



# Design for Exponentials

A Four-Step Framework for Radical Ideation



# Table of Contents

» Introduction	1
» Be the Disruptor	4
» Phase One: Prepare	6
» Phase Two: Discover	10
» Phase Three: Envision	18
» Phase Four: Prototype	24
» Conclusion	31

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# Introduction

In the following pages, we will present our **Design for Exponentials (D4X) framework**, a unique and powerful approach for radical ideation. We use this framework to help our clients, ranging from startup founders to Fortune 100 companies, think exponentially and create innovative solutions for future challenges.





The speed of technological progress exceeds the incremental innovation of many organizations, making it essential to adopt a forward-thinking approach. The D4X framework empowers leaders to see beyond Horizon 3, ensuring they stay ahead of the curve in today's rapidly evolving landscape. By leveraging the predictive path of emerging technologies and fostering creativity, the D4X framework enables organizations to build successful roadmaps for solutions 10, 15, or even 20 years out. Incorporating D4X into your innovation toolkit can help unlock breakthroughs and ensure your organization remains at the forefront of innovation.

## HOW TO USE THIS E-BOOK:

This ebook is designed to be a flexible resource that can be tailored to your preferred learning style. Whether you want to read it independently or actively participate in the activities provided, the choice is yours. To get the most out of the D4X framework, follow these steps:

1. **Read Through Each Section:** Familiarize yourself with the concepts and phases of the D4X framework by reading each section thoroughly.
2. **Engage With the Activities:** Put the framework into practice by completing the activity guides at the end of each section. These hands-on exercises will help you internalize the concepts and see the real-world applicability of the D4X framework.
3. **Reflect & Iterate:** After completing each activity, take a moment to reflect on your experience and consider how you can apply the insights gained to your organization's innovation efforts.
4. **Share & Collaborate:** Discuss the ideas and outcomes of your D4X journey with your team, fostering a collaborative environment that encourages exponential thinking and innovative problem-solving.
5. **Revisit & Refine:** As you encounter new challenges and opportunities in your organization, revisit the D4X framework to help you continuously innovate and adapt to the rapidly changing landscape.
6. **Leverage Singularity Enterprise Solutions for Customized Support:** The D4X framework is designed to work seamlessly with Singularity enterprise solutions, providing you with the opportunity to custom tailor the framework to your organization's specific needs. By combining the D4X framework with our enterprise solutions, you'll benefit from expert guidance, personalized coaching, and tailored workshops to help drive innovation and accelerate your organization's journey towards exponential growth. Reach out to our team to learn more about how Singularity enterprise solutions can enhance your experience with the D4X framework and unlock your organization's breakthrough potential.

## CORE CONCEPTS:

### >> **D4X Framework**

A systematic approach to radical ideation and innovation that focuses on exponential thinking and leveraging emerging technologies.

### >> **Linear vs Exponential Thinking**

Linear thinking involves a step-by-step progression, whereas exponential thinking recognizes the accelerating growth of technology and its potential impact on various aspects of life and business.

### >> **The Three Horizons of Growth**

A strategic model that helps organizations balance short-term success (Horizon 1) with emerging opportunities (Horizon 2) and long-term, disruptive innovations (Horizon 3) to ensure agility, innovation, and preparedness for future challenges and opportunities.

### >> **Mindsets**

The mental attitudes and beliefs that shape how we perceive and approach challenges and opportunities in innovation.

### >> **Narratives**

Compelling stories that help communicate and promote innovative ideas, fostering understanding and acceptance among stakeholders.

### >> **Future Visioning**

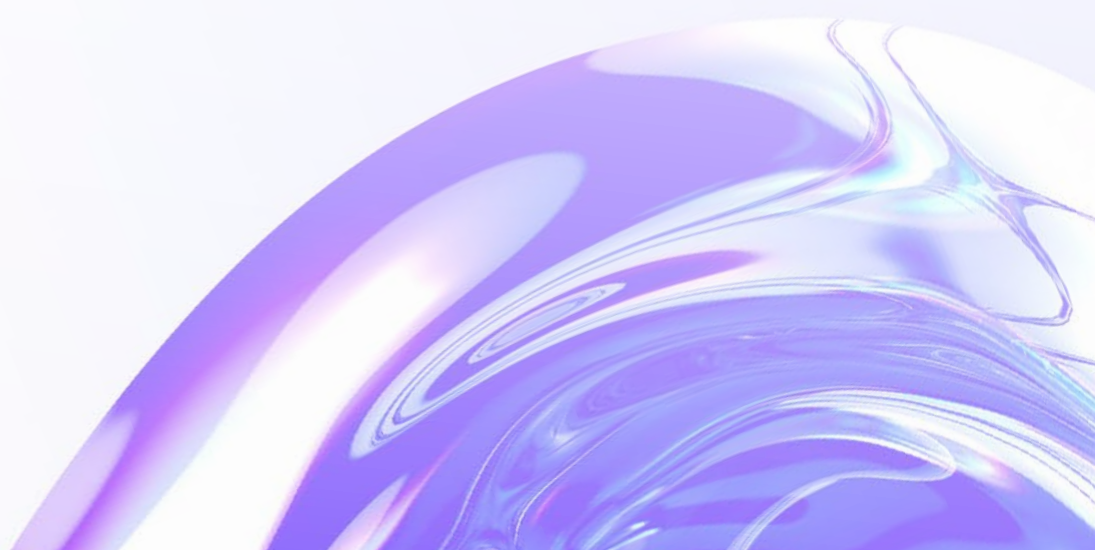
The process of imagining and articulating future scenarios to identify opportunities, challenges, and strategies for innovation.

### >> **The 6Ds**

A six-stage process to understand and leverage exponential technologies, including digitization, deception, disruption, demonetization, dematerialization, and democratization.

### >> **Prototyping**

The iterative process of developing and testing tangible representations of an innovative idea, enabling refinement and validation before full-scale implementation.



# Be the Disruptor

Disruption is inevitable in today's business landscape. Rapid technological advancements are forcing leaders to devise new ways to stay ahead or risk becoming obsolete. No one wants to be the next Kodak, but how do you compete with the current speed of technology?

There is a difference between traditional innovation and exponential innovation. Take for example the Walt Disney Company and Blockbuster in 2004. Both organizations were a core part of culture and entertainment globally, were highly successful businesses—grossing annual revenue of \$27.1 billion and \$5.9 billion respectively—and had enough reasons to resist change. However, as of 2023, Disney is considered one of the world's most innovative organizations, while only one Blockbuster store remains.



A key difference between companies like Disney and Blockbuster is how they think about innovation and their ability and willingness to embrace technology and use creativity to visualize an uncertain future. When the co-founders of Netflix approached Blockbuster in 2000, hoping to sell them the now-\$150-billion company for \$50 million, Blockbuster was not interested. Blockbuster's linear thinking prevented them from seeing the exponential threat digitization presented, even when it was at their doorstep.

In contrast, the Walt Disney Company leverages "Imagineering" to consistently build for the future. They use technology to bring Disney magic to life by optimizing park logistics with MagicBands, for example, improving film production using affective AI, and advancing park interactions with soft body robots.

Disney's ability to stay ahead of technology and competition is rooted in their forward-thinking mindset. Walt Disney, a design thinking advocate, emphasized imagination, story, and technology as core components of the company's culture and mission. Their massively transformative purpose (MTP) is to be the "world's premier entertainment company," transcending their current operations and focusing on transporting guests to different worlds and creating memorable experiences. This D4X-like framing allows Disney to explore technology purposefully, create magical experiences, and expand into merchandise, digital, robotics, and more. They don't fear the future; they paint themselves into it.

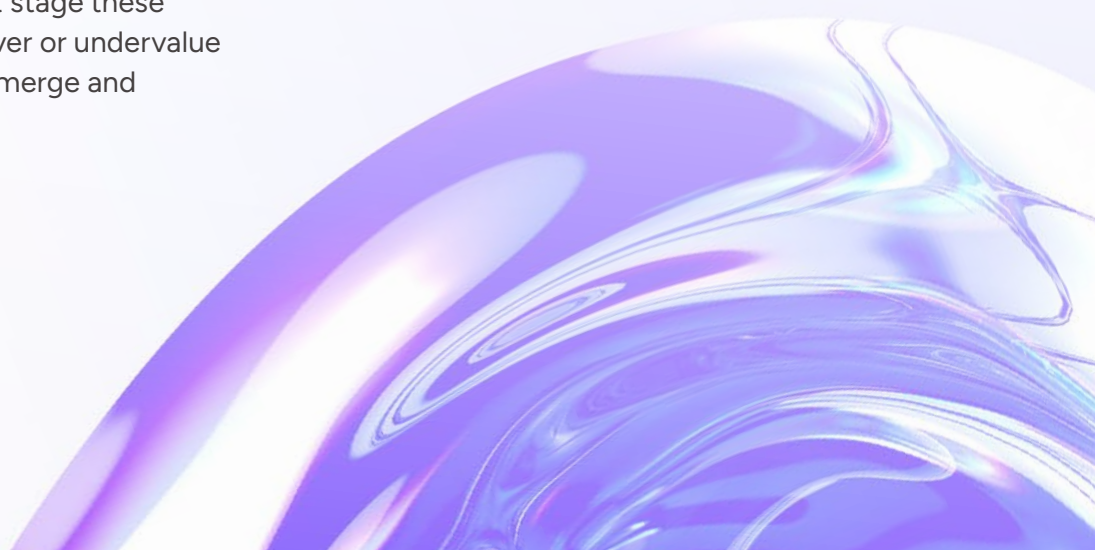
In retrospect, it's easy to think we can pinpoint the moment companies like Blockbuster, Kodak, Nokia, or Sears went wrong, but it's important to remember that there was no singular moment or point of failure. You too might be sitting at the edge of your own "Kodak moment" and not even realize it.

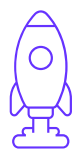
Technologies such as artificial intelligence, augmented and virtual reality (XR), robotics, sensors, quantum computing, and the Internet of Things (IoT) are poised to disrupt how we interact with and experience the world around us. It's easy to miscalculate what stage these technologies are in and over or undervalue when and how they will emerge and

become a real threat to your business. With AI, in particular, we're already seeing major strides being made that are bringing the technology closer to mainstream adoption—however, the real economic and societal impact has yet to be felt. The explosive growth of these technologies is not a matter of if, but when.

Imagine for a moment you step back in time 15 years. You can't disclose who you are, but you have the opportunity to share three business ideas with your past self. Think about what ideas you would share and how your past self would react. Would they listen or dismiss your ideas as impossible or crazy?

Peering into the future is difficult but not impossible when you know where to look. The real barrier to creating the right type of large-scale innovation lies in finding the support for radical ideas. For over a decade, we've leveraged our own as well as proven existing methodologies to help leaders and organizations build an exponential mindset to enable them to develop world-changing innovations. We hope you find value in this framework, and we would love to work with you to help you on your journey. Reach out to us anytime at [sr@su.org](mailto:sr@su.org).





# Prepare

## For a Breakthrough

Before you begin creating a breakthrough idea you need to prepare. The following actions can help lay a solid foundation for success.

### FIND UNCOMMON PARTNERS TO TAKE THIS JOURNEY WITH YOU

As an expert and leader in your respective space, it's likely that you've trained your brain to think linearly and need to be challenged to think outside the box or metaphorical cubical. Look for partners who can challenge your thinking and who you can bounce ideas off to gain different perspectives. You might want to create a mini task force with co-workers from outside your team—and from a variety of backgrounds and levels of experience—to help bring the idea to life.

### CARVE OUT TIME TO THINK

Creativity is a prerequisite for innovation, but don't confuse one for the other. Creating your breakthrough idea will take time, as demonstrated in the supplemental phases, but being unreasonable and thinking new thoughts also requires the right environment for big thinking to occur. We often have our own preferred method of getting into a creative flow. This could look like scheduling a thinking break into your day or asking for time off to focus only on the problem away from the noise of your ordinary responsibilities.

### FIND TOP-LEVEL SUPPORT

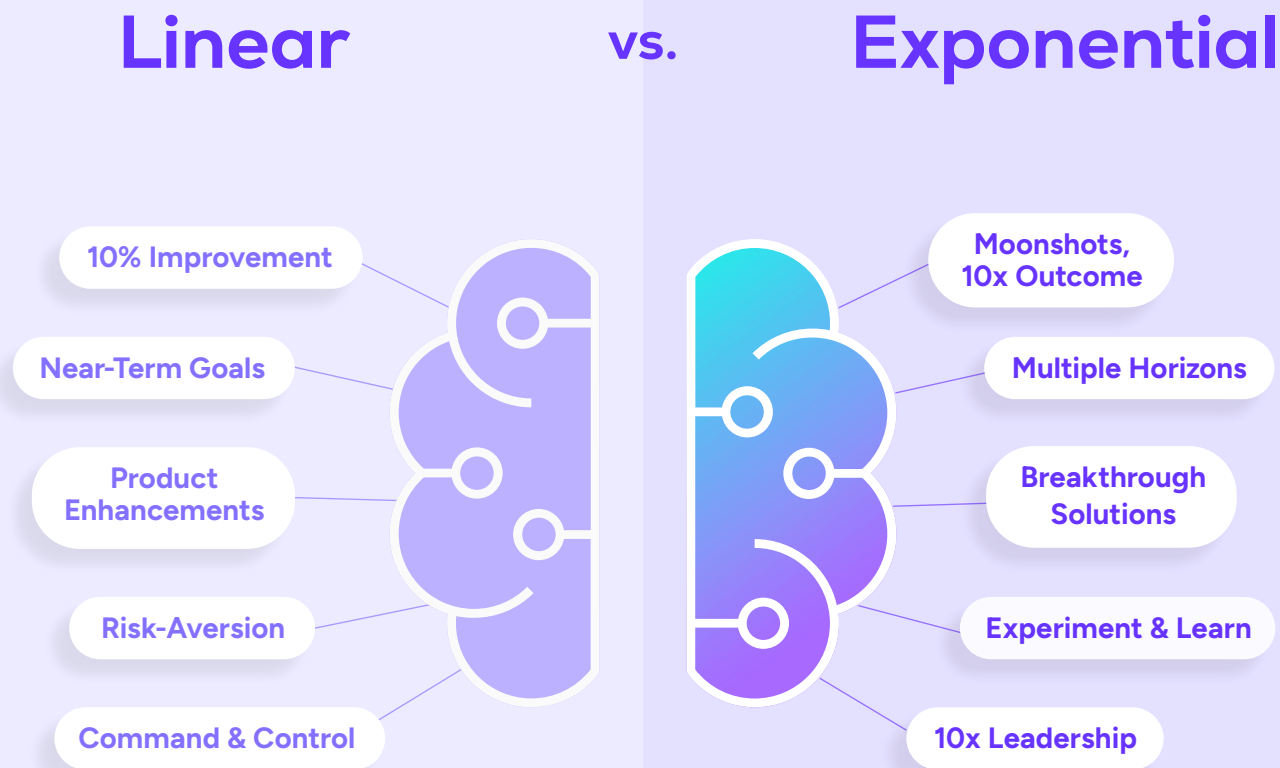
If you are looking to create an innovation within your existing organization, it comes with an overhead cost. You'll likely need to deprioritize other activities or business objectives to focus on the task at hand. Having someone to champion your idea if you do not have a seat at the table is key to successful implementation.



## EMBRACE AN EXPONENTIAL MINDSET

It's important to remember that the thinking that got you here won't necessarily get you to your destination. Embracing irrational and unreasonable thinking can be the key to unlocking your full potential for exponential innovation, and the right mindset is the minimum prerequisite for phases two and three.

The key differences between a linear and exponential mindset include:



Ultimately, embracing this kind of thinking requires a willingness to take risks, challenge the status quo, and push the boundaries of what is possible. By doing so, you can generate breakthrough ideas with the power to change the world.

# Activity

## SET YOURSELF UP FOR SUCCESS

Write down your commitment or plan to leverage the D4X framework to help you chart your path and ensure a solid foundation for the work to come.

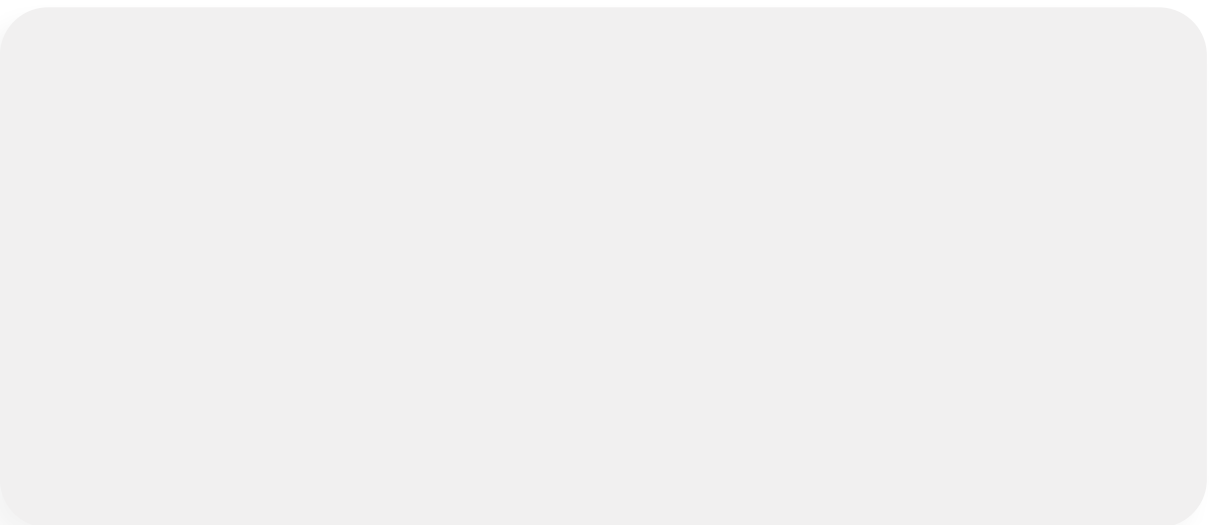
Time to Complete: 10-20 minutes

1. **Identify 3-4 Uncommon Partners:** Choose individuals outside your team or even your traditional organization—people with whom you would not normally collaborate.
  - a. Ideally, select partners with diverse perspectives, experiences, and expertise compared to your own.
  - b. These uncommon partners will provide fresh insights and ideas, helping to enhance the innovation process during the D4X framework.

Write their names below:



2. **Carve Out Time:** When will you work through the activities in this framework? What timeline or deadline will you set for yourself to get through each phase?



3. **Find Support:** Who will champion your work in this area and help you stick to your commitment to create a radical idea?

4. **Shift Into the Right Mindset:** How will you shift from a linear mindset to one of abundance and exponential thinking? Note: Consider implementing strategies such as participating in a mindset shift program, engaging with educational videos or free content, practicing meditation, changing your environment, or exploring other relevant techniques that might work for you.



# Discover

## New Perspectives & Opportunities

PHASE 2

The second phase of our Design for Exponentials (D4X) framework focuses on helping you identify opportunities made possible by the convergence of exponential technologies and large social problems. As Singularity's executive founder Peter Diamandis often says, one of the easiest ways to become a billionaire is to solve a problem that impacts a billion people. While anyone can create a breakthrough idea, knowing where to find inspiration is key. Grasping how technology evolves, the factors affecting its growth, and its potential for exponential impact is crucial for developing groundbreaking ideas.

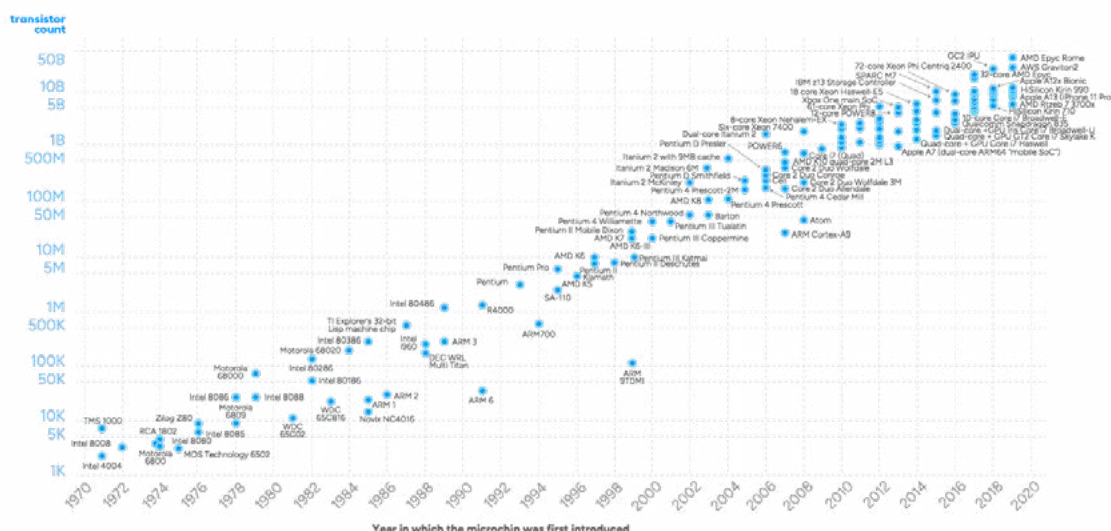
## EXPONENTIAL GROWTH

Understanding the power of exponential technology requires examining Moore's Law—the principle that computing power doubles approximately every two years.

This trend is a benchmark for exponential growth in computing power and has been a driving force behind the technological innovations of the past few decades.

### Moore's Law:

The Number of Transistors on Microchips Doubles Every Two Years



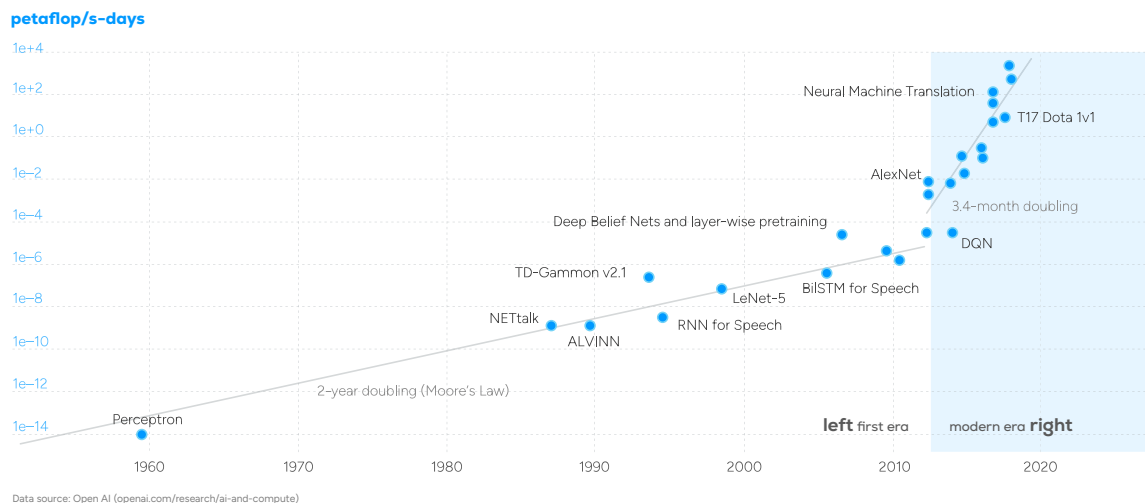
Data source: Wikipedia ([wikipedia.org/wiki/Transistor\\_count](https://en.wikipedia.org/wiki/Transistor_count))  
OurWorldInData.org - Research and data to make progress against the world's largest problems.

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While Moore's Law continues to progress, there is ongoing debate within the community, even supported by Moore himself, about its potential end around 2025. It's worth noting, however, that previous predictions of the trend's demise haven't panned out, as new designs took the reins. Despite the chart not showing significant signs of slowing down, Nvidia CEO Jensen Huang says "accelerated computing" is the next phase in the evolution of Moore's Law. This approach employs specialized hardware to dramatically speed up work, often using parallel processing that groups frequently occurring tasks together. It offloads demanding work that can burden CPUs, processors that typically execute tasks sequentially, to specialized chips like GPUs.

## Two Eras of Compute Usage in Training AI Systems



In AI, the combination of modern GPUs and machine learning has been explosive. In this graph produced by OpenAI, the comparison between Moore's Law and the rates of change in AI compute usage introduced by accelerated computing is evident.

From 1959 to 2012, the results align with expectations based on Moore's Law. However, from 2012 onward, around when deep learning researchers began training AI models with GPUs, the results substantially exceed the predicted rate of doubling. OpenAI research indicates that the amount

of computation used for training AI models doubles every three months, rather than every two years—a trend that has given birth to a series of AI breakthroughs. Rapid growth in computing capabilities is crucial for fostering innovative ideas, as it enables the exploration of new frontiers in technology, drives efficiency, and empowers individuals and organizations to tackle complex challenges previously deemed impossible. Recognizing and capitalizing on this acceleration is essential to staying ahead of the curve and realizing the full potential of your innovative vision.

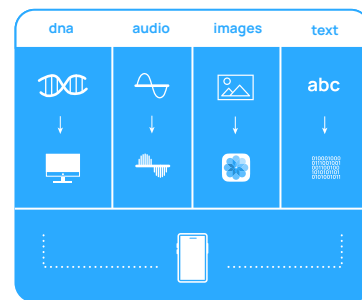
# EXPONENTIAL TECHNOLOGIES ROADMAP

Peter Diamandis' 6Ds of exponential technologies is a framework that outlines the various stages of digital technology development and how it can be harnessed for innovation. By understanding these stages, innovators can better anticipate the potential impact of emerging technologies and strategically position themselves for success. Here's a brief overview of the 6Ds and how they can be applied to innovation:

## The 6Ds

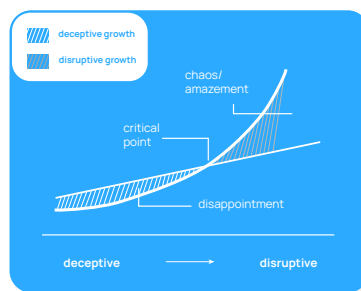
### 1 Digitization

The process of converting analog information into a digital format, making it easier to store, share, and analyze. For innovation, recognizing the potential for digitization in various industries can open up new opportunities for products, services, or solutions that streamline processes, reduce costs, and improve efficiency.



### 2 Deception

A period of slow initial growth where the impact of a technology may not be immediately apparent. Innovators should not dismiss new technologies during this phase; instead, they should monitor their progress and prepare for potential disruption once the technology gains traction.

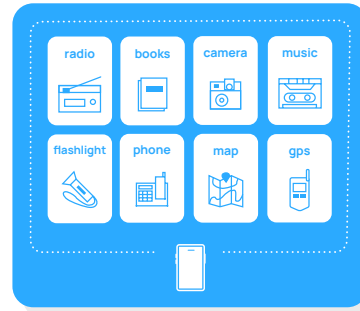


The point at which the technology starts to challenge or replace existing methods, products, or services. For innovators, recognizing when a technology is on the cusp of disruption can provide a competitive advantage, allowing them to adapt their business strategies accordingly and capitalize on the emerging opportunities.

### 3 Disruption



## 4 Dematerialization

The elimination or reduction of physical components in a product or service, as the technology becomes more efficient and advanced. Innovators can look for opportunities to leverage dematerialization to create more sustainable, efficient, and cost-effective solutions.



## 5 Demonetization

The reduction or elimination of the cost of a product or service due to advancements in technology. For innovation, understanding the potential for demonetization can help identify new business models, revenue streams, and ways to deliver value to customers at a lower cost.

		
device	ENIAC	iPhone 7
year	1946	2016
speed	1/1000 Ghz	2.38 Ghz
weight	30 tons	138 grams
cost	\$500,000	\$850

## 6 Democratization

The increased accessibility of a technology to a broader audience, as it becomes more affordable and user-friendly. Innovators can focus on developing products, services, or solutions that democratize access to technology, fostering greater social impact and expanding market opportunities.



Download the First  
Future-Proofing Ebook



Looking to expand your knowledge of the 6Ds and our essential principles for fostering innovation?



## ABUNDANCE THEORY

At Singularity, we believe it is possible to solve the world's Global Grand Challenges using exponential technologies. Because exponential technologies dramatically fall in cost while increasing in performance, we believe we can use them to create an abundance of food, water, shelter, energy, healthcare, learning opportunities, security, and more. Furthermore, exponential technologies also dramatically lower the cost of entrepreneurship, allowing billions of new business and social entrepreneurs to address these problems, increasing innovation and breaking poverty traps.

Abundance can be blocked or slowed down when the 6Ds are blocked. Digitization might be blocked for technical reasons (i.e., lack of electricity or internet), social reasons (i.e., girls discouraged from using technology), political reasons (i.e., internet censorship, regulations) or certain business models (i.e., monopolies). We need to solve these social challenges along with technical challenges when we innovate.

These Global Grand Challenges go hand in hand with the UN's Sustainable Development Goals and are a great place to start looking for your radical idea. If we solve these challenges, we can achieve a world where all 17 goals are complete.

## DEFINE YOUR MTP

Your massive transformative purpose (MTP) is a clear statement that guides, empowers, and inspires you. It helps you decide what to do and, more importantly, what not to do. It's your fuel and your filter.

### Massive

Audaciously big and aspirational.



### Transformative

Can significantly transform an industry, community, or the planet.



### Purpose

There's a clear "why" behind the work being done. Something that unites and inspires action.

You might begin the search for an MTP by researching global challenges. Often, you'll find your purpose in the challenges you are most riled up to solve.



# Activity

## IDENTIFY YOUR OPPORTUNITY

The following activity will help you identify the unique opportunity created by the convergence of exponential technologies and the global grand challenges based on your unique ability. As we will discuss in the next section, we often limit our ideas based on our current reality, but using the above frameworks as a guide, you can think beyond what's possible right now and create solutions that have the potential to revolutionize industries and realize a better future. By recognizing the timelines, trends, and implications of these concepts and their potential impact, you can stay ahead of the curve and effectively leverage the opportunities that exponential growth presents.

## DISCOVERING EXPONENTIAL OPPORTUNITIES

**Objective:** To identify unique opportunities for innovation at the intersection of exponential technologies and global challenges, guided by your personal or organizational mission.

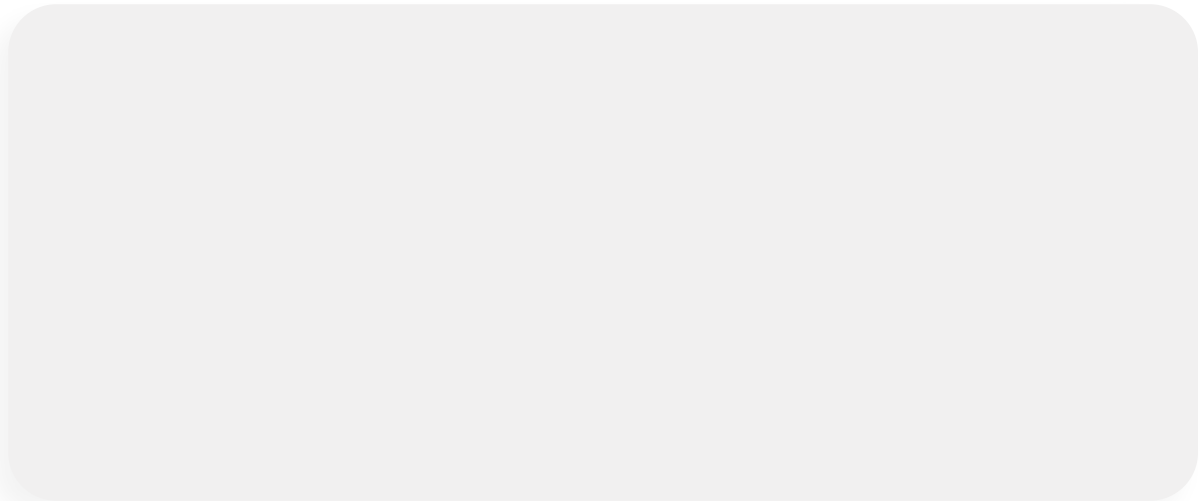
Time to Complete: 5-10 minutes

1. **Review the UN SDGs:** Revisit the chart of the UN's Sustainable Development Goals (SDGs). Write down the ones that align with your interests, values, or your organization's mission.

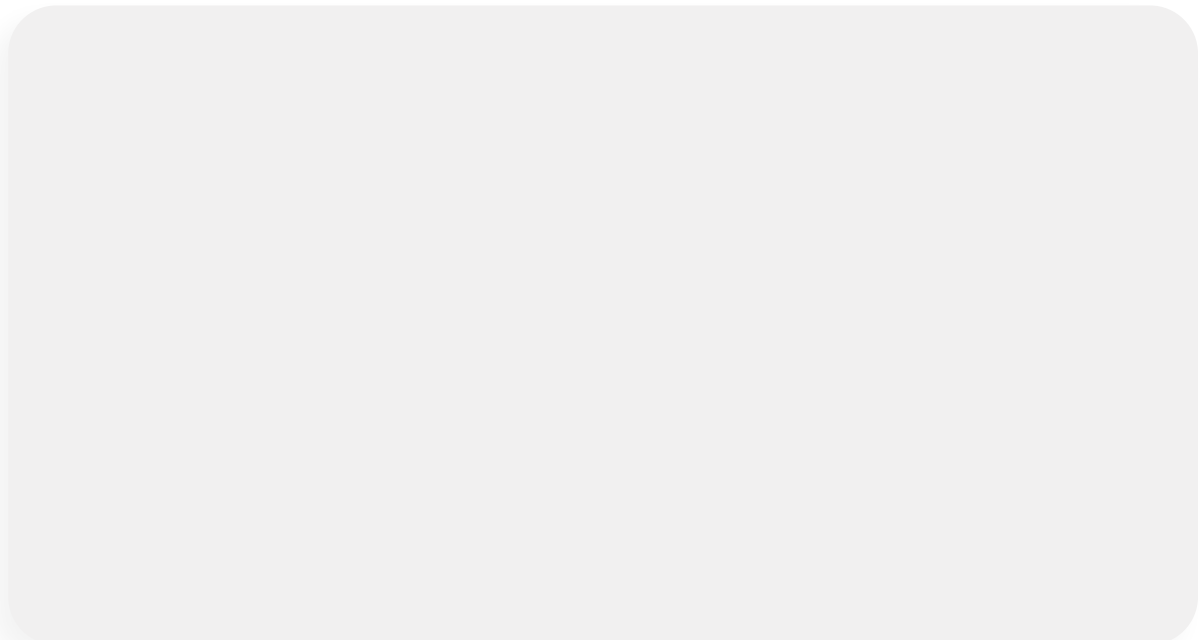
*Remember, the objective of this activity is to **expand your mindset** beyond current constraints; **imagine possibilities** for significant transformation and impact; and **embrace the potential** of exponential technologies in order to leverage them to address pressing global challenges.*

2. **Reflect on Your Resonance:** If you're struggling to identify a problem you're passionate about solving, consider the following questions:

- a. Which of these challenges evokes strong emotional responses in you?
- b. Are there any challenges that align with your personal experiences or your organization?
- c. Which of these challenges do you believe your skills or your organization's capabilities can effectively address?

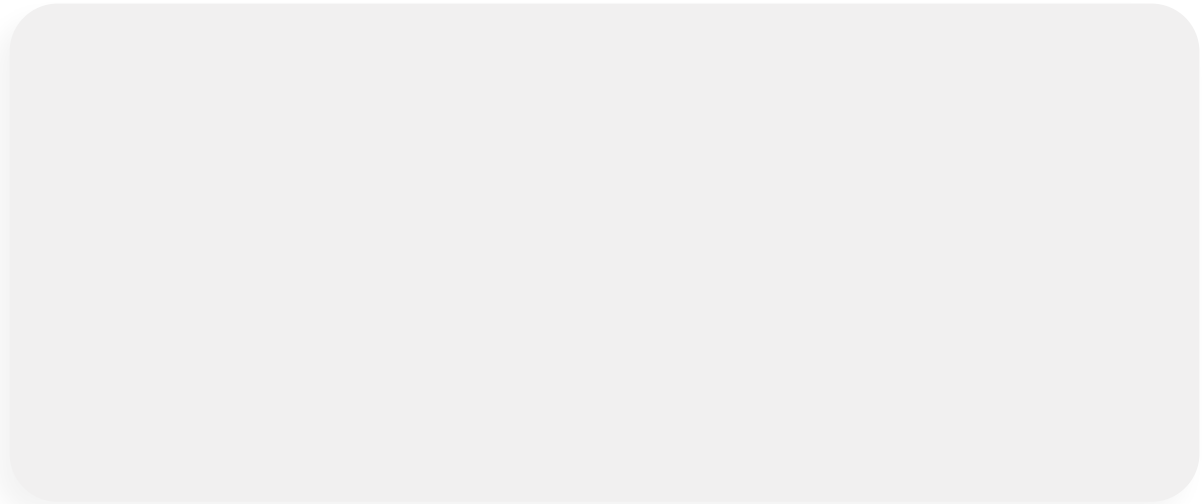


3. **Apply the MTP Framework:** Referring to your identified challenges, create a **massive transformative purpose (MTP) statement**. This should be a bold, aspirational objective that drives you or your organization and promises significant transformation.



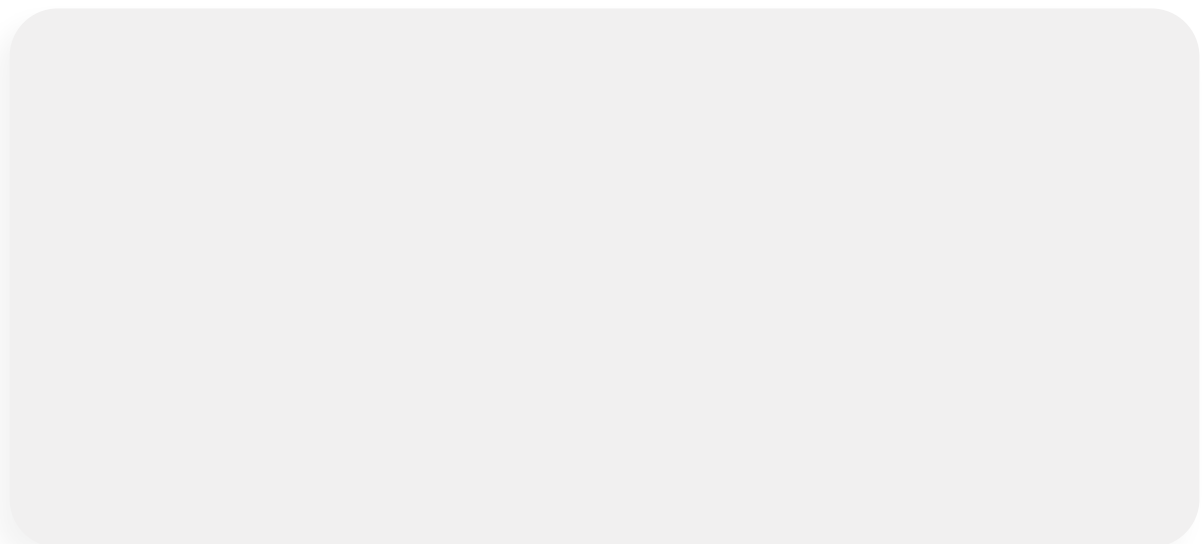
**4. Consider Exponential Technologies:** Reflect on the potential role of exponential technologies in solving your chosen challenge. Ask yourself:

- a. Which exponential technologies (AI, blockchain, biotech, etc.) could potentially address this challenge?
- b. How might these technologies evolve over time, following the trajectory of the 6Ds (digitization, deception, disruption, dematerialization, demonetization, democratization)?



**5. Identify Opportunities:** Finally, identify the unique opportunities that arise at the intersection of your MTP, the selected challenge, and the application of exponential technologies. Consider:

- a. What innovative solutions can be developed?
- b. How can these solutions disrupt existing structures and create new value?





# Envision

Your Solution & the Impact of Your Idea

## IMAGINE THE FUTURE

The next phase of our project involves science fiction prototyping, where we use sci-fi as inspiration to shift our perspective to the future. Science fiction has always had a significant impact on science and technology, inspiring various inventions we use today, such as cell phones, tablets, and virtual reality. Our team draws inspiration from science fiction ideas with the goal of turning them into reality. We collaborate with sci-fi writers and creators to sketch the world we've envisioned in rich detail.

Using science fiction helps innovators suspend disbelief and create a shared vision of the future we want to build. We like to project 15 years into the future, which is far enough out to be hard to predict but close enough to be inspired by our current work. We use visual forms such as comic books, movies, and VR experiences to create a shared point of reference for the future we want to build.

Ultimately, science fiction helps us determine what we need to build today to transform unreasonable ideas into reality. We start with our 15-year vision and work backward to determine the partnerships, initiatives, skill sets, and tools we need to build now. By doing this, we can leverage science fiction to create our own future and fill our company's ideation pipeline with innovative ideas.





# Activity

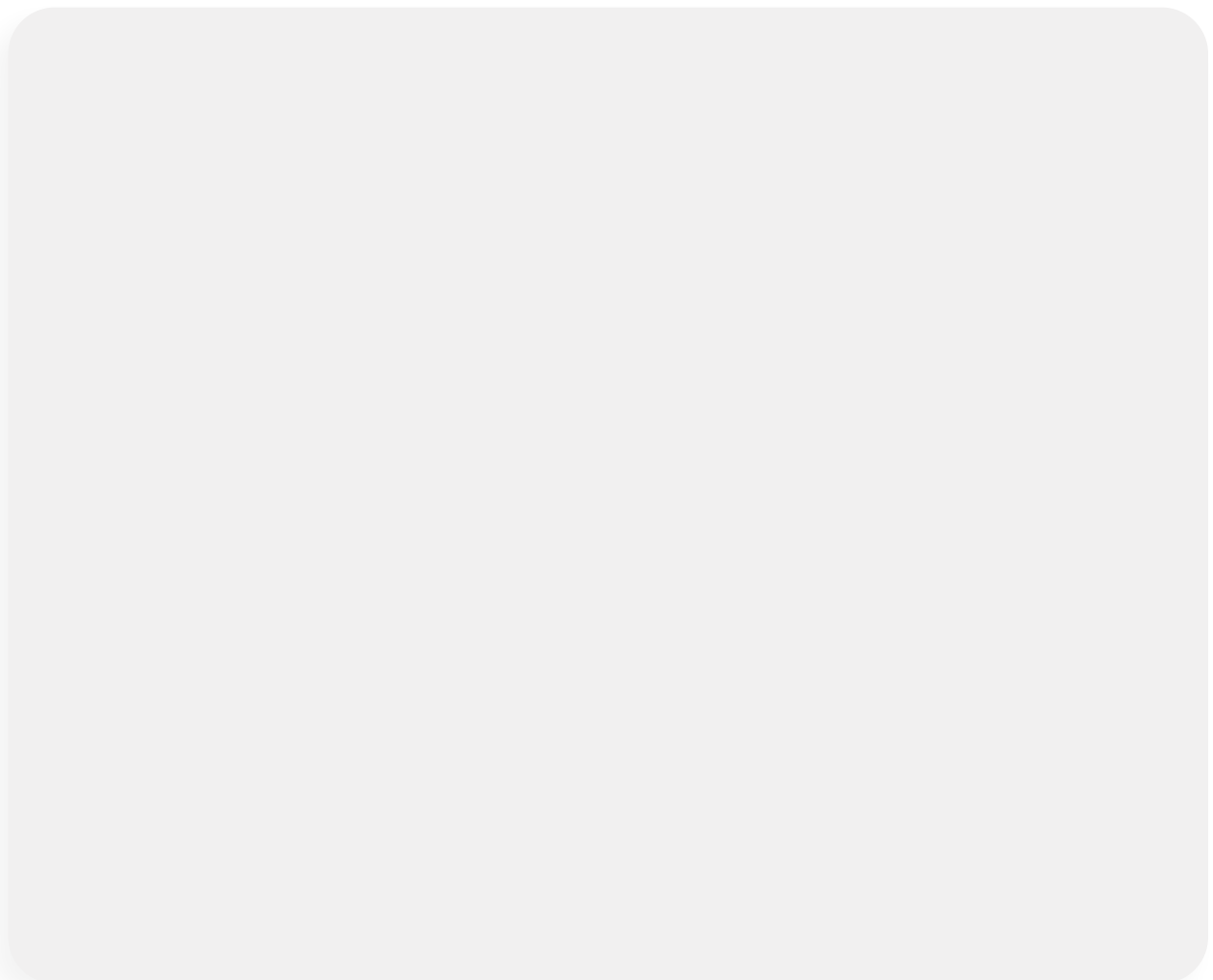
## CRAFT YOUR STORY & CREATE YOUR WORLD

Leverage the power of science fiction to create a vision for your company, product, or strategy, and build a compelling narrative around it.

Time to Complete: 30-60 minutes

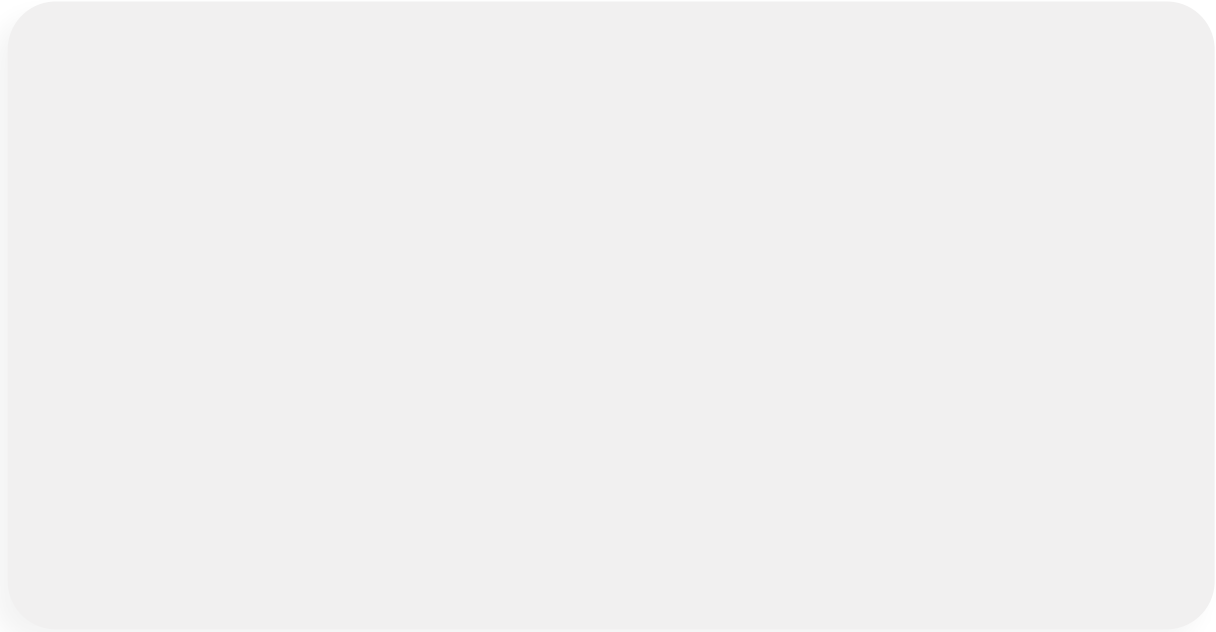
### 1. Understand the Concept:

- a. Discuss the importance of using science fiction to create a vision for the future and identify the necessary steps to turn that vision into reality.
- b. Determine whether the focus of the activity will be on developing a corporate strategy, a narrative, or a product.



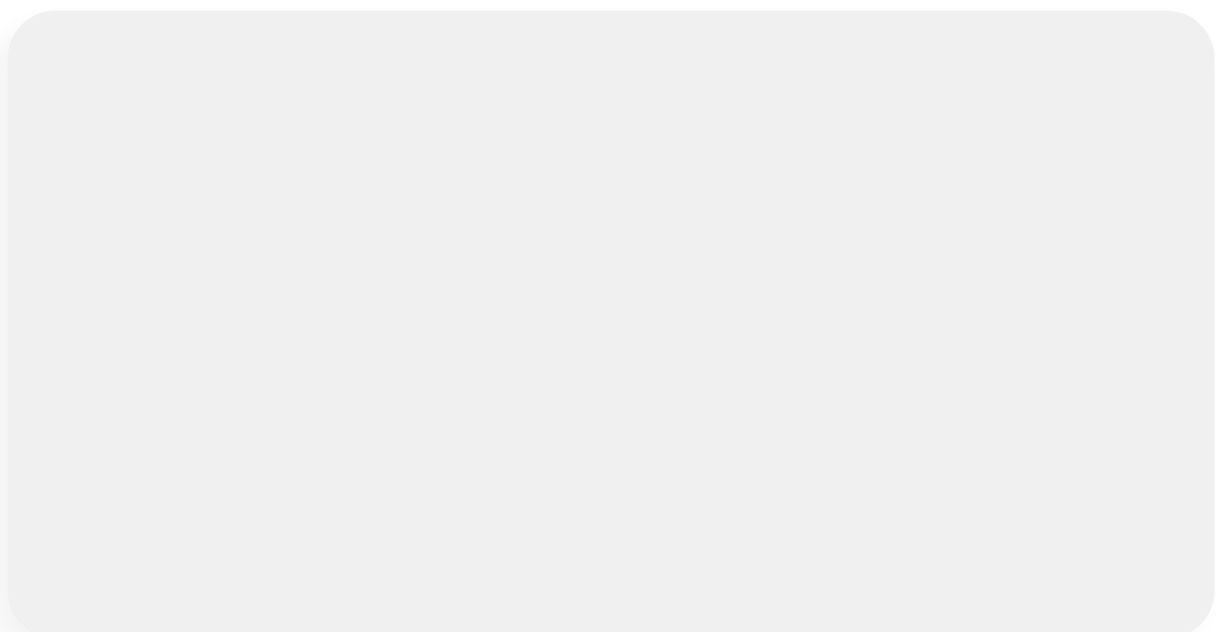
## 2. Set a 15-Year Vision:

- a. Individually, envision your company, product, or strategy 15 years into the future.
- b. Work backwards to define what partnerships, initiatives, skill sets, and tools will be needed to achieve this vision.



## 3. Share and Refine Visions:

- a. Each participant shares their 15-year vision with the group.
- b. Discuss common themes, ideas, and differences, and work together to refine the vision.

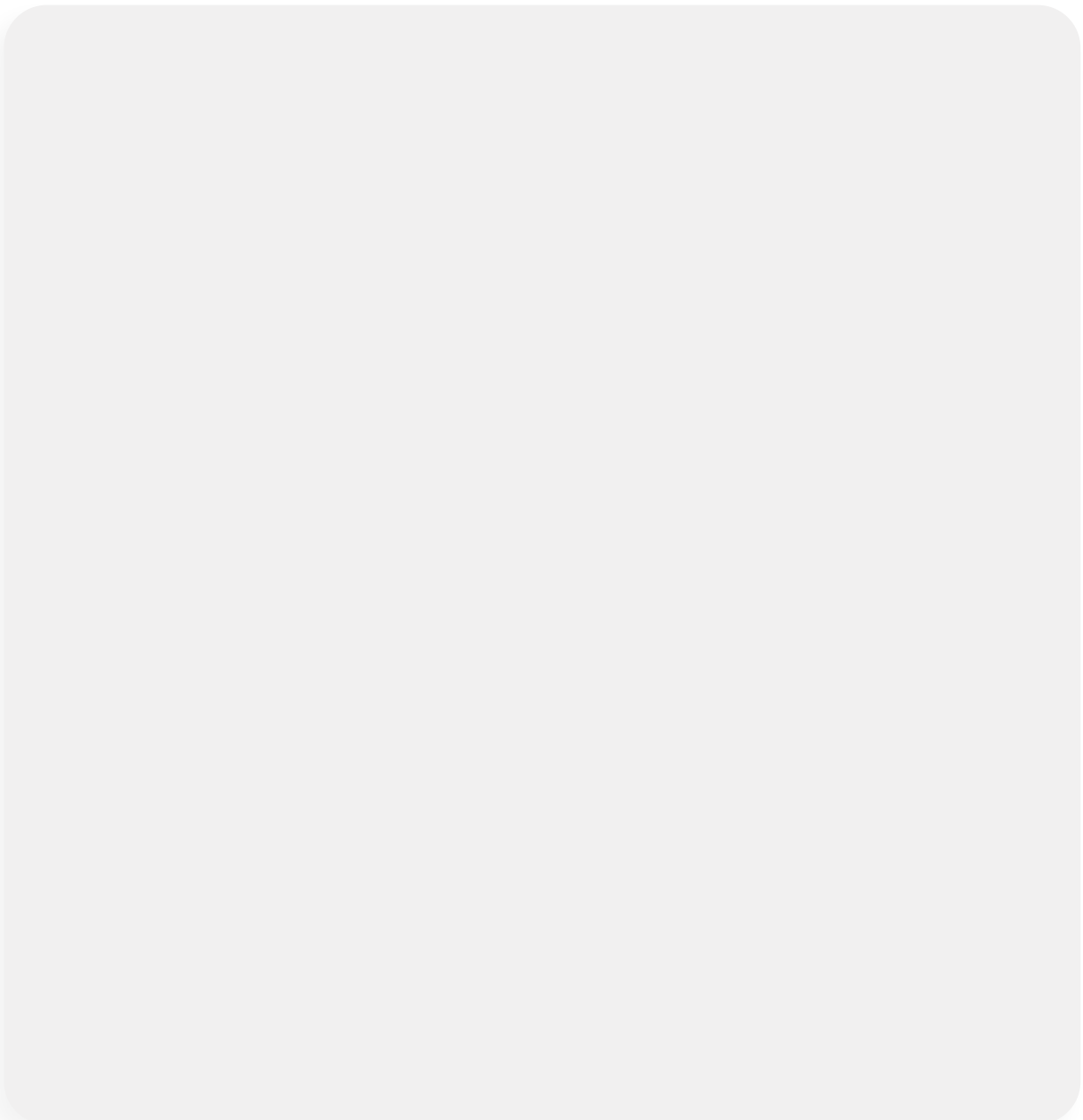


#### 4. Write a Use Case or Narrative:

- a. Based on the refined vision, each participant writes a use case or narrative that shows the solution in action.
- b. Focus on the human element, detailing how the problem is encountered and solved using the concept.
- c. Be as detailed as possible, and consider the desired outcome when writing the use case or narrative.
- d. Pixar suggests the following prompts to help structure the story:

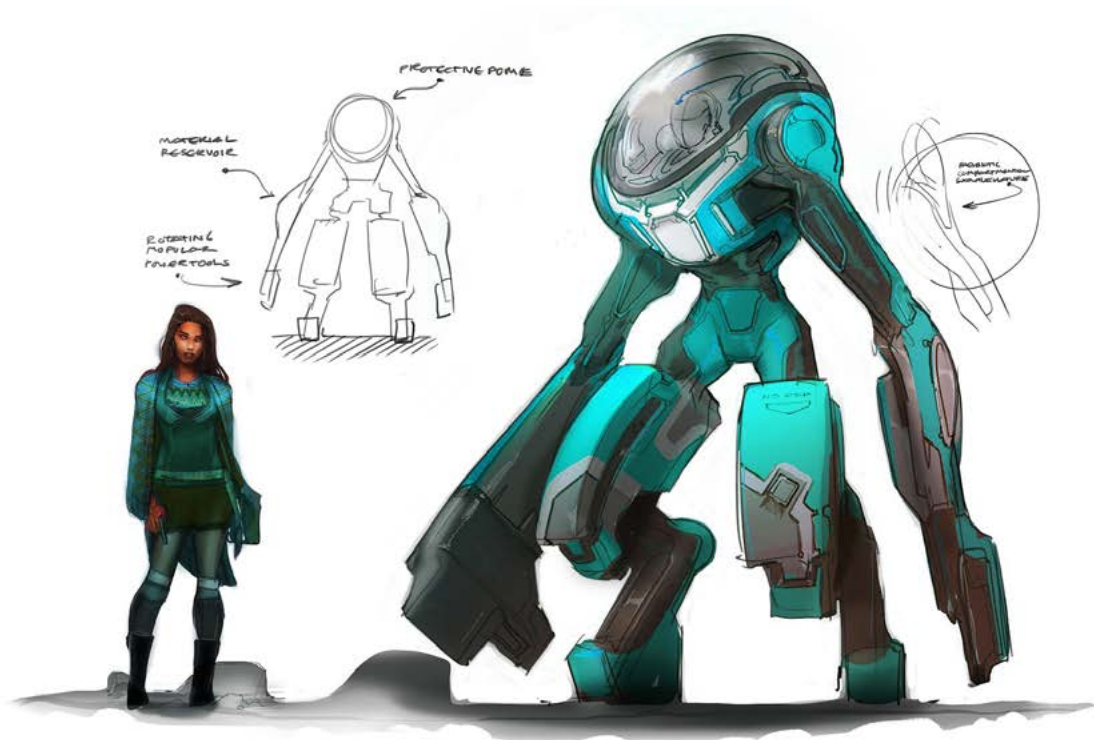
*Once upon a time there was \_\_\_\_\_. Every day, \_\_\_\_\_. One day, \_\_\_\_\_. Because of that, \_\_\_\_\_.  
Because of that, \_\_\_\_\_. Until finally, \_\_\_\_\_.*

Use the story to dramatize the problem and the solution. Pull readers into the story through the characters and the lives they live in this future world.



## 5. Share and Discuss Use Cases or Narratives:

- a. Participants share their use cases or narratives with the group.
- b. Discuss the strengths, weaknesses, and areas for improvement in each story.

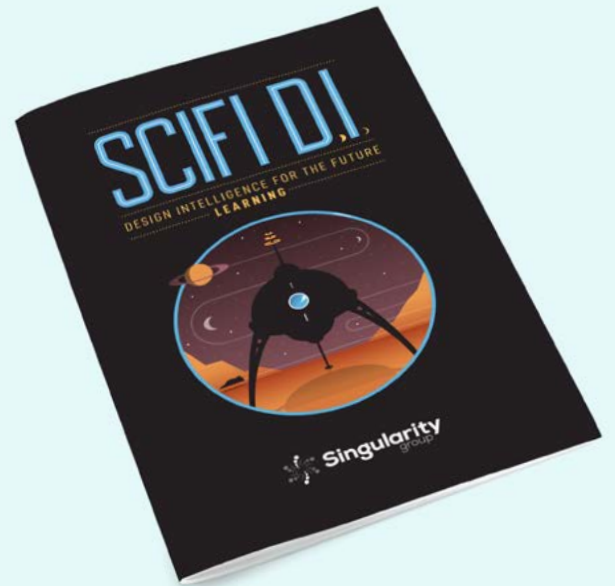




# Strategic Narrative

Are you ready to take your company's vision beyond the horizon? **Singularity's Strategic Narrative** is a key part of your journey towards successful exponential innovation.

Explore possible futures with Singularity experts as our team guides you through the process of creating your future vision, designing solutions and strategies to help you leverage exponential technology to do good, and driving your organization forward for decades to come.



"Normally ... research within our company is looking backwards, but we are not really looking into the future in a sophisticated way...so it was natural for us to turn to SU, who is probably the best in exponential technologies and understanding what it means and the impact it has, to...understand how life and society will look in 2030..."

- **Hakan Nordkvist**

Head of Sustainability Innovation at IKEA

**Click  
Here**

to request more  
information and to  
receive a copy of our



**Future of Learning  
Narrative**



# Prototype

## Abstract Ideas to Realized Solutions

### PROTOTYPE YOUR IDEA

Having navigated the initial phases of the D4X framework—defining your problem in phase two and developing diverse solutions in phase three—you are now ready to propel your concepts from abstract ideas to realized solutions in phase four: prototyping. This phase is one of the most dynamic stages in your D4X journey, but don't be tempted to rush towards creating a shippable product just yet.

The objective of prototyping is to facilitate ideation through making. This hands-on approach helps you gather insights swiftly and cost-effectively, leveraging the groundwork laid during phases two and three. The crux of successful prototyping is to first formulate testable theories and questions that your prototypes can explore.

Break these questions down into focused experiments designed to provide answers. As you complete each batch of prototypes, make sure to record your findings, both positive and negative. These insights will guide the development of your next batch of prototypes and questions. This cyclical approach, often referred to as “fail fast,” ensures that you continually fine-tune your direction, identifying potential solutions as well as areas that won't work.

As you progress through this stage, remember the lessons and insights from phases two and three. Utilize the knowledge and tools you've acquired to make the most of the prototyping phase, ensuring you are building on a solid foundation to achieve impactful results.

### LO-FI PROTOTYPING

In our methodology, we always start with low-fidelity prototyping, using whatever we can find to quickly get to learnings without investing large amounts of capital or time. Doing so helps us avoid falling into the trap of developing products based on the path of least technological resistance and instead lets us focus on the most impactful solution.

But that is not the only benefit of lo-fi prototyping. Making in this way naturally forces you out of your comfortable set of tools, giving you yet another perspective

to find opportunities. When we sit down at our computer to solve a problem, we instinctively rely on the tools that we always use to solve problems. But doing so here would hinder our ability to think differently because we have specific expectations of what is possible or not possible with these familiar tools. And going down this path, we wouldn't even bother trying to do things that are beyond these tools' existing capabilities. And, in turn, whatever we might develop with our existing tools would naturally be embedded within their existing paradigms. As a result, we would have a limited ability to think differently, and we'd be locked into outdated, iterative solutions.

Lo-fi prototyping prohibits reliance on old tricks that we've used over and over again to solve problems and the existing limiting frameworks that come with our existing set of tools. With lo-fi prototyping, we are forced to come up with entirely new solutions, and it's easier to share something tangible with team members and decision makers.

As an added benefit, lo-fi prototyping requires that we get up and actively engage in the act of making. This is very different from jumping to the computer where we are relatively still. By being physically engaged in the act of making, we unleash the full power of our mind on the problem. There is a growing body of research that indicates humans have embodied cognition. Our minds are not some sort of disembodied entity floating around in our brains as Descartes suggested. Instead, we humans use our entire bodies to process thought.

## HI-FIDELITY PROTOTYPES

High-fidelity (hi-fi) prototypes are more polished and complete than the lo-fi prototypes used for rapid ideation. There are many different types of hi-fi prototypes, depending on what they are intended to test.

## LOOKS-LIKE PROTOTYPES

Give insight into how the aesthetics of the product will be received and how the form factor influences performance, perceived or actualized.

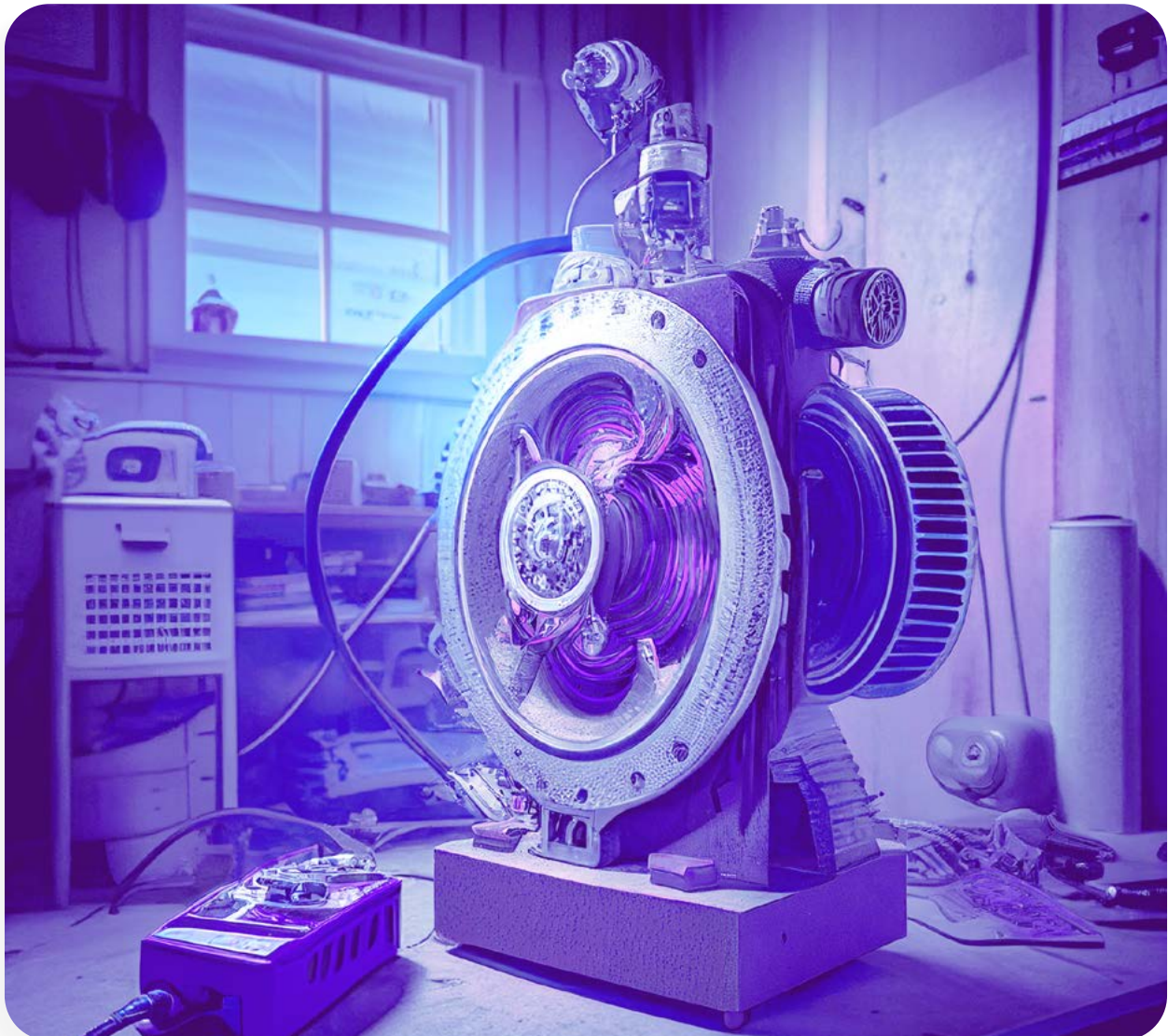
## WIZARD OF OZ PROTOTYPES

Leverage a "looks-like" prototype, but have someone behind the scenes pushing buttons and knobs to make it seem as if the product is functioning.

## TECHNOLOGICAL OR ENGINEERING PROTOTYPES

Provide engineers a way to experiment with different combinations of technologies and programming that will be used to make the final product.

While lo-fi prototypes are designed to help us learn fast, hi-fi prototypes provide an opportunity for more detailed and specific learning. Their higher resolution tricks users into thinking the product is complete, or nearly complete. As a result, they reveal more about the way the solution functions and what needs further refinement than their exploratory lo-fi counterparts. Hi-fi prototypes help focus efforts by quickly identifying what needs to be refined before going to final product development. Just as with lo-fi prototypes, there should be a deliberate and intentional testing procedure that immediately results in refinements of a next prototype until there is sufficient information to move on to development of the go-to-market product.



# Activity

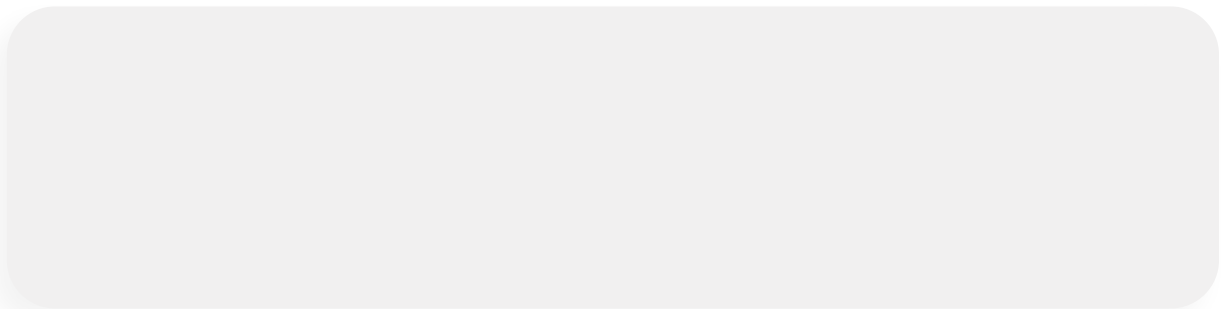
## BRING YOUR IDEA TO LIFE

For this activity you'll need 80 minutes and the uncommon partners you identified in phase one. To keep the session both enjoyable and productive, it's a good idea to stick to a planned schedule for each part of the activity. Using a timer can help keep things on track without feeling too rigid. It's all about creating a space that allows for deep thought and brainstorming, but also keeps everyone moving forward and engaged.

Time to Complete: 80 minutes

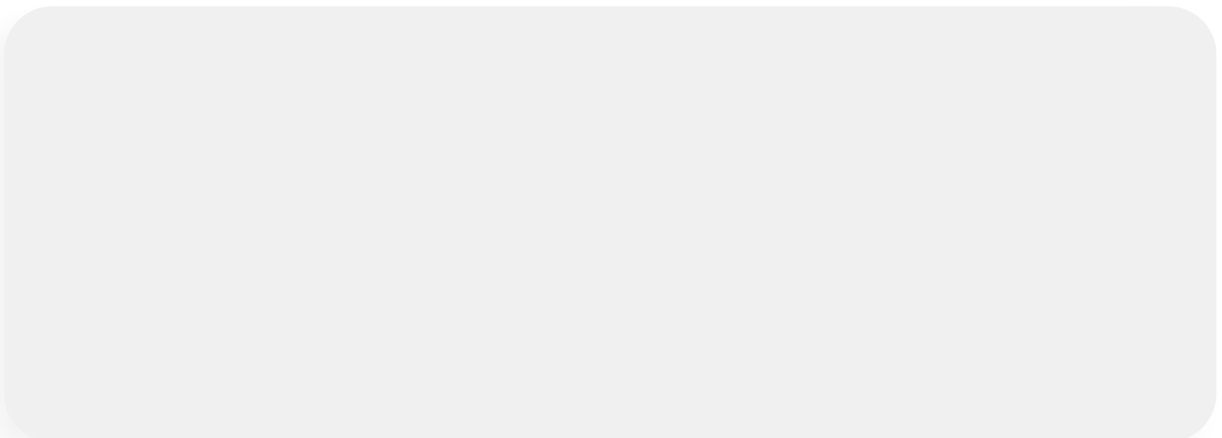
### 1. Introduce the Problem:

- a. Briefly explain the design problem or challenge you're trying to address.
- b. Share the results of your activities in phases 2 and 3 with the group.



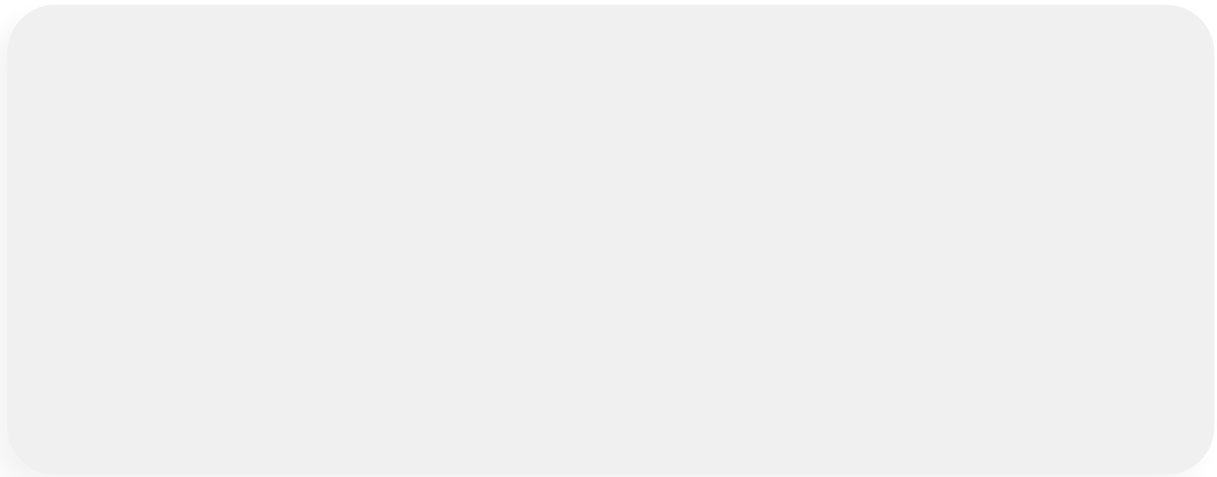
### 2. Brainstorm Ideas:

- a. Have each participant take a few minutes to brainstorm what the real solutions might look like or entail.
- b. Encourage everyone to think freely and not worry about constraints at this stage.



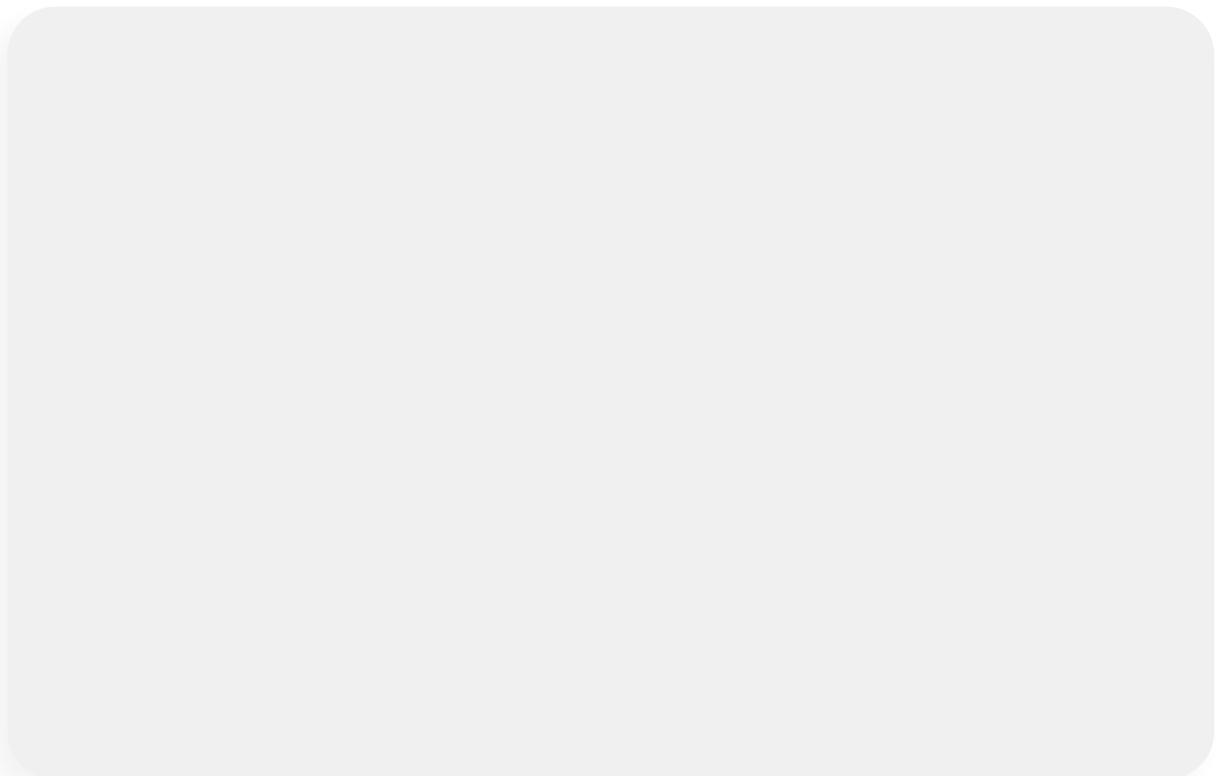
### 3. Share and Discuss Ideas:

- a. Each participant shares their ideas with the group.
- b. Discuss the pros and cons of each idea and identify the most promising ones to prototype.



### 4. Create Lo-Fi Prototypes:

- a. Provide materials for creating lo-fi prototypes, such as paper, markers, post-it notes, and tape.
- b. Each participant selects one or two promising ideas and creates a simple, low-fidelity prototype for each.
- c. Encourage participants to focus on the essential features and interactions of their design.





## 5. Share and Test Prototypes:

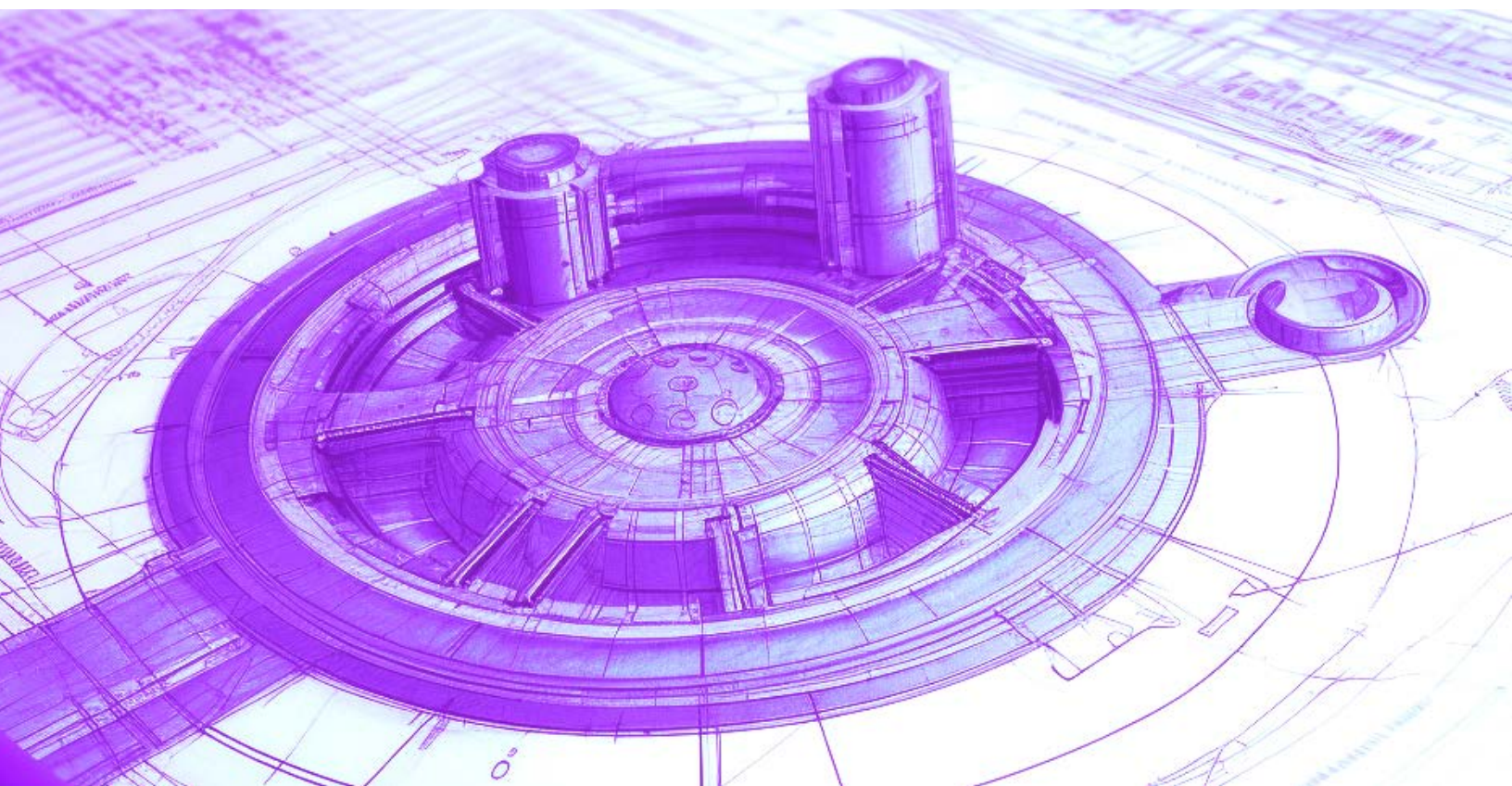
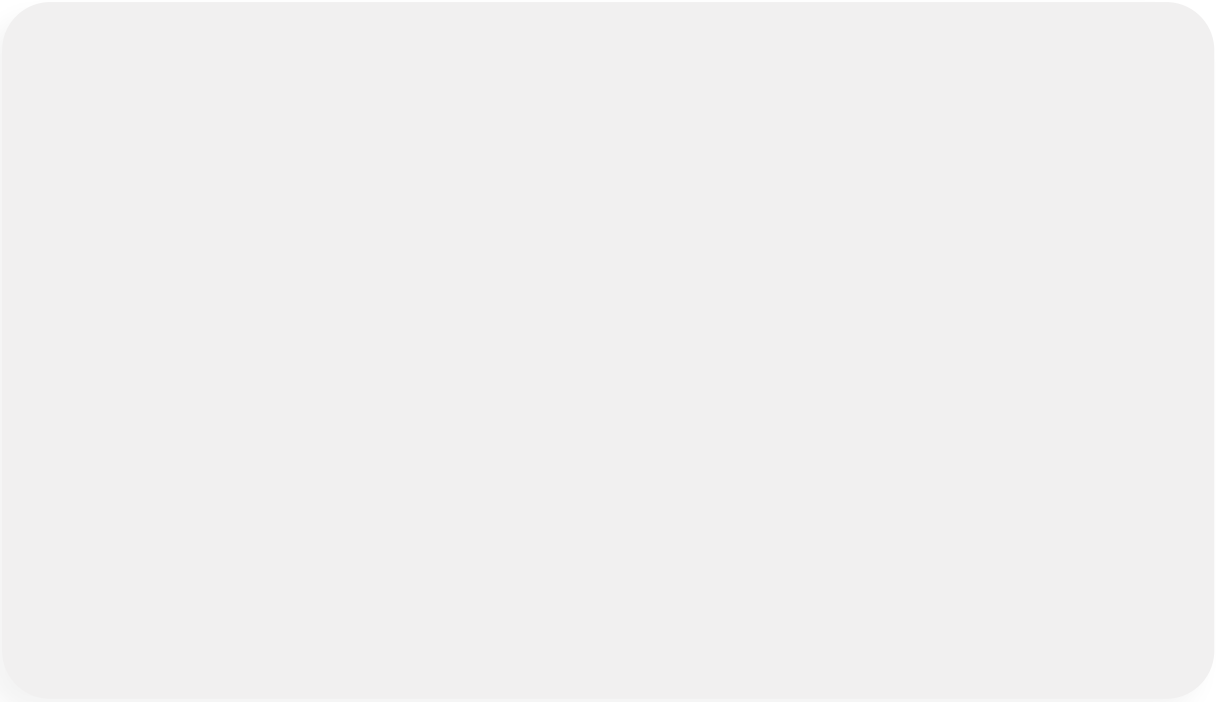
- a. Each participant presents their prototype(s) to the group.
- b. Participants take turns interacting with each other's prototypes and providing feedback.
- c. Discuss what works well and areas for improvement, as well as any surprising insights or observations.

## 6. Iterate and Refine:

- a. Based on the feedback, participants iterate on their prototypes, making changes and improvements as needed.
- b. Encourage participants to consider alternative solutions or variations on their design.

## 7. Wrap Up and Discuss Next Steps:

- a. Reflect on the insights gained during the exercise and how they might inform the design process moving forward.
- b. Discuss potential next steps, such as further iterations, user testing, or moving on to higher-fidelity prototyping.



# Conclusion

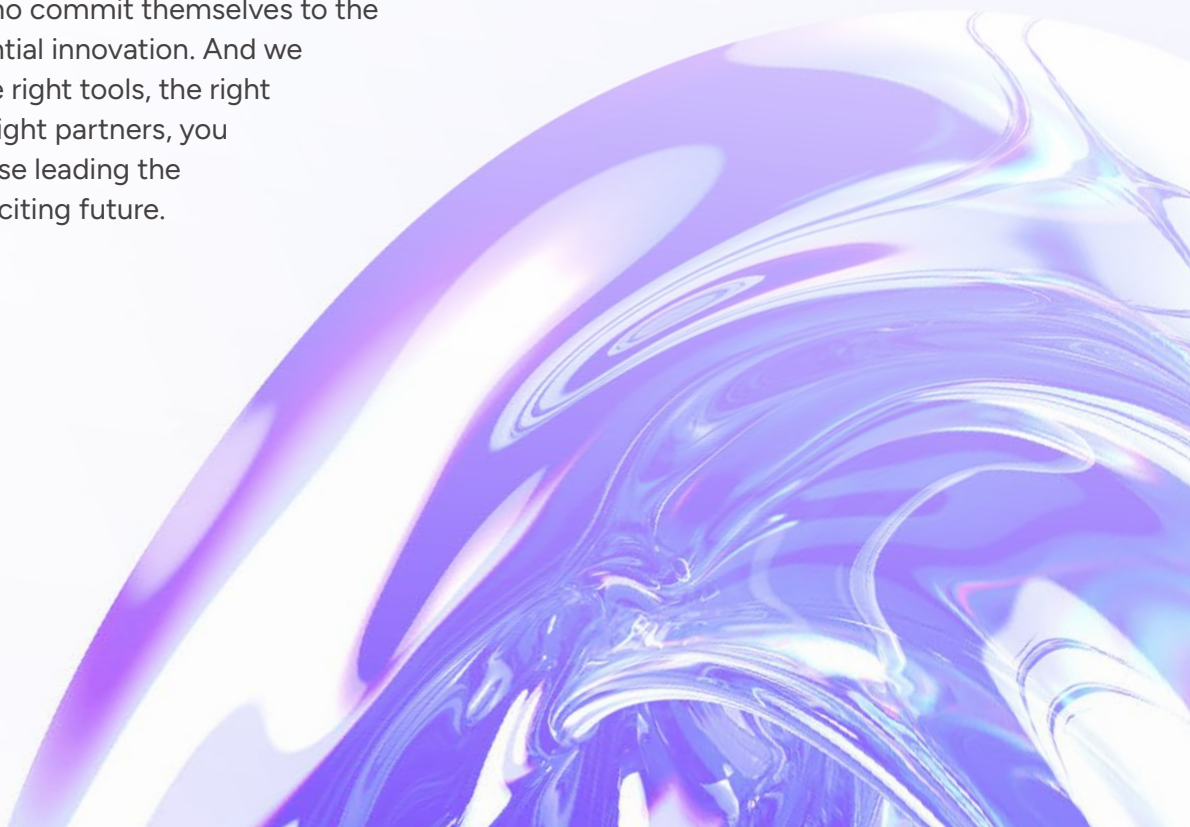
## GO WHERE YOU'VE NEVER GONE BEFORE

You need the vision and then the right partners to help guide you on your journey. The journey to achieving exponential innovation and transformative change begins with embracing a new mindset, one that defies traditional linear thinking and dares to dream big, to think differently, and to relentlessly pursue progress. As you conclude this eBook, “D4X: Design for Exponentials: A Four-Step Framework for Radical Ideation,” we hope you’re feeling not just equipped, but truly inspired to make that leap towards exponential innovation.

This journey, while rewarding, is seldom straightforward. It is marked by an iterative process of ideation, prototyping, testing, and refining—each new step building on the last, always guided by the principles of the D4X framework. However, innovation doesn’t occur in isolation. It requires a supportive culture, one that champions experimentation, tolerates failure, and fosters a spirit of relentless curiosity. These are the principles that guide us at Singularity and that we are eager to share with you and your organization.

As we’ve explored throughout this guide, the D4X framework is not a linear process, but rather a cyclical journey of constant learning, evolution, and growth. It is a journey characterized by bold vision, strategic partnerships, and an unwavering commitment to driving transformational change. It’s a journey that demands patience and tenacity, but one that promises rewards that are nothing short of exponential.

At Singularity, we believe that the future belongs to those who dare to think differently, who challenge the status quo, and who commit themselves to the pursuit of exponential innovation. And we know that with the right tools, the right mindset, and the right partners, you can be among those leading the charge into this exciting future.





As we conclude this guide, we extend an invitation to you: Join us on this journey. Let us leverage our expertise in driving exponential innovation to support your organization in fully fleshing out your strategic narrative and transforming your vision into reality. Together, let's defy the confines of linear thinking and design for exponentials.

**The future is waiting, and we're ready when you are. Let's shape it together.**



**Schedule a Call**

With One of Our Strategic Advisors

