summary

The Future is Better Than You Think: Navigating a World of Increasing Capacity and Risk

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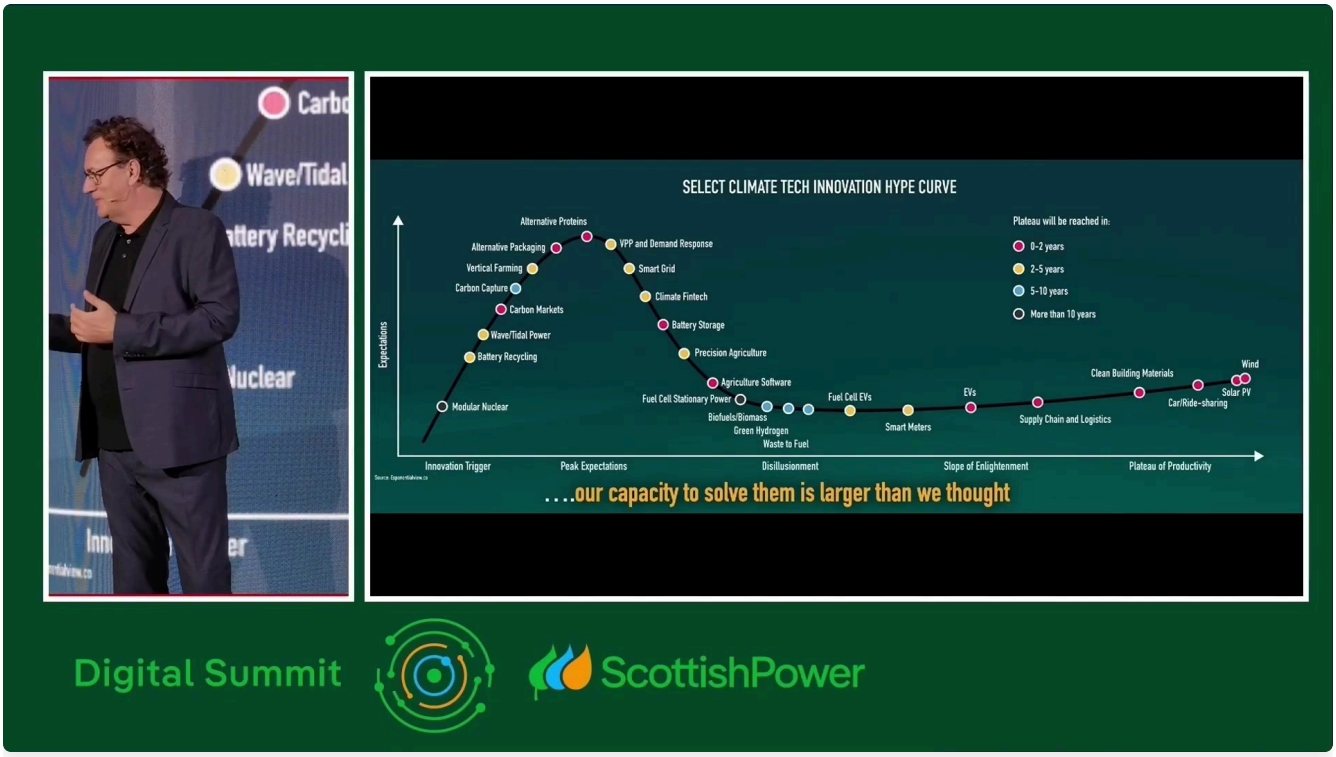
Gerd Leonhard opens by addressing the prevalent pessimism about the future, citing research indicating that a significant portion of young Europeans are hesitant to have children due to concerns about the future. He acknowledges the increasing risks across various domains, including cybersecurity and climate change. However, he emphasizes that humanity's capacity to address these challenges is also growing, referencing Kevin Kelly's assertion that we have more capacity to change problems rather than fewer problems. This is particularly true in the energy sector, where the tools, science, technology, and money exist, but a shift in investment is needed, highlighting the staggering $6.5 trillion per year invested in fossil fuels. Leonhard introduces the concept of "telos" (wisdom for doing the right thing) and suggests Europe possesses more of this quality. He contrasts the US's

innovation, China’s copying, and Europe’s regulation, advocating for Europe to improve its innovation. His core message is that the future is better than perceived, and a negative outlook can become a self-fulfilling prophecy. He points to the decreasing cost of technologies like solar panels (96% cheaper) as positive indicators, while noting that AI, though currently expensive, is on a trajectory of improvement. He also highlights the significant investment in climate technology, including agricultural software, precision agriculture, and battery storage, signaling a burgeoning green future.

The Dawn of Abundant Energy and Intelligence: Fusion, AI, and the Exponential Revolution



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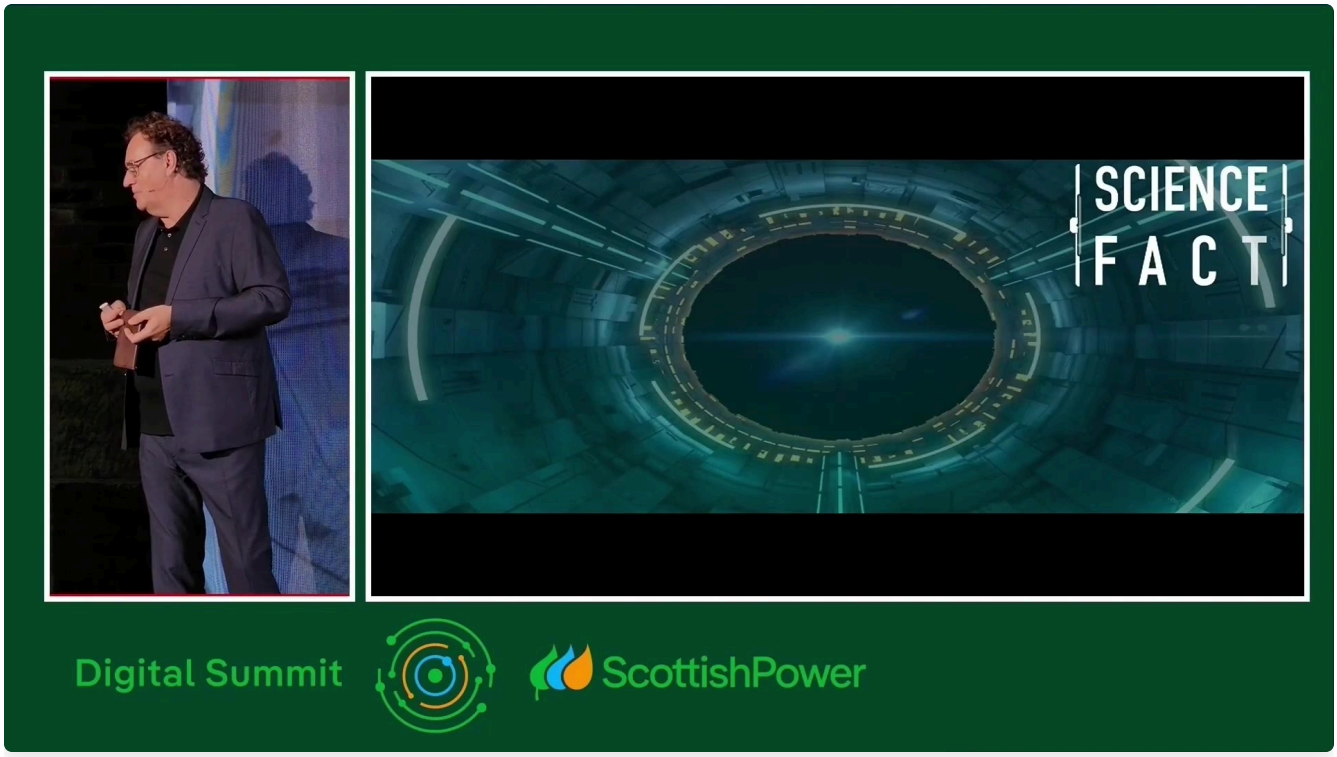
Leonhard discusses the potential of nuclear fusion as a solution for abundant energy, noting recent breakthroughs that suggest its availability within 10-15 years. He posits that a combination of renewable energies and next-generation nuclear power could lead to an abundant future. He stresses the importance of imagination, citing Einstein, and the need to teach this to children, as it is more crucial than mere knowledge. He asserts that the next ten years will witness more change than the previous hundred, with technologies like AI, robotics, quantum computing, nuclear fusion, genetic

engineering, and geoengineering becoming increasingly real. He cautions against the misuse of these technologies, such as developing autonomous killing drones, and advocates for their use in improving human life and flourishing, with energy at its core. He describes the current era as a “time warp” where science fiction is becoming science fact, drawing parallels to Star Trek’s positive vision and the ubiquitous nature of smartphones as a “second brain.”

Abundant Intelligence and Energy: The Promise and Peril of AI



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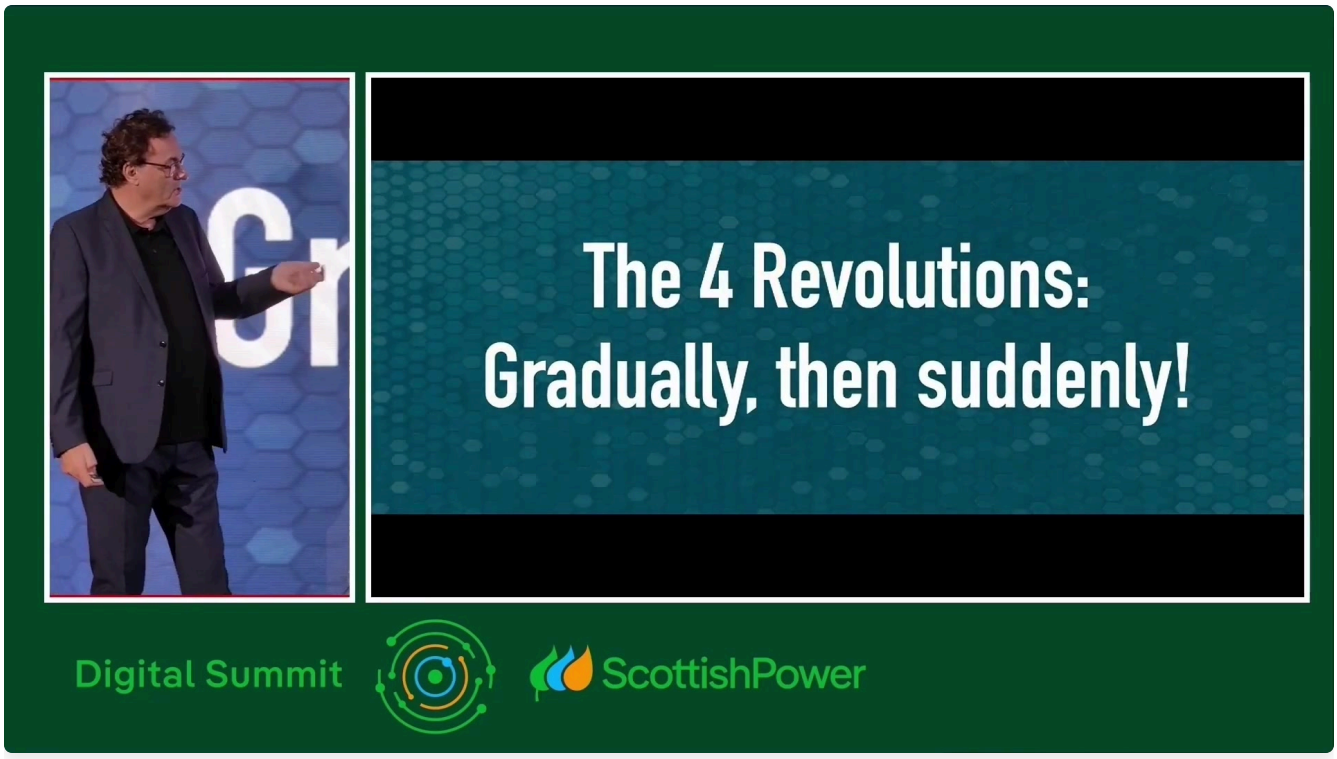
The discussion shifts to the two trends Leonhard is most excited about: abundant intelligence and abundant energy, and the prosperity they promise. He expresses some reservations about the data access requested by AI tools like OpenAI’s Atlas browser, questioning the extent of personal data sharing. He clarifies that while abundant intelligence is emerging, “abundant” is a strong word, and intelligence, defined as the ability to solve problems, is distinct from consciousness, which involves feeling, empathy, and compassion – qualities machines cannot possess. He reiterates that machine intelligence is based on logic, probability, and numbers, making it unsuitable for moral decisions, as exemplified by the challenges in self-driving cars. He revisits nuclear fusion as a path to abundant

energy and discusses how unlimited logical intelligence in machines could simplify many practical issues like waste, pollution, and organization, with applications in healthcare, energy, and climate change. He shares an example of an airline using AI to reduce food waste by 40% through better prediction of passenger consumption. Quoting Alvin Toffler, he emphasizes shaping the future rather than solving it, and raises concerns about the potential for uncontrolled artificial general intelligence (AGI). He also touches upon the geopolitical implications of AI dominance, warning against an “AI Manhattan Project.”

The Four Revolutions: Geopolitical Shifts, Digital Transformation, Sustainability, and Purpose



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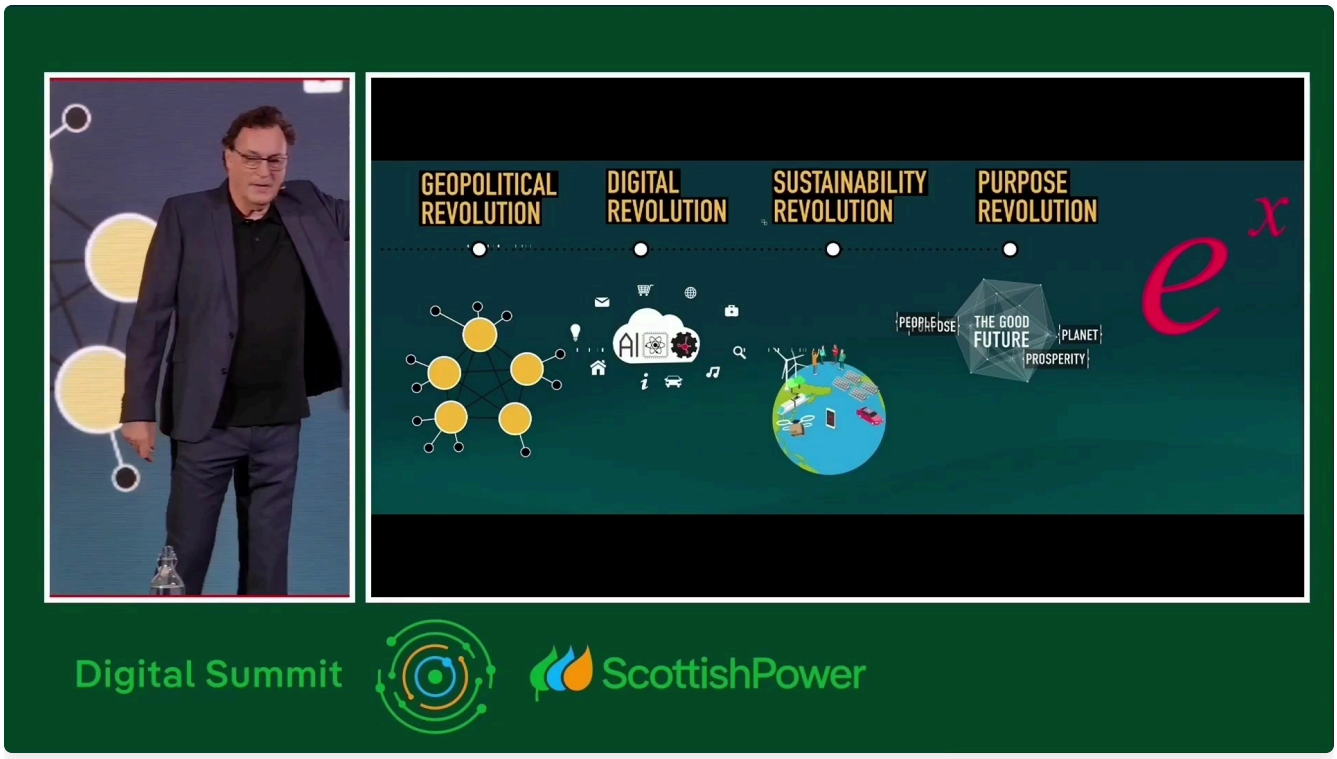
Leonhard introduces his “four revolutions” framework, emphasizing their exponential nature. He uses the example of self-driving cars, which have moved from a gradual development to a sudden widespread adoption, citing Waymo’s operations in San Francisco as a personal experience. He also highlights the capabilities of AI browsers like Atlas, comparing them to tapping into a giant AI brain. He notes the rapid adoption of ChatGPT and other language models, surpassing the internet’s adoption

rate, and suggests this marks the beginning of the end for the traditional internet as AI takes over various components. He expresses concern about the potential for over-automation, particularly in critical areas like air traffic control and nuclear weapons launch. He points out that younger generations are increasingly favoring ChatGPT over Google, posing a significant threat to Google's search dominance. He then outlines the four revolutions: 1. **Geopolitical:** The shift towards a multipolar world with Europe, the US, China, India, Brazil, and Africa as key players, and the growing importance of data sovereignty. 2. **Digital:** Primarily focused on cognitive systems and AI. 3. **Sustainability:** The imperative to be green by 2030, with the necessary tools and funding available, though requiring a significant investment of approximately 14 trillion euros. 4. **Purpose:** A generational shift driven by millennials and women, who prioritize the planet, other people, and the purpose of life over solely profit, influencing business and politics.

The Purpose Revolution and the Shift from Extraction to Creation



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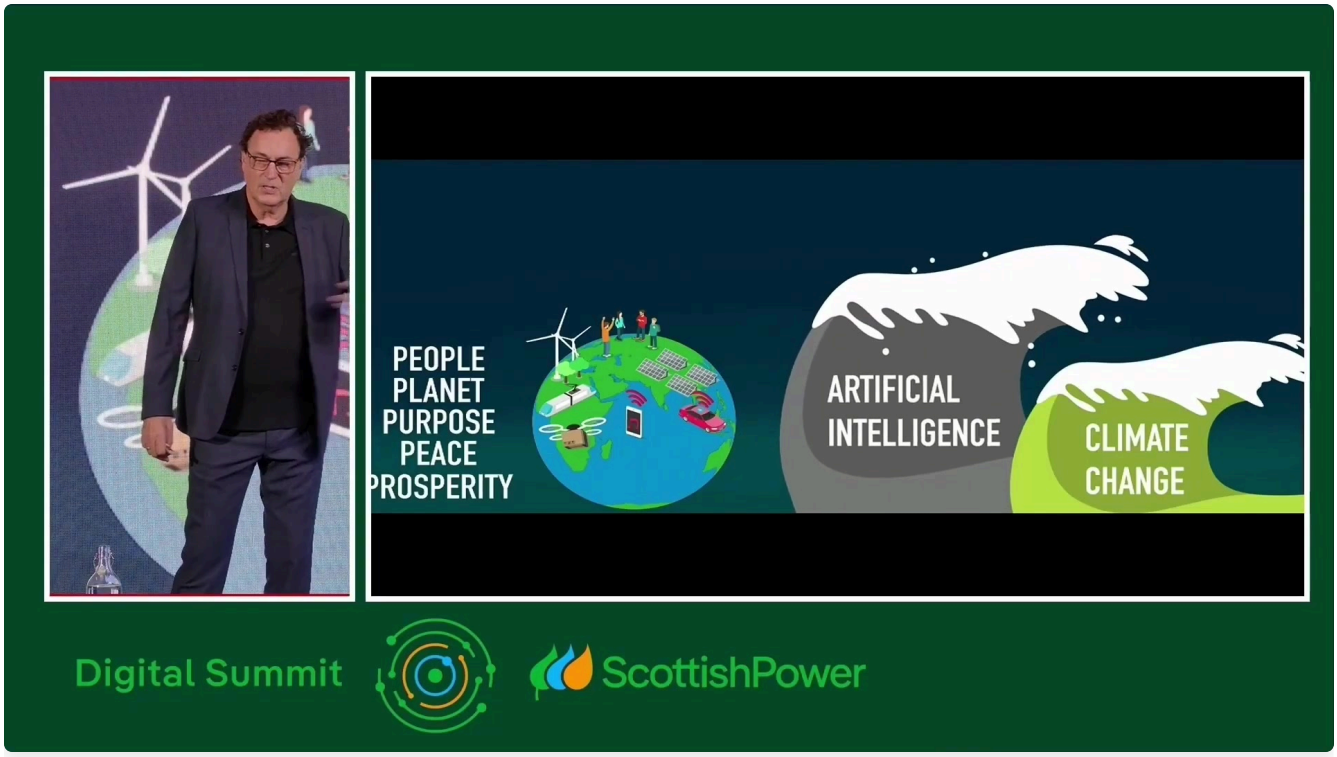
Leonhard elaborates on the “purpose revolution,” predicting that by 2030, millennials will largely be in charge of business and politics. This shift signifies a change in what people want, with a greater emphasis on the planet and societal well-being. He warns against the old model of profit and growth at all costs, which leads to resource depletion and environmental damage, citing the potential for 500 million climate refugees with a 4-degree warming scenario. He argues that achieving carbon neutrality in Europe alone is insufficient; global cooperation, particularly with India, Brazil, and China, is crucial, requiring financial support. He contrasts the old wave of profit, growth, and power with the new wave focused on creative solutions and sustainability. He emphasizes that intelligence, particularly AI, is a powerful tool that can aid in this transition, but its use must be wise and beneficial. He identifies three key waves: climate change, artificial intelligence, and synthetic biology (biofuels, biomaterials). He refers to the combination of technology (“big blue”) and sustainability (“big green”) as crucial, noting NVIDIA’s market capitalization surpassing all pharmaceutical companies, indicating a power shift.

The Changing Framework: From Mega Challenges to Purpose-Driven Economies



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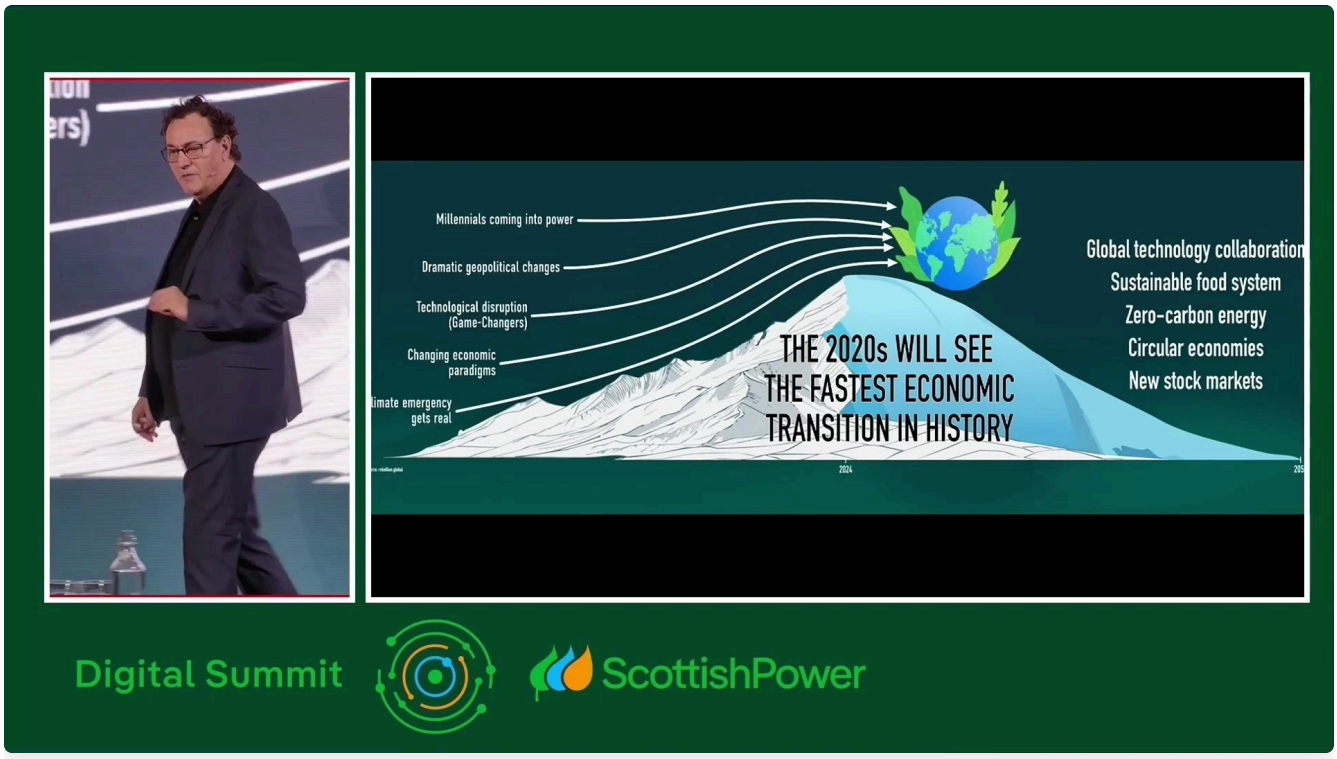
Leonhard discusses the paradigm shift where the “framework is changing, not the picture,” as stated by Marc van der Luen. The primary focus is shifting from mega challenges like economics and the planet to a more integrated approach where the planet and economy are aligned with policy. He highlights the transition from a boomer-centric to a millennial-centric worldview, urging businesses to consider this in their offerings and developments. The model is moving from extraction to creation, with the goal of creating abundance using available tools. This signifies a move towards a circular economy becoming the norm, a concept that has been discussed for years but is now becoming a viable business model. He predicts that by 2050, we will have a global technology ecosystem that is sustainable, zero-carbon, and circular, with new stock markets that incentivize positive behavior, unlike current markets that favor companies like Aramco and Meta, which extract resources and leave environmental messes.

AI as Intelligent Assistants: The Evolution from Data to Consciousness



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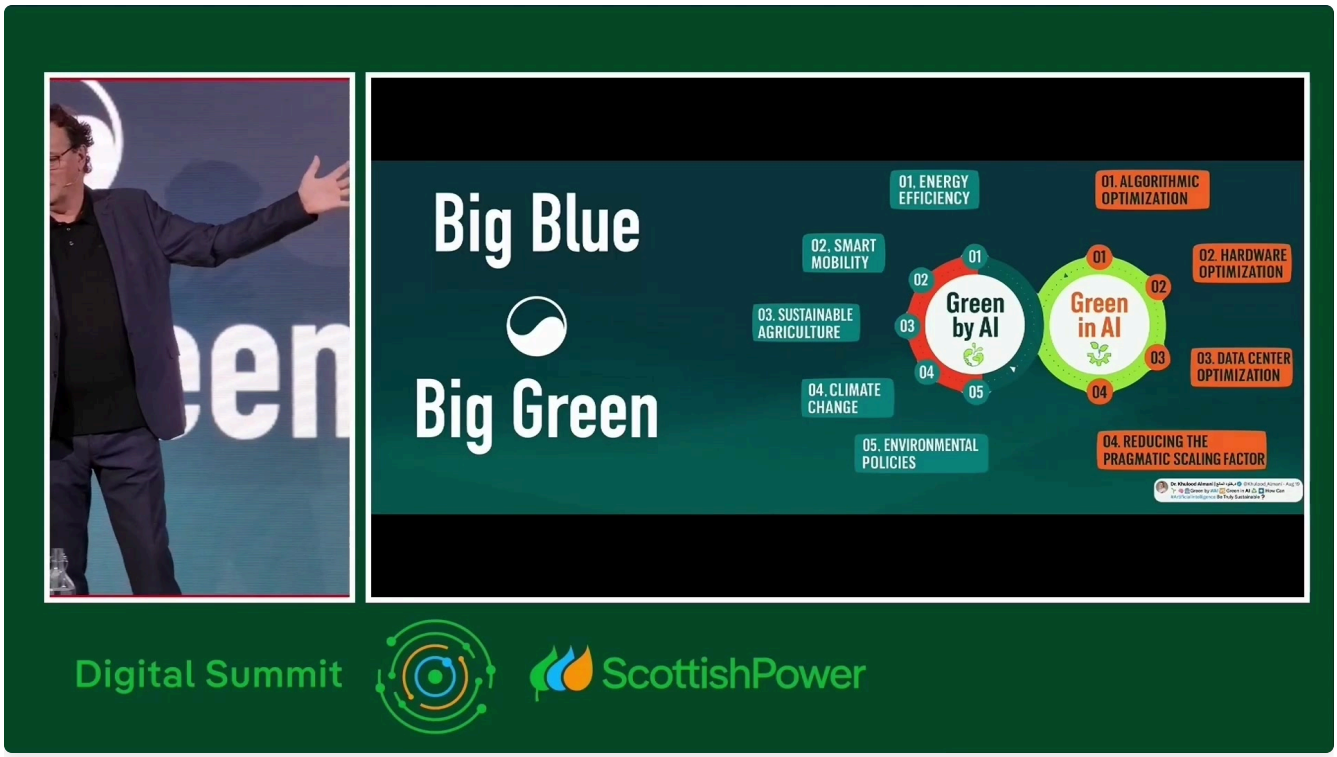
Leonhard defines current AI as “intelligent assistants” and “better software,” emphasizing that machines are no longer “stupid.” This allows them to be used as tools for planning, scheduling, analytics, and robotic process automation, transforming information and data into knowledge. He acknowledges the challenge of machines creating knowledge and posits that human knowledge, encompassing emotional intelligence and other qualities machines lack, remains distinct. He highlights the potential of AI in healthcare, energy, and nuclear fusion modeling, provided it is used wisely. He discusses the concept of Artificial General Intelligence (AGI), referencing Sam Altman’s vision of machines that can think, create, understand, and reason. While acknowledging the utility of AI for tasks like creating charts or films, he expresses concern about “AI slop” and the potential for AI to mimic human creativity without genuine understanding. He introduces “cognification” as the computer’s ability to provide cognitive abundance, enabling users to find, do, and analyze information more effectively, citing Google Notebook LM as an example. He cautions against simply copy-pasting generative AI output and stresses the importance of critical thinking and reality checks. He foresees significant advancements in language translation, virtualization, digital twins, VR, and augmented reality within the next few years. However, he expresses skepticism about full automation, particularly for complex processes, and believes humans will retain significant roles, acting as augmentations rather than being replaced entirely. He likens AI to powerful tools like nail guns, emphasizing the need for responsible use and caution, especially with children.

The Energy Demand of AI and the Path Forward: Magic vs. Toxic Models



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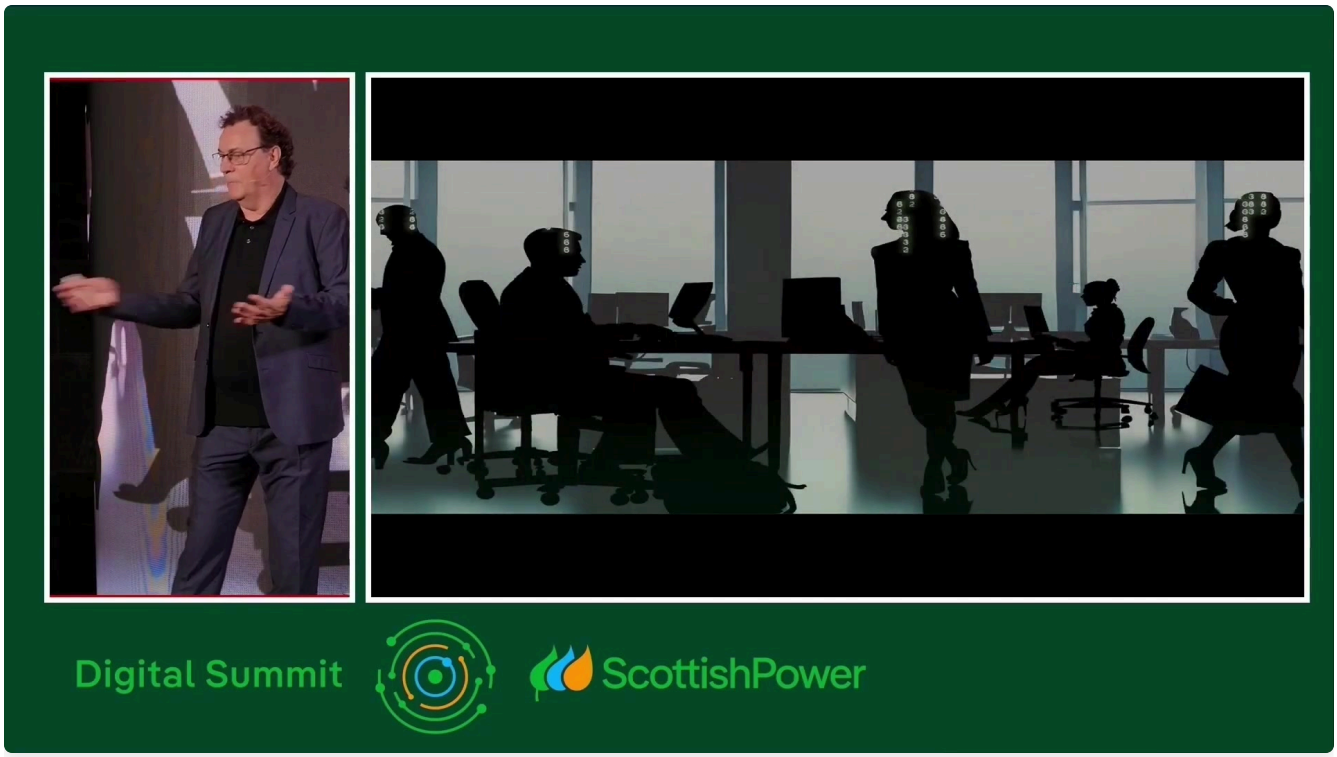
The discussion addresses the significant energy consumption of AI, both for training and deployment. Leonhard presents a counterargument that AI can also lead to substantial energy savings in areas like healthcare, climate technology, and power grid management. He acknowledges the need for more energy to support the increasing demand for AI and raises the question of how to meet this demand, suggesting a potential return to nuclear power. He draws a parallel between OpenAI and the Tyrell Corporation from Blade Runner, highlighting their ambitious plans for energy centers. He emphasizes the exponential growth in AI demand and the challenge of meeting current energy needs. Leonhard advocates for focusing on the “magic” of AI – its ability to save time and improve efficiency – rather than pursuing a “toxic” model of digitizing humans and replacing them entirely. He believes that toxic business models are becoming obsolete. He touches upon the issue of trust in AI systems, contrasting it with the established trust in companies like SAP and IBM, which offer limited functionalities without aiming to replace human roles. He mentions the growing “prohibition of superintelligence” initiative, signed by notable figures, underscoring concerns about unchecked AI development.

The Future of Work: Digital Labor and the Human Element



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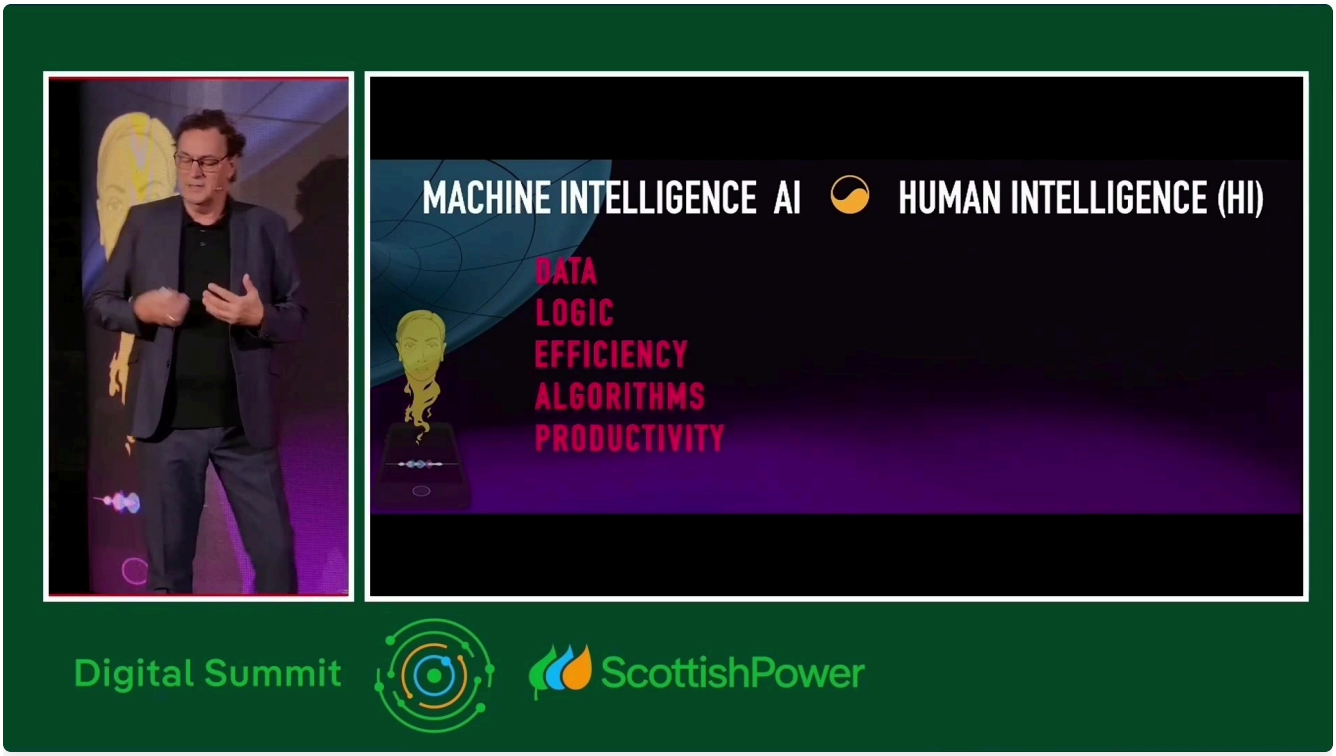
Leonhard discusses the future of work, describing it as increasingly digital, with Microsoft coining the term “digital labor.” He suggests that routine tasks are being automated, posing a threat to jobs that are predominantly routine-based. However, he believes that jobs with a lower percentage of routine tasks are survivable, allowing humans to focus on other aspects. He acknowledges the ambiguity in defining “routine” and believes humans will remain relevant due to their ability to handle non-routine tasks. He humorously mentions ads in Silicon Valley suggesting “Don’t hire humans,” but ultimately believes humans will continue to be essential. He notes that since the launch of ChatGPT, market capitalization and profitability have increased, while hiring has decreased, suggesting a potential correlation. He outlines a shift in human roles from data and information processing to higher-level functions like deep knowledge, tacit knowledge, leadership, consciousness, purpose, human agency, decision-making, morals, values, and ethics – areas where machines currently fall short. This shift necessitates changes in educational structures. He advocates for combining machine intelligence (for data, logic, efficiency) with human intelligence, emphasizing the need for rules and staying in charge.

Embracing Human Intelligence: Creativity, Compassion, and Holistic Purpose



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Leonhard highlights the eight different kinds of human intelligence (emotional, cultural, political, social, kinesthetic) and stresses the importance of humans remaining in charge. He asserts that in the future, qualities that make us human – creativity, compassion, critical thinking, and the ability to create values – will become increasingly crucial. He encourages a holistic approach, where actions have purpose in multiple directions, benefiting people, purpose, and posterity. He summarizes by stating that humanity has more capacity than previously thought to solve problems, but it requires the right mindset and a focus on creation. He refutes the notion that doors are closing for humanity, likening the current challenges to a situation in therapy where problems lead to solutions and new opportunities. He encourages a wider view of reality, branching into adjacent territories, citing tech companies becoming pharma companies as an example. He uses the example of German car companies focusing on better engines while Tesla and others embraced electric vehicles and software-defined cars, leading to a crisis for traditional manufacturers. He proposes a paradigm for the future based on digital, sustainable, and purpose-driven business models, which he believes will eventually be rewarded in the stock market. He outlines the principles of the future as intelligent, sustainable, connected, collaborative, and equitable, wishing the audience a good future and expressing anticipation for future interactions.