

THE NEXT 10 YEARS: HOW EUROPE CAN SHAPE AND CREATE A "GOOD FUTURE"

While we may still be preoccupied with the COVID crisis, the coming decade has much more radical changes and momentous disruptions in store. We are racing at warp speed into the future, as the digital transformation has been vastly accelerated by the pandemic. We need to stop simply asking what the future will bring as if it was already predetermined by someone else. This policy paper argues that in this crucial moment we, Europeans, need to develop a new operating system that would reflect our European values and priorities for the future. It outlines the key guiding principles of this system, in particular regarding the interplay between humans and technologies, and ends with suggestions for policymakers.

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Introduction



Gerd Leonhard

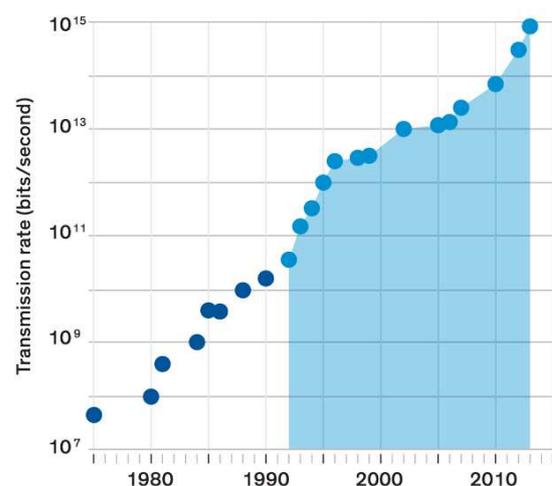
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Introduction

While we may still be preoccupied with the COVID crisis, the coming decade has much more radical changes and momentous disruptions in store. We are racing at warp speed into the future, as the digital transformation has been vastly accelerated by the pandemic.¹ The future is no longer linear: it is exploding with variation thanks to several combinatory factors. Think of growing fibre-optic capacity (Keck's law)² and a cocktail of other laws driving innovation forward, starting with Moore's law, which has computational power doubling roughly every two years³, and Metcalfe's law – by which the value of a network grows exponentially with its users.⁴

Keck's law chart

Exponential over-time improvement of fibre-optic capacity (bits per seconds).



¹ "Global pandemic accelerates digital transformation according to latest study", Security, 4 November 2020, available at: <https://www.securitymagazine.com/articles/93823-global-pandemic-accelerates-digital-transformation-according-to-latest-study>

² Jeff Hecht, "Is Keck's Law Coming to an End?", IEEE Spectrum, 26 January 2016, available at: <https://spectrum.ieee.org/semiconductors/optoelectronics/is-kecks-law-coming-to-an-end>

³ "Moore's law", Encyclopedia Britannica, 26 December 2019, available at: <https://www.britannica.com/technology/Moores-law>

⁴ Rowan Trollope, "Metcalfe's Law: Not Just for Networks", Medium, 30 June 2017, available at: <https://medium.com/@rowantrollope/metcalfes-law-not-just-for-networks-7e74f117a448>

We are now at the point of take-off for exponential change. In the next 10 years, things once considered science fiction will become science fact, from augmented reality and artificial intelligence (AI) to quantum computing. As a result, we will undergo more change over the next decade than we have in the last century. While daunting, this also creates incredible opportunities because we have the chance to lay the foundation for what I call "The Good Future."

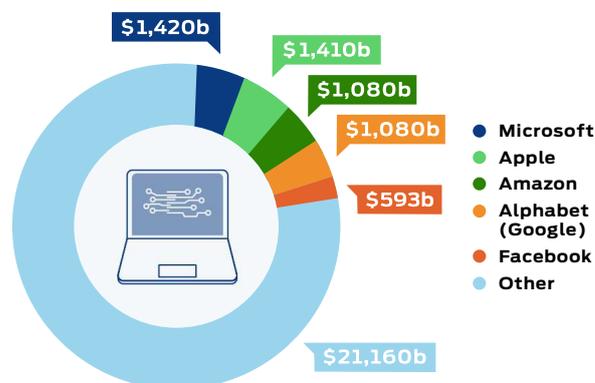
But it's not a given. We need to stop simply asking what the future will bring as if it were already predetermined by someone else. Europe – in particular its leaders, policymakers, entrepreneurs and citizens – has to embrace the idea that WE are actually in charge of our own future, not Silicon Valley, China or anybody else. The future will be shaped by the choices we make today, by our action or inaction.

So, what do we want this future to look like? Do we want to remain the target or the hostage of algorithm-driven media offerings, wherein some data-fed AI can manipulate our thinking and our actions across Facebook, Google and the web as a whole? Do we want algorithmic radicalization driving us into ever smaller echo chambers, or do we want to achieve the collective benefits kindled by a spirit of solidarity? Do we want actual experiences and real relationships, or do we prefer virtual likes, fake followers and the simulation that social media provides so well? My view is that we will not find real happiness (i.e., transcend hedonism) via AI, in the cloud or on a screen; these are just tools to better achieve what really matters: connecting to other humans, engagement, experiences and relationships. Let's remember what William Gibson famously set forth: "Technology is morally neutral – until we use it" – and we are now using it everywhere.⁵

Global tech companies are taking over every single industry and dominating the stock market.⁶

Tech Companies Dominate S&P 500 Index

Market valuation of S&P 500 top five tech companies relative to all others (in billion U.S. dollars)



Market values as of Feb. 11, 2020
Sources: Macrotrends, CNN



Available capital, as measured in dollars and euros, is growing and productivity is rising, but human capital and compensation for human labour remain flat and our natural resources are dwindling. On top of this, the COVID crisis has significantly amplified pre-existing inequalities. Only 5 percent of American families own about 70 percent of the country's equity and 85 percent of directly held stock.⁷

Families grouped by percentiles of net worth:



Source: Survey of Consumer Finances, Federal Reserve Board, by The New York Times

During the crisis, the rich got richer while everybody else got poorer – and I doubt that is the kind of capitalism we want for Europe's future.⁸

We must urgently go beyond GDP and think more broadly about purpose. In the 1970s, American architect, designer and philosopher R. Buckminster Fuller put his finger on the problem, saying that humanity was moving toward a

⁵ Dan Josefsson, "I Don't Even Have a Modem" [interview with William Gibson], 23 November 1994, available at: <http://www.josefsson.net/gibson/index.html>

⁶ Lawrence Delevingne, "U.S. big tech dominates stock market after monster rally, leaving investors on edge", Reuters, 28 August 2020, available at: <https://www.reuters.com/article/us-usa-markets-faangs-analysis-idUSKBN25OoFV>

⁷ Robert Gebeloff, "Who Owns Stocks? Explaining the Rise in Inequality During the Pandemic", New York Times, 26 January 2021, available at: <https://www.nytimes.com/2021/01/26/upshot/stocks-pandemic-inequality.html>

⁸ Rachel Elbaum, "World's richest become wealthier during Covid pandemic as inequality grows", NBC, 25 January 2021, <https://www.nbcnews.com/news/world/world-s-richest-become-wealthier-during-covid-pandemic-inequality-grows-n1255506>

fork-in-the-road moment where we would have to decide where we are going. This moment has arrived⁹, triggered by a virus whose emergence was long predicted by the likes of Bill Gates¹⁰ and Larry Brilliant.¹¹

To paraphrase one of Fuller's disciples, the late American futurist Barbara Marx-Hubbard: as we perceive our future to be, so we act; as we act, so we become. I believe that if Europeans want to become truly united in this post-COVID world, it's crucial that we develop our own vision of the future and design a new capitalism that is future-ready. This is a good time to tackle the issue, as many things that used to be considered 'normal' are up for discussion and we are entering an era of multiple "new normals." The systemic shock that is COVID-19 can serve as our trigger point and our reset moment because of all the suffering it has brought and the clarity that came along with it.

No question, we must embrace technology and scientific research. There should be no barriers to keep smart minds from inventing and commercializing new things; yet I believe that the more we connect, the more we must protect what makes us human: mystery, serendipity, inefficiency, mistakes, imagination and intuition, applying critical thinking and using our unique capacity for foresight. For instance, policymakers, regulators and citizens have to find the right balance between allowing innovations in artificial intelligence to flourish while setting clear boundaries that prevent dehumanisation.

That's especially true because of our track record of slow responses to new technologies' inherent risks and dangers. Humans invented and deployed the nuclear bomb – and then it took us 22 years to come up with a non-proliferation treaty. I believe we'll need similar treaties for Artificial General Intelligence (AGI) and human

genome engineering – but hopefully before the occurrence of disastrous trigger events.

In short, we need a new operating system for Europe. In some ways, it's already booting up all around us, for example in tying stimulus packages to Green New Deal goals.

Here's a short summary of what this new OS for Europe may look like, how it could be installed and what its benefits might be.

COVID is a test run for climate change

COVID has been a fire drill for whether we are able to make sacrifices and tough decisions to fight climate change or not. The need for fundamental change has already triggered a global debate. Larry Fink, one of the most influential investors in the world as Chairman and CEO of BlackRock, put the challenge this way:

I believe that the pandemic has presented such an existential crisis – such a stark reminder of our fragility – that it has driven us to confront the global threat of climate change more forcefully and to consider how, like the pandemic, it will alter our lives.¹²

Indeed, I don't think we will be able to tackle global existential issues like climate change until we collectively decide what really matters. 'Good' capitalism can be about much more than just mak-

⁹ That's why some like-minded futurists and myself recently launched "The Fork in the Road Project" – please join us! <https://www.forkintheroadproject.com>

¹⁰ Christi Carras, "In 2015, Bill Gates predicted an epidemic would kill millions. Here's what he says now", Los Angeles Times, 13 April 2020, available at: <https://www.latimes.com/entertainment-arts/story/2020-04-13/coronavirus-bill-gates-ellen-degeneres-ted-talk>

¹¹ Dr Larry Brilliant, "My wish: Help me stop pandemics" [speech transcript], TED2006 conference, February 2006, available at: https://www.ted.com/talks/larry_brilliant_my_wish_help_me_stop_pandemics/transcript

¹² Simon Jack, "Blackrock chief: 'How Covid could help save the planet'", BBC, 26 January 2021, available at: <https://www.bbc.com/news/business-55811332>

ing more money and increasing GDP. A decade ago, Al Gore popularized the notion of “sustainable capitalism,”¹³ and only now are we reaching the point where we can embrace this idea.

Decarbonization, for instance, is one of the biggest economic opportunities for Europe that will benefit us financially and culturally, not to mention bringing about dramatic change for the rest of the planet. Imagine how a concerted effort on that front could impact globalization and the global power structure. We can expect new carbon taxes to soon be imposed on airline trips and meat products – we must start paying the real costs of our lifestyle if we want to have any chance at preserving our environment. Previously unthinkable change will usher in a new normal in the next two to three years.

Everything is becoming smart

Digital transformation can do amazing things to any traditional business. Connect plants, machines and other equipment, and any process can become much smarter, from farms to cities. Yet this comes with a caveat, too: everything should be as connected as necessary but no more than that. Otherwise, we risk building a new kind of meta-intelligence that could result in serious downsides for human agency (and what you might call ‘free will’) if it goes off the rails. You can already see this happening if you follow discussions about the detriments of algorithmic social media newsfeeds.

How will we control this meta-intelligence once it has amassed an IQ of, say, a billion – even if that ‘IQ’ would only encompass its processing powers? By what rules? Who will be “Mission Control” for humanity?

Next, imagine a world in virtual reality, featuring innovations such as Oculus VR’s Rift, Microsoft’s Mesh or Elon Musk’s Neuralink (however

far-out that may seem today) connecting our brains directly to the internet using “a few tiny electrodes” in your head.¹⁴ If we are already worried about the authority of current digital gatekeepers, what will this future bring? And, for those working in the VR cloud, who will be in charge of safety and standards, what social contract will apply and what laws and regulations will govern devices, apps and services?

Although climate change is surely the biggest threat we’re facing, the externalities and unintended consequences of exponential technological progress are not far behind, followed by those presented by human genome editing. We have our work cut out for us.

Tidal waves of regulation are imminent

This seemingly warp-speed technological acceleration means that we will see a tidal wave of tech regulations and other measures dealing with how data should be harvested and used (just imagine your DNA in the ‘health cloud’), how our digital identities can be safeguarded and how to protect ourselves from becoming ‘content’, i.e., machine-readable subjects run by algorithms. In my view, the biggest risk today is not that AI will steal our jobs or take over, let alone kill us. The greatest danger really lies in us becoming too much like them.

To quote Apple CEO Tim Cook: “Technology is capable of doing great things. But it doesn’t want to do great things. It doesn’t want anything.”¹⁵

This WANT is up to us (we call it ethics), and it’s all about balance. We have to find a careful middle path that’s a blend of precaution and proactivity, and I think doing so will set us apart as Europeans.

¹³ Al Gore and David Blood, “A Manifesto for Sustainable Capitalism”, Wall Street Journal, 14 December 2011, available at: <https://www.algore.com/news/a-manifesto-for-sustainable-capitalism>

¹⁴ Elon Musk & Neuralink, An Integrated Brain-Machine Interface Platform with Thousands of Channels, 16 June 2019, available at: <https://assets.documentcloud.org/documents/6204648/Neuralink-White-Paper.pdf>

¹⁵ Tim Cook’s Twitter account, available at: https://twitter.com/tim_cook/status/1055035552037253121

Digital ethics councils will bloom everywhere

For several years now, I have argued that we need a Digital Ethics Council¹⁶ made up of wise, impartial and independent people who are tasked with thinking about the digital world's impact on people and society. Is everything we invent fair game for monetization? What should we not automate? Technology is indeed a precious gift, yet I would set forth that too much of a good thing can be a very bad thing.

The problem isn't technology itself but rather how we've used and profited from it in the past. This is a critical distinction, as we are moving from a products- and services-based economy to an experience- and purpose-based one.

Rehumanize media

If we can agree that the more we become connected, the more we must protect what makes us human, then this principle could become the guiding context for our media and information policies. I see a coming renaissance of human media shaped by our active curation, decisions and choices (and so based on androriths, not algorithms). That means having more awesome humans on top of much smarter media-producing algorithms, which will constrain the power of reductionist AIs and thus limit their potential damage.

It also means figuring out how we can best use public funds to protect what is important to us. The primary goal of human media is not to sell advertising – it is to sustain and feed democracy.

Our mission must be to redesign the very business model of the internet and to counter algorithmic reductionism before it results in even more harmful dehumanization. To paraphrase a saying from the Native Amer-

ican Cherokee tribe: "The wolf you feed is the wolf that wins".

If we want to have better media, not just algorithmic media, we have to feed it.

Toward the United States of Europe

Europe's mutually shared goals, ethics and values remain strongly influenced by what's happening across the Atlantic. Following Trump's disastrous "valley of confusion," the United States seems to be pivoting now, and it is likely that we are heading toward a new period of increased global collaboration and a renewed multilateralism. If this is true, Europe needs to first be united at home before it can play a vital role in the world.

Everything is riding on Europe's ability to take the right actions and lead the global agenda toward "the good future." Take AI as an example: though having an IA (intelligent assistant) that can do the grunt work for you (scheduling, screening, translating simple texts, fact-checking, etc.) seems like a very attractive proposition, having a

bot that becomes generally intelligent (AGI) is another matter altogether. As Prof. Stuart Russell points out in his book *Human Compatible*¹⁷, we should strive for AI that is competent, not conscious. While the timeline toward AGI might be open to much discussion, Europe needs to stand united, and soon, on its position regarding super-intelligence.

This new world will remain strong on economic and monetary values, but we will move far beyond GDP as the only yardstick. British author and entrepreneur John Elkington proposed 20 years ago that we should pay attention to the three Ps of people, planet and profit (a better word is prosperity).¹⁸ I believe now is the time we extend it by one more P, for PURPOSE.

Purpose is becoming a crucial consideration because purpose beats everything else (yes, even



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¹⁶ See Gerd Leonhard, "A Global Digital Ethics Council?" [video excerpt from keynote speech], NetApp Insights, Barcelona, 20 January 2019, available at: <https://www.futuristgerd.com/2019/01/new-video-proposing-a-global-digital-ethics-council/>

¹⁷ Stuart Russell, *Human Compatible: Artificial Intelligence and the Problem of Control*, Penguin Random House: 2019.

¹⁸ John Elkington, "People, Planet, Profit", 4 June 2008, available at: <https://johnelkington.com/2008/06/people-planet-profit/>

great products). Purpose is what defines us as humans, and purpose is what our policies must focus on. Europe, no doubt, should aim to be a leader in this regard.

As this summary has illustrated, we are encountering amazing opportunities posing as crises. Yet again, take note: as we perceive our future to be, so we act; as we act, so we become.

Every crisis is a chance to rethink, relearn and make things right. Decarbonization presents Europe with a multi-trillion-euro opportunity. We are, right here and now, defining what governance of exponential technological change, including media, should look like. Policymakers, business entrepreneurs and market leaders can work toward a broad re-humanization of digital media and the internet itself. Finally, Europe needs to take the lead in building a renewed kind of social capitalism based on the 4Ps: People, Planet, Purpose and Prosperity.

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Conclusion

Here are a few things that policymakers can do:

1. Promote real future thought-leadership in Europe. We need to build our own narrative on the future we want, not wait for the US or China to do it.
2. We need a sustainable, 4Ps-based stock market. Think of it as a sustainable NASDAQ (SUSDAQ) where – much like the new Long-Term Stock Exchange in San Francisco – performance is pegged on 4 objectives, rather than only one, and where companies that adhere to these principles can list their stocks.
3. Why not explore how we could share social media revenues with public (or even private) media organisations to create great content in the future?

We will have all the tools, but will we have the telos – the will, the purpose and the wisdom? Let’s make sure Europe will answer with a resounding YES. ■

Authors' Bio

Gerd Leonhard is a top-rated futurist, keynote speaker, and presenter specializing in the future of technology and humanity, digital transformation, and artificial intelligence. He is the CEO of The Futures Agency, a global network of over 40 leading futurists, speakers and personalities, a fellow of the Royal Society of Arts (RSA, London) and an advisory board member of the Indian and Canadian Research Institutes.

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