



## The 4<sup>th</sup> Industrial Revolution from an Ethical Perspective

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### Abstract

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The 4<sup>th</sup> Industrial Revolution raises some profound ethical questions about the kind of world we want to live in. From artificial intelligence to virtual currencies, it's a complex and contentious trend. We live in an age of transformative scientific powers, capable of changing the very nature of the human species and radically remaking the planet itself.

These new powers hold great promise for curing and preventing disease, improving agricultural output and enhancing quality of life in many ways; however, no technology is neutral — and the powers of the 4<sup>th</sup> Industrial Revolution certainly are not.

Scientists are already struggling with such dilemmas. As we enter the new machine age, we need a new set of codified morals to become the global norm. We should put as much emphasis on ethics as we put on fashionable terms like disruption.

This is starting to happen.

### About ISPSW

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The Institute for Strategic, Political, Security and Economic Consultancy (ISPSW) is a private institute for research and consultancy. The ISPSW is an objective, task-oriented and politically non-partisan institute.

In the ever more complex international environment of globalized economic processes and worldwide political, ecological, social and cultural change, which occasions both major opportunities and risks, decision-makers in the economic and political arena depend more than ever before on the advice of highly qualified experts.

ISPSW offers a range of services, including strategic analyses, security consultancy, executive coaching and intercultural competency. ISPSW publications examine a wide range of topics connected with politics, the economy, international relations, and security/ defense. ISPSW network experts have worked – in some cases for decades – in executive positions and have at their disposal a wide range of experience in their respective fields of expertise.



## Analysis

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### The Big Shift

The 4<sup>th</sup> Industrial Revolution is catapulting global mankind and all kind of companies and organizations in spheres never discovered or experienced before. We stand on the brink of a technological shift that will fundamentally alter the way we live, work and relate to one another.

The 1<sup>st</sup> Industrial Revolution used water and steam power to mechanize production. The 2<sup>nd</sup> used electricity to create mass production and the 3<sup>rd</sup> used electronics and information technology to automate production.

Now based on a completely digitalized world the 4<sup>th</sup> Industrial Revolution is characterized by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres. The possibilities will be multiplied by emerging technology breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, material science, energy storage and quantum computing.

When compared with previous industrial revolutions, the 4<sup>th</sup> one is evolving at an exponential rather than a linear pace. It is disrupting almost every industry in every country. The breadth and depth of these changes herald the transformation of entire systems of production, management, governance – and also churches, ministries, mission agencies and all kinds of other Christian organizations.

Disruption seems to be the opposite of the Lutheran-Teutonic "Here I stand, I cannot do otherwise". We can. And we have to, as there is no way back into our cozy analogous world.

### Societal and ethical consequences

#### *Beneficiaries*

A current unanswered question is: Who will benefit most? Does this industrial revolution – like the others before – also have the potential to raise global income levels and improve the quality of life for the whole of mankind around the globe?

Until now, those who have gained the most from these fundamental changes have been consumers who were able to afford to access the digital world. For them, technology has increased the efficiency and pleasure of everyday life: ordering a cab, booking a flight, buying a product, making a payment, listening to music, watching a movie or playing a game.

However, in the same way the 4<sup>th</sup> Industrial Revolution could yield greater inequality, particularly in its potential to disrupt labor markets. As automation substitutes for labor across the entire economy, a global job market could increasingly get segregated into "low-skill/low-pay" and "high-skill/high-pay" segments, which in turn will lead to an increase in social tensions.

#### *Workforce*

Instead of a pro-job growth future, economists across the board predict further losses as artificial intelligence, robotics and other technologies continue to be ushered in. Art Bilger from the Wharton School of Business estimates that "all the developed nations on earth will see job loss rates of up to 47% within the next 25 years".



This helps explain why so many workers are disillusioned and fearful that their own real incomes and those of their children will continue to stagnate. An economy that offers only limited access to the middle class is a recipe for democratic malaise and dereliction.

Instead of a democratization of global employment and market shares, we will experience a centralization of them. Companies like *Amazon* already substitute large parts of the former retail industry, *Uber* the taxi industry and *Airbnb* the hotel business.

### **Network Economy**

This network economy has a dangerous side effect: it leads to monopolies, because in every network the benefit for all participants increases as new participants join. This is a fundamental difference to traditional markets. The old industrial economy is driven by scale effects, the new information economy by network effects. The key concept of the new economy is "positive feedback". The success feeds itself. The winner takes it all!

Interestingly we can't see any outcry which previously happened in the case of monopolizations. Now everybody wants to be part of this new network economy – voluntarily! The power of the digital revolution lies in the fact that no one is directly compelled to participate. The revolutionaries of the working world will be sympathizers, at least until the disadvantages of new monopolies become apparent.

The co-working spaces in a network economy are booming. One is surrounded by like-minded people and can enter two socially rich bonds: with the working neighbors and the work colleagues - both will no longer necessarily be cover-equal. The virtual share increases while the share of manual work decreases. There is a reasonable concern that "click-workers" could become the day-laborers of digital modernism.

### **Identity**

Engineers, designers, and architects are combining computational design, additive manufacturing, materials engineering, and synthetic biology to pioneer a symbiosis between microorganisms, our bodies, the products we consume, and even the buildings we inhabit.

We will increasingly wonder whether something is natural or artificial. Or there will be no clear division and artificial will become the new natural.

The 4<sup>th</sup> Industrial Revolution finally will change not only what we do but also who we are. It will affect our identity and all the issues associated with it: our sense of privacy, our notions of ownership, our consumption patterns, the time we devote to work and leisure, and how we develop our careers, cultivate our skills, meet people and nurture relationships.

### **Singularity**

The background of a newly formed concept called "singularity" is the idea of "uploading people" - or at least their minds - into a cloud, thus enabling them to live beyond their mortal cover. As of today, it is not yet known whether it is doable to separate a mind from neurons and transfer them to transistors. But Ray Kurzweil, Google Manager, technologist and founder of the Singularity University claims that "you cannot rule it out". Interventions in human minds are even desirable, because character errors can be remedied and performance improvements can be made possible.



But on the other side, the door is widely opened to any kind of manipulations and brainwashing. You're no longer the Internet customer, but you are rather its product. The concept of singularity creates a kind of pseudo-religion. The cloud, with the collected knowledge of the world, has the function of a substituted God. But in historical practice most attempts to play God have ended in oppression, exploitation and death.

### **Disruptive Church? Church for “Disruptors”?**

We must now develop an ethical and globally shared view of how technology is affecting our lives and reshaping our economic, social, cultural and also spiritual lives. Today's decision-makers are too often trapped in traditional, linear thinking or are too absorbed by the multiple crises demanding their attention, to think strategically about the forces of disruption and innovation shaping our future.

In the end, it all comes down to people and values. We need to shape a future that works for all of us by putting people first and empowering them rather more than building nice organizations.

On a business level it seems that there will be no alternative to a kind of internal cannibalization, in order to survive in times of disruption. That might be unpleasant and hard to accept in a short term. But the emergence of global platforms and other new business models finally means that talent, culture, and organizational forms will have to be rethought.

On the level of churches and Christian organizations the “business model” is still dominated by one-way-invitations, membership systems, analogous communication, printed magazines, frontal speeches and sermons, committees, functions and titles. This is not bad per se and has worked well in an analogous setting in the pre-digitalized world. But it has to be rethought in times of postmodern millennials.

These network-focused people are rather longing for a share of experiences, access to inspiration, participation and contribution, talent development and vivid movements which show in practical ways how to live Christian values in the face of the afore mentioned ethical challenges.

Disruptive churches and Christian organizations must function less as providers of Christian programs and rather more as equippers of Christian people – however and wherever.

We need room for a truthful and healthy development of somebody's REAL identity, not a FAKE one. And first and foremost it is needed to build and foster relationships in a highly individualized and less-related world.

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**Remarks:** Opinions expressed in this contribution are those of the author.



## Literature

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## About the Author of this Issue

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Timo Plutschinski is Partner of MIC Corporate Finance and leads the Business Coalition of the World Evangelical Alliance (WEA) which functions as an information & resource hub providing strategic and thought leadership for business, ministry and church leaders. The World Evangelical Alliance (est. 1846) gives a world-wide identity, voice and platform to more than 600 million Christians in 129 countries.

The theologian and business consultant is also a Fellow of the Olivet Institute for Global Strategic Studies and a Board Member of the Congress of Christian Leaders. He has over 8 years experience in management consulting, change management, project development and financing of renewable energy and development projects.

He has lectured finance and accounting at the BIWAK Academy as well as Intercultural Conflict Management at the Alice Salomon University. Today he is involved in ethical fund development and has started the WEA Council for Business & Ministry Finance.

Timo Plutschinski lives with his wife and two daughters in Hamburg, Germany.



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