

THE REBIRTH OF PALLAS ATHENE, AND HER EXTENDED BRAIN



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1. Prelude - The Rebirth of Pallas Athene

The question is - how to make sense of the world we live in, in order to act in it.

We elaborate the question through practice and the leading metaphor - *The Rebirth of Pallas Athene, and Her Extended Brain*.

In the realm of ancient Greece, the pantheon of gods and goddesses held sway over the lives of mortals. Among them, **Pallas Athene**, the goddess of wisdom, strategy, and war, stood as a beacon of insight, strength, and strategic brilliance.

Pallas Athene was assisted by her helmet that gave her inhuman capabilities. The helmet was her extended brain.

This paper is written by Associate Professor (foresight & complexity) Mika Aaltonen, technology entrepreneur with three exits Rauno Saarnio, and their Metaverse assistant and AI Publishing House.

We explore and write about the possibilities of man and machine collaboration.

We have been assisted by artificial intelligence in our writing and drawing, while contemplating what kind of capabilities Pallas Athene's helmet today could offer - to assist her *inner capabilities*, that is the human senses, and the *capabilities of monitoring the changing world*.

The machine has helped us to do certain tasks, for instance drawing the cover picture very quickly, in a matter of minutes, with obvious good results. The same applies to our analysis and writing.

In general, the world has already witnessed the transformative power of the man-machine partnership. With technology serving as a tool rather than a replacement, society can flourish. Humans and machines can work in tandem, creating a harmonious and symbiotic relationship that propels humanity forward.

In our reasoning we have faced the same difficulties as the experts before us.

In chapter two we recall three lessons.

The French foresight master Michel Godet discussed “*asking the right questions*”. However, the appropriate knowledge is contextual, it is cultural, and it is historical. Like a word in a sentence gets its meaning in relation to other words, or like a chapter in a book fulfills its complete importance only in correspondence with other chapters. “Asking the right question” requires a deep education in actual topics, and related topics.

The American analyst Michael Loescher singles out the terms *emergence*, referring to the phenomenon where a complex system exhibits properties or behaviors that its parts do not have on their own, and *convergence*, referring to the process of two or more things coming together or becoming similar, in understanding novelty.

We believe that, detecting patterns, discovering causal linkages between things, events and people which are not obvious usually increases the power, efficacy and accuracy of interventions.

In social systems patterns are not always complex, they can be relatively simple, yet unknown to us. However, every time a new pattern that fits the behavior of the system is discovered, it is likely to benefit the discoverer.

For bestseller author John Naisbitt, the *future emerges in clusters* when different ideas and technologies of various levels come together and bring into being something new.

In pattern management two philosophical notions guide our efforts:

- The search for associations and similarities at any level of content or expression. Thus, the elements need to have something in common, but they do not need to be identical in order to belong to the same pattern.
- The combination of the actors, the order of events and the pieces of information must fit into a convincing narrative, which consists of the subject's pursuit of an object he considers valuable, and the other elements that have or find their roles in this pursuit.

Born fully grown and armored from the head of her father Zeus, Pallas Athene possessed a profound intellect and a keen understanding of the complexities of the world. From her divine perch on Mount Olympus, she offered guidance and counsel to both gods and mortals, imparting wisdom that surpassed all others.

With her piercing gray eyes and her gleaming golden armor, Pallas Athene commanded both respect and admiration. Mortals sought her guidance in times of war and conflict, relying on her strategic advice to ensure victory. Generals and military leaders would invoke her name, believing that her wisdom would guide them to conquest.

The spirit of Pallas Athene serves as a reminder of the power of knowledge, strategy, and the pursuit of wisdom.

Philosophy, arguably the greatest contribution of ancient Greece, has continued to shape human thought throughout the ages.

The discipline of philosophy allows individuals to grapple with fundamental questions about knowledge, nature of reality, and ethics. The pursuit of virtue and the search for truth, the legacy of Greek philosophy, resonates in our modern society encouraging us to engage in critical thinking and contemplation.

The chapters three and four focus on philosophy.

They claim that when technology is changing our world, it also changes some of the concepts that have remained permanent, and constructed and constrained our lives for ages.

And presses us to rethink them.

The extended brain of Pallas Athene is the subject matter of chapter five. Her inner capabilities, and the capabilities to monitor the world are reviewed.

We could contend that with her transformative abilities, the reborn Pallas Athene ignites a path towards progress and understanding.

Timely ethical considerations are requisite.

It is up to existing organizations and institutions to guide technological buildout. So far greed and political interests have driven the developments, now it is time to think about human and sustainable aspects as well.

Chapter six takes into ethical consideration digitality and sustainability.

Figure 1. Pallas Athene.



In the final chapter the future of society and work is discussed based on previously presented ideas.

The man-machine union becomes a parable of balance, reminding people that the true potential of technology lies not in replacing humans, but in empowering them. Ultimately, it is through this partnership that the world achieves unprecedented progress, while valuing and preserving the uniqueness of each individual.

Our metaphor - *The Rebirth of Pallas Athene, and Her Extended Brain* - sets the stage for a thought-provoking exploration in the cluster of mythology, philosophy, and technology.

2. Three Durable Lessons

In this chapter we present the ideas of three experts upon which we build our reasoning.

Michel Godet is a French professor of foresight. He worked most of his professional life at *Conservatoire National des Arts et Métiers* in Paris.

"Asking the right questions", has been one of the phrases Michel used regularly. But in order to do so successfully, you must have a certain level of culture and education.

Michael Loescher has a long career in intelligence, leading some of the most difficult and ambitious projects in the US.

He often stated that by force, because of the overwhelming amount and complexity of data, also the rest of the world outside the intelligence community will have to begin to use their methods and ways of working.

John Naisbitt is the author of *Megatrends* book series.

The series was initially based on how he and his team analyzed over 2 million articles to form clusters of common themes - megatrends - that can indicate where the future is emerging. The analysis was manual and painstakingly laborious. Now you do not need to be a celebrated futurist nor work for months to conclude your analysis, you can achieve the results quickly with search engines.

2.1 Michel Godet - Asking The Right Questions

Michel Godet, an economist and a strategist, was known for his groundbreaking approach to decision-making and problem-

solving. His unique perspective emphasized the importance of asking the right questions in order to uncover valuable insights and design effective strategies.

Born with an insatiable curiosity, Michel grew up questioning the world around him.

As he delved into the field of economics, he discovered that simply finding the answers wasn't enough. He realized that the key to unlocking true understanding and driving meaningful change lay in asking the right questions.

The five questions leading to action are:

1. What could happen? (Scenarios)
2. What can I do? (Strategic options)
3. What will I do? (Strategic decisions)
4. How will I do it? (Actions and operation plans)
5. Who am I?

The fifth question being the fundamental point of departure.

Throughout his career, Michel developed a systematic approach to framing questions that would challenge conventional thinking and bring about innovative solutions. He believed that the quality of our questions directly influenced the quality of our decisions.

Michel's approach began with carefully identifying the underlying problem or issue at hand. He encouraged individuals and organizations to go beyond the surface-level symptoms and explore the root causes. By clarifying the problem statement, he set the stage for asking pertinent and insightful questions.

Next, Michel emphasized the importance of expanding the scope of inquiry.

He encouraged individuals to consider a multitude of perspectives, both within and outside their fields of expertise.

This broadened understanding allowed for the development of comprehensive strategies that accounted for various factors and potential consequences.

One of Michel's core principles was to challenge assumptions.

He believed that many commonly held beliefs and assumptions constrained our thinking and hindered progress. He encouraged people to question established norms and consider alternative viewpoints, fostering a more open and creative mindset.

Furthermore, Michel emphasized the need to consider different time frames when formulating questions. He advocated for taking into account both short-term and long-term consequences, ensuring that decisions were made with a holistic view of their impact on individuals, society, and the environment.

Michel's approach also emphasized the importance of building scenarios and exploring multiple futures. By envisioning different possibilities, he encouraged individuals and organizations to prepare for uncertainty and develop resilient strategies. He believed that by asking questions about potential scenarios, we could better anticipate and adapt to future challenges.

Throughout his career, Michel Godet's unique approach to asking the right questions had a profound impact on decision-makers, entrepreneurs, and policymakers alike. Through his teachings and writings, he empowered individuals and organizations to challenge the status quo, think critically, and create innovative solutions to complex problems.

Michel's legacy continues to echo in the minds of those who strive to make a difference.

His dedication to asking the right questions serves as a reminder that in a rapidly changing world, the ability to challenge assumptions, grasp complex interdependencies, and envision

multiple futures is essential for driving meaningful change and shaping a better tomorrow.

2.2 Michael Loescher - Emergence & Convergence

Michael Loescher was a visionary entrepreneur and technology enthusiast who believed that the power of emergence and convergence could unlock untapped possibilities and drive radical innovation.

Throughout his career, he embraced the concept of emergence, which referred to the unexpected and novel patterns that arise from the interaction of diverse elements.

Michael recognized that in a rapidly evolving world, traditional siloed thinking and isolated approaches to problem-solving were no longer sufficient.

He saw the potential for groundbreaking advancements at the intersection of different disciplines, industries, and technologies, and he dedicated his life to harnessing this power.

Drawing inspiration from nature, Michael understood that emergence often occurred when seemingly unrelated elements came together in unexpected ways.

He sought to replicate this phenomenon in the realm of technology and business. He believed that by bringing together diverse minds, skills, and perspectives, entirely new and transformative ideas could emerge.

To foster emergence, Michael founded an innovation hub that served as a meeting ground for experts from various fields. His space encouraged collaboration and cross-pollination of ideas, providing a fertile ground for the emergence of innovative solutions. In this environment, scientists, engineers, artists, entrepreneurs, and thinkers from different industries converged to push the boundaries of what was possible.

Michael was passionate about exploring the convergence of technologies. He recognized that advancements in artificial intelligence, robotics, biotechnology, nanotechnology, and other fields had the potential to intersect and exponentially enhance each other's capabilities. He encouraged his team to seek out these convergences and identify opportunities for disruptive innovation.

The innovation hub became a thriving ecosystem where emerging technologies converged and interacted. Through interdisciplinary projects and experiments, Michael and his team pushed the boundaries of what was deemed feasible, suitable and acceptable. They harnessed the power of big data, machine learning, and predictive analytics to tackle grand challenges such as climate change, healthcare, and sustainable energy.

One of their notable achievements was the development of a revolutionary smart city concept. By converging technologies like Internet of Things (IoT), blockchain, renewable energy, and urban planning, they created a blueprint for a sustainable and interconnected city of the future. This visionary project served as a testament to the power of emergence and convergence.

Michael's passion for emergence and convergence didn't end with technological advancements.

He recognized that the intersection of different cultural backgrounds and perspectives could ignite profound social changes. He fostered diversity and inclusivity within his innovation hub, cultivating an environment where people from different walks of life could come together to create transformative solutions.

As in his notable scenario exercises *Proteus* and *Crossroads*.

Michael Loescher's commitment to emergence and convergence left an indelible mark on the innovation landscape. His visionary

leadership and unwavering belief in the power of interdisciplinary collaboration continue to inspire future generations of entrepreneurs, technologists, and change-makers.

By embracing emergence and convergence, he challenged the limitations of traditional thinking and unlocked the potential for revolutionary solutions that have shaped our world. Through his legacy, Michael encouraged us all to seek out diverse perspectives, explore unexpected connections, and strive for transformative innovation.

2.3 John Naisbitt - Megatrends

John Naisbitt, a renowned futurist and author, revolutionized the way we think about the future with his groundbreaking concept of Megatrends. Throughout his career, he dedicated himself to studying and identifying the major forces shaping our world, allowing individuals and organizations to navigate the complexities of a rapidly changing global landscape.

Naisbitt believed that understanding these Megatrends, large-scale societal, economic, and technological shifts, was crucial for staying ahead of the curve and making informed decisions. He developed a methodology to identify and analyze these trends, enabling individuals and businesses to anticipate and adapt to the future.

One of his most notable contributions was his book titled *Megatrends: Ten New Directions Transforming Our Lives*, published in 1982.

In this book, he outlined ten key Megatrends that would shape society for decades to come. From the rise of the information age and the increasing importance of globalism to the growing impact of environmental consciousness, Naisbitt accurately predicted the major shifts that would shape the world in the coming years.

Naisbitt's insights were not based on mere speculation, but extensive research and analysis. He combined a keen awareness of social, economic, and technological developments with the ability to identify patterns and extrapolate their long-term impact. Through his work, he empowered individuals and businesses to proactively respond to and leverage these Megatrends.

His concepts resonated with audiences around the world, making *Megatrends* a best-selling book that sparked widespread discussions and influenced decision-makers in governments, corporations, and communities. Naisbitt's ideas strongly resonated because they provided a framework for understanding the complexity and interconnectedness of our global society.

Over the years, Naisbitt continued to refine his ideas, releasing subsequent books and publications that expanded on the concept of Megatrends. He recognized the importance of continuously monitoring and analyzing emerging trends, ensuring that individuals and organizations remained adaptable and future-focused.

Naisbitt's contributions went beyond the theoretical realm. He established the Naisbitt China Institute, a platform for businesses and organizations to gain insights into China's economic and social transformations and their global implications. Through this institute, he facilitated cross-cultural understanding and helped shape strategies for navigating the evolving landscape of the world's second-largest economy.

John Naisbitt's legacy as a futurist and strategist lives on.

His concept of Megatrends has become a fundamental tool for understanding and preparing for the future. By identifying and analyzing these transformative forces, he empowered individuals, businesses, and governments to make informed decisions and embrace the opportunities that lie ahead.

Naisbitt's work reminds us that the future is not a foregone conclusion, but a tapestry of intertwining trends and possibilities. Through his insights and methodologies, he encouraged us to become active participants in shaping our collective destiny, emphasizing that understanding and harnessing Megatrends is key to realizing our potential in an ever-changing world.

3. Philosophy - Thinking about Thinking

Originally, philosophy means love of or the search for wisdom or knowledge.

This search includes the most fundamental principles of our existence, values and reason.

It should be an ongoing and unending endeavor.

3.1 Ontology, Epistemology, Methodology

Bit by bit, myriad subject matters in philosophical debate were organized under a limited number of headings.

Ontology, or theory of existence, dealt with the general nature of the world. Epistemology, or theory of knowledge, attended to the justification of belief. Sometimes epistemology included methodology, ways of acquiring knowledge; sometimes methodology was presented as an independent faculty. Ethics, or theory of value, concentrated on the conduct of life.

Philosophy offers a rational and systematic way of approaching knowledge.

Figure 2. The Philosophical Set-up.

Ontology	Epistemology	Methodology
Ethics		

The foundations of Western philosophy were laid by the Ancient Greeks. Their everyday life and interactions – and their thinking – were tied to local, physical opportunities.

The emphasis on and the importance of the above faculties has varied over the years.

Nevertheless, it can be assumed that Immanuel Kant's decision to omit ontology from the second edition of his *Critique of Pure Reason*, and to concentrate only on the validity of knowledge, was the beginning of a decline in interest in **ontology**.

In the twenty-first century, new technologies – AI, Machine Learning, Blockchain, Augmented Reality, Virtual Reality, the Internet of Things, Robotics and Quantum Computing – are catalysts of change. Each of these technologies stands for new opportunities. Together, they open a new passage into the future.

Very likely, they represent the most powerful technology disruption we will see in our lifetimes, a disruption that is already transforming many aspects of our private and working lives.

We are witnessing the escalation of the alternative reality we call virtuality.

It is one thing to shape the environment with tools. It is another to create an environment as a tool.

Our world in the twenty-first century is a combination of the physical elements plus the evolving digital substrate.

Like Alice, we have fallen through a looking-glass to a wonderland, the virtual world where all the elements of human nature are played out, a world overflowing with terrible danger and nearly boundless opportunity.

As happens with euphoria, we are addicted to it, at least for the time being.

The transformation touches the ideas and concepts that have constructed and constrained our world. It necessitates changes

in ideas that have remained unchanged for years. It also makes us rethink some of the elementary concepts of philosophy.

Plato's *Theaetetus* is one of the earliest and most rigorous writings on **epistemology**. In that dialogue, Socrates and Theaetetus do their best to explicate the true nature of knowledge.

They discuss three definitions:

- Knowledge is nothing but perception.
- Knowledge is true judgment.
- Knowledge is a true judgment with an account.

In the dialogue, each of these is rejected as unsatisfactory.

The ancients were physiologically and intellectually very much like us today. The way they conveyed the knowledge they acquired and the manner in which knowledge arose for them were the same as they are for us.

However, the completion of the Internet infrastructure has set the stage for a massive uploading of knowledge coupled with novel computing technologies.

Moreover, the Internet is crowded with people. No less than 55.1 per cent of humankind, or over 3.5 billion people, use it. Every day, we send 269 billion emails, download 350 million pictures and tweet 500 million times. In two hours, we produce the same amount of data as mankind had produced in total by the year 2003.

It would take 50 years to watch what is posted in a single day on YouTube.

Everything is recorded, as Google admitted in 2007.²⁶ The recorded, classified and analyzed data produces the best insights into what people think, aspire to and dream.

In short, we are the data.

From the **methodological** point of view of the capitalist economy as a whole, the newly emerged giants of the global economy (Amazon, Apple, Facebook and Google) all trade profitably in human attention. For better or worse, the Internet has become a marketplace where algorithms collecting and selling data about human attention are the engine room of the digital economy.

From the point of view of the individual, the abundance of cultural goods increases the opportunity cost of reading an article or watching a video, since it is virtually certain that another one, somewhere online, will be better suited to our desires or needs. This creates an attention crisis.

In a world of clickbait, 24/7 news and big data, the Internet is increasingly the fulcrum around which we organize our lives, pursue our relationships and even predicate our identity.

Donald Trump is an embodiment of the dynamics of clickbait. He is the logical product in the political domain of a petty media environment defined by impulsiveness and zero-sum competition for our attention.

His success metrics – the number of rally attendees, the size of his “buttons,” the grandiosity of his military parades, or the number of retweets his trollish fusillades receive – are attention economy metrics.

We risk failing to deal with what truly matters, such as our children’s future and our relationships.

The main question is this: How do we use our time in order to attempt the tasks that are important to us?

We may also think that the new knowledge in the networked world is isolated from truth or falsehood, and left to exist in the absence of either.

If what is false can become true and what is true can become false, the very concept of ground truth is dangerously limiting. Maybe, besides knowing what is true and what is false, we should be more aware of what has become knowable.

According to the Aristotelian idea of science, there are many different sciences, and they are characterized according to their specific types of objects and their laws: physics is the field of natural movements and transformations; logic is the study of formal reasoning; politics is the analysis of public virtues; and rhetoric is the study of how to convince others.

Implicitly, Aristotle set the basis for a polynomial understanding of the world. This means that certain names, terms, ideas and theories are supposed to work best (and sometimes only) within certain areas of expertise and science, or within certain professions.

This is a philosophy of the past. It produces knowledge in silos.

Technologies help us to pool ideas in entirely new ways and to connect people across huge distances. Through this, we can bring more brains together, generate new sources of data, enhance human intelligence, and analyze large volumes of data to make better predictions.

Knowing the world requires contextual knowledge, practiced by people who understand that knowledge is context-dependent and that different viewpoints must be included and evaluated in order to reach an appropriate conclusion or to make a just decision.

3.2 The Logic of Change

The evolving digital substrate was not without precedent.

It was part of a long trend of human inventions to expand the space in which things could be done, and to devise new sensors to “navigate” within it, and new tools to manipulate its elements.

It was apparent that the digital substrate could capture and contain the actions, transactions and reactions of the world, and that it would evolve into a parallel universe of multiple virtual realities.

What we do not know – but think – is that software objects can aggregate and evolve with or without any actions of human programming.

But this is an understanding expressed in a biological metaphor. If future programmers use it (and that is the trend), it is the richest source of analogies in our experience.

The best way at the moment to think of this is in parallel with the explosion of biological life in the Cambrian Age. It is a virtual ecology that is evolving in response to the sudden rise of a new technology.

Figure 3. The Philosophical Set-up with Emphasis.

ONTOLOGY	Epistemology	Methodology
Ethics		

That was ontological reflection, which we consider of utmost importance for understanding the following:

1. How our world is changing.
2. How these changes influence epistemology, methodology and ethics.

4. Our World Revamped by Technology

Our point of departure is both philosophical and pragmatic.

How to understand the world we live in, in order to act in it.

This quest encompasses the study of knowledge, the nature of reality and ethics.

4.1 Reality - Virtuality Continuum

The reality-virtuality continuum represents a spectrum ranging from pure physical reality to virtual reality. The metaverse blurs the boundaries between these realities with implications on our perception and experiences.

Researchers Paul Milgram and Fumio Kishino were the first to talk about the concept. They introduced their pioneering research paper *"A Taxonomy of Mixed Reality Visual Displays"* in 1994.

They blended real and virtual worlds along the reality–virtuality continuum consisting of Augmented Reality (AR) and Augmented Virtuality (AV) technology. AR overlays virtual objects onto the real world, while AV captures real objects and superimposes them onto the virtual environment.

Figure 4. Reality - Virtuality Continuum.

Reality	Augmented Reality	Augmented Reality	Virtuality
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The distinctions between real and virtual are obvious, depending on whether we are dealing with real or virtual objects, real or virtual images, and direct or non-direct viewing of these. The middle, where the merging of real and virtual worlds takes place, is referred to as Mixed Reality (MR).

Today, the reality–virtuality continuum offers a fitting allegory to make sense of the world we live in.

We live a life mediated by screens, filtered through the Web and dominated by technology. Every day we upload billions of bits of ourselves to a network that records and even predicts our most basic wants, desires and fears.

We do not know where the mind begins and the machine ends. Today, the machines are not just hardware, they are projections and extensions of our mind.

Examining the reality-virtuality continuum through an ontological lens allows us to question the nature of reality itself. Traditional understandings of reality have largely been based on the tangible, physical world. However, as the metaverse evolves, our notion of what is real and authentic becomes more complex. Philosophical investigations into the nature of existence and the underpinnings of reality can give us insight into how the metaverse challenges our traditional ontological frameworks.

The metaverse blurs the boundaries between physical and virtual realities, creating a new space where the distinctions between the two become increasingly intertwined. This has profound implications for our perception and experiences.

Our understanding of “real” and “virtual” is changing as we immerse ourselves in virtual environments and interact with virtual entities.

A fundamental question is whether our experiences in the metaverse hold the same ontological weight as experiences in the physical world, and how our perception of authenticity is evolving.

By examining the reality-virtuality continuum and its implications, we can shed light on the transformative power of the metaverse. We can discuss the ways in which this blurring of realities impacts our understanding of self, relationships, and even the notion of truth.

The philosophical inquiries into the nature of perception, consciousness, and subjective experiences provide a rich foundation for exploring the metaverse's impact on our daily lives.

4.2 The Deep Web & The Dark Web

The more the world opens up, the more it closes down. Also the ability of hostile powers to hide information is enhanced.

The future will be an increasingly secretive place, new venues for denial will arise, both discrete and broad events can be hidden by sanctuary.

For decision-makers, not knowing what you do not know complicates things.

Figure 5. The Deep Web and the Dark Web.



To put it simply,

Surface web deals with the portion of the World Wide Web that is indexed by search engines. It can be viewed by general users on standard Web browsers. Its share of the total WWW is estimated to be 4 %.

The Deep Web extends beyond the reach of typical search engines, because it includes unindexed sites, free-for-service (FFS) content, and private databases such as password-protected email accounts. The Deep Web comprises approximately 96 % of online content.

Dark Web is an encrypted network that can be accessed only with a specialized browser or application. The Onion Router (TOR) is the best known and most common method of interacting with the Dark Web. It is an anonymizing platform that routes encrypted traffic through a series of nodes. All the criminal activity you find in the physical world will be found also in the Dark Web. Its volume is less than 1 % of the total of the web.

4.3 Metaverse

The metaverse enables us to engage with virtual spaces, collaborate with others, and experience a new form of reality.

It is a digital realm that encompasses interconnected virtual worlds, where individuals can explore, interact, and create in real-time.

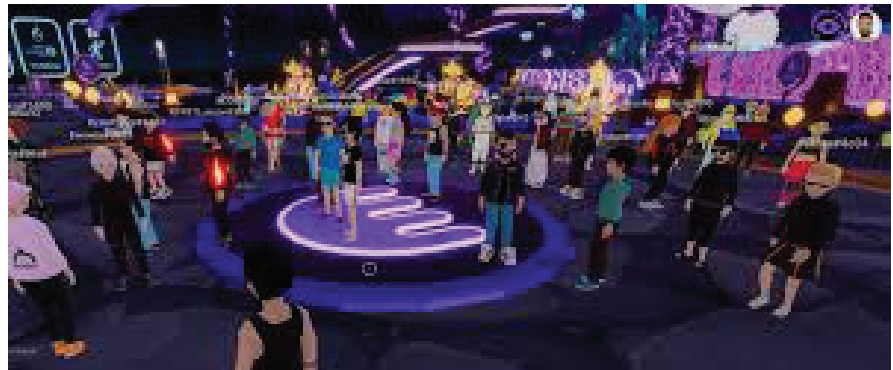
It is immersive, blurring the boundaries between physical and virtual realities, and allowing for seamless transitions between various virtual spaces.

It is vast, scalable, and persistent.

The metaverse has the potential to encompass an infinite number of virtual environments, each offering unique experiences and opportunities for exploration.

It is dynamic. Users can collaborate, socialize, and engage in real-time interactions with others across distances.

Figure 6. Metaverse.



The main potential has to do with human interaction. It enables people to connect, communicate, and collaborate within virtual spaces, creating opportunities for shared experiences and collective creativity in novel ways.

Instead of staring at your screen, you are in it.

The concept of embodied presence means that the individuals can project their identities and engage with others in meaningful ways, transcending the limitations of physical proximity.

The metaverse offers extended capabilities for the integration of virtual and augmented reality, haptic feedback, and other emerging technologies to enhance our sensory experiences and create more realistic virtual environments.

There are new opportunities for learning, entertainment, and personal expression. Also new avenues for self-discovery and growth.

5. Her Extended Brain

Our senses are vital for gathering information about the world around us.

Our sensory inputs shape our perception and interactions within physical and virtual environments.

The human capabilities have remained the same for ages:

- What We See: The typical human eye is capable of perceiving light at wavelengths 390-750 nanometers, a very narrow band of electromagnetic radiation.
- What We Hear: The range of frequencies that can be picked up by the human ear is usually cited as 20-20,000 Hz.
- What We Touch: Highly variable among individuals within absolute limits. Fingers 2-3 mm precision.
- What We Taste: Over-estimated usually. Depends on very limited taste receptors, molecular docks, in the tongue.
- What We Smell: Uncertain. Believed to be an underdeveloped sense in humans. Varies dramatically.

The advancements in technology impact our senses and expand our capabilities.

Artificial intelligence (AI), machine learning, and wearable devices augment our abilities to process and analyze information. Virtual reality (VR) and augmented reality (AR) simulate sensory experiences and create more immersive virtual environments.

Emerging technologies, such as brain-computer interfaces (BCIs) have the potential to directly interface with our sensory systems, further blur the boundaries between physical and virtual experiences.

We explore these factors and how they shape our perception and cognition, interactions and experiences in reality - virtuality continuum.

5.1 Her Extended Inner Capabilities

Our perception of reality is not confined solely to what our five traditional senses - sight, hearing, touch, taste, and smell - allow us to perceive.

Our senses are but the doorways to a vast realm of possibilities, where the boundaries between the external world and our internal experiences blur.

Deep within ourselves, we encounter the primordial sense of intuition, an innate awareness that guides our decision making on an instinctive level. It is a powerful yet enigmatic sixth sense that enables us to perceive patterns, make connections, and navigate the complexities of existence.

Or to put it more aptly, we discuss our capability to make sense of emergence and convergence, which can be harnessed. This capability can expand our brain, unlock a realm of wisdom and knowledge far beyond the grasp of traditional senses.

In the extraordinary realm of synesthesia senses intertwine and blend in harmony. In this synesthetic tapestry, the boundaries between the senses dissolve, and new avenues of perception emerge.

In the intricate tapestry of extended capabilities, we begin to grasp the notion that our perception of reality is far more complex and nuanced than we once believed. Our senses are not static, but fluid and adaptable entities, capable of expanding and evolving in ways that defy conventional understanding.

We captured the development in a single phrase: *"The more you can sense, the more you can do."*

The untapped possibilities that lie within our extended capabilities. Human senses offer glimpses into a world that transcends our conventional understanding of reality. It is a world that invites us to question, to push boundaries, and to discover the boundless potential that resides within us all.

Various advancements and technologies play a role in expanding our capabilities.

Figure 7. Quantum Computer.



For instance, quantum computing represents a significant milestone in computing technology. Quantum computing has the potential to revolutionize data processing and computational power, enabling complex simulations and immersive experiences within the metaverse.

It enhances our ability to interact and engage with virtual environments.

Quantum computing enables faster and more efficient data processing, allowing for more realistic graphics, advanced physics simulations, and sophisticated AI algorithms within virtual spaces. This heightened computational power paves the way for more immersive and interactive experiences that blur the boundaries between the real and virtual worlds.

Furthermore, the potential applications of quantum computing enhance our ability to interact with the metaverse. Quantum computing can facilitate real-time responsiveness in virtual environments, creating a more seamless and intuitive user experience. This improved interactivity can enhance our ability to navigate, manipulate information, and create within the metaverse, fostering deeper engagement and immersion.

The transformative impact of quantum computing is targeted on the underlying infrastructure of the metaverse. There is potential for secure and efficient data transmission, quantum encryption, and improved networking capabilities. These advancements contribute to a more robust and scalable metaverse, enabling widespread access and seamless connectivity across users and virtual worlds.

Quantum computing enhances our ability to interact, simulate, and experience the metaverse in ways never before possible.

Supercomputers are another significant advancement pushing the boundaries of what is possible in the metaverse. They facilitate sophisticated simulations and real-time rendering, creating highly immersive and realistic virtual experiences.

They are able to handle massive amounts of data, allowing for intricate simulations that mimic real-world physics, weather patterns, and other complex systems. Supercomputers prepare the way for virtual experiences that are incredibly lifelike and interactive.

They enable the creation of visually stunning and immersive virtual environments. This has a transformative impact on graphic-intensive applications, such as gaming, virtual design, and architectural simulations. This enhanced rendering capability brings us closer to a metaverse where the distinction between physical and virtual realities becomes increasingly blurred.

Another aspect is the role of supercomputers in advancing research and development within the metaverse. The formidable computing power supports scientific endeavors, enabling breakthroughs in medicine, climate modeling, and materials science.

This research-driven approach fosters innovation and pushes the boundaries of what can be achieved within the metaverse.

The direction is towards a metaverse where highly realistic, immersive, and interactive virtual experiences become the norm.

5.2 Her Extended Capabilities to Monitor the World

Time and space are fundamental dimensions that shape our experience of reality.

Their exploration in the context of the metaverse offers profound insights.

By and large, the temporal world is taking on increasing importance over the physical world.

Time is not only money.

It is the principal component of power, ideas, organization, events, intents, and veracity.

Timing shapes consequences of planned events. Time is often the analytical nexus among seemingly disparate events.

A sophisticated understanding of time and timing delivers strategic and tactical indications.

On the other hand, the ability to orchestrate events across the reality - virtuality continuum makes it possible to influence opinion and to create and manage perceptions on an

unprecedented scale. We can see the inklings of this ability everywhere: the timing of press releases, of diplomatic actions, of corporate mergers.

The metaverse challenges our traditional understanding of time and space.

In virtual environments, the concept of physical distance is no longer a limiting factor, allowing us to transcend traditional spatial boundaries. Virtual spaces can create a sense of presence and immersion, altering our perception of space and providing access to experiences and places that were previously inaccessible.

The asynchronous nature of digital interactions and the ability to manipulate time within virtual environments can affect our perception of the passage of time.

There is a fluidity of time in virtual spaces, where the rules of real-time may not necessarily apply. This freedom can have both positive and potentially disorienting effects on our daily lives.

The metaverse's impact on our perception of time and space extends to social interactions.

The metaverse enables us to connect with others across vast distances and time zones, transcending the constraints of physical proximity. Furthermore, there is a blurring of work and personal boundaries and a sense of timelessness when engrossed in virtual experiences.

As we journey further into the realms of human potential, we delve into the concept of an extended brain - the idea that our cognitive abilities can transcend the confines of our physical bodies.

We discover the remarkable capacity to monitor and interpret external information beyond the limitations of our immediate surroundings. This expanded awareness allows us to tap into

collective knowledge, perceive distant events, and traverse the dimensions of time and space.

The extended brain invites us to embrace the vastness of our cognitive abilities, enabling us to monitor the world outside ourselves, transcend the limits of time and space, and tap into the collective wisdom and experiences of humanity.

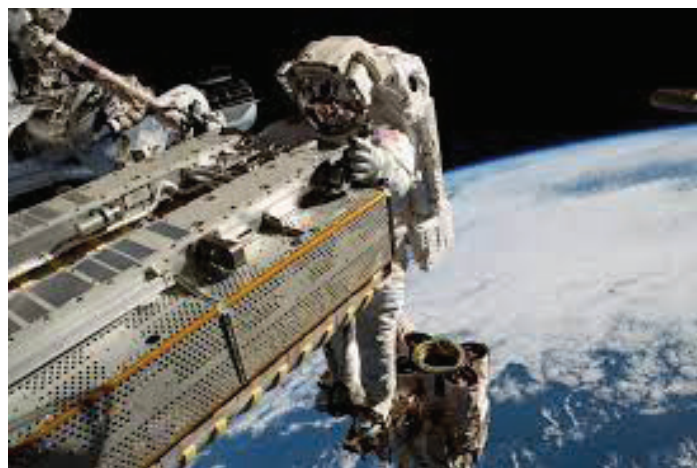
It is a reminder that our minds are extraordinary instruments, capable of reaching beyond the confines of our physical being, and inviting us to embark on a journey to solve the great challenges of our time.

There are a large number of institutions and technologies that enable this monitoring.

NASA, NOAA and DARPA are well-known for gathering and analyzing data from the external environment. These organizations play a crucial role in monitoring various aspects of our world, such as weather patterns, astronomical events, and technological advancements.

They provide valuable insights and contribute to a collective understanding of the world.

Figure 8. NASA.



The esteemed work of **NASA** (National Aeronautics and Space Administration) includes exploring outer space and studying celestial bodies. NASA uses advanced technology to gather data from satellites, telescopes, and rovers, uncovering valuable insights into the universe beyond our planet. The organization's contribution to scientific knowledge, space exploration, and astrophysics showcases its significant impact.

NOAA (National Oceanic and Atmospheric Administration) is dedicated to monitoring and understanding our planet's marine and atmospheric conditions. It collects vast amounts of data regarding weather patterns, climate change, and ecological health. The organization's efforts can be showcased as instrumental in predicting and mitigating natural disasters, protecting ecosystems, and providing valuable information to various industries.

DARPA (Defense Advanced Research Projects Agency) might also be featured for its cutting-edge research and technological advancements. DARPA plays a pivotal role in developing innovative solutions and pushing the boundaries of science and technology. DARPA's data-centric approach contributes to breakthroughs in fields such as artificial intelligence, robotics, and cybersecurity, thus influencing the technological landscape of the metaverse.

These institutions, and several like them, in data gathering and analysis, contribute to our collective understanding of the world.

The data collected supports scientific research, policy-making, and the development of technological advancements. They also advance knowledge and drive progress in their collaborations with private entities.

6. Ethics! What about Her Heart?

In his science fiction novel, *I, Robot*, Isaac Asimov outlined the three laws of robotics:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey orders given to it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Figure 9. *I, Robot*.



Asimov did not suppose that robots would evolve by themselves. He supposed that there would be laws, a moral that would steer their journey.

Artificial intelligence is not impartial or neutral.

It is an outcome of people's decisions. Coupling artificial intelligence with social and economic questions is not uncomplicated. It is full of moral choices. So far, the choices

have been made by a homogeneous group of young, white men whose education, life experiences and values are similar.

Ethical values and norms around accountability, social and political responsibility, inclusion and connectivity, legibility, and security and privacy are embedded in the default settings of every system, whether intentionally or not.

Clearly, a more intentional and explicit approach to ethics is needed.

In essence, Pallas Athene needs to consider not only her brains, but also her heart. The seat of emotions, compassion, and love.

6.1 Digitality

In our exploration of the human potential, we must not overlook the significance of the fourth element in philosophy - **ethics**.

While the brain and its extended capabilities have been at the forefront of our trek, it is essential to look into the realm of the heart and its profound influence on our existence.

It holds a power that transcends logic and reason. It is through the heart that we experience the depths of joy, love, and empathy - emotions that can shape our lives and the world around us.

It is the gateway to our most authentic selves, the place where intuition and empathy reside.

It unites individuals, it breaks boundaries, and it catalyzes transformative.

There is a growing need for regulating artificial intelligence (AI) and digital technologies.

These technologies are reshaping various industries. Concerns are plenty, such as data privacy, algorithmic bias, and the

responsible development and deployment of AI. Also the role of governments, organizations, and individuals in shaping regulations that balance innovation and protection.

Digital regulation encompasses various regulations and standards that are aimed at ensuring the responsible development, deployment, and use of AI and digital technologies.

This includes regulations specifically focused on AI, as well as broader regulations that address data protection and digital services.

Some of the key regulations and standards in this field are:

1. **AI regulation** refers to specific laws and guidelines designed to govern the development and use of AI technologies. These regulations often focus on ethical AI practices, accountability, transparency, and the protection of human rights. Different regions and countries are in the process of developing their own AI regulations to address the unique challenges and opportunities presented by AI.

2. **General Data Protection Regulation** (GDPR) is a comprehensive data protection regulation enforced in the European Union. It sets strict standards for how personal data should be collected, processed, stored, and shared. GDPR ensures that individuals have control over their personal data and provides them with rights regarding data protection and privacy.

3. **Digital Services Act** (DSA) is a proposed regulation by the European Commission that is intended to regulate digital services, such as social media platforms, online marketplaces, and search engines. The DSA aims to establish clear responsibilities and obligations for these platforms, including measures to combat illegal content, ensure transparency, and protect user rights.

4. **Digital Markets Act** (DMA) is another proposed regulation by the European Commission that targets large online platforms that act as gatekeepers in the digital market. It sets out rules to address competition issues and aims to ensure fair and open digital markets, providing smaller businesses with a level playing field.

5. **Digital Governance Act** (DGA) is a proposed regulation that seeks to establish a framework for the governance of AI systems and other emerging digital technologies in the European Union. It aims to ensure transparency, accountability, and human-centric design principles in the development and deployment of AI systems.

6. Other standards such as ISO and Cenlec. The **International Organization for Standardization** (ISO) and the **European Committee for Electrotechnical Standardization** (Cenlec) have developed standards related to AI and digital technologies. These standards provide guidelines and best practices in areas such as AI ethics, privacy, security, and quality management.

These regulations and standards play a crucial role in addressing the ethical, privacy, security, and accountability concerns associated with AI and digital technologies. They provide a framework for organizations and individuals to ensure responsible and ethical practices in the development and use of AI systems and digital services.

6.2 Sustainability

Sustainability regulation is another key aspect we address.

The **United Nations** is a prime actor. It has presented the 17 Sustainable Goals.

Figure 10. The 17 United Nations' Sustainable Development Goals.



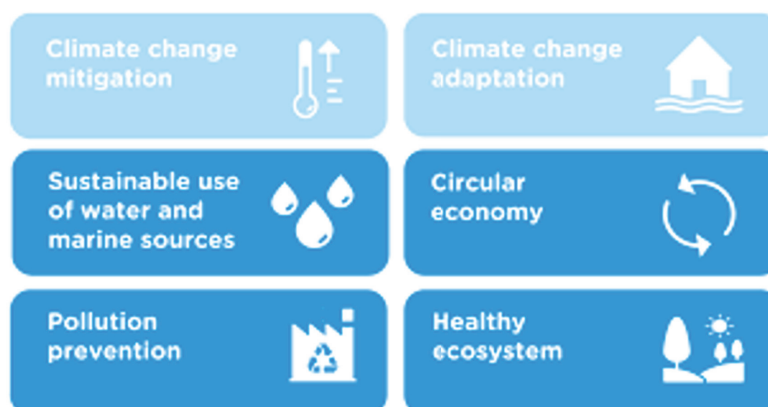
Sustainable Development Tracker instead presents data across all available indicators from the *Our World in Data* database, using official statistics from the UN and other international organizations.

It is a free, open-access publication that tracks global progress towards the Sustainable Development Goals and allows people around the world to hold their governments accountable to achieving the agreed goals.

Also the **European Union** is a dynamic actor.

The European Union has created a sustainability taxonomy to summit the topics of interests.

Figure 11. The European Union Sustainability Taxonomy.



New regulation raises the level of compliance needed.

The large financial and non-financial companies must disclose in the Board of Directors Report the share of Taxonomy-aligned turnover or expenditures, capital and operational.

There are other European and global standards to be considered:

1. **Sustainable Finance Disclosure Regulation (SFDR)** is a European regulation introduced to improve transparency in the market for sustainable investment products, to prevent greenwashing and to increase transparency around sustainability claims made by financial market participants.
2. The **Corporate Sustainability Reporting Directive (CSRD)** is a new framework introduced by the EU to bring sustainability reporting in line with financial reporting. The CSRD will be rolled out in a phased approach from 2024 and will require companies to report on how sustainability issues, such as climate change, impact their business and how their operations in turn affect people and the planet. The CSRD will impact more companies than any other piece of sustainability regulation to date, raising the bar on disclosures across the 'E', 'S' and 'G'. Approximately 50,000 companies worldwide will be required to disclose, track and measure their sustainability performance. The CSRD also features mandatory assurance for reporting by an independent assurance service to make sure information is accurate and reliable. The standards are being developed by the European Financial Reporting Advisory Group (EFRAG), with additional technical advice from other European agencies
3. The **European Financial Reporting Advisory Group (EFRAG)** is a private association established in 2001 with the encouragement of the European Commission to serve the public interest. It plays a key role in the development and promotion of European views in the field of corporate

reporting, including financial and sustainability reporting. EFRAG has been involved in the development of the European Sustainability Reporting Standards and has been appointed as the technical advisor to the European Commission for the development of these standards. The organization's activities are manifested through two streams: financial reporting, through the Financial Reporting Board (FRB), and sustainability reporting, through the Sustainability Reporting Board (SRB). EFRAG's mission is to strengthen sustainability reporting requirements and to ensure the quality, consistency, and comparability of the information disclosed.

4. The **International Sustainability Standards Board** (ISSB) is an independent, private-sector body that develops and approves IFRS Sustainability Disclosure Standards. It operates under the oversight of the IFRS Foundation and was formed in 2021 to meet the demand for global sustainability standards. The ISSB comprises 14 members from across the world with a mix of professional perspectives, including former investors and preparers. It has a transparent, rigorous due process to develop market-informed standards that respond to the needs of investors, companies, and international policymakers. The ISSB is responsible for developing IFRS Sustainability Disclosure Standards to provide a truly global baseline of sustainability disclosures to further inform economic and IFRS Accounting Standards. The ISSB's standards are designed to ensure that companies provide sustainability-related information that is globally comparable and that addresses a fragmented landscape of voluntary, sustainability-related standards and requirements.
5. The **Securities and Exchange Commission** (SEC) is an independent agency of the United States federal government that is responsible for enforcing securities laws and protecting investors. It was created in 1934 in response

to the stock market crash of 1929 and the Great Depression. The SEC's mission is to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation. The agency does this by enforcing securities laws, registering securities and investment companies, and conducting research and analysis on securities markets. The SEC also oversees the National Securities Markets Improvement Corporation (NSMIC), which is a non-profit corporation that helps to improve the efficiency and effectiveness of the securities markets.

6. The **Directive on Corporate Sustainability Due Diligence** (CSDD) is a proposed legislative framework by the European Commission to oblige companies, including those in financial services, to identify and prevent adverse human rights and environmental impacts arising within their global value chains. The aim of the directive is to foster sustainable and responsible corporate behavior, anchor human rights and environmental considerations, and ensure that businesses address adverse impacts of their actions, both inside and outside Europe. The CSDD will set obligations for large companies regarding actual and potential adverse impacts on human rights and the environment. It will require companies to follow specific due diligence steps, such as identifying and addressing potential and actual adverse human rights and environmental impacts in their value chains. The directive is expected to be enforced at the Member State level, with directors of EU companies being responsible for overseeing due diligence requirements. The CSDD is designed to reduce the risk of adverse human rights and environmental impacts within global value chains and is part of the EU's broader efforts to promote sustainability and responsible corporate behavior.

The comparison of EFRAG, ISSB and SEC viewpoints is worthwhile to apprehend the desired direction for the future.

Figure 12. Evolving ESG Standards.

THEME	EFRAG	ISSB	SEC
Targets and transition plans	Commitment to and disclosure of GHG emission reduction targets in five-year rolling periods, including target values for 2030 & 2050. A transition plan to align with the Paris Agreement.	Disclosure of any climate-related targets set by the company. Such targets would be compared to the latest international agreement on climate change (currently The Paris Agreement).	Disclosure of any climate-related targets or goals set by the company. Targets or goals set in response to regulatory requirements or climate-related treaty or law.
Use of scenario analysis	The use of scenario analysis to assess resilience. To be consistent with the Paris Agreement and limiting climate change to 1,5 Celsius.	The use of scenario analysis to assess resilience. Disclosure of if the analysis aligns with The Paris Agreement. Alternative means of analysis permitted.	Any means to assess resilience. Additional disclosures if scenario analysis is used. Does not require consideration of specific scenarios.

In responsible regulation there is a balance between technological advancements and environmental stewardship. The sustainability regulation can guide the development and use of emerging technologies. The regulations and standards can address the concerns and incentivize the adoption of sustainable practices.

The intersection of technology, sustainability, and regulation offers perhaps the most prolific opportunity of minimizing the ecological footprint and ensuring long-term viability.

7. Conclusions

We asked our Metaverse assistant how about writing a chapter on future society.

He or she or it responded.

“Absolutely! The “Future Society” section offers an opportunity to explore the profound societal changes that can occur as a result of the metaverse and emerging technologies. Authors can explore various aspects that arise from our interconnected world and envision the implications they may have on society.”

There is an emergence of AI-driven assistants.

These virtual assistants have capabilities far beyond traditional administrative assistants. They can handle various tasks, such as scheduling, data analysis, and even basic customer interactions, effectively streamlining processes and freeing up human employees to focus on more strategic and creative work.

As part of the future work landscape, the role of copywriters in crafting compelling content for marketing and communication purposes must be pointed up. AI-powered tools assist copywriters in generating ideas, optimizing content, and analyzing data to ensure messages effectively resonate with target audiences. This collaboration between human copywriters and AI-driven tools leads to more efficient and impactful content creation.

As in this paper.

In addition, AI-powered chatbots handle customer inquiries, provide instant support, and streamline customer interactions. This automation frees up human customer service

representatives to focus on complex customer issues that require empathy and human connection.

AI organizations act as tireless assistants, managing repetitive tasks and streamlining workflows. Through automation, they eliminate the need for humans to engage in mundane and time-consuming activities, allowing employees to focus on more strategic and creative endeavors. From handling tedious administrative work to managing logistics and supply chains, AI organizations enable real existing organizations to achieve higher levels of productivity and efficiency.

Furthermore, AI organizations excel in customer service and support. With their natural language processing and sentiment analysis capabilities, they can effectively engage with customers, addressing inquiries, resolving issues, and providing personalized recommendations. Whether through chatbots, virtual assistants, or voice-enabled interfaces, AI organizations become the face of real existing organizations, delivering exceptional customer experiences and bolstering satisfaction.

AI organizations play a crucial role in innovation and research with their ability to rapidly gather and analyze data from various sources, they aid in market research, trend analysis, and forecasting. This valuable insight helps real existing organizations stay ahead of the curve, identify emerging opportunities, and drive business growth.

Figure 13. Future Society 1.



It is important to note that even as AI organizations contribute to the success of real existing organizations, they do not replace human employees.

Instead, they complement and collaborate with human workers, fostering a symbiotic relationship that harnesses the strengths of both. Human employees provide the critical thinking, empathy, and creativity that AI organizations cannot replicate, ensuring the harmonious blend of human and machine capabilities.

As the partnership between future AI organizations and real existing organizations continues to evolve, the boundaries of what is possible expand. With ongoing advancements in AI technology, these organizations will continue to refine their capabilities, becoming even more adept at addressing complex challenges and driving innovation.

The future AI organizations of daily assistance are poised to transform real existing organizations, helping them adapt to the changing landscape and achieve unparalleled levels of success. Together, they forge a path towards a future where human capabilities are amplified, and organizations thrive in an interconnected world of intelligence and collaboration.

7.1 Future Society

Here are pivotal subject matters we must cover:

1. **Digital Divide.** The widening of the digital divide results from the metaverse and emerging technologies. Certain populations might face barriers in accessing and participating in the metaverse, and how this exacerbates existing social and economic inequalities. There is a need to address strategies and policies that can bridge this gap and ensure inclusivity.

2. **Social Inequality.** The metaverse and emerging technologies can impact social inequality. Access to advanced technologies and virtual experiences can lead to social stratification and the potential marginalization of disadvantaged groups.

However, there are ways to mitigate these inequalities, such as implementing accessible technologies, education initiatives, and support for underrepresented communities.

3. **Cultural shifts** may arise as a result of the metaverse and emerging technologies. The blurring of boundaries between physical and virtual identities, and the influence of virtual communities on real-world culture may come with unforeseen aspects. And with an impact on traditional social structures, norms, and values, and the potential for new forms of expression, collaboration, and artistic creation.

4. **Policy Considerations.** The role of policy making shapes the future society influenced by the metaverse. There is a need for regulations regarding privacy, data protection, intellectual property, and ethics in virtual environments. The policymakers can, and must, balance innovation and protection while fostering an inclusive and equitable metaverse.

5. **Education and Workforce Development.** The implications of the metaverse and emerging technologies on education and workforce development are evident. The virtual learning environments can enhance educational opportunities and provide new learning experiences. The potential impact on future job markets and the necessary skills for individuals to thrive in a metaverse-driven society is tangible.

6. **Collective Action and Collaboration.** The importance of collective action and collaboration in shaping the future society influenced by the metaverse. Global communities can come together to address challenges, maximize the potential benefits of emerging technologies, and ensure equitable access. Also

the initiatives and grassroots movements that promote positive change and inclusivity need to be considered.

Figure 14. Future Society 2.



In a world where technology continues to advance at an unprecedented pace, future AI organizations have emerged as vital partners in daily assistance for real existing organizations. These AI organizations bring a unique blend of intelligence, efficiency, and adaptability that transforms the way businesses operate and thrive in the modern landscape.

With their advanced algorithms and machine learning capabilities, AI organizations seamlessly integrate into the fabric of real existing organizations, augmenting the capabilities of human employees and driving productivity to new heights.

In the best case, they become our trusted allies, supporting and enhancing various aspects of daily operations.

7.2 Future Work

We envision that AI-powered organizations will complete and support existing executive positions such as CEO, CMO, CSO, CFO, CIO, and CTO with AI technologies and tools to enhance productivity and improve decision-making.

One of the key areas where AI organizations excel is indeed data analysis and decision-making.

With their immense processing power, they swiftly analyze vast amounts of data, identifying patterns, trends, and insights that human employees might overlook. With this information at their disposal, real existing organizations can make data-driven decisions with greater accuracy and efficiency

Like Pallas Athene's helmet, these AI systems analyze vast amounts of data, surface insights, and make recommendations to aid human executives in their decision-making process.

There is an increasing demand for AI coders and developers.

AI coders specialize in to develop and maintain AI systems, various programming languages, such as C#, Python, JavaScript, and Java. These technical roles are crucial for implementing AI capabilities and ensuring the optimal functioning of AI-driven organizations.

The development is not simple and straightforward.

As organizations chart their path forward, they recognize the importance of methodologies as guiding frameworks. These methodologies provide structure and clarity, helping to align efforts and achieve strategic objectives. They lay the foundation for systematic approaches to problem-solving, decision-making, and project management.

Organizations can conduct audits, analyze existing methodologies, and identify their strengths and weaknesses. But they should also explore new models, frameworks, and approaches that enable them to tackle new trends and challenges.

This self-reflection forms a cornerstone of AI integration.

Basically, to encourage adaptability organizations need to establish mechanisms to gather feedback from ongoing initiatives, seek external perspectives, and promote a mindset of experimentation and learning.

The renowned Danish futurist **Rolf Jensen** listed new professions for his *Dream Society*.

In it, functionality of a product or a service is just a small part of the price. A higher percentage of the value proposition consists of emotions and narratives.

“The better the story, the higher the price”, Rolf stated.

His list was based on his experience, imagination and hard labor.

The below list highlights the differences between present jobs and AI jobs. It is drawn by our Metaverse assistant.

Figure 15. Jobs & AI Jobs.

CEO	AI CEO
-----	-----
- Define vision	- Analyze market trends
- Set goals	- Make data-driven decisions
- Provide leadership	- Develop AI strategy
- Make key decisions	- Monitor AI performance
- Establish relationships	- Collaborate with AI teams
- Monitor performance	- Foster AI adoption
 CMO	 AI CMO
-----	-----
- Conduct market research	- Analyze market data
- Develop marketing plans	- Utilize AI insights

- | | |
|------------------------------|------------------------------|
| - Manage marketing campaigns | - Optimize marketing with AI |
| - Monitor marketing metrics | - Evaluate campaign impact |
| - Collaborate with teams | - Align marketing with AI |

CSO

- Develop sales strategies
- Identify market opportunities
- Manage sales activities
- Build client relationships
- Collaborate with teams

| AI CSO

- | - Utilize AI for sales forecasting
- | - Optimize sales with AI
- | - Analyze sales performance
- | - Foster AI-assisted strategies
- | - Align sales with AI

Assistants

- Schedule appointments
- Handle communication
- Prepare documents
- Coordinate meetings
- Assist in organization

| AI Assistants

- | - Manage schedules with AI
- | - Utilize AI for data processing
- | - Automate tasks with AI
- | - Utilize AI chatbot capabilities
- | - Continuously learn AI capabilities

Social Media Manager

- Develop social media strategies
- Create social media content

| AI Social Media Assistant

- | - Utilize AI analytics
- | - Optimize content with AI insights

- | | |
|--------------------------|--------------------------------|
| - Engage with audience | - Automate social media tasks |
| - Monitor performance | - Analyze social media metrics |
| - Collaborate with teams | - Align social media with AI |

Secretary

- Manage schedules
- Handle communication
- Prepare documents
- Coordinate meetings
- Assist in organization

| AI Secretary

- | - Utilize AI for calendar management
- | - Automate communication tasks
- | - AI-powered document preparation
- | - AI assistance for meeting organization
- | - Continuously improve AI capabilities

The list can serve as a guide to debate whether it is correct or not, or which parts of it are correct and which are not. The tasks for each role, and specific tasks may vary depending on the organization and its context.

The AI-enabled future work is characterized by a symbiotic relationship between humans and AI systems. It is not about replacing humans with AI, but rather leveraging AI technologies to enhance human productivity, decision-making, and creativity.

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