

THE AUTOMATED WORLD

A COMBINATORIAL FORECASTING TOOLKIT

We're on the verge of entering an automated world where everyday people, organizations, and cities use previously unimagined machine power, where algorithms make art and diagnose illness, and where humans+machines redefine how we live, work, and play. In this future, billions of things in our material world get networked and take on unprecedented capabilities. They'll have **on-demand intelligence** and be capable of **continuous capture and sensemaking** and **simulating complex decisions**. And they won't be static but instead adapt as **evolvable hardware** and contain **encoded judgments** that shape the outcomes of their actions. The technologies of the automated world will be available to everyone. How will you use them?

This toolkit, with its companion map, ***The Automated World: Toward Human+Machine Symbiosis***, is your guide to navigating the coming decade.

the
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TOWARD **HUMAN+MACHINE** SYMBIOSIS

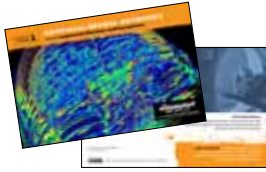


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HOW TO USE

This toolkit contains several suits of cards to help you create your own forecasts, explore the future at the intersections of foundational technologies, generate strategic insights, and begin prototyping the future you want today.



Step
▶ **1**

BUILD YOUR COMBINATORIAL FORECASTS

This suit of 18 cards describes the different Foundational Technologies that combine to make the automated world possible. Use them to create your own combinatorial forecasts of the new automated world.



Step
▶ **2**

CHART YOUR FUTURE POSSIBILITIES

This suit of 5 cards outlines the combinatorial forecasts that are the building blocks of the automated world. Use these cards to think through their impact and generate strategic insights.



Step
▶ **3**

DESIGN YOUR ARTIFACTS FROM THE FUTURE

This suit of 6 Artifact from the Future cards describes scenarios of products, services, and systems of the automated world. Use them to tell your own story of the automated world and design your own artifact from the future.

STEP
1

BUILD YOUR COMBINATORIAL FORECASTS

To understand the promise and power of the automated world, we must understand the basic technology foundation.

This suit of 18 cards describes the different foundational technologies that combine to make the automated world possible. Each is a force in its own right, but in combination they open up totally unprecedented possibilities.

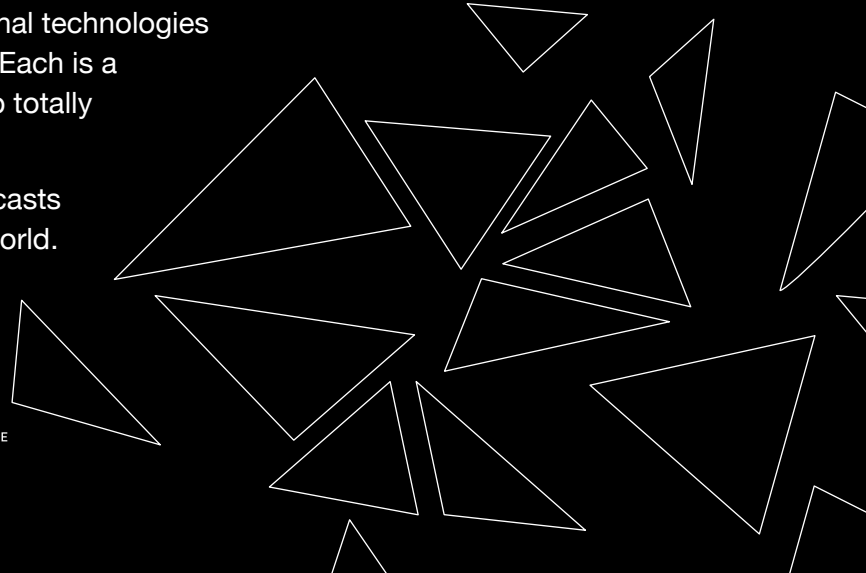
In this step, you'll create your own combinatorial forecasts of new capabilities we'll use to build the automated world.

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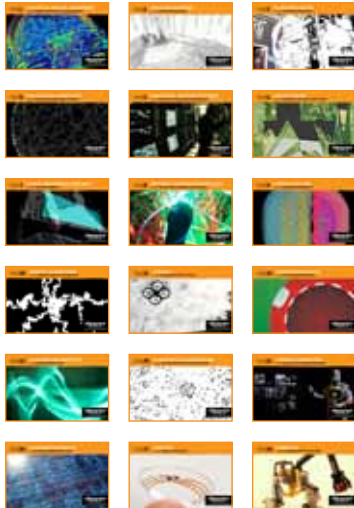
STEP

1

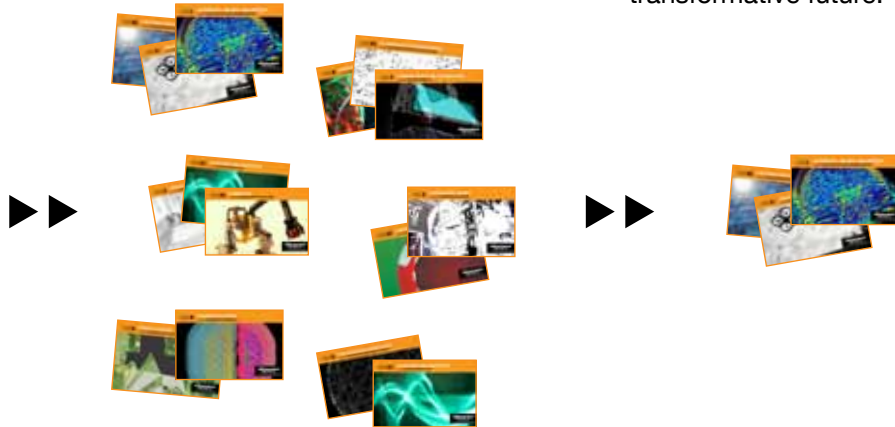
BUILD YOUR COMBINATORIAL FORECASTS

instructions

Get familiar with foundational technologies by laying out all 18 cards and reading them out loud.



Explore powerful combinations by considering different clusters of at least three cards and looking for combinations that will have the most impact on your future.



Build your own combinatorial forecast by selecting the most impactful combination, giving it a title, and forecasting how they combine to create a transformative future.

STEP
2

CHART YOUR FUTURE POSSIBILITIES

Combinatorial Forecasts represent the **building blocks** of the automated world.
What will you build with them?

This suit of 5 “Combinatorial Forecast” cards describe forecasts of emerging capabilities that different combinations of Foundational Technologies generate. Use these cards to consider the disruptive impact and transformational possibilities of the automated world.

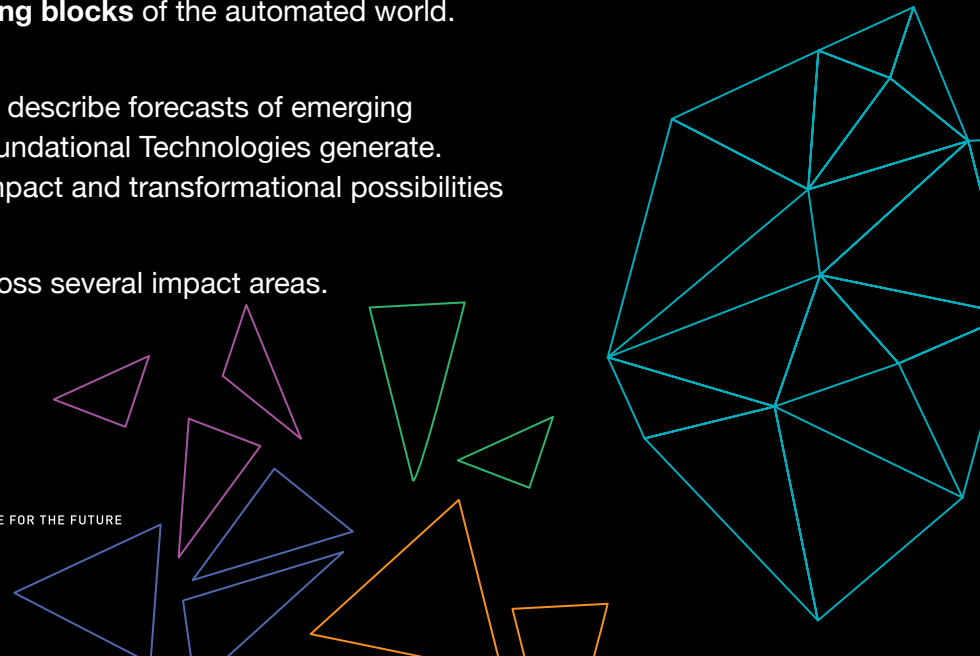
In this step, you’ll chart strategic insights across several impact areas.

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STEP
2

CHART YOUR FUTURE POSSIBILITIES

instructions

Review five Combinatorial Forecast cards to learn about the building blocks of the automated world. Then:

1 Add your own Combinatorial Forecast from the last step here

2 Generate Impact Zones that are important to you or your organization and add them here

COMBINATORIAL FORECASTS							
IMPACT ZONES		CONTINUOUS CAPTURE AND SENSEMAKING	SIMULATING COMPLEX DECISIONS	ON-DEMAND INTELLIGENCE	EVOLVABLE HARDWARE	ENCODED JUDGEMENT	
	Human Resources	Automated Employee Wellness	Staffing with Robots	On-Demand Wellness Counseling	↓ Future-Proof Design		
	Marketing	Dynamic Ads in Place		Interactive Ads			
	Product Development						
	Distribution		Algorithmic supply chain management				Priority Sustainability

3 Chart Strategic Insights by identifying critical intersections where Combinatorial Forecasts meet your Impact Zones to create new opportunities or challenges



STEP
3

DESIGN YOUR ARTIFACTS FROM THE FUTURE

You can catalyze the change you want to see in the automated world by prototyping your own vision for the future today.

This suit of 6 **ARTIFACTS FROM THE FUTURE** cards describes six scenarios of products, services, and systems of the automated world at different scales. They bring the future forward, giving you an immersive view into the world of the next decade.

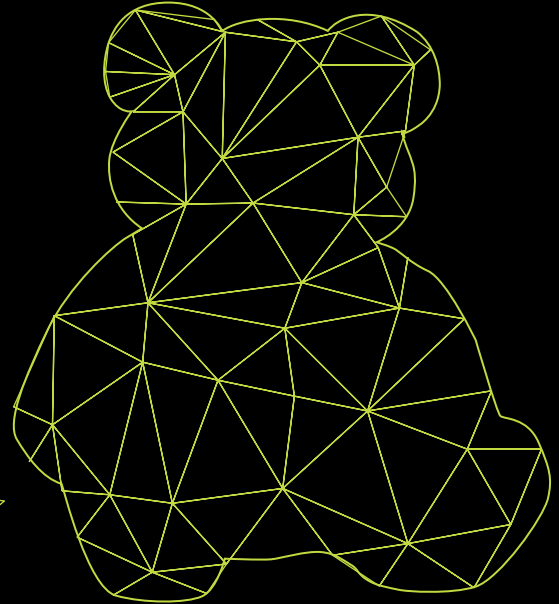
In this step, you'll explore Artifacts from the Future and create an original scenario to tell your own story of human+machine symbiosis.

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STEP
3DESIGN YOUR ARTIFACTS FROM THE FUTURE
instructions

Designing Future Artifacts

- 1 **Describe the future** at a critical intersection from the matrix from the previous step by answering, "What is being automated? To what end? For whose benefit?"
- 2 **Highlight the technologies** of an automated world in your story to explain how this future will be possible.
- 3 **Make the future tangible** by creating an interaction, object, person, or place that represents the transformational nature of this future.
- 4 **Bring your future forward** by telling a story about your interaction, object, person, or place using text and illustrations.
- 5 **Sketch your Artifact from the Future**



ABOUT THE

INSTITUTE FOR THE FUTURE

The Institute for the Future is an independent, nonprofit strategic research group celebrating 45 years of forecasting experience. The core of our work is identifying emerging trends and discontinuities that will transform global society and the global marketplace. We provide our members with insights into business strategy, design process, innovation, and social dilemmas. Our research generates the foresight needed to create insights that lead to action and spans a broad territory of deeply transformative trends, from health and health care to technology, the workplace, and human identity. The Institute for the Future is based in Palo Alto, California.

TECHNOLOGY HORIZONS PROGRAM

The Technology Horizons Program combines a deep understanding of technology and societal forces to identify and evaluate discontinuities and innovations in the next three to ten years. We help organizations and communities develop insights and strategic tools to better position them for the future. Our approach to technology forecasting is unique—we put people at the center of our forecasts. Understanding humans as consumers, workers, householders, and citizens allows IFTF to look beyond the technical capabilities and identify the value in new technologies, forecast adoption and diffusion patterns, and discover new market opportunities and threats, as well as anticipate how we will live, work, and connect with one another in the coming decade.

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