RETROSCOPE 2018

FreedomLab

INTRODUCTION

DEAR READER,

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THE END OF THE YEAR IS A TIME FOR CONTEMPLATION. IN THIS RETROSCOPE, WE LOOK BACK AND REFLECT ON THE IDEAS AND INSIGHTS WE HAVE PUBLISHED IN THE MACROSCOPE THROUGHOUT 2018. WE HAVE COVERED A WIDE RANGE OF EVENTS AND DEVELOPMENTS IN TECHNOLOGY, GLOBAL POLITICS AND SOCIETY. THE MACROSCOPE IS MARKED BY OUR TEAM'S DIVERSITY OF PERSPECTIVES, RANGING FROM PHILOSOPHY, ECONOMICS, HISTORY, SOCIOLOGY, POLITICAL SCIENCES TO ENGINEERING. COMBINING THIS INTERDISCIPLINARY APPROACH WITH SCENARIO THINKING AND CYCLICAL THINKING, WE AIM TO ASSESS CURRENT AFFAIRS FROM A COMPREHENSIVE AND LONG-TERM PERSPECTIVE. OUR RETROSPECT OF 2018 IS THEREFORE ABOUT HOW THIS YEAR'S EVENTS TIE IN WITH OR DEVIATE FROM LARGER TRENDS IN TECHNOLOGICAL, HEGEMONIC OR SOCIO-CULTURAL CYCLES. OUR MISSION IS TO UNLOCK SOCIETY'S POTENTIAL BY DECODING THE FUTURE.

THE HYPERLINKS IN THIS RETROSCOPE REFER TO THE UNDERLYING MACROSCOPE PUBLICATIONS OF 2018.

WE HOPE YOU ENJOY OUR REFLECTION!

FREEDOMLAB THINKTANK

IBM quantum computer - Image by IBM research on flickr.com

1. Technological cycle

WE, LIKE SO MANY OTHERS, HAVE TRIED TO MAKE SENSE OF EVERYTHING THAT HAPPENED IN THE DIGITAL SPHERE IN 2018. ACCORDING TO CARLOTA PEREZ' MODEL OF TECHNOLOGICAL REVOLUTIONS, DIGITAL TECHNOLOGY FINDS ITSELF IN A GOLDEN AGE AND, ACCORDING TO THE VALUATION OF GLOBAL TECH COMPANIES, THIS IS QUITE RIGHT. HOWEVER, 2018 WAS ALSO THE YEAR IN WHICH CRITICISM OF BIG TECH BECAME MAINSTREAM AND SOCIETIES VISIBLY STRUGGLED WITH THE NEGATIVE SIDE EFFECTS OF DIGITAL TECHNOLOGY. HAVE WE SEEN THE BEGINNING OF THE END OF THIS DIGITAL ERA?

1. The beginning of the end for digital technology as we know it?
From a quantitative perspective, Big Tech is doing fine: these companies sit on top of a pile of cash, investing in new technology development or acquiring promising startups and mature businesses in other verticals such as health, finance, and even more health. In doing so, Alphabet, Facebook, Amazon and others are building digital conglomerates that span a multitude of sectors for which they hope synergies in data collection and analysis will yield even bigger profits. Interestingly, they also invest heavily in physical assets; to create real-world barriers to entry for digital newcomers and to make sure they have direct access to consumers and control over the sensors that will fill our lifeworld.

At the same time, 2018 has also shown growing concerns over the power of Big Tech and the ways in which these companies have failed to address interests of consumers and society as a whole. Arguably, Facebook has taken most hits this year with the Cambridge Analytica scandal and uproar among some of its major acquisitions. Perhaps because of this, the social media mogul is forced to take its first steps into the realm of blockchain technology.

Facebook and others have continued to struggle with fake news. Although some of the talk about fake news and filter bubbles is somewhat overstated, the future is bound to bring much more sophisticated forms of fake news, such as deepfakes, and even lead to an infocalypse in which all trust in public media is gone. In the meantime, social media platforms are struggling to regain trust from (mainstream) users and governments by upping their moderating efforts. YouTube even tried to hide behind Wikipedia, which, so far, has managed to retain a Red Cross-like position in the fake

news wars. If they don't succeed, they may either be held (legally) accountable for whatever content they harbor or governments will take more active control over their pages. Not everybody is happy with these efforts though, several platforms have emerged to provide refuge to nonconformists who are no longer tolerated by Big Tech. Still, whether or not we "like" Big Tech, we still perceive these companies as the inevitable rulers of the digital sphere. Moreover, most of us remain avid users of the products and services they offer in exchange for our data. And, despite growing momentum for legislative action against the digital conglomerates, for now, actual antitrust enforcement seems unlikely to come about in the U.S. However, Europe could be more willing, if only because it still lacks its own digital champions.

Perhaps there's more than meets the eye here. As we have discussed over the year, the end of the current techno-economic paradigm is in sight and a new one is already in the making. Technologically, this will consist of advanced A.I., 5G, quantum computing, ubiquitous (and self-powered) sensors, new interfaces and decentralized (i.e. blockchain) network architectures.

Institutionally, the "rules of the game" that come with these technologies, could even include elements of Marxism. These technologies may even lead to a Second Deep Transition that repairs some of the (social and environmental) 200 years of industrial modernization that shaped the first deep transition. For one, broader definitions of welfare (beyond GDP alone) will almost certainly be central to policy making in the future.

2. The ongoing struggle with digital technology in our everyday lives

Regardless of the role and faith of tech companies, digital technology is getting a firm grip on our everyday lives. Digital technology is changing the way we live (and shop) and is turning our homes into multi-functional hubs. At the same time, our cities (e.g. through living maps) and shops are becoming ever-smarter and this raises questions pertaining to data ownership and the desirable and undesirable effects of collecting ever more data in the public space. The very fact that digital products receive constant updates and new features means that we will continue to struggle with questions of how to use them and how to curb their undesired side effects.

That is because data has a will of its own and the far-reaching consequences of data collection are already visible in China's social credit system. Partly because it's the stuff of some of our worst digital nightmares, but also because it may nevertheless provide some inspiration for Western societies as well. In the same vein, growing international tensions and fears of terrorism are also fueling interest in all sorts of surveillance systems and these are becoming increasingly significant export products. The debate on the use of consumer products continued throughout the year. France drew a lot of attention with its (more or less pre-existing) ban on smartphones in classrooms. We have also written about how technology messes with our natural rhythms and digital detox is becoming a necessity for the body as well as for the mind. The short burst of attention for the toxic nerds of the incel movement showed, again, that the internet can also bring out the worst in humans.

This does not mean that everything about digital technology is wrong. The availability of data can still empower oppressed or otherwise powerless groups and individuals, as even cybercrime has a bright side and, when care is taken, digital technology can be a vector for norms and values to benefit society.

3. Let's not forget the atomic layer

As far as technology is concerned, most of our writings this year dealt with digital technology and various forms of computing. Indeed, as with any techno-economic paradigm, most of us only have eyes for the dominant "technology du jour"; ICTs. However, there is more to technology than the digital and even the digital has a very physical dimension. Hence, instead of trying to understand all the various manifestations of digital technology - such as smart cities, data storage, artificial intelligence, living maps, next-generation biological and computer interfaces, digital design, cloud computing, open-source software, API protocols – as different species or genres of computing, we are better off treating them as layers of a larger integrated system. Following the work of Benjamin Bratton, we refer to this as the Stack: the layered organization that constitutes the architecture of our digital economies and societies. Within this Stack, we should not forget about the atomic substrate on which it all rests. That is, the physical matter on which all digital goods and services rely (e.g. silicon, but also the infrastructures of cables, buildings and antennae). Hence, scarcity on this (literally) fundamental layer means that the dynamics upwards in the Stack are changing. This past year, for example, urban construction became more expensive because we are running out of sand, the global manufacturing industry was hurt by global water stress, and new ecosystems emerged because of undersea resource construction. Accounting for this layer's capital in a proper way might even lead us to find new economies of welfare and value, such as the ocean or energy economics and (geopolitics). These material inputs provide the power to computation itself, to data storage and servers, network connectivity infrastructure, as well as the smart cities we build. This mash between virtual and physical networks redefines sovereignty and hegemony, and a new logic how companies compete with each other.

President Donald J. Trump with North Korean leader Kim Jong Un, June 12, 2018
Photo by White House on Wikimedia Commons

2. Hegemonic cycle

AS WE HAVE FREQUENTLY REPORTED, WE ARE IN A PERIOD OF "HEGEMONIC SHIFT", AS THE ATLANTIC ERA IS COMING TO AN END. IN 2018, WE HAVE SEEN MANY MANIFESTATIONS OF THIS SHIFT (E.G. IN INDIA OR VIETNAM) AND AN INCREASING FRAGMENTATION OF GLOBAL (MILITARY) POWER. ALTHOUGH WE SHOULD BE AWARE THAT THIS IS A RETURN – OR THAT THE ATLANTIC ERA WAS A KIND OF HISTORICAL ABERRATION – RATHER THAN A RISE FROM NOTHING. WITHIN THIS MEGATREND, WE SAW THREE THEMES EMERGE IN 2018.

1. The race is on for global tech dominance

The most significant geopolitical event in 2018 was the unfolding of the trade war between the U.S. and China. However, while tariffs and blockings of takeovers took headlines, there is more structural tension between the U.S. and China: the upcoming tech war. Technological leadership (including biotech) is closely related to "hard power", if only because countries maintain tech-autonomy, even in space. Furthermore, digital technological capabilities will increasingly determine (cyber) power relations and means of projecting power.

This struggle for technological dominance will only become more important in the future with the rise of the sensor-based economy. And with this, we will also see a shift of power to the local level: a new wave of urbanization and smart city technology will greatly empower cities over national governments. As the global tech battle unfolds between China and the U.S., Europe risks losing out on innovation as it still scores high in research, but less so in development of value-adding products and services, seeing itself as on a mission to bring forth a true European champion.

2. China is eager to take over the helm

The primary "challenger" of the U.S. hegemony is China. Based on its own historical and cultural traditions, it is developing a new vision of progress based on its own unique political philosophy. Increasingly, the contours are emerging of China's worldview and a Chinese-led world order, as China is leading Eurasian cooperation, BRICS integration, and spearheading Asia's financial catch-up. This process is further accelerated as the U.S. is increasingly turning inwards and alienating some of its former allies as well as making new enemies. Furthermore, China is making large infrastructure investments (e.g. establishing an intercontinental super grid) as well as developing a new Silk Road for the 21st century.

While the BRI and adjacent investment policies are defining China's future foreign

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policy, Made in China 2025 is the blueprint for China's future economy. Following this plan, China wants to leapfrog its economy into becoming a digital leader with future growth coming from its megacities and regional capitals, which have their own governance model. This is enabled by the implementation of a social credit system that is to combat (financial) misbehavior, corruption and (re-)install trust throughout Chinese society, as well as by other sweeping reforms, as we have seen in 2018, such as its financial liberalization drive or the greening of its economy. Despite economic problems (e.g. the deleveraging of its economy) and technological hurdles (e.g. its semiconductor industry), China will lead the hegemonic shift of our times.

3. (Transnational) Populism is "alive-'n-kickin"

In 2018, we saw no backing down of populism. In Europe, far-right populism is becoming more mainstream across the European continent. This European divide will make life harder for political parties in the center, which have dominated European politics for decades and have often pushed for more European reforms. Furthermore, the economic policies – loose monetary conditions with high deficit spending – that are proposed by these parties are driven by the resurgence of the Eurozone's southern member states, such as Italy's new populist government. In addition, the upcoming Brexit will shake up European dynamics and may open doors to some smaller stakes like the Netherlands. No matter the circumstances, the U.K. will leave the EU. However, populism is not limited to Europe or the West alone: in Brazil, far-right nationalist candidate Jair Bolsonaro, a former army officer with a "law-and-order" style of governance, has won the Presidential elections. Elsewhere on the continent of change, Latin America, Manuel Lopez Obrador won the Mexican elections with a sweeping majority, promising to take on Mexico's "mainstream elite". However, there are also brighter signs of improving political conditions: in April 2018, in just one week, three former presidents were sentenced in South Korea, South Africa, and Brazil on bribery charges. And populist tides will also push countries into cooperation based on shared values, such as the Indo-Japanese partnership.

Fortnitemares - Image by BagoGames on Flickr.com

3. Socio-cultural cycle

THE GRAND NARRATIVES OF THE PAST HAVE BEEN MET WITH POST-MODERN SKEPTICISM AND OUTRIGHT RESISTANCE. MANY PEOPLE ARE LONGING FOR NEW (HOPEFUL) STORIES AND PRINCIPLES TO GUIDE THEIR LIVES AND THESE ARE NOW EMERGING ON DIFFERENT LEVELS. ON A PHILOSOPHICAL NOTE, THE RISE OF INTELLIGENT MACHINES IS FORCING US TO RETHINK OUR OWN NATURE AND GIVES WAY TO A POST-HUMAN PERSPECTIVE.

1. New times call for new narratives

In the midst of global and transnational populism, driven by the rise of the precariat class, we have also witnessed how new generations have developed new hopeful narratives and consumer practices that go well beyond mere consumerism and broader business ethics (e.g. Nike's embrace of Colin Kaepernick). On a personal level, new narratives are emerging about our bodies and minds, the food we eat, emancipation and our relation to digital technology. The same is true for travel, which is less about relaxing and much more about personal development and even transformation. All of this is not just about content, language itself and the style of communication are also subject to profound change.

On a socio-economic level, people are seeking new ways to articulate their changing political preferences and narratives, as part of a general trend of more holistic or non-reductionist worldviews. This new tone of voice includes new ways of utopian thinking. Interestingly, these new generations are about to inherit large sums of money from their baby-boomer parents and they are bound to look for sustainable and impact-oriented investment opportunities, hence they will be able to translate their changing ideals into real-life changes.

2. New generations seek new navigators

New narratives require new navigators. As part of this trend, youngsters are increasingly searching for intentional content and meaningful entertainment (e.g. in gaming). This search leads them to listen to new voices, some of which we consider politically incorrect and turn to more communal forms of entertainment and new trusted parties to provide guidance in the virtually unlimited amount of digital (pop culture) content they have at their disposal. Marvel's huge commercial and cultural success with Black Panther made abundantly clear that traditional trusted parties can continue to play an influential role as long as they align themselves with the mindset of new

generations. For these generations, the lines between the virtual and the real world are really beginning to blur. Especially Gen-Z is embracing fully digital influencers and this generation is creating truly meaningful virtual lives as these youths find valuable experiences and share precious moments in virtual worlds.

3. Beyond an anthropocentric world view
Partly because of ever-smarter digital technology, we are in the process of broadening our minds. The re-bundling and networked nature of the digital age is giving rise to a less anthropocentric, more post-human perspective. That is, artificial systems may develop genuine consciousness and our spirituality might become mediated by technology. That same technology will develop a will of its own, become a legal entity, and provide us with altogether new insights about the complexities of life. In other words, we may come to consider computers our equals and do away with our held belief in the uniqueness of man.
This philosophical shift away from the primacy of humankind is also visible in a number of consumer practices. While these are presented as means of reducing friction and making life easier, several "as-a-service" business models can also be understood as ways of reducing our own free will. That is, we are no longer expected to make our own choices or, for instance, maintain traditional human rhythms. Moreover, this year, Google (secretly) speculated about a future in which humans are reduced to mere data-generators in favor of an ever-smarter and selfish ledger.

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4. Disruption in the making

THIS YEAR, WE HAVE WRITTEN EXTENSIVELY ABOUT FOUR DOMAINS OF EVERYDAY LIFE THAT ARE BEING DISRUPTED BY DIGITAL TECHNOLOGY. MOBILITY, HEALTH, FOOD AND EDUCATION HAVE TO ADAPT TO CHANGING CONSUMER PREFERENCES AND SOCIETAL CHALLENGES AND NEW TECHNOLOGIES WILL SHAKE UP EXISTING VALUE CHAINS. BELOW, YOU'LL FIND OUR TAKE ON THESE CHANGES.

1. Mobility

Many car manufacturers made bold promises, under the pressure of regulators (and Elon Musk) to mass-market their own battery-electric or hydrogen vehicles. One of the questions looming over the automotive industry is, however, whether consumers will continue to buy and use cars to the extent they do today. Policy makers are seeking ways to get people out of their cars (often in order to improve local air quality) and improve public transportation, through Mobility-as-a-Service initiatives, for instance. Insofar as people will continue to get around by car, the question is whether they will still drive themselves. Despite several accidents, both carmakers and tech companies are busy developing and testing their autonomous vehicles. While most analysts have talked about safety and the infamous trolley problem, we have asked how these vehicles may change our everyday lives. Autonomous cars are bound to change the layout of our cities and, in a similar vein, other technologies (e.g. cheaper and faster tunneling) may lead to vertical cities and the comeback of supersonic flight could lead to a handful of hyper-connected, and hence hyper-attractive, global cities.

2. Health

A future in which genetic modifications give us enhanced physical and cognitive capabilities came a bit closer in 2018. Eventually, this will give us the possibility to rethink our human design, but much sooner, genetic data will allow us to unravel our personalities. Along with advanced genetic research, new insights regarding our health have also led to a return to traditional thinking and more holistic approaches to health. The latter related to an increasing focus on prevention instead of care, for example by critically reexamining our diet, the growing awareness of the importance of mental health and the development of digital tools to detect early signs of illness. Even the importance of (urban) infrastructure in stimulating healthier lifestyles was taken into account in 2018.

Despite this broadening perspective, medical care will be needed in the future and

it is thus no surprise that Big Tech showed ambitions to disrupt the healthcare value chain. At the same time, a real breakthrough for e-health has not taken place in 2018. Still, initiatives to make e-health applications more user-friendly and introduce gaming elements, could drive its adoption in the coming years and even boost digitalization in other fields as well.

3. Food

2018 has shown growing concerns over food security and ways to feed a growing population in a world of climate change. For instance, rising carbon dioxide levels in the air may make plants grow faster, but it also makes them less nutritious, i.e. the "nutrient collapse". And, while maintaining biodiversity is crucial to the health of our ecosystems and varied diets are key to our wellbeing, food supplies around the world have become more similar, resulting in expansive monocultures for the intense cultivation of a few select staple crops. Indeed, whether the UN's Sustainable Development Goals will be met depends largely on the sustainability of the global food system. As we have discussed over the year, in an increasingly urbanizing world population, the city is becoming an integrated landscape for both people and agriculture. Moreover, emerging digital technology is not only making cities smarter, it is also enabling the digitization of the food chain. Biotechnological advancements, such as the gene-editing tool CRISPR, and advancements in the field of genetics are leading to possibilities in crop improvements, disease control and other ways to transform selection processes in agriculture and first steps to the holy grail of personalized food and medicine.

4, Education

This year, preparing ourselves and future generations for the Fourth Industrial Revolution has become an even more pressing topic, as a skills gap in future graduates is still on the rise. Education systems are being reevaluated around the world, and Technical skills and a set of "soft skills" are top requirements on the list of future-proof education. Although we have always thought that at least our emotional and social qualities would be safe from being replaced by computers, A.I. has been shown to carry out many social and emotional tasks. Furthermore, we have seen an increasing acceptance of these systems doing so. As globalization is moving forward, the knowledge and skills that are required become less related to specific cultures and more alike in each community. These developments increase the popularity of tech solutions that transcend country borders, the one-size-fits-all model of current education systems or the limitations of classroom lectures, such as K-12 online tutoring, personalized learning, online education in the corporate sector, YouTube as a learning tool and VR in the classroom. Whether the current changes that education is going through (e.g. schoolification) are taking place fast enough to keep up with new tech-savvy generations is unclear and the looming skills gap seems to remain in the foreseeable future. As a consequence, kids might increasingly turn directly to companies or start their own business instead of pursuing higher education, in order to develop themselves in a way that resonates with their lifestyle and offers a more solid perspective on a job/income.