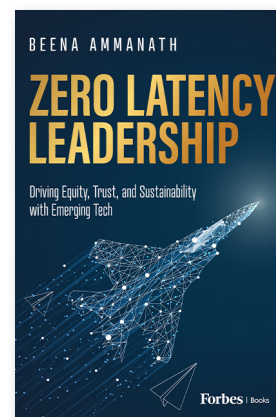


Zero Latency Leadership

Driving Equity, Trust, and Sustainability with Emerging Tech

by **Beena Ammanath**



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THE SUMMARY IN BRIEF

We live in a time when every decision we make as leaders is simultaneously under a microscope, on a virtual billboard, and recorded for posterity in a matter of seconds for all the world to see. Yet, we must make decisions faster than ever because the technology and circumstances of business demand it.

The book *Zero Latency Leadership: Driving Equity, Trust, and Sustainability with Emerging Tech* helps leaders align tech resources with trust, equity, and sustainability to shape reliable competitive advantages for their businesses.

By laying out the opportunities and challenges of technology in business, author Beena Ammanath helps readers build a personal leadership framework for making complex decisions at great speed and with purpose.

IN THIS SUMMARY, YOU WILL LEARN:

- How to position noteworthy leadership within technology.
- How to build technical literacy.
- The risks and rewards of embracing technology.
- The characteristics of a Zero Latency Leader.

Introduction

Zero Latency Leadership is about aligning technology with trust, equity, and sustainability to set your business up for success regardless of the competition that surrounds it.

Part 1 of the book establishes a context – both historical and contemporary – for the tools, lessons, and resources available to position trustworthy leadership within technology.

In Part 2 each chapter lays out the opportunities and challenges of embracing that technology, ending with some thought-provoking questions about how that technology may fit into your business model and your professional success.

Part 3 introduces more technologies to consider for the future state to round out a primer for technical literacy. In the final pages, the book journeys through the characteristics of a Zero Latency Leader and the next steps on your leadership journey.

Part 1

Chapter 1: History of Change

For thousands of years, human beings could only imagine the technologies we use daily in the 2020s. Yet we got to where we are from the skills that were commonplace throughout human history: the use of fire and basic tools, the power of observation, and verbal communication. On the way to the present day, our ancestors developed the written language, the printing press, mass production, the steam engine, the combustion engine, airplanes, submarines, space travel, DNA analysis, organ transplant, life support, and the internet.

We can look at the historical adoption of technologies to better understand how new technologies will affect the population. From the innovators who will grasp the newest technologies, hack them, exploit them, and discover new ways to use them to the laggards who will wait it out until they have no choice but to join the club, every wave of technology will wash over us at some point. But technology does not exist for technology's sake. It exists for humans to use and we must learn to use it wisely.

Chapter 2: The Impact of Modern Technologies

Our modern technology has made human reunions and scientific breakthroughs possible. At the same time, it has enabled crimes and attacks against individuals, including children, businesses, charities, entire nations, and nature

itself. All our contemporary shortcomings beg the question: As a society, are we socially ready for the next wave of technology? Probably not. But the next wave is coming whether we are ready or not. When it comes, we will benefit as much as we will struggle. However, we will sell ourselves short if we ignore the lessons of our past as we face the future. So let's prepare ourselves.

Part 2

Chapter 3: Quantum Computing

Computing uses qubits instead of the traditional bits that our classical computing systems currently use. Bits are binary; they can be 0, or they can be 1, but they cannot be both. This allows quantum computing to solve problems that are too complex for other computers.

Quantum computing has potential applications in material sciences, medicine, drugs, genetics, military intelligence and warfare, artificial intelligence, communication, economics, transportation, and any discipline that impacts humanity. This technology, however, will come with its own set of risks and implications. Quantum computing will rely on algorithms that will evolve without human interaction, meaning we cannot see or validate the work they would create. This can cause concerns about cybersecurity and exploitation, and more.

The use of quantum computing will advance technology in ways previously thought unknown. However, we will in turn need to ask how it will remain ethical and consider what actions will need to be taken to accomplish that.

Chapter 4: Blockchains, NFTS, and Cryptocurrencies

Blockchains are infrastructures or networks of nodes that support both cryptocurrencies and NFTs, neither of which can exist without blockchain.

An NFT (nonfungible token) is a unique cryptocurrency token that can take the form of anything digital—a drawing, music, a video, or a meme. So NFTs allow you to buy and sell ownership of unique digital items and keep track of who owns them using blockchains.

Fungible means “interchangeable.” For instance, any two US pennies in common circulation have the same value. These pennies are fungible items within a system of currency. The same is true with cryptocurrency tokens; any one unit is interchangeable with another.

Blockchains, cryptocurrencies, and NFTs are all innovations with great promise and equally great risks. Blockchains may serve the purpose of democratizing value through a peer-to-peer marketplace of cryptocurrencies and NFTs and create a free market where intermediaries no longer profit from or gatekeeper transactions.

But money itself is a social construct. The new concerns relate to the ease of transactions for criminals and the risk to victims. Leaders must ask themselves, “How do blockchains exacerbate these problems?” and find a way to curtail them.

Chapter 5: Augmented Reality and Virtual Reality

A virtual reality (VR) experience is entirely immersive in a simulated environment. Think of a solo trip to the Holo-deck on Star Trek. Augmented reality (AR), on the other hand, allows users to interact with each other through a digitized intermediary. Think of backgrounds in a Zoom meeting that make you look like you’re in the same place as your colleagues.

VR interaction may resolve concerns about screen time and sedentary game use among children. It provides extraordinary possibilities for learning. AR unlocks a host of possibilities for fitness and physical activities. On the flip side, VR and AR can take humans away from social interactions that shape their neurological development and social skills and the critical human construct of empathy. Aside from physical dangers, there are many financial and emotional risks associated with AR and VR.

Chapter 6: The Metaverse

There is no “one” metaverse. Rather, there are metaverses—plural. Eventually, meta-verses may converge, but presently they are best known in the realm of gaming. As metaverses were only imagined within the last thirty years and initially actualized in the last twelve, a clear-cut definition is elusive.

A metaverse is the perfect place to simulate comprehensive learning. Imagine visiting the South Pole, the bottom of the ocean, the surface of the moon, or the deepest recesses of the living human brain. The metaverse offers unfettered access to the real and the imagined. It could very well lead to fully digital offices, greatly enhance and realize virtual tourism, and make social media more immersive than ever.

Because the concept of a metaverse is still so new and nebulous, we must assume that the challenges we face with it will be the same as any other emerging technology. We will have

those who exploit it, those who are exploited by it, and the rest of us following along until it’s no longer new.

Chapter 7: Genetic Engineering

At its most essential, genetic engineering is the manipulation of a segment of DNA to influence the way in which the source cell reproduces, and the traits carried forth in new cells derived from the modified genes in the new cell’s DNA.

The manipulation could be limited to copying or cloning an existing cell with no additional modification. However, even a clone cell can be influenced by unintended consequences, which is what makes genetic engineering so mysterious—and potentially so dangerous.

While the ethics of cloning are hotly debated, the first-ever sheep (named Dolly) was cloned in 1996 by scientists. In 2020, scientists cloned the endangered black-footed ferret. Could human cloning be the future of genetic engineering? Could the procedure cause harm to individuals? What are the long-term effects of cloning?

Chapter 8: Robotics

Robots are machines that can be programmed to operate manual tasks without direct assistance from human beings. Robotics as a field emerged from interdisciplinary efforts in manufacturing, engineering, and computer science and has come to embrace medicine, aeronautics, and a variety of environmental applications. Robots in the operating room allow surgeons to accomplish procedures with their minds and mechanical controls that their hands simply could not manage within the same time and space.

But this technology can disproportionately harm the lower-skilled and midlevel workers in geographies where robotics is adopted. Robotics are expensive investments for manufacturers. This gives larger global businesses distinct advantages over smaller businesses without the capital to reap the cost benefits of robotics.

Chapter 9: Edge Computing and 5G

Edge computing is a distributed computing paradigm that brings computation and data storage closer to the sources of data. This method reduces bandwidth to improve response times. Edge computing relies on faster networking to process data closer to where it’s being generated, enabling processing at greater speeds and volumes. Faster communication between devices delivers action-led results in real-time.

Cities can become “smart” by using 5G technology to connect many devices and sensors, and when managed well, the city’s infrastructure can see improved transparency and efficiency. This technology can also provide more options regarding security and control, making it more customizable for every business. But edge computing and 5G come with countless privacy and security concerns. When everything is on the same global network, anyone can hack into any device holding private or sensitive information.

Chapter 10: 3-D Printing

“3-D printing,” enables us to build a three-dimensional object that was printed from a computer design. The additive process of 3-D printing creates less waste and makes a large investment in materials cost-prohibitive. Unique items are also perfect candidates for additive manufacturing.

Medical devices and dental implants are extremely specific to the person who needs them, and 3-D printing allows for faster delivery of highly specific items at lower costs than those required by traditional manufacturing processes. We are at the point in time when, if you can imagine it, you can make it with a 3-D printer.

Presently, the materials most common in 3-D printing are not as durable as those used in traditional manufacturing. The advancement of 3-D printing is also at odds with other efforts to reduce plastic consumption for the health of our oceans, earth, and atmosphere. Some important questions to ask around this topic include “Who is responsible for weapons or dangerous materials created with 3-D printers?” “What effects will additive manufacturing and 3-D printing have on IP?” “Will traditional IP laws limit the adoption of 3-D printing or additive manufacturing technology by end consumers?” “How would copyright and patent infringements be monitored and addressed?”

Chapter 11: Artificial Intelligence

It is evident that artificial intelligence (AI) is the most transformative technology of the twenty-first century. It already permeates nearly every industry and business function, and its capabilities are only expanding.

This ground truth of AI applies to the many kinds of AI in use today including computer vision, natural language processing, speech recognition, planning and predicting, and recommended systems. The capacity to use AI to create good for all organizations and people is enormous, but for it to reach that full potential, we must contend with some

complex challenges along the way.

AI can be considered trustworthy if it hinges on a combination of the following dimensions:

- Fair and impartial
- Robust and reliable
- Respectful of privacy
- Safe and secure
- Responsible and accountable
- Transparent and explainable

Part 3

Chapter 12: The Next Evolution of Humans with Emerging Technology

Part two of this book explained some of the most pressing and prescient technologies to build your technical literacy. This chapter introduces you to additional emerging technologies that may be relevant to your business to expand your awareness of the technology landscape

Biofuel generates electricity from bacteria using microbial fuel cells and is being used in pilot landfills across the globe. Hydrogen fuel-cell energy, which produces zero carbon emissions, is also on the horizon. The detection of BRCA1 and BRCA2 gene mutations is likely to save millions of lives through predictive early monitoring for a variety of reproductive cancers over the twenty-first century. Hyper-personalized technology will eventually include everything from your cell phone to an eye implant.

As we all consider our impacts on the planet, these innovations should remain front of mind for all Zero Latency Leaders. Planning for potential technologies within your organization is crucial to taking proactive action.

Chapter 13: Leadership in the Era of Rapidly Emerging Tech

Leaders should focus on becoming more tech literate to be able to pursue their specific business strategy, aligned with their specific business values. Strong leaders shape an environment where technology is part of the business process and act accordingly. Zero Latency Leaders must use their skill set to navigate (not manage) and thrive in the onslaught of technical opportunities. Some steps you can take toward embracing this change include:

- Become tech fluent
- Collaborate with your competition
- Build diverse teams
- Cultivate an ecosystem
- Focus on Humans with technology
- Learn to fail
- Use technology in your personal life
- Continuously upskill your team
- Upgrade your soft skills
- Be a responsible citizen

Conclusion

Leaders have an intrinsic bias toward action. Sure, learning about emerging technologies and leadership skills is critical. But putting these learnings into practice is equally important.

Ensure that equity, sustainability, and trust are all cornerstones of your company's mission. Do not fear the future, plan for it instead. To enhance your technical aptitude, don't hesitate to subscribe to a technology newsletter. Constantly assess how ready your company and staff are to meet innovation and bring it into your company in a sustainable, equitable, and trust-driven fashion.

Finally, remember that as a Zero Latency Leader, you're not here to merely make quick decisions for the best business gains. You're here to make a difference in the trajectory and impact of how technology is used in business and beyond. Everything is a choice. Let ours be choices that make meaningful and lasting differences.



Beena Ammanath has been at the forefront of emerging technologies for some of the largest and most prestigious enterprises around the world. A computer scientist by education, she is an award-winning senior business executive with a career that has spanned leadership roles in finance, marketing, e-commerce, telecom, retail, software products, service, and industrial manufacturing domains with companies such as Deloitte, GE, HPE, BT, Bank of America, and numerous start-ups. She is also the founder of Humans for AI, a nonprofit focused on increasing diversity and inclusion.

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