corporation. Social inventions are the creative acts that have defined and invented what we know as Western Civilization. Understanding social invention does not just help us to understand how the world we live in was created; it suggests something big about our future. Traditional entrepreneurship is a form of social invention. If the new limit to progress is entrepreneurship, we'll have to become as adept at social invention in this century as we became at technological invention in the last. Social invention is not just helpful as a way to understand our past; it is how we'll create our future.

1 Social Invention

Social invention is the oft-overlooked companion to technological invention in the story of economic progress. Yet social invention is key to understanding progress both past and future.

There are these two young fish swimming along, and they happen to meet an older fish swimming the other way, who nods at them and says, "Morning, boys, how's the water?" And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes, "What the hell is water?"

— David Foster Wallace

Progress has always depended on technological invention. It is pretty obvious that the wheel and pottery made life better. It is sometimes less obvious that social inventions like the tribe or city were just as important to early man's progress. The history of Western Civilization is punctuated by really big social inventions like the nation-state and corporation that have defined our world and stimulated progress as much as the steam engine or computer. Such social inventions will become even more important in the next economy.

Edison's Most Important Invention

By the time he died, Thomas Edison had an astounding 1,093 patents. The man did not just have a single light bulb moment of inspiration; his lights stayed on.

It isn't easy to say which of his technological inventions was most impressive. He invented products as varied as the light bulb,

phonograph, radio, and even something akin to a motion picture projector.

As it turns out, though, Edison's character flaw seemed to obscure what I think was by far and away his most impressive invention. Edison did not like to share credit and those of us not really paying attention would observe this great body of work and conclude that the man was an invention factory. In fact, his greatest invention was just that: an invention factory that was the first Industrial Research & Development lab. He hired people to invent things. Some of the things that he invented he really did invent on his own; at other times, he held patents for products his employees had invented or to which they had significantly contributed.

The R&D lab was more impactful than any of Edison's technological inventions. In fact, it became the source of great technological inventions. Edison's lab became a model for in-house R&D labs that sprung up within modern corporations and universities. And the R&D lab is a social invention.

In 1900, Edison's R&D lab was exceptional. By 2000, it was the norm. Before 1900, the sole inventor working with a partner or two and perhaps a few investors was the norm. During the twentieth century, technological invention was institutionalized, managed and financed within R&D labs. (In a sentence that might not make much sense now, during the next few decades, we'll institutionalize social invention, or entrepreneurship.)

Technological invention is a novel design that allows *parts* to do jointly what they could not do on their own.

A social invention is a novel design that allows *people* to do jointly what they could not do on their own.

Social Inventions

The philosopher John Searle makes the distinction between brute facts

and institutional facts.¹ Brute facts – the sun is 93 million miles from earth, hydrogen has a single atom – exist independent of what we think or agree. Institutional facts, by contrast, depend upon agreement. “The meeting is adjourned,” for example, is a fact because it was declared and cannot exist independent of such a claim.

Searle further makes the distinction between rules that create behavior and thus reality and rules that merely regulate.² Rules regulate the fact of people driving cars. Rules create the game of chess. Driving might be chaotic without rules but it could exist. Chess, by contrast, depends on rules. People were not pushing wooden pieces around on a checkered board when someone came along with the rules of chess to regulate what they were doing.

When an offensive lineman pulls off the line to block a defensive end, his action makes no sense – indeed, has no purpose – independent of the team. His actions are part of a collective effort and only make sense within that context and the rules that create the game of football. Even his competition against the other team makes sense only within the context of cooperating with that other team in order to play a game. Most economic behavior is like this – meaningless on its own. Imagine the lineman “pulling off the line” without any other players or a person trying to use money to “buy” something among people who have no concept of money. The fact that the offensive lineman pulled off the line is an institutional fact, dependent in this case on the institution of football.

Economic behavior is an institutional fact. Money is only money because we agree it is money. As soon as we all agree that Confederate currency no longer has any value, it no longer has any value. When we agree that information on magnetic strips affixed to plastic has value, it has value. Whether someone is a slave, employee or part-owner of an enterprise is not inherent in any physical reality or dependent on any brute facts, but is – instead – true only as an institutional fact.

I’ll piggyback on Searle’s distinction between brute facts and institutional facts to make a distinction between technological invention

¹ John R. Searle, *The Construction of Social Reality* (The Free Press, New York, NY, 1995), mostly drawn from the first two chapters, “The Building Blocks of Reality” and “Creating Institutional Facts.”

² Rules that create reality Searle calls constitutive and those that regulate it he calls regulative.

and social invention. A technological invention results in a product that can be seen independent of any agreement about it. While its use might require some instruction, instruction that might be something akin to declaration or agreement, its existence does not. A steam engine translates heat into motion and even if it requires an operator to do this, its existence falls more into the category of brute fact than institutional fact. By contrast, a home loan is an institutional fact. Without a contract specifying terms and even who owes what to whom, the loan makes no sense. Further, the loan assumes a whole other set of institutional facts, from money to banks to a real estate market to determine the value of the home for which the loan exists.

Invention and Progress

When we step into a car, we're fully aware that we have entered into a piece of technology. We know that someone once invented this. Social inventions are more subtle. Andrew Marr, offers one reason that Britain lagged France, Germany and the US as a source of automobile inventions.

It was also because of the equally out-of-date state of transport law. In the 1860s self-propelled vehicles had been given speed limits of 2 m.p.h. in towns and twice that in the county, in both cases to be preceded by a walking man carrying a red flag or (at night) a red lantern. The flags were later made voluntary but the enthusiasm of the British police for apprehending and fining early motorists was vigorous long before the speed camera. In 1895 John Knight successfully built his own petrol-driven car and triumphantly rode it through the streets of Farnham at eight miles an hour. He was promptly arrested and fined for speeding.³

Technological invention is often twin to social invention, and the direction of causation is not always particularly clear. There are things that communities do to encourage or discourage technological innovation.

³ Andrew Marr, *The Making of Modern Britain: From Queen Victoria to VE Day*, Pan Books, London, 2009, p. 94.

We less often think about social invention than social norms. We gain consciousness of how things are and to be a part of a society typically means that we accept these norms rather than question them. Social invention often seems to be the product of past generations whose inventions we rarely question.

When you come home to your family, you're less aware that family is something that's also invented. In some tribes, children from numerous families grow up around common fires while the couples retire into private huts outside of these circles. In 80-some percent of cultures, some form of polygamy was – and is – practiced,⁴ and while most of the world defines family as only two parents, an increasing percentage of children grow up in families of just one parent. Families in different cultures and households have three generations or one, adopted children or only biological, same sex couples and no sex couples. In matrilineal cultures, the mother defines family. In some cultures that simply means that the mother's brother is responsible for the children's education, contributing to costs and such. The Mosuo people in China, have a seemingly extreme form of this matrilineal culture.

The Mosuo are a matrilineal, agricultural people, passing property and family name from mother to daughter(s), so the household revolves around the women. When a girl reaches maturity at about thirteen or fourteen, she receives her own bedroom that opens both to the inner courtyard of the house and to the street through a private door. A Mosuo girl has complete autonomy as to who steps through this private door into her babahuago (flower room). The only strict rule is that her guest must be gone by sunrise. She can have a different lover the following night—or later that same night—if she chooses. There is no expectation of commitment, and any child she conceives is raised in her mother's house, with the help of the girl's brothers and the rest of the community.⁵

⁴ Laura Fortunato, "The ancient roots of monogamous marriage," <http://www.santafe.edu/news/item/fortunato-origin-monogamous-marriage/> 8 July 2011.

⁵ Ryan, Christopher; Jetha, Cacilda (2010-06-29). *Sex at Dawn: The Prehistoric Origins of Modern Sexuality* (.) (Kindle Locations 2141-2146). Harper Collins, Inc.. Kindle Edition.

You might find yourself horrified or intrigued by this Mosuo arrangement. For now I will just point out two things. One, apparently for the Mosuo this is normal. Some probably like it and some probably hate it – just as individuals feel about most any social norms they find themselves participants in, from compulsory education to a matrilineal family. Two, you can probably think of at least one person who would do better in this arrangement than they do with our Western traditions. No norms work for everyone.

Family, nation, culture, workplace, and gang are all invented, but seem less like inventions than simply the way things are. Social inventions less obviously exist “out there” and more subtly take root in our minds, and as such are more like an operating system that is just there when we boot up than a software application that we intentionally open. They are not so much things that we’re aware of as things that define and direct our awareness.

The central claim of this book is that a fourth, entrepreneurial economy is emerging. This, in turn, rests on two claims related to social invention.

The first is that progress depends as much on social invention as it does on technological invention. Progress obviously depended on technological inventions like the steam engine and computer; it less obviously depended just as much on the social inventions of nation-state and corporation.

The second point is that we’re entering a century in which social invention will become as intentional and as normal as technological invention became in the last century. Entrepreneurship is social invention. We tend to think of it as something that occurs in the business domain but as we become more adept at and conversant with social invention, we’ll do more than simply create more and better business ventures. Already the term social entrepreneur has entered the language, and the notion of social invention as something broader than business will become increasingly normal. Imagine social invention applied to schools, with people designing, creating, and customizing learning around individual children, an explosion of educational entrepreneurship that means more options for more kinds of learners. Imagine employees who act like entrepreneurs, creating new products, markets, and business units from within their corporations. Imagine new ways to govern. Imagine that we’ll explore some of this in the final section of the book.

The past is a foreign country. They do things differently there.

— L. P. Hartley

Our prehistoric ancestors had to worry about wild beasts crashing through the bushes. They did not have to worry about being late for work. Increasingly, our life is more defined by our inventions than the natural world. We begin our day alarmed, our bodies' natural processes truncated by a ring or radio. From our first stirring of consciousness, we're plunged into a world that's made up. We use a razor to shave (a technological invention), shampoo to wash our hair (more technology), and a brush to comb it (technology) so that we'll look fashionable (a social invention), and we do it quickly in order to be on time (social invention) and seem like a good employee (social invention). Inventions technological and social affect every part of our lives, though they are so ingrained into the fabric of our daily lives that we give them little notice.

Social inventions, especially, often fly beneath the radar of our awareness. Children learn stories about technological invention. Ford invented the assembly line (as with so much history, a fact that is not true but is close enough and simpler to teach). Alexander Graham Bell invented the phone, and Thomas Edison the light bulb. By contrast, typically not even adults are told stories about social invention. Who invented the nation-state or modern corporation? Such things seem to have always existed.

Like the microwave oven and air conditioning, churches, banks, and corporations have made this a different world. In fact, social inventions like churches, ATMs, jobs, roads, and department stores have become such ingrained parts of our lives that we can scarcely imagine a world without them. It's harder still to imagine that they might all be radically reinvented, a process invariably more disruptive than the switch from 8-track to iPod.

Technological inventions change parts; social inventions change people. For this reason alone, social invention is trickier than technological invention and more rare.

One consequence of overlooking social inventions as inventions is that we are less inclined to think about the need to change them. We are used to technological inventions continually changing: we shop for new cars, new computers, and new clothes that reflect the latest and greatest idea and execution. We don't have this same expectation with

social inventions; we somehow are startled whenever the norms and practices for religion, government, or business change. In fact, while we expect a stream of new products, we tend to consider social inventions so disruptive that we give them labels like revolution.

Inventing Civilization

Initially, change was defined only by the programming of biology, changes in DNA that occurred through biological evolution. Starting about a million years ago, cultural evolution began to have greater influence on behavior change than biological evolution. Instinct was supplemented by imitation and then instruction. Today, biology evolves so slowly as to be nearly invisible in a lifetime, whereas cultural and social evolution is not only visible but accelerating. Still, the idea of social invention and evolution is largely neglected.

After curing polio, Jonas Salk had a blank check to essentially pursue whatever he wanted. As it turns out, he wanted to establish an institute across the street from the University of California at San Diego on the cliffs of La Jolla, overlooking the Pacific Ocean. He wanted to populate this institute with some of the most interesting and eclectic minds on the planet. (For instance, James Crick, co-discoverer of DNA, spent his last years working at the Salk Institute.) And he wanted to base this institute on two principles: one, it would be devoted to the study of social evolution (or what he called meta-biology), and two, it would be democratically run. Sadly for Salk - and for us - he did not clearly subordinate the one goal to the other. That is, he did not say, "We will pursue the question of social evolution in a democratic way." So, once he'd assembled his great minds, they listened to his goal and quickly dismissed it. Social evolution was not, it appears, either interesting enough or real enough to be made a proper object of study. This author would beg to differ.

Among the lessons of history is this: although social inventions are just made up, the consequences of adopting or discarding these social inventions are not. At one level, declaring "this meeting is adjourned" seems arbitrary; at another level, though, even a social invention as simple as declaring a meeting adjourned depends on layers of social inventions as varied as the idea of a chairman with the authority to make such a claim and, of course, the idea of a meeting or even an

authority. At one level social invention might appear to be just made up, but as with technological invention it is involved and always depends on a sequence of previous inventions and the context of the times.

A tyranny and a democracy are both “just made up” and involve different rules and expectations. But the consequences of adopting one or the other are very profound for a community and lead to very different experiences for the individual living within them. A tricycle and a luxury car, too, are both “just made up,” but that doesn’t make them any less real or the differences between them any less stark. And just as someone who has only known a tricycle can’t just declare that they’re going to invent a luxury car without lots of intermediate inventions, so it is with simple communities that have only known tyranny and want to create a modern democracy. Inventions are complex and seem to evolve. Social inventions are dependent on both seemingly ingrained tendencies (genes rather than social messages seem to account for the persistence of boys’ tendencies to fight and girls’ tendencies to negotiate) and a sense of normal more defined by history than possibility. Social invention is probably more difficult than technological invention.

Things that are made up can create experiences that are quite real. The people on Easter Island somehow “made up” a religion of ancestor worship that led them to decimate all the trees in order to build statues. The ensuing loss of resources and topsoil that wiped out a huge percentage of their population was not made up; it was very real. There are very real rewards for getting social invention right and very real penalties for messing it up. The success of a plane doesn’t depend on imagining a world without gravity any more than the success of an economy depends on imagining a world without greed. Inventions have to deal with reality as it is in order to change it or rise above it.

It is not just the things that we can see that are made up. Even the way that we see is made up. An ATM is a technological invention yet the idea that we need money (even the idea of money itself) to buy something as essential as food is a social invention. In a village centuries ago, a hungry person would not be sent away for lack of money. The way we see the world, our worldview, has changed. The medieval mind made sense of the world very differently than does the modern mind. (Well, than do some modern minds.) Among other things, we invent meaning, explaining our world and our roles in it. Social norms, too, are just made up but have very real consequences.

The medieval mind believed that man had fallen from grace and, now expelled from the garden, was destined to a life of misery as a test of worthiness for the afterlife. The Enlightenment mind, by contrast, believed that progress was possible and desirable, believed that this life could be good and made even better. These beliefs, too, are social inventions. Whether we call them beliefs or philosophies or mental models, these might be the most subtle yet pervasive social inventions of all, changing how we make sense of the world and even what we think is possible or desirable.

A set of inventions defines a culture or civilization.

We recreate civilization in each child. We call it education. Look at the huge amount of time and attention we devote to “civilizing” a baby to become a member of society. The gross effort it takes to recreate society in each child should be testament to the fact that a culture is not a “natural” or spontaneous state; it is, instead a social invention that takes great effort - every time. Language and manners, what we question and what we accept, social roles - all of these end products represent the teaching of parents, teachers, and even the media and are essentially conventions that work to construct meaning, to create the modern life.

Rather than see them as inventions, we often see social inventions as simply “the way things are.” Should you want a reminder that social inventions are just made up, however, raise a child. Mothers know that the curious, rebellious, stubborn, and lazy child will challenge social inventions. My family lives close to the Mexican border and when my daughter was protesting her car seat, she would say, “Mexican kids don’t wear seat belts.” She, like every child, knew that things could be different and questioned why they were not. And of course, travel, news reports, novels, and history all remind us that our social inventions are not universal or even stable. What makes you successfully fit into your neighborhood in Manhattan would make you stand out in Afghanistan. Or even Montana. What made you fashionable in 1972 makes you look silly in 2012.

The Need for Social Invention

Perhaps teachers and parents should add this to their list of admonitions and lessons: “Warning: contents of this society have been

known to create feelings of anomie and alienation; provoke wars, homicides, and suicides; and pollute the habitat you need for survival. Most of what we tell you should be questioned and could be improved upon. This is, really, just the best we've been able to do up until now and it could be that improvement will actually overturn much of what we now accept and advocate. Learn about your culture and your place in it, but don't cling too tightly to it. What we're teaching you probably needs to change, and soon."

History is not a set of static stories about the way the world once was. Told right, history is the story of how we came to live the way we do, and it might even predict our future. Most of us define our lives by the social inventions that define us. I'm an American, we might tell people, or a Baptist, or young, or an engineer, or an employee of IBM, and yet this is as often a phase we are going through as a defining part of who we are. We had the potential to be something more or perhaps someone different, and had we been born into a different time or place we would have been. Through history, the ways of being - the options for how we live our lives - have changed dramatically. What is perhaps most interesting about this change is that in each succeeding generation, one's way of being has been defined less by the society one is, by chance, born into and defined more by personal choice. There is little reason to believe that the ratio of intentionality and choice to chance and destiny won't continue to rise. Increasingly, individuals will define their lives rather than leave that definition to the society into which they're born. This is already happening.

Change Consensus – Invent a New Social Reality

A \$20 bill is worth exactly \$20 for no other reason than this: we all agree that it is worth \$20. As soon as we stopped agreeing that it was worth \$20, it would no longer be worth \$20. One day a Confederate dollar is worth a dollar and the next it is worthless. The thing itself did not change - only what everyone agreed about it.

This is an oddity of social reality. It is not made out of a material like wood or metal. Instead, it is made out of consensus.

One day, everyone agrees that a certain amount of gold is worth \$20. The next day, everyone agrees that mere paper will be worth \$20. One

day the world is populated by polygamists and the next by monogamists. This is called progress.

Of course, there are limits to social invention. Like technological invention, it is not magic. A group of people can't just gather around a fish and declare it to be a desk. (Well, unless they are merely changing its name.) But a group can gather around one man and say he's a king and around another and say he's a president and then agree that the two have very different rights and responsibilities. Or groups can gather around one woman and say she's a slave and around another and say she's a wage earner, and explain the demands that can be made of each, the rights each does or does not have, and the compensation each deserves.

Charles Tart makes the point that a hypnotist, in a matter of minutes, can program you to do things you don't normally do and to believe what is not so.⁶ He then asks, how much more powerfully can society program you during the course of your life, given that it has so much more time and so many more persuasive tools at its disposal than does a hypnotist?

Without going too far into this now, the fact that the self is itself a social invention suggests something curious about the next stage of progress. If social invention is to become more widespread, the individual will have to become more aware of how his or her life is also an invention. Up until now, it is the few who have defined society and the many that have been defined by it. A few receive divine revelation and many receive Mass. Think about a world in which the direction is increasingly reversed, a society in which the individual is less social invention than social inventor. Or, rather, imagine a world in which more people engage in acts of social invention. If social invention becomes to this century what technological invention was to the last, we'll witness such a change. Or, rather, we'll create such a change.

If daily life is an invention, the question is, whose invention is it? It is hard to underestimate the importance of inertia in defining society. Yet entrepreneurs challenge this inertia and invent something new.

As I left school, the headmaster told me, "Branson, I expect to either

⁶ Charles Tart, *Waking Up: Overcoming the Obstacles to Human Potential* (New Science Library, Boston, MA, 1987) 98-100.

see you on the cover of a business magazine or in jail.”

— Richard Branson, founder of Virgin, who has, incidentally, been on the cover of quite a number of magazines

Entrepreneurs

We've been intentional about technological invention through much of the twentieth century. Corporations budget for it and assign project teams to develop new products. By contrast, social inventions come from entrepreneurs and revolutionaries - from outside the system. Social invention is not planned for. It receives little support. People seem to think that the social inventions through which we currently work and govern will not change, in stark contrast to their expectations about technological inventions. I think that the contrast between our expectations of technological and social inventions will become very similar within our lifetimes.

I suspect that there will be at least three phases to social invention becoming more normal. In the first, communities will do more to support traditional entrepreneurship, realizing that the real leading indicators of job formation are measures like venture capital investment. In the second, we'll popularize entrepreneurship further, making more employees more entrepreneurial, doing with corporations what we've begun outside of them. This will drive, and be driven by, multiple big changes to the corporation, a transformation of today's dominant institution. Third, this matter of entrepreneurship will be more clearly seen as a an act of social invention and communities will begin to transform education, government, and the public sector through acts of entrepreneurship, acts that might have been considered revolutionary in past centuries.

It seems as though we're about to enter a new economy, one in which the act of social invention will become as normal as the introduction of new products. At first, this will seem disorientating, but our grandkids will think it is normal. New ways to learn, to work, and even to worship will be invented and evolve at unprecedented rates. This will be a period of unprecedented prosperity and individual freedom. It will also be unsettling.

For centuries, if you were to ask the average person in the West to articulate the purpose of life, you would probably hear a response that had to do with being a good Christian, a good citizen, and / or a good employee. That is, purpose has been given to the individual by social institutions. The big social inventions provided meaning and purpose and the criteria by which people judged their lives.

It is difficult to distance ourselves from our big institutions and do the hard work of defining self. It is much easier to be an employee than to be an entrepreneur. It is much easier to be a good Catholic than to be the first Protestant, or to be a good citizen than to be a revolutionary.

Society teaches us many things, but one thing it does not teach us is how to change society. Every society is born out of some revolution and yet no society actually teaches or encourages revolution.

Entrepreneurs start businesses, and I'm going to expand the term to essentially say that an entrepreneur is a social inventor. Their work is to create a new social invention, an organization, an institution, a new market, or a new business. Social entrepreneurs might start a new non-governmental organization (NGO) or nonprofit or charter school. I'm going to include under my broad umbrella of entrepreneurs not just business entrepreneurs like Bill Gates and Henry Ford but political and religious entrepreneurs like Thomas Jefferson and Martin Luther.

The next economy will popularize entrepreneurship in the same way that the information economy popularized higher education and knowledge work during the twentieth century. As entrepreneurship becomes more popular and diverse in its expression and application, social invention will become as normal as technological invention is now.

For centuries, social invention was more often the product of revolutionaries than something societies intentionally encouraged. Yet social invention is at the root of social progress. The first communities to successfully encourage social invention as they now encourage technological invention will be the first to create the next economy, ushering in a time of unprecedented social progress.

The next chapter explores why some social inventions give communities more wealth and power.

2 Limits to Progress

An economy is defined by its limit. If you want to understand an industrial economy, predict what people will do to overcome the limit of capital. If you want to understand the fourth economy, predict what people will do to overcome the limit of entrepreneurship—the act of social invention.

Not every invention leads to progress. At the dawn of an industrial economy, a community is limited by capital; without machines or money people have to make things by hand and, as a result, have very few things. By the end of an industrial economy, by contrast, they have enough machinery and money to make lots of products. When that happens, the limit has shifted from capital to knowledge workers who can do things like create advertising that creates demand for all the products that capital can make. At different stages of development, economies have different limits and those limits define them. To overcome the limit of capital, a community might invent a bank or a steam engine (or to be more historically accurate, one of the myriad innovations that become a part of what we now think of as a bank or steam engine – these defining inventions are actually complex systems). Once a limit is overcome, though, a community has a choice: stagnate by continuing to focus on what used to limit or reinvent itself by shifting its focus to the new limit.

Fad or Fundamental?

Social inventions like the church or state define lives for generations. Others, like pet rocks and the Macarena, are just fads. So why has the Catholic Mass been persistently more popular than the twist? (And if you think that this is an absurd, glib, or intentionally irreverent

comment, you underestimate the oddity of history. For a long time, dance was quite common in church as a means of celebration and expression. And yes, I do mean dance in what came to be known as the Catholic Church, not some obscure pagan sect.)

The reason that some social inventions have a lasting influence and some are thrown onto the scrap heap of nostalgia and history is fairly simple: some inventions are more effective at helping communities get what they want, helping them to overcome the limit to progress.

Imagine that a tribe in the American Northwest lives in an area rich with beavers and has lots of furs but is often hungry. A neighboring tribe lives in an area rich with salmon and has lots to eat but is often cold. A social invention that lets the two tribes swap excess furs for excess salmon would improve the welfare of both tribes.

Given that you live in modern times, when thinking about a social invention to solve this exchange problem your mind probably immediately goes to the idea of a market like the mercantile exchange market, or barter, or eBay or even stores. Those social inventions are indeed possible solutions but the tribes in the Pacific Northwest developed an interesting alternative: the Potlatch ceremony. Two tribes would meet for a feast and “gift” each other with their excess. This became competitive and did a lot to establish status. Giving “gifts” also created a sense of obligation and mutual care that sales or barter may not have created. Not only did this make them both better off, as should all trade, it also created a sense of obligation that helped to maintain peace and ease the request for help in the future. To prove their wealth, chiefs would not just make gifts to others but might even throw gifts into the fire in a display of conspicuous consumption likely to make even someone joy-riding in a Hummer scratch his head. (Social inventions often look silly to people outside of the culture. This is one reason that university students can sometimes be so annoying: not yet vested in the system, they’re more likely to see and mention the obvious flaws in the society in which they live.) An economist would likely point to the inefficiencies of the Potlatch ceremony but the rituals probably helped the tribes to bond. The ceremonies also resulted in the exchange of surplus in ways that led to specialization and an improvement of life for both tribes. And given that the Potlatch ceremony solved the problem of hunger or cold (for our fictional tribes; exchange between actual tribes involved a different mix of goods and was more considerably more nuanced and complex), this social invention would become institutionalized. Communities would likely resist attempts to change it because it worked. Why did the Potlatch

ceremony become such a big deal? It got the tribes what they wanted. If people see an invention as a means to get something as vital as food or clothing, it will become important. It will become something mythologized through things like stories or advertisements, which are, of course, themselves social inventions.

Every society is limited in its ability to get what it wants. Any social invention that helps a community to overcome these limits becomes important, and in economies, the limits that matter most are the limits to economic progress.

In the simple example of the two tribes who need only salmon and fur, once they have the Potlatch ceremony that lets them trade, their access to natural resources no longer limits them. They have enough salmon to eat and enough furs to keep them warm. Sort of. Once communities overcome one limit, though, a new one appears. Development continually shifts the limit, whether it is from toilet training to managing tantrums in public or from a need for natural resources to a need for capital.

The tribes with enough salmon and furs experience a shift from the limit of natural resources to the limit of technology to process these natural resources. They need what economists call capital: tools that require an investment of time, problem-solving, and creativity. They have plenty of salmon but only when it is in season. If they want enough to eat in the off-season, they need new techniques and tools for preserving salmon. This requires some experimentation and investment of time and resources. Until they develop this ability, they're not limited by the natural resources but by a process that can preserve their salmon. And perhaps they have a similar problem with the furs, which are hard to link together well enough to keep out drafts on cold and windy days. You can stack only so many furs on your shoulder before cold legs are all you think about. Their limit to progress is having the knowledge, tools, and processes to smoke the salmon and stitch the furs. More abstractly, their limit is capital, an investment in tools and techniques that allows them to transform their raw materials into something more valuable. Until our tribes have that, life doesn't get much better in spite of an abundance of furs and salmon. Overcoming their new limit requires a new batch of inventions, some technical and some social. (Technical inventions might include the actual hooks that work as needles and threads for stitching, while social inventions might include agreements about how to divide the work of stitching and smoking salmon and how to divide the "profits" from the work.)

When social inventions help communities overcome limits to progress, they become important. They make the community richer and more powerful. The people who control these inventions gain wealth and power, and the better these inventions are at overcoming the limits to progress, the more rich and powerful is the community.

What happened in the history of the West is more complex than our simple example of fictional tribes who are lacking only fish and furs. But the general theme is the same. Progress depends on overcoming limits. Economies - and the communities they are in - are largely defined by the limit they're focused on overcoming and the success they are having in doing so.

Systems Dynamics and Strange Attractors

Complex systems can be sometimes be defined by relatively simple dynamics. The whirlpool in the tub looks alive and yet it is defined by the rush of water through a drain.

The economic complexity of a community can be defined by its limit. Communities intent on conquering or ruling land are going to be very different from communities intent on creating knowledge workers. Land is zero sum, meaning that any acre you get is one that I don't. Knowledge is variable sum, meaning that how we share knowledge can determine the total sum of knowledge available. For this reason, a community defined by the limit of land is likely to be more competitive to the point of warlike than one defined by the limit of knowledge workers. Land is a gift of God and knowledge is a product of curiosity and questioning. For this reason, a community defined by the limit of land is more likely to have dogmatic religious beliefs than one defined by the limit of knowledge work. Lots of seemingly complex differences can be traced back to differences in limits (real or perceived).

Overcoming a limit requires a complex and persistent response from the community. There is never just one invention - social or technological - that will transform something from limited to seemingly unlimited.

As complexity rises, precise statements lose meaning and

meaningful statements lose precision.

— Lofti Zadeh

What is Bald?

A quick aside about baldness. If you have a full head of hair, you're obviously not made bald by someone plucking a single hair from your head. That would be ridiculous. Even if they took two hairs from your head, you still would not be bald. But at some point in the process of plucking hairs, there would be a general consensus that you were now bald. The way that the term is generally used, bald is rarely an all-or-nothing state. So it is with so many of the concepts that I'm writing about in this history of the West. In a traditional economy, people generally choose a trade, say, because of tradition. The baker's son becomes the baker. By contrast, in a market economy someone would become a baker because that career seemed to offer them the best blend of salary and pleasure. But no economy is strictly market based, free of tradition. And no traditional economy is free of market forces. To use a term like market economy or traditional economy is to be both terribly imprecise and to be fairly descriptive. I'll use terms akin to traditional or market economy, bald or not bald quite a lot. Covering 700+ years of progress, this book will be littered with imprecise descriptions that should nonetheless describe quite a lot.

For example, during the time that we generally label the economy as traditional, before 1300, there were lots of examples of towns formed by trading and where market forces defined what people did for a living. Yet that – alone – did not make it a market economy. Did the West suddenly go bald in 1300? Or, rather, did it suddenly become a market economy? No, but the influence of markets became more obvious. It might be more accurate to say that in 1000 there was little evidence of the West being shaped by market forces, and by 1500 there was quite a lot of evidence. It's just simpler to say that in about 1300, the West became more of a market than a traditional economy. And throughout this narrative of Western civilization, I'll continuously opt for such simplifications of reality rather than attempt to exactly capture it. For instance, I'll talk about the first economy as something that started in 1300 and ended in 1700 - a sort of convenient precision that is fairly absurd at one level and yet good enough at another.

Another example of a gross generalization that is – nonetheless – good

enough for describing the transition from an industrial to information economy, or from information to entrepreneurial economy, is the notion of a single limit to progress. Before talking to that, though, I'd like to introduce you to an idea that has helped increase profits at quite a number of companies. And it is an idea that will clarify what I mean by limits to progress.

The Theory of Constraints

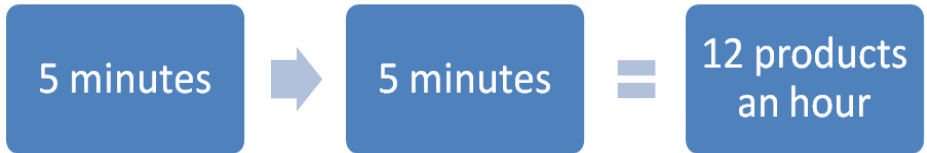
Eli Goldratt developed and popularized his Theory of Constraints through books like *The Goal* and *Critical Chain*. Put simply, he claims that any system with a goal has one constraint to getting more of that goal. If one focuses anywhere but on that constraint, any "improvements" will not actually result in more of the goal. To improve a system requires focus on the limit. His own focus was on the business world and some of the world's biggest companies have applied his ideas to factory floors and product development.

To illustrate how his approach might work, imagine a very simple factory. This factory has just two workstations. The one workstation takes ten minutes to process a piece of inventory and the other takes only five minutes. To make the product, the factory has to move inventory through both process steps. The factory, or system, can produce only six products an hour because of the first stage. This is the constraint - or limit - to making more products.



To "improve" the speed of the second stage would really be no improvement at all. The limit to making more products is in the first step. Double the speed of the second step and you don't improve your ability to create more products at all. By contrast, double the speed of the first step - the limit - and you double the number of products you

can make. Once you do that, both workstations take only five minutes to process each part. Now, your factory can make twelve products an hour, double its old output of six. Focus on the limit and you get more of your goal. Diffuse your attention elsewhere and you get no improvement.



Double the speed of the first step one more time, though, and you get no increase in ability to make products. Once your first step takes, say, just two minutes, the limit has shifted from the first step to the second. If you want more products now, you have to shift your improvement efforts to the second stage, which still takes 5 minutes.



Now in this example, the limit is obvious. That's not always the case with a factory floor with dozens or hundreds of steps, each worked by someone who wants to "do their best." Yet any person doing her best to improve who is working at the station that is not the limit will do nothing to improve the output of the system. Best efforts are not enough. The only way to make more products per hour is to improve the speed of the limit. The whole factory improves when we focus on the limit; "improvements" elsewhere in the system are illusions. This explains how management expert W. Edwards Deming could say, "Everyone doing their best. We'd be a lot better off if some people just

came in late and read the newspaper.”

Goldratt’s theory of constraint and its focus on limits can apply to any system, whether it be traffic flows, projects to develop new products, or, as I’m doing in *The Fourth Economy*, entire economies. At one stage of development, you can make progress just by raising graduation rates, increasing your output of knowledge workers. At the next stage, increasing graduation rates might do little to further progress; the limit has shifted.

A central premise of *The Fourth Economy* is that we describe entire economies as having one limit. An agricultural economy is limited by land. An industrial economy is limited by capital. As you overcome one limit, you face a new one. If you don’t shift your limit, you don’t make progress. Spanish conquerors who ruled huge swaths of the world through exploration and conquest – two effective ways to overcome the limit of land – are eclipsed by British industrialists who do that *and* develop banks and factories, – two effective ways to overcome the limit of capital. If we’re going to discuss something as complex as economic progress during the last 700 years, it is good enough to talk about economies as limited and defined by one limit at a time.

Before an economy faces a limit to progress, though, it has to be making progress. Progress starts when a community changes from a traditional to a market economy.

Economic Limits

At one stage in development, an economy is mostly defined by tradition. The village has a baker because the baker’s son fills the role, and prices are set by tradition. Guilds protect prices and process. Not much changes in this world. At the next stage of development, markets primarily define the economy. The village may or may not have a baker, and he’ll fill the job if he can charge prices high enough to make a living that keeps him in that village and out of another job or profession. To accept a market economy is to accept a disruptive dynamic. After 1300, the West was more obviously defined by a market economy than by tradition.

The West’s first market economy was agricultural. Neither capital nor knowledge workers were the limits to progress. There was almost no

talk about the need for more machinery or the need for better universities. In 1300, progress was mostly limited by access to natural resources and products of the land. The West would have to develop quite a lot before capital development would reach a point of a critical mass, a point at which capital would define it as an industrial economy.

Communities in 1300 didn't rely much on genetics, fancy fertilizers, or machines and didn't even have much in the way of plows and seed drills. If they wanted more, there were essentially two ways to get more: one was to conquer and rule more land and the other was to trade surplus with other regions, trading fish for furs or wool for grapes. Natural resources, or what economists call land, were the limit to progress in this first economy, and at the beginning of the first economy, communities most often got those through conquest or trade.

To simplify, I'm going to refer to an economy based on land as an agricultural economy, to contrast it with an industrial or information economy. But if we're talking about an economy limited by land, it could get its wealth from any number of sources, including agriculture (which is most likely), fishing, mining, forestry, oil, or any other natural resource. Practically speaking, though, the economies of the West during this first economy were essentially agricultural, and a huge majority of the workforce was engaged in some kind of farming.

Economy	First	Second	Third
Period	1300 – 1700	1700 – 1900	1900 - 2000
Limit to Progress	Land (Natural Resources)	Capital	Knowledge Workers
Type of Economy	Agricultural	Industrial	Information

If land is your limit to progress, you might do well to invent a nation-state with a standing army to protect your land and a navy to explore and conquer (or at least establish and protect trade with) distant lands. Of course, the notion of a nation-state with a standing army represents a big jump from tribes wearing furs, which is one reason that the story of the first economy plays out over roughly four hundred years. It doesn't just take a long time to bake this cake, but there are many layers to it; the series and layers of social inventions that brought societies to a place where they could field a standing, national army - inventions as varied as stable borders, taxation, and a sense of nationalism and patriotic duty - didn't unfold in a single generation. And of course, no one said, "Land is our limit. We'll need to invent a series of inventions like taxes and bureaucracy to eventually support an army that will just stand around rather than rally out of the fields with pitchforks." The various things that communities did to gain more power and make progress accumulated into something we can look back at as a first economy, or look ahead to imagine a fourth economy.

Defined by Limits

Limits define communities in a variety of ways. The community whose economy is limited by land is likely to be very religious, for instance. They rightfully see that the natural resources they enjoy have their origins in something other than man's efforts. The fish, the fertile land, rain, and the seasons are all blessings that they can do little to control or influence. Even today, agricultural or rural communities throughout the West are generally more religious than urban communities. The oil-rich nations in the Middle East, whose wealth is based on natural resources - or land - are also more religious than the more economically developed European nations where a community's welfare is not so obviously dependent on the blessings of nature.

An economy limited by land is ready for war. Members of this community know that any acre you rule is an acre that they don't. The competition for control of natural resources is zero-sum. (Control of resources is win-lose, or zero-sum. Trade of resources can be win-

win, or variable sum.⁷) Communities whose progress is limited by land are prepared for war and put a great deal of effort into military preparations and actual war.

The communities whose economy is limited by land find ways to enhance the value of their goods through trade. The further you are from the apple orchard, the more an apple is worth. When all you have is natural resources, you have incentive to trade. Within their borders, communities working to overcome the limit of land might create free trade zones (a social invention). Outside of their borders they might fund navigation and exploration to find new sources of goods and new markets in which to sell or trade. (And in the process may even discover new continents.)

During the first economy, social and technological inventions that helped communities to overcome the limit of land made them wealthier and more powerful. Furthermore, the social inventions that helped were the ones that became important and were institutionalized. That is, they became a way of life and they defined for these people, “who we are.” The good thing about this is that once communities had institutionalized these inventions, these inventions were less likely to be lost. The bad thing about this is that once communities had institutionalized these inventions, it was harder for these communities to let go of or change them in order to focus on overcoming a new limit. Change required revolution and change threatened “who we are.” The kings who invented the nation-states and were able to make the land prosperous early in the first economy (around 1300) were beheaded late in the first economy (around 1700) when the monarchies they’d invented as part of the nation-state were overthrown.

The West has overcome a series of limits through a series of inventions and revolutions. In the process, western economies have transformed from agricultural to industrial and then from industrial to information-based. In transforming from an agricultural to an industrial economy, the limit of land gave way to the limit of capital. At one point, trade in cotton made communities wealthy and it was enough to sell cotton to the households that were left to process it into clothing. As the West moved into the next stage of economic development, however, the limit of land, of natural resources like cotton, was

⁷ Robert Wright’s *Non-Zero: The Logic of Human Destiny* (New York: Pantheon Books, 2000). The first half of the book is a marvelous explanation of how variable sum games contributed to cultural evolution. Pages 31–37 tell the story of trade among the Northwest Indian tribes.

overcome. What then limited the new economy was capital to process that cotton into garments that could be sold. If you want to be wealthy in the first economy, when land limits, you might focus on conquest and trade. If you want to be wealthy in the second economy, when capital limits, you focus on investment and process. The strategies for progress change as the limits shift.

The main thread of the narrative for the first economy, from 1300 to 1700, is one of overcoming the limit of land. It is a story of global exploration and conquest. It is a story of shifting power from church to state because the state is an institution better able than the church to adapt to the demands of overcoming the limits of land, an institution better at managing, ruling, and extracting value from land. The most important social invention of the first economy was the modern nation-state, an invention of entrepreneurs like Henry VIII and King Louis XIV. The world of 1700 was very different from that of 1300. One simple but dramatic difference reveals the magnitude of the change in mindset that occurred over the course of these four centuries: around 1300, spices like pepper were rumored to come from lands just across from the Garden of Eden, lands so distant as to be mythical; by 1700, spices were likely to come from foreign colonies that had been conquered, mapped, and largely “civilized.” And much of the progress that occurred during this four-hundred-year period of history was clearly driven by a set of social and technological inventions - as diverse as the compass and the notion of private property - that allowed the populace to overcome the limit of land.

Since the beginning of the eighteenth century, Western economies have been limited by two other factors: capital and knowledge workers. These two limits have created two new kinds of economies: an industrial economy focused on overcoming the limit of capital, and an information economy focused on overcoming the limit of knowledge workers.

After 1700, the limit to progress shifted from land to capital, and the West was transformed by a new set of social and technological inventions. Inventions as diverse as the steam engine and bank clearinghouses, factories and bond markets helped communities to overcome the new limit of capital. The agricultural economy was transformed into an industrial economy and once this occurred, capitalists dictated to kings.

After 1900, a third economy—an information economy—emerged. It was limited by knowledge workers. The story of the last century is a story of a new set of social and technological inventions like venture capital

and computers. Again, a wide and disparate range of events can be given coherence if seen as an attempt to answer the question of how to overcome the limit of knowledge workers. How do communities create more of them? How do they get more from them? How do they create tools to maximize their productivity? The answers to those questions bring us inventions like MBA degrees, the Multinational Corporation, and personal computers.

When the factors limiting society shift, communities have two choices. They can struggle to invent their way into the future by creating new social inventions better suited to overcoming this new limit, even if this means transforming or toppling the old social order, or they can remain stagnant, continuing to get better and better at what matters less and less, gradually losing power and wealth over time. And lest you think that the abandonment of social inventions is something simple or abstract, know that it involves things as wrenching as beheading kings and being branded a heretic. We tend to define ourselves by the work we do inside of the corporation, the beliefs we have within a church, the citizenship we have within a country; to transform or invent the institutions that in turn define us is to challenge our very notion of self, our very definition of community, our meaning of life. Social invention and social change are disruptive. When limits shift, inventors, entrepreneurs, and revolutionaries create a new society in response to the new limit. They reinvent civilization. And this disruptive, awful, and wonderful process that has unfolded three times in the history of the West has just begun for a fourth time.

Progress

If we talk about the limit to progress, it is worth defining progress. Obviously it is progress when a tribe goes from hungry to having enough to eat or from cold to having warm clothes, but progress is more comprehensive than merely meeting physical needs.

Progress gives the individual more autonomy, more freedom to live a life of his own choosing. A person with shoes has more choices about where to go than a person in bare feet; a person with a car has even more autonomy than a person who has only shoes. The person living in a modern democracy has more autonomy about how - or even if - to worship than someone living under a theocracy. Progress follows

from social or technological inventions or - most often - some combination of the two.

At a really large scale, the social inventions that have helped communities to overcome the limits to land, capital, and knowledge workers have also given the individual more freedom in religion, government, and finance. This might be the most fascinating thing about how social invention has changed the world so far.

In a sense, the West is an odd experiment in placing trust in the individual. Progress has given choice and autonomy to people who hold no titles or formal authority. This is a hard experiment to justify, but it has created the most phenomenal results in history. And while people have done things with religion that popes disapprove of, things with government that kings don't like, and things with credit that would make J. P. Morgan's nose turn red, the net effect has been quite wonderful.

The more choice and freedom we give the individual, the more interesting the world is, and the better life is for nearly everyone. Inventions that give us progress are the ones that give us, along with generations to come, more autonomy and more choice about how to define and live our lives.

So What Really Limits?

One way to distinguish between what limits and what is necessary is to ask whether acquiring more of it will help. Air could limit survival but once you have enough, another roomful of it will do little to change things. Once you have enough air, it could be that you need water. And, again, water might limit survival only up to a point and then you might need food and then warmth. The limits to progress, like the limits to survival, can shift, and acquiring more of a limiting factor, once the limit has shifted, may have little effect.

The limit to progress does not shift because the old limiting factor is no longer necessary or because the old social inventions haven't done well at addressing the old limit. Air still matters when you start drinking water. Success at the old limit gives you a foundation for addressing the new limit. Factories that define the industrial economy could do little without natural resources, which defined the limits of the

agricultural economy, to process. Knowledge workers without machines and capital (somewhere in the economy, even overseas) would be wildly ineffective.

Yet, after a time, acquiring more of the limiting factor does little to further progress. We reached that stage around 1700, when conquest and trade had opened access to essentially all of the natural resources this planet had to offer. At this point, the limit shifted to capital that could be used to process these natural resources into higher value products. From that point, wars of conquest were more likely to impoverish rather than enrich communities. We reached the stage of diminishing returns with capital shortly before 1900, when factories could produce more than communities were prepared to consume. Now, we have reached that stage in our information economy, a stage in which information no longer limits, a world where a fourteen-year-old with Internet access can get more information in an hour than could the head of the KGB in a month at the height of the Cold War.

What limits us now is not land, capital, or knowledge but entrepreneurship. The story of the economy during the first half of the twenty-first century will be the story of how communities invent their way past this limit, building on what we've learned in overcoming the limits of land, capital, and knowledge work but still ready to overturn the social inventions that defined communities within the agricultural, industrial, and information economies.

Entrepreneurship

We've typically thought of entrepreneurship as the act of starting a new business. It is. Yet I think that the fourth economy will reveal how narrowly we have thought about entrepreneurship. Entrepreneurship is an act of social invention. By this definition, when Martin Luther and Joseph Smith each started a new religion, they were engaging in an act of entrepreneurship. Thomas Jefferson and Giuseppe Garibaldi were also entrepreneurs, helping to create the nation-states of the United States and Italy.

Entrepreneurship has always been with us, just as land, capital, and knowledge workers have. But entrepreneurship was not a limit to us as long as our economies were constrained by these earlier, simpler limits.

Entrepreneurship is social invention that creates new systems. And one bit of evidence that we're entering a new economy that needs a new approach is that everywhere we look we face failing - or at least faltering - systems. We live in a world dependent on systems and yet we know little about them, their dynamics, or how to create, manage, or sustain them. We question the sustainability and efficacy of systems as varied as our financial systems, industrial systems, ecosystems, and educational systems. Entrepreneurship in the fourth economy will be about creating new businesses and creating equity, as it always has been. And it will be about popularizing that so more people engage in acts of entrepreneurship. But it will more profoundly be about creating sustainable social systems through some combination of technological and social inventions. Focusing on overcoming the limit of entrepreneurship will reinvent civilization as much as any previous shift in limit. And then it will reinvent it again. And again. Entrepreneurship will be to the fourth economy what technological invention was to the third economy.

Within the next decade, the West will continue to struggle to create jobs until it does more to encourage and facilitate entrepreneurship. Right now, becoming an entrepreneur is like becoming a knowledge worker in 1900. That is, it is possible but hard enough that few people do it. One of the most urgent changes the West needs to make is to change this, working towards popularizing entrepreneurship in this century as we did knowledge work in the last.

Progress doesn't just happen. Communities that actually transform the lives of average people are the communities that focus on overcoming the limit to progress. Within a stable economy - within an industrial or information economy, for instance - progress comes from focusing on a single limit. During a time of transition into a new economy, progress requires shifting the focus from one limit to the next. That's more than a little unsettling.

The next chapter traces the pattern of progress from about 1300, tracing the combination of social invention and revolution that marks the transition from one economy to the next. It gives a very high level summary of the tsunami of change that follows from a shift in the limit to progress.

3 The Pattern of Social Invention & Revolution

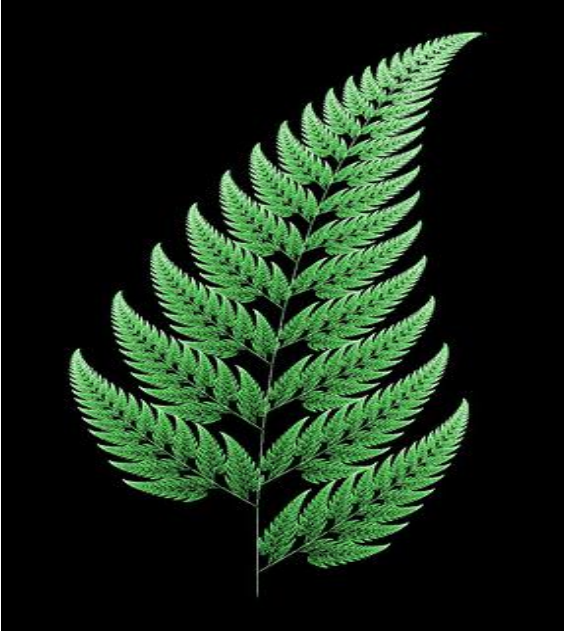
The history of the West is punctuated by big changes and revolutions that have defined and redefined religion, politics, and finance. These are not random events but seem to fall into a pattern that emerges as communities focus on overcoming limits to progress.

Patterns

Western Civilization has been reinvented on three separate occasions, and has each time created a distinctly different economy and society. Each time, a wave of social invention has helped the West to overcome the limit to progress. While history involves more than just economic progress, but some of the biggest and most defining events are captured in this pattern of progress. In the process, we've arrived at distinctly Western notions of religion, government and finance. The fourth economy will redefine how we think of business.

Patterns allow prediction. Because patterns repeat, someone can tell you the exact time the sun will rise tomorrow. Because of patterns, we can define the major trends of the next few decades.

During the last seven centuries, a big pattern has been repeated three times. Savvy readers will point out that this is hardly the basis for a statistically significant conclusion but in fact the pattern is a bit like Mandelbrot's fractals. Mandelbrot discovered shapes that repeated at small and large scales: a fern leaf has a shape that is similar to the larger shape of the fern plant and also to just a smaller portion of the leaf. Fractals repeat patterns at different scales. The pattern of revolution in the West that has played out three times in really broad strokes has also played out in smaller domains than the whole of



Western Civilization quite a few times. Communities, countries, and regions have all gone through similar stages of development enough times to give the pattern credibility.

This pattern also has logic behind it. In the sense that this represents a progression, this pattern of economic and social progress echoes natural evolution. Plants had to develop before

herbivores could develop and, of course, herbivores had to develop before carnivores could. That's logical. It also seems logical that an economy would first need some raw materials, some natural resources, before it would have much incentive to develop capital and machinery to process those materials. And then you could say that the complexity of the machinery, markets, equipment, and products of this industrial economy would generate increasing incentive to develop ways to manipulate symbols of these things first, which is the work of knowledge workers. (It is much cheaper to re-arrange the blueprints of a factory than the actual walls, and much cheaper to learn what a focus group wants when you are still designing the product than to learn what a market wants after you've already made a million units.) Raw materials give machines something to work with and machines give knowledge workers something to work with. The progression from a resources or agricultural economy to an industrial or to an information economy is not only logical but seems to be supported by lots and lots of examples in many different regions, communities, and countries.

The Pattern of Revolutions

This book covers more than seven hundred years of history and

predicts the next half-century. It tends towards sweeping generalizations. If you want a book on the particulars for starting a business in California in the second decade of the twenty-first century, you'll need something considerably more detailed. With that said, this section is going to be the most sweeping of all. I'm going to talk to a pattern that plays out over centuries and ignore about a thousand details that might be worth examining - if I had lifetimes in which to research and write about the West and you had years in which to read about it.

Our starting position before 1300 was one of squalor, starvation, superstition, short lives, and short people. In this period, nobody knew anything about anything and even sections of Europe that would later fall within the same national boundaries were shrouded in mystery from one another. Distant continents were known mostly by rumor, if at all. The dominant institution was the church and there weren't any nation-states. There weren't really even nations, and the states (mostly city-states) were capriciously governed. After the collapse of the Roman Empire, Europe had shrunk to the size of small villages and, in more prosperous regions, city-states. Even things like the Roman formula for making concrete were lost, and Europeans used the Roman roads for centuries, unable to build anything better. The church was the one institution that gave Europe a common identity or any kind of coherence during this time.

Limits

There was no limit to progress, because there really was no progress. Life was static. Ninety-five percent of Europeans never traveled more than five miles from their homes during the course of their short lives. Many were serfs, meaning that they were bound to the land by law anyway, and could not travel even if they had dared to.

Although there might be markets here and there, this was not a market economy. It was a traditional economy. Centuries went by and nothing changed. Life was not particularly complicated, and even as late as the seventeenth century, the main pastime of French peasants was little different than the grooming behaviors of other primates: they spent most of their free time combing lice from each other's hair.

A market economy is dynamic. As technologies and competition and

fashions change, whole industries rise and fall. A market economy unleashes gales of creative destruction and it is not just companies or industries that are created or destroyed. Worldviews, dominant institutions, and a sense of self and community can also be made or lost in these gales. A society with a market economy is dynamic, and once the West transitioned into a market economy, change rippled through every facet of life.

I'm not saying anything new when I claim that industrial economies follow agricultural economies and information economies follow industrial. That these economies are part of a larger set of changes is less often noted. The process that leads to the creation of a new economy does not create only a new economy: it also creates an entirely different culture, society, and people. This is, for our generation, no mere historical curiosity; another new economy, and all the sweeping changes it will provoke, is about to emerge.

The pattern of economic change starts with this: when a community shifts its focus to a new limit, it begins to create a new economy.

Economy	First	Second	Third
Period	1300 – 1700	1700 – 1900	1900 - 2000
Limit to Progress	Land (Natural Resources)	Capital	Knowledge Workers
Type of Economy	Agricultural	Industrial	Information

An agricultural economy is defined by the limit of land and an industrial economy is defined by the limit of capital. Less obviously, an information economy is limited by knowledge workers. (This will be explained in more detail later but suffice it to say that information has

little value without knowledge workers to transform it into, well, knowledge. Until it is acted upon, information has only potential.)

The world we have made using one level of thinking creates problems we cannot solve at that same level of thinking.

—Albert Einstein

Intellectual Revolutions

It is not enough to use the same approach with a new limit that you used with the old one. It's a "new wine in old bottles" or "old minds in new worlds" problem. Getting communities to shift is problematic for lots of reasons. One is that the very fact that a community is facing a new limit is proof that their strategies were effective. These strategies took them up to the new limit, and it's hard to abandon the tried and true. But you have to crawl out of the boat that got you to the new shore in order to walk around to explore the new land; the old strategies don't work on the new terrain. A community facing a new limit has succeeded at overcoming the old limit. This alone is proof that its approach, its culture, its worldview, and a myriad of social inventions are worth protecting. But a new limit means that a community has to be prepared to abandon what it has come to treasure, even how it explains the world

The most subtle but probably most profound social invention changes how we think about the world. It's an intellectual revolution. Intellectual revolutions change how problems are framed, how problems are solved, and even what communities consider to be problems. Until about 1100, in the West it was commonly thought that humanity had been created to replace the fallen angels who'd been kicked out of heaven along with Satan. Limits to material or economic progress were not even considered problems for the simple reason that progress was not the goal of life. Salvation was. It might take a great deal of intelligence to debate about how many angels fit on the head of a pin, but winning or losing such a debate did little to bring milk to the table. Life was thought to be only a test by which one could win or lose salvation. Nothing else mattered. Without a change in thinking, an intellectual revolution, issues like conquest, capital, or information technology had little hope of seizing the popular imagination. Breaking with the

obsession with spiritual matters required a new way of thinking, something the Renaissance provided.

In the history of the West, three great intellectual revolutions have changed how elites and laymen alike have seen the world. The Renaissance shifted attention from heaven to earth, reviving interest in the work of the Greeks and Romans and even the idea of progress. This life - and not just the next - became important and this was represented even in the art of this period, which depicted real (if idealized) people rather than the less realistic people or things, icons, and symbols that were common in the art of the medieval period. Following the Renaissance, Enlightenment thinkers transformed science and politics, subordinating monarchs and miracles alike to law. Finally, most recently, pragmatism has come to define how we think about the world. These days, most people claim to be pragmatic, typically unaware that they're describing a philosophy. Pragmatism is to most people in the West not a philosophy but instead, just the way things are. "I'm pragmatic," business or political leaders tell us, as if that refers to the world itself rather than a lens through which we look at it. The Renaissance, Enlightenment, and Pragmatism each represent a distinct philosophy, and each will be explored in its own chapter. What they each have in common is that they were useful constructs for addressing the limit of their time.

Economy	First	Second	Third
Period	1300 – 1700	1700 – 1900	1900 - 2000
Limit to Progress	Land	Capital	Knowledge Workers
Type of Economy	Agricultural	Industrial	Information
Intellectual Revolution	Renaissance	Enlightenment	Pragmatism

Transforming Work

The pattern of revolution also includes a change in the definition of work. Before 1300, the role of workers was essentially that of slaves. (The term "slave" comes from the word "Slav," in reference to the fact that Central Europeans would make "recruiting" runs into the east to kidnap Slavs whenever they needed more workers.) Serfs were bound to the land, unable to live anywhere else. The agricultural economy gave rise to a growing number of freemen, workers who were free to lease their own land and choose how and where to work. The manual work of the agricultural economy was eclipsed in the industrial period by factory work and then, in the information age, by knowledge work. At each new stage, the experience, productivity, and even products of workers radically changed. It probably seems obvious to say that work changes as an economy changes. This "obvious" point should be remembered, though, if we're going to seriously think through the implications of what it means to create an entrepreneurial economy. A new economy suggests that how we define and think about work will change again.

Economy	First	Second	Third
Period	1300 – 1700	1700 – 1900	1900 - 2000
Limit to Progress	Land	Capital	Knowledge Workers
Type of Economy	Agricultural	Industrial	Information
Intellectual Revolution	Renaissance	Enlightenment	Pragmatism
Work	Manual (manipulate things by hand)	Manufacturing (manipulate things by machine)	Knowledge (manipulate symbols of things)

Big Social Invention

Economic changes are never neatly contained within the workplace, however. A community does not change how it thinks about the world and leave its institutions as they are. The rewards for inventing a new institution able to overcome the new limit to progress are huge. The leaders in this process are inevitably the richest and most powerful communities. They are also the ones most willing to make wrenching changes to their dominant institution.

The first economy emerged at a time when the church was at the peak of its power. With everything from church bells to papal bulls, the church defined daily life. One little-known fact about medieval popes is that much of their time was spent resolving property disputes. Without agreed-upon government officials, the pope was the ultimate authority. (In fact, many of the property disputes were between barons, counts, and various-named “authorities” who were the closest thing to

government officials but were nonetheless arguing amongst themselves about who had jurisdiction, given that political authority was not yet defined and settled.) Yet the church was poorly suited for overcoming the limit of the first economy. Europeans were never really comfortable with the idea of a pope riding out to battle with a sword on his hip in order to claim land (something that actually happened). Nation-states were a much better social invention for conquering and protecting land. Nation-states could provide a navy able to protect trade routes on the open sea, an army to protect and expand borders, and police and courts to protect private property. By the end of the first economy, the nation-state had eclipsed the church as the most powerful institution in the West. One simple reason for this (although the process itself was anything but simple) is that the nation-state is better suited for overcoming the limit of an agricultural economy than is the church. If a community is serious about overcoming the limit of its economy, it needs to be serious enough to cede control from a previously dominant institution to a new, more effective one. This process alone makes for wrenching social change.

The second economy saw the rise of capitalism and financial markets, and once again a new institution came along to eclipse the power of the old. The bank was better at overcoming the limit of capital than was the nation-state, and soon governments were shaping their policies to win the approval of bond markets and bankers, eager for the financing that would allow them to keep power, even while it hastened their loss of relative power to the banks and the market they represented.

In the twentieth century, the multinational corporation became the most powerful institution in the West. These corporations grew to define our work-family balance, our options for products and services, our incomes, our capital returns, our landscapes, and even the quality of our environment. The corporation is simply better at overcoming the limit of knowledge work than is the church, the state, or the bank. As with every economy before, in the third economy the institution best suited (or, really, designed and invented) for overcoming that economy's limit to progress was the institution that became most powerful.

Economy	First	Second	Third
Period	1300 – 1700	1700 – 1900	1900 - 2000
Limit to Progress	Land	Capital	Knowledge Workers
Type of Economy	Agricultural	Industrial	Information
Intellectual Revolution	Renaissance	Enlightenment	Pragmatism
Big Social Invention	Nation-State	Bank	Corporation

Institutional Transformation

Of course, these newly dominant institutions do not emerge in a vacuum. They have to wrestle against the old, previously dominant institution. Furthermore, these new economies don't displace the old economies; they build upon them. You can't manufacture without natural resources to process. Knowledge workers manipulating symbols need actual things to which those symbols link. (As Peter Drucker quipped, even the grandest strategies eventually devolve into actual work.)

As previously mentioned, there is a very real difference between something that is necessary and something that is a limit. The newborn needs air, but once it is breathing, it needs food and rest. The need for food doesn't assume that the baby no longer needs air - just that the air is a given. So it is with economic progress. Communities working to overcome a new limit do not assume that the old limit goes away but rather, that this old limit is no longer a limit.

When the limit to progress shifts to capital, there is still a need for natural resources. In fact, demand for them grows. This suggests that

the social invention able to overcome the limit of a preceding economy is even more effective and more broadly used in a new one. That is, the previously dominant institution does not go away when a new one takes over the dominant role, but instead becomes the tool of the many instead of elites.

One repeating pattern throughout the history of the West is the dispersal of power. “We are all priests,” cried Martin Luther as he wrested authority away from the pope and gave it to every Bible-reading Christian. “All men are created equal,” wrote Jefferson, who was issuing a challenge to aristocrats, not an invitation to slaves. Such sentiments speak to real changes in what it meant to be a Christian or a citizen. Such sentiments also describe the democratization of power.

The Protestant Revolution ultimately shifted power from church authorities to the Bible. Catholic authorities warned that in this direction lay massive splintering of the church, as any Bible reader could claim a revelation about what a particular verse meant and start his own denomination. As it turns out, they were right. Thousands of Protestant denominations now pepper the religious landscape, but this is a consequence of the dispersal of power. Today, each individual can decide how - or even whether - to worship.

But the new nation-state quickly escalated in size and its armies alone were enough to drive innovations in finance like the emergence of bond markets, innovations that could feed the nation-states voracious appetite for previously unimagined sums of money. The nation-state’s dependence on money made it dependent on financial markets, and eventually presidents danced to the rhythm of bond markets.

Finally, and less obviously, the power formerly held by the bank has been dispersed over the last century. Not only do corporations dictate terms to banks (rather than vice versa, as in the early days of capitalism) but rather than beg for credit, the average household regularly rejects offers of it, discarding credit offers that seem to come daily in the mail. In this way, households now have the power over credit that bankers once held: they decide whether to accept or reject loans requests. Stock markets have become investment vehicles for the average person and not just the elites. During the last century, mostly through pension and mutual funds, the average person has become the majority stockholder in the United States. Households have been given easy access to credit and investments. As with the church and state before it, the bank has become a tool of the masses.

Economy	First	Second	Third
Period	1300 – 1700	1700 – 1900	1900 - 2000
Limit to Progress	Land	Capital	Knowledge Workers
Type of Economy	Agricultural	Industrial	Information
Intellectual Revolution	Renaissance	Enlightenment	Pragmatism
Big Social Invention	Nation-State	Bank	Corporation
Social Revolution	Protestant Revolution	Democratic Revolution	Financial Revolution

The Fourth Economy

Our generation gets to add a fourth revolution to this fascinating adventure. The fourth economy will result as we invent our way past the new limit of entrepreneurship. We will discover a new way of thinking that is better suited to entrepreneurship and the creation and management of systems and social inventions. The new economy will change work again, popularizing entrepreneurship rather than leaving it to the elites. It will transform today's dominant institution, dispersing the power of corporations. Finally, it will mean a change in how we define institutions and how we delineate our relationships to them.

One constant through this thread of progress is the rise of the individual over the institution. At the rise of each new economy, the average person is seen as subject to that economy's dominant institution, and is used as a tool by it. At the beginning of the second economy, for example, the individual was a subject of the state. By the close of the economy, things have been reversed: the institution has

become a tool of the individual. By the end of the second economy, the king's subjects have become citizens. By the end of the fourth economy, employees will finally realize that through their pensions and 401(k) plans they have become the stockholders. And corporations will gradually become tools of communities, just as the church, state, and bank before it.

The bad news is that there is nothing special about our generation. Like earlier generations, we'll be forced by circumstances to adapt, to let go of what we once knew to be true and to invent our way into new truths.

Entrepreneurship is both hard and improbable (meaning that most new ventures fail). Entrepreneurship also determines levels of wealth and unemployment and the quality of goods and services, which suggests that communities ought to do all they can to make entrepreneurship easier and more probable.

Economy	First	Second	Third	Fourth
Period	1300–1700	1700–1900	1900–2000	2000–2050
Limit to Progress	Land	Capital	Knowledge Workers	Entrepreneurship
Type of Economy	Agricultural	Industrial	Information	Entrepreneurial
Intellectual Revolution	Renaissance	Enlightenment	Pragmatism	Systems Thinking
Big Social Invention	Nation-State	Bank	Corporation	Self
Social Revolution	Protestant Revolution	Democratic Revolution	Financial Revolution	Business Revolution

Our founding fathers were Enlightenment thinkers whose great experiment in government was a natural consequence of taking Enlightenment principles seriously. From science to politics to business, they tried to create a world more in accord with the exciting possibilities of a new way of thinking. As systems thinking changes our

mind about what is real and what is possible, a similar transformation of our major institutions should follow.

Finally, this new economy will require a new idea of self. For now I'll simply say that until now, self has been defined in response to the big institutions of the West, from church to corporation. It'll be a very different thing to instead define these big institutions in response to the self, and yet that's what is suggested when we speak of the popularization of entrepreneurship and the rise of social invention.

There is one other point worth making, a point so obvious that we nearly overlook it. Social invention - this story of the rise and transformation of institutions - offers the potential for huge and powerful payoff. The walls of Oxford's Christ Church College Dining Hall are covered with portraits of luminaries who have attended Oxford. John Locke is among them. Even if every other graduate of Christ Church had been a slacker who smoked opium and played video games, Locke's ideas would have ensured England's positive return on their investments in Oxford. It would be difficult, if not impossible, to calculate the extent of the benefit we have received as a result of John Locke's ideas, which did so much to create modern democracies. Social invention has huge potential, and because of its track record we've come to nearly deify social inventors like America's founding fathers. And here's the point: if social invention can make so much difference, why not make it an intentional part of life rather than something that happens only on rare occasion? When we create institutions to overcome limits, we make progress. When we transform institutions to make them tools available to many, we are better off. Social invention, just as assuredly as technological invention, facilitates progress. It makes little sense to confine it to history books when we can make it a part of our lives.

When a community transforms from an agricultural to an industrial economy, or from an industrial to an information economy, it is not just the economy that changes. There is a pattern of revolutions that sweeps through society to change the major institutions and even how people think about the world. That pattern suggests that when the next economy emerges, its impact will not be neatly contained within cubicle walls but will require a change in our thinking and dominant institution.

The next section delves into the first economy, a time that brought us out of the Dark Ages and transformed religion.