"Your world view will transform instantly."

SALIM ISMAIL founding executive director of Singularity University and bestselling author of *Exponential Organizations*

THE PRICE OF TOMORROW

Why Deflation Is the Key to an Abundant Future

JEFF BOOTH

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

Praise for *The Price of Tomorrow*

"Is this time different? Most economists say 'no'—we've adapted to many technological revolutions before. In contrast, Jeff Booth says 'yes.' And thus begins a journey of ideas as he takes the reader on a tour de force, making his case for why that's so and sharing revelations from his personal relationships with tech industry leaders along the way. To harness the power of technology for good, we need to understand how it is linked to humanity. In a sweeping analysis that draws upon economics, science, innovation, politics, psychology, sociology, and business, Booth offers an intriguing thesis predicated on the deflationary impact of technological advancement coupled with increasingly easy credit. True to his impulse as an entrepreneur—a thinker, but also a doer—he concludes with a call to action. Business leaders, entrepreneurs, policy makers, and youth committed to working towards a brighter future should read this book."

AJAY AGRAWAL professor at the University of Toronto and founder of the Creative Destruction Lab

"As someone who understands the exponential rate at which technology is advancing, Jeff Booth has a unique ability to connect the dots to something bigger in this must-read book. Few books offer a more succinct, provocative, and enlightening view of the world as it is today, and what it could be tomorrow. Your world view will transform instantly."

SALIM ISMAIL founding executive director of Singularity University and bestselling author of *Exponential Organizations*

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

THE PRICE OF TOMORROW

Why Deflation Is the Key to an Abundant Future

JEFF BOOTH

STANLEY PRESS

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

فروشگاه کتاب الکترونیک باکِتابام

https://e-baketabam.ir

Copyright © 2020 by Jeff Booth

All rights reserved. No part of this book may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, without the prior written consent of the publisher or a licence from The Canadian Copyright Licensing Agency (Access Copyright). For a copyright licence, visit www.accesscopyright.ca or call toll free to 1-800-893-5777.

ISBN 978-1-9992574-0-8 (paperback)
ISBN 978-1-9992574-1-5 (ebook)

Published by Stanley Press

Produced by Page Two
www.pagetwo.com

Cover and interior design by Setareh Ashrafologhalai

www.thepriceoftomorrow.com

eBook by Bright Wing Media

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

To the extraordinary people who have positively impacted my life.

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

CONTENTS

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

PREFACE

WE LIVE IN an extraordinary time, where there could be global prosperity. Perhaps not in the same way we think about it today, but global prosperity, nonetheless. Technological advances are happening faster than our ability to understand them. In a world that moves faster than we can imagine, we cannot afford to stand still. We cannot afford to cling to systems and pretend they are working because they did in an era before technology. Continuing on the existing path, without significant changes to the way we think about economics and the way we have constructed economies will ensure chaos. On this path, the price of tomorrow is set to explode. In this extraordinary time, it is not reasonable to believe that what will work in the future should necessarily be built on what worked in the past.

Who am I to be saying this? I'm someone who has an unearned advantage and wants to use it to help. I grew up with incredibly good fortune. I was born in Canada, a nation that consistently ranks at the top of international polls of best places to live. I grew up with amazing parents who loved and supported me and my brothers, parents who taught us right from wrong and constantly challenged our learning through vigorous debate. It was an upbringing that allowed me to see a different world than many people see and then build on the edge of that knowledge. It's not that I faced no adversity—we did not grow up wealthy, and I have experienced tremendous loss, the kind when it feels like everything is taken in an instant. But my upbringing drove a deep curiosity to learn from everyone around me; that helps me to consider the world as it might look like from others' points of view.

From a young age, I was always curious. Curious to know how the world worked and why it worked that way, and I was never afraid to ask a big or seemingly crazy question. Even with all of the distractions of life today, I still take time to read about fifty books per year. That curiosity, combined with a drive to create something better in the world, was the start of an incredible adventure as an entrepreneur, an adventure that has had me alongside and inside some of the top technology companies globally. An

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

adventure that also allowed me to gain friendships and learnings in many countries all over the world.

As my friend Thuan Pham, the chief technology officer of Uber, recently said to me over breakfast, “I am a firm believer that talent is distributed evenly around the world, but opportunities are not.” I wholeheartedly agree. If our success in life depends on what and how we learn, and the people and environment around us—and I believe it does—then I had a head start that not everyone in the world, or even everyone in developed countries, has access to.

I have been in the front seat for technology change for about twenty years. In 1999, my friend Rob Banks and I founded BuildDirect, a technology company that tried to simplify the building industry. Driving change in an industry not generally known for innovation and transparency was filled with lessons and many ups and downs—going from an idea to more than $500 million in market capitalization and a doubling of sales each year to swinging for the fences to build something even bigger (and ultimately failing). Leading a technology company for nearly twenty years, through the dotcom meltdown, the 2008 financial crisis, and many waves of technology disruption has given me a unique insight on the ever-changing world around us. The external challenges of building a business in times that are changing so fast were hair-raising enough, but they were trivial compared to the many things I learned about myself through the adventure.

Every one of the technology founders and leaders I have spent time with is determined to use technology to make a positive impact on the world. I believe it is a trait shared by most technology entrepreneurs. Beyond building their businesses into successes, they are determined to make the world a better place. They, like all of us, make mistakes, but common in every one of them is a genuine desire to help.

Most times, the entrepreneurial spark comes from envisioning the way the world could work versus the way it does now. In other words, the opportunity to create something better comes from observing something broken or that doesn’t work the way you believe it should. That, oftentimes, creates the highs and lows of the entrepreneurial adventure because even if you are right, change is never easy. Many of history’s greatest entrepreneurs, scientists, and leaders were ridiculed early on, but continued, because they saw something that needed change. That itch had to be scratched.

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

They, in turn, create their own reality—and ours with it. The truth is we all have that power. How we each view our own reality and the stories we tell ourselves about who we are determine many of the actions we choose. Those choices compound and sometimes we don't realize, or we forget, that we control our own thoughts, and we control our time. We all have choices on how and with whom to spend our time; it is one of the most important choices you can make.

Today, I am in the fortunate position to spend my time helping some of the most extraordinary technology entrepreneurs and their companies in diverse industries. From that vantage point, I have a rare view to many of the changes underway that promise a better tomorrow.

There is Karn Manhas, the founder and CEO of Terramera, who wondered why farming required toxic pesticides when for millennia plants have thrived in harsh environments. That question led him and his team to invent a technology that allowed organic compounds to outperform synthetic ones. Not only does this change the game for organic farming, when the technology is applied to synthetic pesticides, it reduces their use by up to 90 percent. Those same pesticides that we use on our food to kill insects end up in our bodies, so removing or reducing them is a big deal.

Understanding that home ownership is one of the most important wealth generators, Michael Stephenson and Steve Jagger set out on a mission to deliver home ownership to the 90 percent of people left out. Their company, Addy, uses technology to democratize this asset class and lets people own real estate for as little as a dollar. In a world that is becoming more unequal, giving access to a generation left out could help stem the tide.

Chonlak Mahasuvirachai is determined to build one of the largest marketplaces in Southeast Asia by simplifying the home-building industry. Frustrated by the lack of access and control for consumers, she chose to build NocNoc to bring far better choice, value, and simplicity than could otherwise be achieved. By designing the company around some of the platform principles shared in this book, the company is growing quickly—from just over a million in revenue in the second quarter of 2019 to over 55 million bhat in the third quarter.

These are just a select few of the leaders I have had the privilege of witnessing change their respective industries. Each of them is distinctive in their approach and market, but they have in common an unwavering drive to help people, and the companies are successful because they do. Almost

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

every company I'm involved with is in some way using artificial intelligence to make better decisions. Many of the companies create success by removing massive inefficiency in the market. Unfortunately, projected forward, that comes at the expense of the jobs of today. For the companies and leaders that win, that will be very lucrative—but when you add up what is happening across the technology landscape, it means fewer winners and more losing out unless there are massive new industries created.

I am not a technology utopian: I don't believe that technology will solve all of our ills. Nor am I a technology dystopian: I don't believe that technology will ruin us. These are far too simple frameworks. The human condition cannot cope with either unilaterally. We would be unhappy and rebel in either case. In a world where there were no problems and technology did all of our bidding, we would quickly become bored and yearn for a problem to solve. In a more dystopian world where technology was used to control us, people would eventually rise up and fight that control. I do believe, though, that technology today is different than technology in the past.

The thesis of this book is something that I have been following closely for almost a decade, talking about it with family and friends and watching things unfold as expected—like signposts on a road, knowing what the next sign would say. At the same time, I was hoping I was wrong.

The scope of this book needed to be broad, while at the same time going deep enough in certain fields of research and technology to demonstrate patterns otherwise unseen. Choosing to write this book meant publicly challenging universal truths which many in our society believe—something that rarely wins popularity contests. But it is something I felt I must do, because technology changes the operating system of the world we live in. That operating system—the rules by which we have built our wealth and economies—will need an overhaul, and there has not been sufficient debate or dialogue. For reasons we will explore, instead of focusing on root-cause issues to fix, the dialogue is focused on second- and third-order effects of those root causes.

It's time we started asking bigger questions and then listening to the answers—not just for our future but that of our children.

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

INTRODUCTION: THE END OF INFLATION

"The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist."

JOHN MAYNARD KEYNES *The General Theory of Employment, Interest and Money* (1936)

TECHNOLOGY IS DEFLATIONARY.

That is not conjecture. It is the nature of technology. And because technology underpins more and more of the world around us, it means that we are entering into an age of deflation unlike any the world has ever seen. We might not like what that means, or be ready for the changes that it foretells, but it doesn't change the facts.

Our economic systems were not built for a world driven by technology where prices keep falling. They were built for a pre-technology era when labour and capital were inextricably linked, an era that counted on growth and inflation, an era where we made money from scarcity and inefficiency. That era is over. But we keep on pretending that those economic systems still work.

We are at a critical point, because many of our choices are in fact choices about economics. Most choices come down to economic realities: a trade-off between our perceived value and price. We might aspire to be more environmentally minded while choosing to drive a car that is convenient for us and a toll on the environment. We may want all of our food to be organic but be unwilling or unable to pay the extra cost for it. Businesses are no different. A business is just a collection of people making choices with the aim of growing a better business while, at the same time, in competition with other businesses trying to do the same. "Better business" often comes down to the harsh realities of economics—or the

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

value that the business brings to its users (whether that value is perceived or real). Those economic choices to compete and win more of scarce markets lead to almost everything else. From your income and lifestyle, to your opportunities for travel and leisure, to how you care for your family, economics is fundamental to it all.

Every so often, we learn something new that rewrites all of what we have come to know and trust. In those moments, our foundation of knowledge crumbles—and with it, many of the beliefs that we have built on top of it. Those transitions are hard because we do not easily let go of our beliefs.

We are at a crossroads. What worked before will not work in the future. Technology is moving too fast—and it will only move faster from here. Even if we wanted to, we can't put the genie back into the bottle. We need to build a new framework for our local and global economies, and soon, or the same technology that has the power to bring abundance to us and our world will instead destroy it.

The only thing driving growth in the world today is easy credit, which is being created at a pace that is hard to comprehend. The rise of that credit and corresponding debt is keeping us locked into a system where we are the proverbial frogs in a pot with the heat of the water slowly rising and we do not notice. And as we try to artificially drive an economic system built for the past, we are creating more than just economic trouble. On our current path, our world will become profoundly more polarized and unsafe.

The seemingly random events of Brexit, Trump, and a rise in populism and hate in our world are not haphazard or isolated at all. They are all connected to a loss in hope for a better future for large portions of the population. Underlying this loss of hope is a new economic reality where it's not just the poor who are missing out on economic gains. Much of the middle class is also feeling squeezed. Instead of technology allowing for a fifteen-hour work week, as Keynes predicted when he penned his 1930s essay "Economic Possibilities for Our Grandchildren," vast numbers of people are working longer, in jobs they rightly fear will soon be gone. Trapped—wondering how they will provide for their families and basic needs when the other shoe drops. At the same time, we are seeing a massive rise in inequality: in the United States, the top 5 percent of the population now holds more than two-thirds of the wealth, while the remaining 95 percent of the population fights for their share of the other third.[1] Just three

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

people—Jeff Bezos, Bill Gates, and Warren Buffett—account for more wealth than 50 percent of the population.

It is easy to point at the wealthy and assign blame, but the focus should instead be on a broken system that reinforces radical inequality. In fact, many of the wealthiest families are aware of the very same risk to society and are intent on trying to fix it, either by entering the debate and making their voices heard and/or committing to philanthropy. The Giving Pledge, signed by 204 pledges at the time of writing, dedicates the majority of their wealth to giving back. But it shouldn't even be necessary.

The concentration of wealth has not been this high since the late 1920s. The world naturally becomes more unsafe when large amounts of people with increasing anxiety about their own economic future see incredible wealth creation in the hands of very few people. That environment provides fertile ground for revolutions. The loss in faith of systems meant to be reliable predictably leads to blame and division—all of which can be opportunistically redirected to target groups such as immigrants, religious groups, political parties, other countries, and so on. In other words, populism explodes because of an unjust system. It's hard not to look back to a similar loss of hope and rise in populism and ideologues around the world in the early 1930s, which escalated into World War II.

It is the same loss of hope that is driving elections today. Countries that once considered themselves enlightened are torn by ugly xenophobia, committed to protectionism and closing their borders. Entire populations are being swayed by politicians who incite more anger and polarization by creating "us versus them" narratives without understanding the root causes of our new reality. Many of them are using social media as a powerful weapon in their aim to consolidate power. They're building influential communities online that fuel dissension in the streets. In Germany, the far-right populist Alternative für Deutschland (AfD) went from zero seats in the 2013 election to forming the largest opposition party in that parliament in 2019. Around the world, authoritarian regimes are flourishing. The trend of more wealth inequality, more polarization, and more discord is a major threat to our collective future. And it is all being caused by the same thing: adherence to an economic system designed for a different time.

How did we end up here? And where are we going?

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

The age of inflation

All of our lives, we have lived in a world where hope for a better future was a motivating force in economics—a world where growth reigns. Our parents grew up in that same world, and so did their parents. It is what we know.

The American dream espouses the idea that no matter who you are, if you work hard enough or are innovative enough you can achieve almost anything you desire. Ever-higher-paying jobs are central to this construct. We expect to start our careers, earn more over time, and hopefully at the same time outrun rising prices. If we are lucky enough to have bought assets, the rising prices of those assets, because of inflation, creates longer-term wealth. If we leverage those assets by adding debt, our return is even greater because the asset increases in value while the dollars that we pay back in debt are priced in today's dollars—and with inflation, and growth in our incomes due to the inflation, we pay back the debt tomorrow in dollars that are worth less.

Housing is the classic example of this leverage. My parents bought their first house in suburban Vancouver, Canada, in 1977 for $69,000. At the time, it was a large sum of money for them. But with a down payment of $10,000 and a mortgage of $59,000, they were on their way to seeing the benefits of buying assets in an inflationary environment. Their incomes rose over the course of their careers, and with that rise in incomes, the mortgage of $59,000 became easier to pay. All the while, inflation also increased the value of their home: today it's worth about $1.5 million.

Almost any asset shares the same fundamental story, whether those assets are stocks, resources, or art. And there is nothing fundamentally wrong with the equation. It has driven enormous wealth and prosperity. True, asset owners have prospered more than others, which has contributed to inequality, but overall in the world, this process has driven much of the world out of poverty.

But what happens when we can't count on a system of growth and inflation anymore? What if a more powerful force renders most of our efforts to create inflation irrelevant? And what if, by desperately trying to cling to an outdated inflationary model, we drive more wealth inequality, more polarization, and more discord into our societies?

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

Today, we are in that scenario. The continual growth and inflation we expect—the system we've built our nations' economies around—is ceasing to exist. Technology is a deflationary force so great that, in the end, nothing we do will stop it.

The shrinking world of technology

I was given my first cellphone in 1988 as a gift from my employer as I left to start a new career. It was an incredibly special gift because it was completely unexpected. Cellphones in 1988 were quite rare, and the Motorola 8000 was one of the first to be truly portable—before that, they needed to be carried in suitcases. The phone was about the size and weight of a brick with a long antenna. It had thirty minutes of talk time before it needed to be charged for ten to twelve hours, and it cost about $2,000. My friends wanted to make calls from it just to say they were talking on a cellphone, and I tried to be careful how much I let them because calls cost $1.50 per minute. No text, no apps, no data, just phone calls—but that ability to make a call when I wanted to instead of trying to find a quarter and a pay phone was revolutionary. My first cellphone bill, with roaming charges, added up to about $1,200. I remember it distinctly because it was an insane amount of money at that time in my life. But for me in 1988, technology had finally arrived.

That was just over thirty years ago, and it is absolutely staggering how far we have come.

Take out your smartphone. How big is it? How much did it cost? How much does it cost to use? What can it do?

That same deflationary force made our phones cheaper and more powerful: it turned your phone into a camera, flashlight, a map, a measuring tape, a calendar, a wallet, a guitar tuner, and a million more things. All free or nearly free.

When we use technology, there is an exponential effect in its output or power relative to its price. We get far greater benefit and the price continues to fall. The abundance that it brings to our lives is incredible and it is all around us. In chapter 4, we will explore in depth what is underlying this extraordinary performance gain. But we only need to look at our phones to get a convincing picture of the deflationary effects of technology.

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

Deflation, put simply, is when you get more for your money—just as inflation is when you get less for your money. With deflation, a currency becomes more valuable because its buying power goes up in relation to goods and services. With inflation, it's the opposite: the prices of goods and services go up and therefore a currency's value is lower as purchasing power is less.

Deflation is not intrinsically good or bad. It just matters where you put your money. On each side of the equation, there are winners and losers. With inflation, holders of assets win, since the dollars in the future are worth less and it would therefore take more dollars to buy assets at a later date—like my parents and their first house. With deflation, holders of currency are the winners, since their dollars can buy more goods and services in the future than they could today.

The problem is that we still think that deflation is restricted to parts of our economy—that we will keep getting more with less in our electronic devices while getting the benefits of inflation in the rest of our lives. And we still look at technology through a narrow lens, as if it's only something that powers our phones.

Even zooming out a little more, we often think of the technology industry in terms of giants like Apple, Google, Microsoft, Facebook, Amazon, and, in China, Tencent, Baidu, and Alibaba. We often don't even realize that it is the same deflationary force in those companies that we are celebrating in using their services, often without even thinking about it. Whether it is the free and abundant information Google provides or the continued lower pricing and increasing service of Amazon, we continue to get more for less.

But technology has even wider and more important ramifications. Technology is not an industry isolated to our phones or Google searches or things we buy on Amazon. Technology is making its way into everything. It is increasingly the backbone of every industry and every company. In the near future, if you're not a technology-based company, you will likely not be a company at all.

So, if technology is making its way into every industry, why should we expect to get the benefit of the deflationary force in some places but inflation everywhere else? If the same technology that gave us abundance in our phones is now moving into just about every industry, should we not expect both abundance and price deflation in everything around us?

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir

If everything—not just phones or Internet companies but *everything*—is giving far more performance and at the same time falling in price, a family that makes $75,000 this year and struggles to make ends meet could make $70,000 next year and the dollars would go further. And then $60,000 a few years after that and it would go further still, continuing to gain more for less with the natural deflationary trend in technology. That would allow us to step off the existing treadmill of chasing higher and higher prices, requiring ever-higher-paying jobs to keep up.

That may sound radical, but if technology is deflationary, and we expect technology to continue its advance into more and more industries, it may not be radical at all. It may be the only sane thing to do.

There's just one problem: if technology should be driving everything cheaper, why is life getting more expensive?

Reactionary economics

All over the world, rent, housing prices, fuel, food, and many other costs are rising, keeping us on a hamster wheel of work. To anyone living in this environment, it is almost impossible to believe in deflation or the abundance that might be possible with it.

But this rise in prices is artificial—driven by an enormous rise in credit and debt.

Governments and central banks will do almost anything to stop deflation. Inflation targets, set at typically 2 percent, are public elements of their mandates, with a blend of ever-increasing, wild ideas to keep inflation going. Any real growth that the world has seen is only because of an unprecedented spending spree fuelled by easy credit and debt that masks what is really happening underneath. The problem comes from believing we can outrun deflation and the natural order of things by creating more and more debt. It's a bit like trying to flap your arms to fight gravity: gravity will win. Even a plane using massive energy to stay in the air must eventually land.

In measuring the amount of debt in the world, it is important to compare the total debt of governments, persons, or corporations in relation to its impact on total growth of gross domestic product (GDP). Otherwise, one can be easily fooled by sleight of hand of slower growth of debt in one part of

فروشگاه کتاب الکترونیک باکِتابام
https://e-baketabam.ir