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Designing Our Future

Redefining Design in the Age
of AI for Sustainable Innovation

—

Diana Olynick

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Designing Our Future: Redefining Design in the Age of AI for Sustainable Innovation

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Winnipeg, MB, Canada

ISBN-13 (pbk): 979-8-8688-1162-3

ISBN-13 (electronic): 979-8-8688-1163-0

<https://doi.org/10.1007/979-8-8688-1163-0>

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Managing Director, Apress Media LLC: Welmoed Spahr
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Editorial Project Manager: Gryffin Winkler

Cover designed by eStudioCalamar

Distributed to the book trade worldwide by Springer Science+Business Media New York, 1 New York Plaza, New York, NY 10004. Phone 1-800-SPRINGER, fax (201) 348-4505, e-mail orders-ny@springer-sbm.com, or visit www.springeronline.com. Apress Media, LLC is a Delaware LLC and the sole member (owner) is Springer Science + Business Media Finance Inc (SSBM Finance Inc). SSBM Finance Inc is a **Delaware** corporation.

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About the Author



Diana Olynick is a leader in engineering innovation, emerging technologies, strategic foresight, and futures design. As a registered Professional Engineer, Diana leverages her extensive experience in the public and private consulting sectors to drive sustainable and forward-thinking solutions. Her expertise includes AI-driven strategic foresight methodologies and the application of cutting-edge technologies in engineering. Beside her technical engineering experience, Diana has

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Kamila Iżykiewicz is a futures designer, researcher, and internationally exhibited artist (MA Design Futures, RCA). She leads Futures Design (www.futuresdesign.co.uk), a practice blending research, storytelling, and design to explore how sensory experience shapes time, legacy, and social-ecological systems. Her projects have been showcased at Tate Modern,

Dubai Futures Forum, Design Indaba, and major design weeks across Europe. Her awards include CERN's Far Futuring Grand Challenge and the Creative Conscience Prize. She has published in academic journals and presented at institutions including Kingston University, Northumbria, the University at Buffalo, and the Royal College of Art, as well as with industry partners such as John Lewis Partnership.

Acknowledgments

First and foremost, my deepest gratitude goes to my family—Sara, my mom, Stephen, Gani, and Penny—whose unwavering belief in this work anchored me through the busiest and most challenging moments of the journey.

To the diligent teams who helped bring this vision to life: Welmoed Spahr, James Robinson-Prior, James Markham, Gryffin Winkler, and Shobana Srinivasan. To our technical reviewer, Kamila Izykowicz, and to our world-class contributors—Jerome Glenn, John Maeda, Alice Rawsthorn, and Nabil Harfoush—thank you. To every editor, manager, colleague, and friend who offered guidance and critique along the way, your contributions were and continue to be invaluable.

As you are about to discover through *Designing Our Future*, it is all about the now. I invite you to pause for a brief meditation on the present moment, not only here, but throughout these explorations and in your own practice. It can feel contradictory to pick up a book about the future when we are so often told to stay present. And yet that is precisely the point: from grounded presence we can build a more resilient and conscious tomorrow. That, ultimately, is why this book exists.

Most importantly, dear reader, Thank You. By engaging with these pages, you make the work alive. I hope, in some small way, it equips and encourages you to shape the resilient and innovative futures ahead.

Preface

“The future is in your hands.”

Imagine you stumbled across a strange device in one of your trips to the Middle East. It is a watch. You take it with you and begin to study it trying to decipher its symbols. As you touch the top button, you start to feel dizzy; you feel you are about to faint. Somehow you open your eyes and you are in another place, completely different from your last hotel room where you had been inspecting the artifact. You look through the window and you can see something is just not matching your previous reality.

The once vibrant city life has been replaced by unsettling silence. You can hear the wind through the remains of skyscrapers, their facades being replaced by decades of neglect and contamination. Nature, once pushed back by the relentless treatment of humanity, now reclaims the abandoned streets. Cracked asphalt is fractured by blades of grass.

Inside a decaying apartment, sunlight filters through a broken window, and as you observe, years of unchecked climate change, driven by industrial expansion and resource extraction, have wreaked havoc. The global climate system is spiraling out of control, and the window for course correction has slammed shut. Food production is projected to collapse within the next year. Mass starvation and social unrest are inevitable.

As you witness the chaos, you remember stories from your grandparents before the environmental crisis. Images project in your mind: fresh green fields, prosperous food markets, people happy and smiling... Now, those memories feel like a cruel dream.

PREFACE

Deep down you know the truth. Humanity gambled on the future, prioritizing short-term gain over long-term sustainability. Even in this desolate world, there must be a way forward, you think. You decide to work on what seems now a dream—the dream of rebuilding, not just a society, but a future where humanity learns from its mistakes. Together, with the few surviving communities, you might find a way to restore balance and hope in a world ravaged by human excess and neglect. The year was 2125.

Suddenly you wake up in your own bed, back in time. In our current world.

This scenario serves as a stark reminder of the consequences of inaction. It underscores how the choices we make today, both in design and technology, shape the trajectory of our future.

This book explores the critical intersection of design, artificial intelligence, and the urgent need for sustainable, long-term thinking. The world is undergoing unprecedented technological advancement, fundamentally altering the way we design products, services, and systems. Yet, the traditional design mindset struggles to adapt. It's inherently reactive, limited by its focus on immediate problems rather than the interconnected systems of our increasingly complex world.

Integrating Futures Thinking with the power of AI is crucial. Futures Thinking provides a framework to anticipate challenges, explore potential scenarios, and design proactively for a better future. AI offers enormous potential as a tool for creative exploration, pattern recognition, and strategic foresight. Together, they provide an invaluable toolkit for shaping the world we want to live in.

This book is intended for designers, technologists, policymakers, and anyone interested in actively designing the future, “the forward thinking ones.” It will guide you through understanding Futures Thinking principles and methodologies, integrating AI tools strategically, and applying these frameworks to real-world challenges.

This book begins by defining Futures Thinking and outlining its key principles. It explores the ways AI transforms design processes, and highlights the ethical considerations of this powerful partnership. The remainder of the book dives deeper into practical methodologies, providing concrete tools and examples to help you implement these ideas into your work.

Before we dive deeper into the content of each section, this is where we need to make the most important clarification. If you have been studying these fields, you might have heard the terms futures thinking, futures design, strategic design, critical design, speculative design, anticipatory design, futures studies, and more. This book will focus on the broad span of the methodologies used in strategic foresight, futures thinking, and futures design.

It is beneficial to notice that the process of exploring signals of change, determining preferable futures, and creating scenarios often touches on different aspects of foresight, futures thinking, and futures design, frequently overlapping and complementing each other. In fact, I have seen different experts talking about different aspects of these disciplines interchangeably.

Due to their interrelated nature, these practices are not rigidly separated. For example, when you are exploring signals (foresight), you might simultaneously begin to imagine how those signals could manifest (futures thinking), and as you develop scenarios, you might decide to create visual or experiential representations (futures design) or push the boundaries with more radical, thought-provoking concepts (speculative design).

And finally, the most important takeaway is that throughout the world, there are an important number of researchers, futurists, and academics that have dedicated their entire careers to this field, and even with that depth of practice, their opinions about the use of these different methodologies and their definitions can also vary to some degree, even when all fall under the same unified study of the future. In fact, some of the design thinking methodologies have been morphed and adjusted for the study of the future.

PREFACE

Ultimately what is important is that you study the methodologies, through your own experience learn how they are best applied in your respective projects or fields, and regardless of their names or characterizations, you are able to produce solid insights about potential futures for sustainable development and social good. I even invite you to create your own methodologies once you understand the principles so that you can customize your own tool for the specific needs of your job.

Lastly, here is my main contribution for you to remember about this book. I would like to share this through the actual story of how this unfolded. I have since the 2010s followed and learned from the work of a researcher that I appreciate for the contributions he has made. His name is Dr. Jerome Glenn. One day we were talking through a video call and the point he impressed on me was that foresight is only as strong as its evidence chain. You can apply a method correctly and still struggle to explain how signals became insights, or why a scenario was judged “preferable.” From that conversation forward, I have tried to make the logic from Signal ► Insight ► Implication ► Choice visible and auditable.

This is an important warning for us to keep in mind, on how much we really know about where conclusions come from and how much data we really have gathered and rigorous research methodologies followed to arrive at them. Please keep in mind that this book is not about the process to establish rigorous research alone, as that would be a completely separate scope, but to be aware that this might be required for a complete and formal futures study. In this book we will work on understanding and reflecting on the methodologies, and brief case studies will be provided using assisting tools like AI, but the complete results of a formal futures study would require a strong infrastructure of experts teams working together along with associated communities, stakeholders, and participatory frameworks that can lead to those objective insights. The

content presented in this book is presented for methodological purposes and the examples presented are for the purposes of understanding the tool, not to provide the ultimate conclusion of the data used for the examples.

My own journey in the facets as an engineer, researcher, designer, and technologist has profoundly shaped my perspective. Having seen both the potential and the pitfalls of unchecked technological advancement, I'm firmly convinced that intentional design is critical.

It is my sincere hope that this book empowers you to embrace Futures Thinking and harness AI responsibly. The future isn't pre-determined. It's an act of continuous design, and we get to be the architects.

Introduction—The Challenge of Futures Design and AI

What world are we creating?

In an age of rapid technological change, interconnected global systems, and looming environmental crises, one thing is certain—the future will be complex. Reactive design approaches that focus on solving today’s problems are woefully insufficient. Building a world that is sustainable, equitable, and resilient requires a fundamental shift in how we think about design itself.

This shift is embodied in Strategic Foresight. Rather than predicting one outcome, we explore a portfolio of futures: the possible, plausible, and probable, and then clarify the preferable trajectories we aim to shape. Using this wider lens helps us anticipate long-term impacts of today’s design choices and align action with ethical and sustainable intent.

Artificial intelligence (AI) has become an indispensable tool in this endeavor. AI’s capacity to analyze data, identify patterns, and generate creative options expands the designer’s toolkit. It allows us to navigate the complexities of the future and make more informed, far-reaching decisions. However, this powerful technology also demands a sense of responsibility. As we design alongside AI, ethical considerations become paramount.

This book aims to be your guide to this exciting intersection of Futures Thinking, AI, and the creation of a sustainable future. Within these chapters, you will explore how design can be used to address the most pressing challenges of our time, from climate change to social inequality. You’ll discover methods for harnessing AI in design without losing sight of the human experience. Most importantly, you’ll gain the tools to become an active participant in shaping a future that benefits all.

In Part I, we set out to understand the ground bases at the intersection of design and futures thinking, exploring the different approaches being tried in both fields and the integration of them in modern disciplines like cognitive science, computational design, bioscience, social studies, and more. This understanding of the traditional approach to design, at the contemporary application reflected in futures design, led us to reflect on Part II about the foundations of the core concepts in futures design thinking, as well as its cultural and global impact over the last years along with its ethical and sustainability viewpoint and direct applications. Considering the variable approaches in futures design, in Part III we discuss different methodologies and frameworks as well as tools and applications to gain a better understanding of what devices are better used in different contexts. Since different fields offer different challenges, Part IV is dedicated to explore some of those ones as well as opportunities in emerging fields. Part V then takes all these building blocks and presents the use of AI resources in the field of Futures Design while deepening its applications with some of the emerging fields discussed in Part IV, along with complex environmental scenarios and the different philosophical and mythological perspectives. Part VI explores how AI pushes futures thinking beyond the typical constraints opening new frontiers in space exploration, post-human and virtual realities, regenerative environmental systems and inclusive design among others. In Part VII, we examine societal systems such as politics, health, economics, education, environment and more, concluding with Part VIII as a final reflection on opportunities moving forward and anticipations on the integration of new methodologies and frameworks using advanced technologies. Designers and leaders make better choices when they can imagine desirable futures and work backward to today's decisions. This book combines strategic foresight (evidence, scenarios, options) with futures design (experiments, artifacts, engagement) so teams can (1) define what preferable means for them, (2) explore multiple trajectories beyond straight-line trends, and (3) translate vision into near-term moves they can

test and measure. See the section “Radical Reimagining and Innovation for Desirable Futures” in Chapter 7 for the mindset shift that powers the tools that follow.

The future is not something that simply happens to us. It’s a canvas awaiting our design. Let’s start building.

Seeing Further, Acting Sooner

We are making decisions today that will live for decades, often under conditions that shift faster than our plans. This book is about developing the practical habits to see further and act sooner. At its core is strategic foresight: clarifying purpose, scanning widely, building plausible scenarios, and stress-testing choices before committing resources. Alongside that, we draw on futures design to communicate implications, prototype possibilities, and help teams and stakeholders make sense of complex change, without confusing concept sketches for certainty.

Artificial intelligence now accelerates this work. Used thoughtfully, AI scales horizon scanning, helps structure weak signals, drafts scenario narratives, and generates quick visualizations and simulations. But acceleration is not the same as understanding. Human judgment—values, ethics, context—remains the governor of quality. Throughout these pages you will see workflows where AI does the heavy lifting on volume and speed while humans do the work that only humans can: asking better questions, weighing trade-offs, and building legitimacy with the people affected by our decisions.

This book is pragmatic. It favors clear steps over jargon and shows how to move from abstract frameworks to concrete choices. You will learn to set a sharp intent, run 360° environmental scans (e.g., looking across social, technological, economic, environmental, political, and values factors), cluster signals into patterns, and turn those patterns into scenarios that reveal risks and opportunities. You will practice implications mapping and lightweight futures wheels to surface second- and third-order effects

SEEING FURTHER, ACTING SOONER

that day-to-day planning misses. You will also see where futures design artifacts such as storyboards, mock interfaces, and service maps make strategy more communicable and testable.

Just as important is what this book does not do: it doesn't promise prediction, and it doesn't treat visual artifacts as outcomes in themselves. Where design appears, it is in service of foresight, clarifying options, exposing assumptions, and enabling participation. Where AI appears, it is situated inside guardrails: cite sources, distinguish facts from synthesis, check for bias, and keep a human in the loop.

PART I

The Foundations of Design and Futures Thinking

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