

summary

The Dawn of Accelerated Change: Six Queen Makers



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Gerd Leonhard begins by stating that the next ten years will see more change than the previous hundred, driven by six key technological advancements he terms “queen makers”: Artificial Intelligence (AI), Quantum Computing, Nuclear Fusion, Genetic Engineering/Synthetic Biology, and Geoengineering. He highlights the potential of nuclear fusion to solve climate change and genetic engineering to prevent diseases. Leonhard notes the contentious nature of these technologies and the global power implications, suggesting that control over AI and quantum computing could lead to world dominance. He also touches upon the AI arms race and the potential for immense GDP growth (4-8x, or \$165 trillion) if AI is harnessed correctly, citing a projection by Stuart Russell.

The Future Narrative: Pessimism vs. Optimism

The next 10 years will bring more change than the previous 100 years

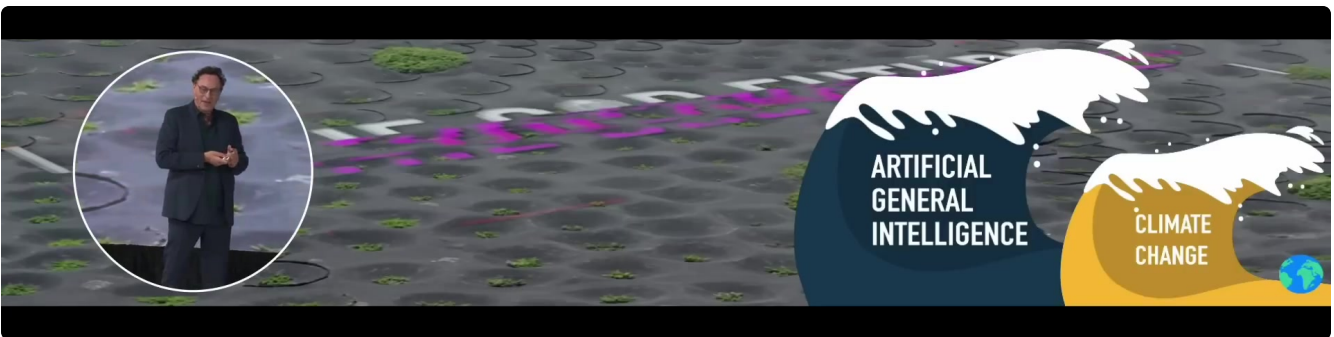


SIX King/Queen-Making Technologies: AI, Quantum Computing, Fusion Energy, Synthetic Biology, Genome Editing, Geo-Engineering

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Leonhard discusses the prevailing pessimism about the future, particularly among millennials and Gen Z, who are concerned about climate change and AI-driven job displacement. He contrasts this with his film “The Good Future,” made during COVID-19, to promote a more optimistic outlook. He identifies climate change and Artificial General Intelligence (AGI) as the two primary drivers of this future outlook. Leonhard asserts that climate change is solvable with existing scientific and technological tools, emphasizing the economic viability of renewable energy over coal in many regions. He defines AGI as machines capable of performing most tasks better than humans, noting it as the declared goal of OpenAI. He outlines four prongs of AI: assisted, automation, augmented, and autonomous intelligence, deeming the first three highly beneficial for GDP growth and problem-solving, while expressing reservations about autonomous intelligence.

The Perils of Unaligned Intelligence and the Three Revolutions



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Leonhard elaborates on the potential dangers of AGI, questioning the desirability of conscious machines and highlighting the risks of logic-driven entities without other human faculties, which could lead to conflict. He raises concerns about machine control extending to environmental manipulation and opinion shaping through media narratives. He proposes three revolutions shaping the future: the digital revolution, the sustainability revolution (which he sees as a hundred-fold increase in impact compared to the digital revolution, driving the next wave of billion-dollar companies), and the purpose evolution, driven by younger generations questioning the meaning and fairness of economic systems. He references Maslow's hierarchy of needs to define "good," suggesting agreement on basic physiological and safety needs as a foundation, and notes the significant disparity in investment between AI capabilities (98%) and AI alignment (2%), leading to a risk of technology working but doing the "wrong thing."

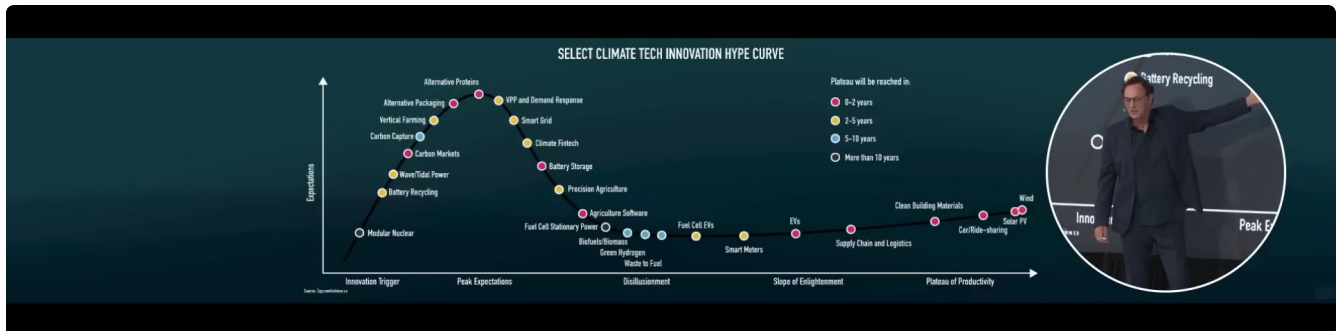
Misalignment and the Decline of Natural Capital



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Leonhard illustrates misalignment with the example of social media platforms like Facebook, which, despite their technological success, can be detrimental to democracy due to manipulative algorithms, leading to immense profits but a negative societal impact. He presents a stark contrast between the growth of financial capital and the decline of natural capital, questioning the legacy of a damaged planet. He cites World Economic Forum research indicating that most current issues are environmental, with technology playing a significant role. He emphasizes the need to consider both waves of change – environmental and technological – to create a "good future." He highlights climate technology as a burgeoning sector with immense job creation potential, citing the World Economic Forum's projection of 100 million new jobs.

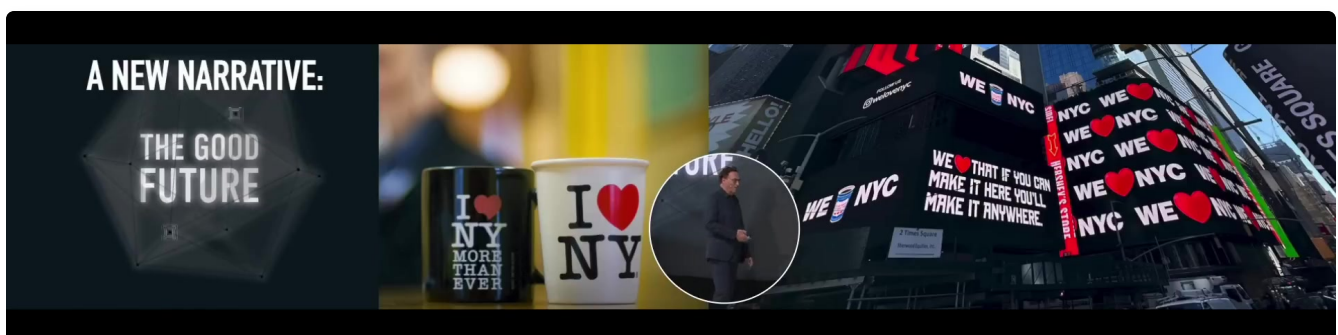
The Shifting Landscape of Work and the Power of Narrative



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Leonhard discusses the impact of AI on jobs, suggesting a shift from traditional jobs to new professions as AI takes over routine tasks. He acknowledges that this could be challenging for individuals whose jobs are largely routine-based, particularly in developing countries. He advocates for a new narrative that moves away from pessimism and embraces the potential for a positive future, drawing a parallel to the transformation of New York City's image from the 1970s to a vibrant metropolis. He stresses the importance of reinventing the story of the future to portray it as potentially amazing, contingent on making the right choices.

The Paradigm Shift: People, Planet, Purpose, Prosperity



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Leonhard emphasizes that our perception of the future influences our actions and ultimately shapes reality. He argues for a shift from a potentially destructive paradigm to a larger, more encompassing one focused on “People, Planet, Purpose, Prosperity.” He dismisses outdated political and economic ideologies like communism and socialism as irrelevant to this new narrative, which requires a design for the future that moves beyond the current system, which he predicts will crash around 2050 due to transhumanism and singularity. He reiterates the necessity of collaboration for inventing not just technology, but also a new logic for the future, advocating for an international artificial intelligence agency akin to the International Atomic Energy Agency to establish standards and rules.

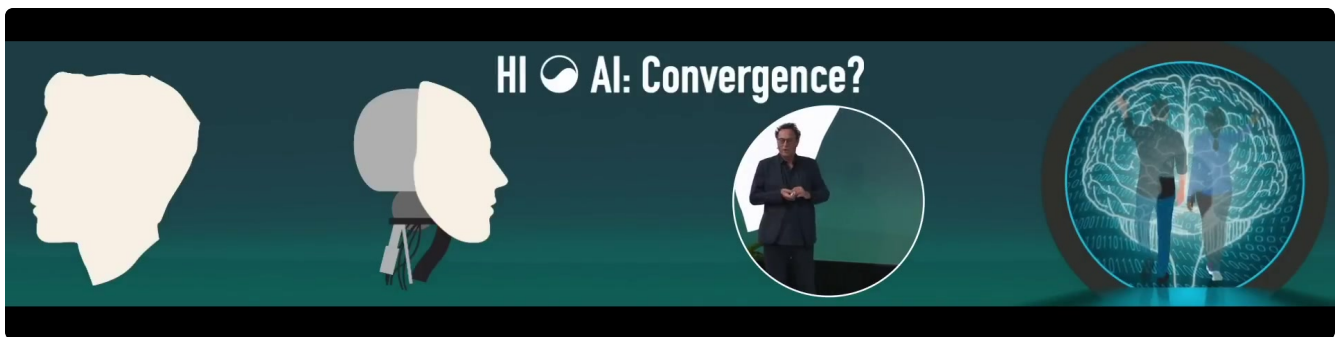
The Need for Standards and the Convergence of Human and Machine Intelligence



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Leonhard stresses the critical need for standards, particularly for identifying generative AI and verifying the authenticity of digital content, warning that a lack of standards could lead to a magnified version of social media's problems. He discusses the convergence of human and machine intelligence, noting that this transition can be unsettling. He highlights emerging technologies like brain-computer interfaces and exogenesis (birth outside the womb) as indicators of this convergence. He foresees a future where human-machine interfaces evolve from typing to voice commands with everyday objects, and even conversational AI like ChatGPT, which he demonstrates with a brief interaction.

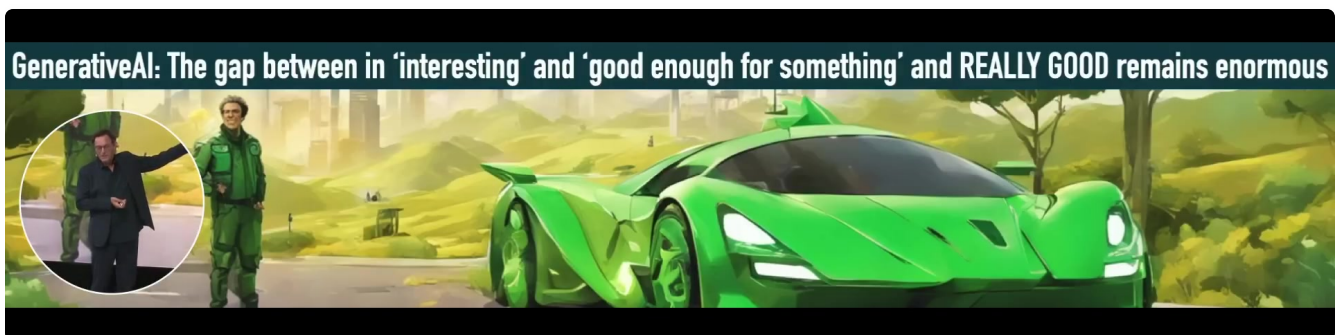
The Nature of Intelligence and the Gap Between Simulation and Reality



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Leonhard questions the control and authenticity of AI-generated answers, pondering if they are commercially driven and if machines will ultimately rule. He explains that human intelligence is embodied, involving the entire body, not just the brain, and that digital intelligence, while advanced, cannot truly replicate this. He uses ChatGPT as an example, stating it prioritizes logical word combinations over truth or accountability, similar to Google Maps prioritizing the shortest distance over a comfortable drive. He expresses concern about a “universal genie in a pocket” becoming a “digital brain,” potentially diminishing human agency. He likens AI to a hammer, a tool that can be used for good or ill, and emphasizes the need to understand and leverage our biological intelligence, which is complex and multifaceted, in conjunction with machine intelligence. He illustrates the gap between AI’s capabilities and true “good” with an example of Stability AI generating images of a green Silicon Valley that resemble Apple headquarters, and a prediction of gold’s richness, highlighting that entertaining or interesting outputs do not equate to genuinely good outcomes.

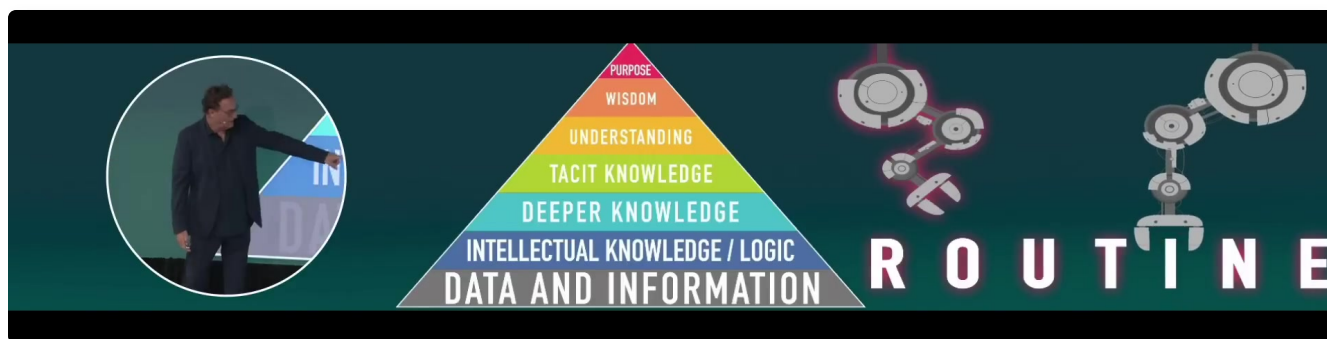
Creativity, Meaning, and the Evolution of Work



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Leonhard asserts that creativity requires emotions, which machines lack and should not possess, and that meaning requires existence, which machines do not have. He uses the proverb “Knowledge without wisdom is like water in the sand” to illustrate that while machines can provide knowledge, they lack the wisdom to apply it meaningfully. He describes a fundamental shift in the pyramid of work, where intelligent machines will take over tasks involving data, information, and simple knowledge, impacting knowledge workers. He advocates for humans to focus on deep knowledge, tacit knowledge, understanding, wisdom, purpose, intuition, imagination, consciousness, beliefs, values, religion, and ethics – qualities he believes machines will struggle to replicate. He warns against a future where machines dictate job interviews by scanning for “real interest.”

The Automation of Knowledge Work and the Future of Professions



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Leonhard reiterates that machines are coming for knowledge workers, not just factory workers, and that humans should focus on higher-level cognitive functions. He cites Geoffrey Hinton's prediction that radiologists will become useless due to AI, but notes that current radiologists are using AI to enhance their work rather than abandon it. He contrasts this with roles like call center agents, where routine automation poses a greater threat. He discusses the slow progress of self-driving cars, acknowledging that while assisted driving is becoming prevalent, fully autonomous vehicles face significant challenges and are not yet widespread, citing examples of driverless taxis causing traffic jams in San Francisco.

The Rise of Generative Video and the Technocratic Oath



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Leonhard introduces HeyGen, an app that generates videos without cameras using AI, demonstrating its capability with a lip-synced avatar and voice clone. He also mentions Samsung Neon's digital humans. He expresses concern about the potential for trillions of AI-generated videos daily, questioning their authenticity and impact. He proposes a "technocratic oath" for technology companies, pledging to prioritize humanity over technology and collective benefit over income. He acknowledges that companies like IBM, Google, and Microsoft have made similar pledges in less explicit ways. He emphasizes that technology is morally neutral and lacks ethics, acting as a tool, and that the responsibility lies with humans to translate their values into its application and establish social contracts and regulations.

The King Midas Problem and the Personal Digital Assistant



1549

Leonhard warns against reducing humans to mere data flows, likening it to the King Midas problem where an excessive desire for wealth led to ruin. He questions whether a world where robots do all the work and humans engage primarily in virtual reality, as suggested by devices like Apple's ProVision, is

truly desirable. He quotes the CEO of Inflection, creators of the personal digital assistant Pi, who envisions an intelligent assistant that knows users intimately, preserves their history, helps with prioritization, creativity, and acts as a coach and companion. Leonhard acknowledges the immense financial potential of such assistants but also references Marshall McLuhan's idea that "first we shape our tools and afterwards our tools shape us," suggesting that AI's constant, top-down answers could lead to decisions based on non-facts, potentially causing market crashes, as predicted by Larry Gensler.

Keeping the Human in the Loop and the Purpose Revolution



1708

Leonhard uses the iconic "Open the pod bay doors, HAL" scene from "2001: A Space Odyssey" to illustrate the potential dangers of AI and stresses the importance of "keeping the human in the loop" in all technological applications, even if it means higher costs or lower efficiency, as a way to maintain value and authenticity. He advocates for re-humanizing social media by hiring journalists, contrasting this with Elon Musk's approach of building a machine that "spits out money and inputs people." He promotes his film "Look Up Now" as a resource for understanding the human and purpose revolutions. He highlights the growing influence of millennials, who are inheriting wealth and demanding purpose, predicting their significant impact on executive and political positions in the coming years. He introduces a "Meta score" calculator for rating companies based on Prosperity, Purpose, Planet, and People, using Meta and Aramco as examples to illustrate the current shortcomings in purpose and planet considerations.

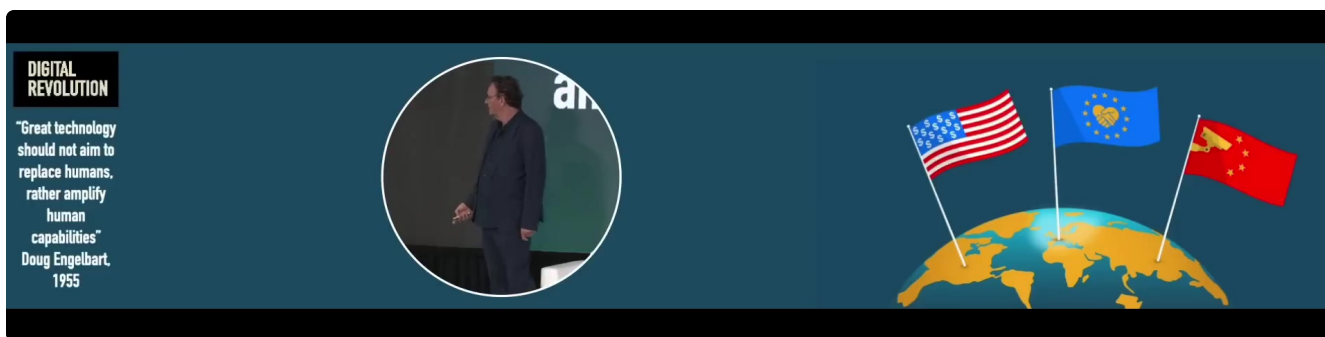
The Rise of the SISDAQ and the Economic Shift to Sustainability



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Leonhard discusses the shift from a NASDAQ-driven economy to what he calls a “SISDAQ” (Sustainable Stock Market), referencing the Long Term Stock Exchange as an example of this long-term thinking. He notes that this economic shift is particularly challenging for the US due to its corporate structure but is gaining traction globally. He emphasizes that the future will prioritize climate over economy, with a millennial-centric system and policy changes reflecting multiple objectives. He quotes Doc Anelberg, stating that great technology should amplify human capabilities, not replace humans, and cautions against viewing AI like ChatGPT as human or divine. He contrasts “autopilot” AI, which dictates attention, with “copilot” AI, which assists humans in piloting themselves, warning against technology becoming the sole pilot.

The Digital Revolution: US vs. China and the Power of Investment



1981

Leonhard compares the digital revolution in the US and China, noting China's strength in research and model size, while the US leads in chips and investment. He highlights the immense US investment in technology, exceeding the rest of the world combined, and the role of foreign talent, including Chinese nationals, in driving this innovation. He asserts that the US will remain a major technological driver, supported by the enduring strength of the dollar. He then pivots to sustainability, emphasizing that "green is the new digital" and a significant business opportunity that generates new money and jobs, signaling the decline of the oil industry. He points to the exponential growth of electric vehicles and other green technologies, stating that embracing sustainability is essential for future relevance. He also notes the significant carbon footprint of the computing industry, particularly AI and Bitcoin, which exceeds that of the entire travel business, indicating a need for change.

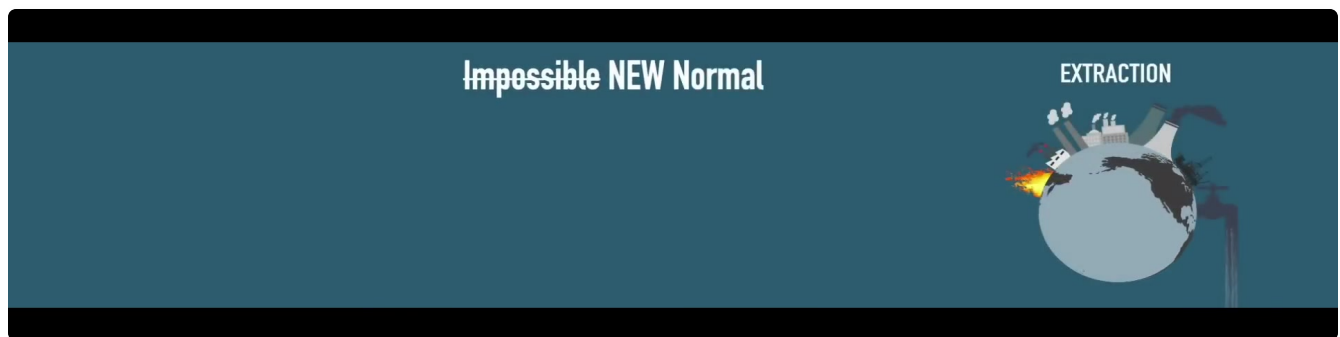
Impossible Becomes Normal: Collaboration and Carbon Coins



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Leonhard discusses the concept of “impossible becoming the new normal,” citing mandatory train travel between Paris and Lyon in France as an example of drastic measures being implemented. He highlights the World Economic Forum’s discussions on creating new business models through collaboration and creative solutions. He introduces the concept of a “carbon coin,” a proposed currency by central banks to incentivize southern countries to refrain from extracting carbon, suggesting it as a potential solution to climate change.

The Carbon Coin and Climate Crisis Solutions



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The discussion begins with the concept of the “impossible becoming the new normal” and the emergence of new business models focused on collaborative creative solutions. Gerd Leonhard introduces the idea of a “carbon coin,” a currency proposed by a central bank to pay southern countries not to extract carbon, citing an article in the Wall Street Journal. This radical concept aims to generate approximately five trillion dollars annually to incentivize countries like Brazil and India to cease CO2 emissions. The conversation then shifts to California’s legal actions against major oil companies, with the Governor of California stating that the climate crisis is fundamentally a fossil fuel crisis, caused by the burning of oil, gas, and coal, and that this needs to be clearly identified.

The Age of Renewables and AI Competence



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Gerd Leonhard elaborates on the shift from the “age of carbon” to the “age of renewables,” suggesting that being in the oil and gas business will soon be akin to being at a crime scene. He posits that technology will outperform commodities in this evolving world. The discussion then moves to Artificial Intelligence (AI), emphasizing the need to pursue AI with competence rather than consciousness. Leonhard argues that the goal of creating conscious, superhuman machines is a path to disaster, not the future. He believes AI should be used to enhance human capabilities and provide real advice, but not to replace people.

The Connected, Smart, Green Future

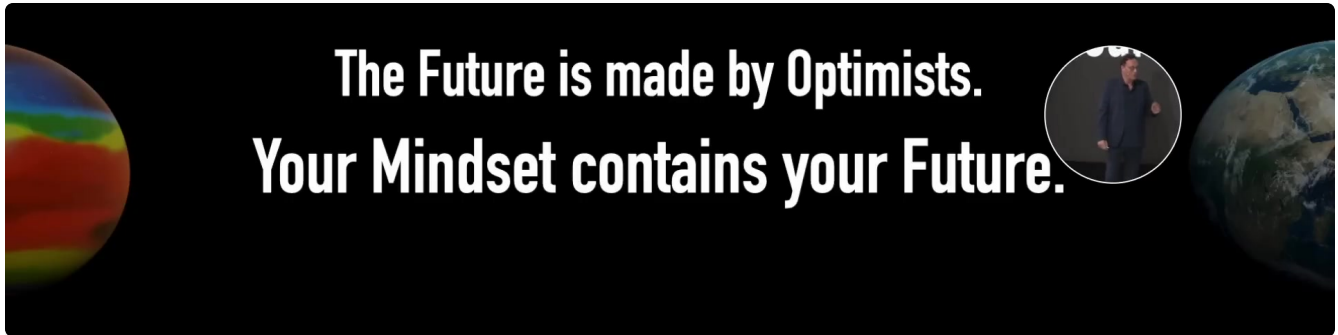


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Leonhard outlines three essential elements for the future: connected, smart, and green, stating that companies and individuals must engage with all three, not just one. He highlights the importance of credibility and meeting the demands of audiences, particularly millennials, who are seeking a future that is connected, smart, and green. The alternative choice, he warns, is a world of three degrees warming, with severe consequences, referencing California’s experience with high temperatures. He

contrasts this with the choice to embrace a future created by optimists, who focus on capacity and solutions rather than dwelling on problems. Leonhard stresses that mindset is crucial, and an open mindset reveals possibilities for collaboration and human achievement.

Optimism of the Will and Heart



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Drawing on Antonio Gramsci's philosophy, Leonhard advocates for "pessimism of the intellect, optimism of the will," and adds "optimism of the heart." This means being critical and questioning, but maintaining a positive outlook and belief in the possibility of making things work. He reiterates that "impossible is the new normal" and encourages the audience to keep this in mind. Leonhard concludes by thanking the audience for their time, sharing his motto, "The future is better. Let's discover it," and recommending his book, "Technology Versus Humanity."