Author: Alfredo M. Ronchi

Is ethics evaporating in the cyber era? Part 1: Setting the scene

Abstract:

This paper provides a brief history of evolution of digital technologies and its impact on human societies. Further, it emphasizes on cyber ethical issues that include the pervasive use of cyber devices and technologies, including the evolving use of intelligent algorithms and machine learning to manage companies and support governments. This paper also discusses the protection of freedom of expression and mainstream information potential biases and information oversupply. It also focuses on the relevant role of "platforms" and how these are being monopolized by some countries. Finally, this paper summarizes the key aspects of The UNESCO IFAP Code of Ethics for the Information Society and related follow-ups.

Keywords: Appification, Artificial Intelligence, Bias, Cyber Devices, Digital Technologies, Ethics, Freedom of Expression, Info-besity, Machine Learning, Privacy

Agenda:

Authors:

Prof Alfredo M. Ronchi

- Head of S2D2 JRC Politecnico di Milano, Email: alfredo.ronchi@polimi.it

From divergent thinking to thinking different

In the 1960s, science fiction and later scientific magazines and TV news showed "loft-size" computers fed by punch cards, controlling a set of spinning magnetic tapes mounted on fridge size machinery, all of them under the supervision of several experts in cybernetics. Have these technologies deeply impacted society? The cyber technology that really impacted society was not the one in use in the 1960s or 1970s when big mainframes were operated by scientists dressed in white coats. Thirty years ago, information scientists and computer users witnessed the unprecedented revolution due to "computer for people" that later on was termed as "personal computer". This revolution was initiated by visionary researchers like Douglas Engelbart[1] and his "oN-Line System[2]" that is directly connected with "The Mother of All Demos", as retroactively termed its presentation at the IEEE on 9 December 1968. His device, the "mouse", is a revolutionary concept.

A significant step forward in reshaping the future is due to a research team of divergent thinkers working at the Xerox Palo Alto Research Center (PARC). Xerox Corporation, the "Document Company" and member of the "Cyber" establishment, the inventor of "Xerocopies" and printing machines, was the originator of the digital revolution. The PARC research team, composed of Butler Lampson, Charles P. Thacker, Robert W. Taylor, and Alan C. Kay, invented the Alto computer with its object-oriented interface was licensed in 1973, i.e., ten years before Apple Macintosh. In the 1980s, Alan Kay, who developed "Databook", introduced the concept of the laptop computer. We cannot forget of course the IBM PC released in August 1981, designed by another group of divergent thinking engineers directed by Don Estridge in Boca Raton, Florida. So, California and Florida, the two sunny states, were at that time the homeland of the digital revolution.

Thanks to Tim Berners-Lee and Robert Cailliau, close to the end of the 1980s, the web technology was born at Conseil Européen pour la Recherche Nucléaire (CERN) to ease the information exchange among physicists. Another revolution was on stage in 1995 that flourished on the consumer and home markets after some years of a transversal appeal involving philosophers and artists. The Microsoft motto "Where do you want to go today" outlined the idea of a small world entirely connected online. Then, starting from the first decade of the twenty-first century a number of Governmental Agencies, Institutions and Private Enterprises from all over the world, both in industrialised and developing countries, invested time and resources on e-Services (Ronchi 2019).

Wallet, wristwatch, and …

Computers have been around for about half a century and their social effects have been described under many headings (Ronchi 2019). Mobile position-aware devices, home appliances and Internet of Things (IoT) represent the most recent revolution in both technology and society. They are perceived as something different from computers even if they play, among others, the same role and immediately became part of our daily life, a wearable accessory as our wallet or wristwatch. Home assistant appliances like Alexa, wearable devices like smart-watches, bracelets are becoming pervasive as well. Cyber technology is increasingly merging many sectors of our daily life. We are witnessing relevant changes due to both technological enhancements and modification of user requirements/expectations. In recent times the digital domain, once strictly populated by professional users and computer scientists, has now been opened to the digitally divided society. Society (Ronchi 2019) is changing under the influence of advanced information technology. Technology is evolving toward a mature "calm" (Weiser 1991) phase, and "users" are overlapping more and more with "citizens" (Council of Europe 2001). They consider technology and e-Services (Ronchi 2019) as an everyday commodity like, to buy a ticket, to meet a medical doctor, to access the weather forecast, etc. The digital divide in its original semantic meaning is mainly bridged, thanks to mobile position-aware devices, but now we must deal

---

[1] On the occasion of the WWW 1997 Doug Engelbart introduced the concept of a "multidimensional" operating system showcasing a graphical interface associating each single process to a "dimension" of a n-dimensional interface.

[2] NLS—Developed by Douglas Engelbart and Dustin Lindberg at SRI International.

with a different divide, the "knowledge divide". The rapid diffusion of "cyber" was not associated with a proper digital media literacy awareness program (UNESCO IFAP MIL). Hence, citizens must acquire a minimum level of knowledge in the proper use of cyber-technology, including the field of cyber-security (European Commission/Union 2014-17).

From the origins of computer science, less attention was devoted to the potential impact of research outcomes on the society and economy. States must favour the creation of multidisciplinary working groups to analyse from different standpoints the future impacts of emerging or improved existing technologies on society, economy, and protection of human rights from a mid-and long-term perspective.

Looking for the "silver bullet"

The incredibly rapid success of the Internet, mainly due to e-commerce and social media, gave a boost to the globalisation trend, a shift toward uniformity, jeopardising diversities, and cultural identities. The key element of this success was the cyber element called "platform", the main component of any kind of service or information delivery. Platforms are mainly "populated" by users, even if they do not pay any fee, considered as customers. They, as "customers", increase the market value of the platform in the media market because of the advertisements and the ability to analyse data and resell customers' profiles.

The absence of platforms' regulations led to the emergence of new monopolies. This development has been deeply influencing the society. Citizens have been increasingly using the platforms to buy and sell goods online, book their travels and vacations. They also now enjoy social media and several other services, unthinkable before the Internet, from extremely vertical services to crowd services (Surowiecki 2004) or funding. Platforms are the real "silver bullet" that created major opportunities and a real impact on society and the economy. A relevant part of digital transformation relies on platforms and standards (Ronchi 2020). These aspects are directly linked with the "owners" of such platforms and standards. This can be considered a kind of monopoly not yet regulated - a kind of grey zone. So, in the digital transition, despite Antitrust laws, there is a potential risk to fall under the control of few key players. This aspect was recently outlined by the censorship action of some platforms that cancelled user profiles and entire video channels opening the discussion on the balance of the rights between the owner and the user of the platform. This aspect can lead to the infringement of the human right, "freedom of expression", as we will see later.

An additional remark is warranted here. If, on the one hand, the diffusion of platforms creates new opportunities, as it happens with small enterprises or craftsmen, on the other hand, it "kills" several existing businesses. Besides, the platforms open the "global" market to small and micro enterprises offering them a "window" on the globe, and, further, the access to global service platforms creates a shortcut between the offer and demand that cuts out a major part of the traditional added value chain, thereby replacing malls with platforms.

General aspects, ethics, human rights, and potential drawbacks

Cyber Technology is a new entity, a new class of objects, from an ontology point of view. Cyber data can be duplicated without any difference (cloned) and transferred on the fly through networks. These properties made cyber objects difficult to manage on the legal side and even created some ethical problems. Philosophers and experts in humanities debated for a long time to identify the "original" in digital data. One of the assumptions is that original data are the ones just created in the computer's memory. Nevertheless, in the early times of Xerocopies "originals" use to be signed in blue or green ink to make the reference document easy to identify. In the age of "digital originals" the issue of "authenticity" and "originals" has been amplified and several tools and standards were created to solve the problem in contracts, reports, instructions, technical drawings and more. In many cases, there is a real or virtual lack of legislation, virtual because situations apparently new can lead us back to the original.

Probably the standpoint of humanities was considered because the web technology has opened the use of the Internet to the multidisciplinary group of users. Information Ethics was one of the issues (UNESCO IFAP). On the occasion of the first phase of the WSIS (World Summit on the Information Society) held in Geneva in 2003, a specific working group was created. This later on became a WSIS Action Line that has brought out C10 "Ethical Dimensions of the Information Society" (UNESCO WSIS) and some other relevant documents, like the "Code of Ethics for the Information Society". The existence of knowledge "silos" unable to cooperate because of the different knowledge backgrounds and skills has been recently broken. Hence, in the last decade, philosophers and humanists started to professionally deal with computer scientists and innovators (Stuckelberger 2018). These scholars usually considered the medium and long-term impacts of technologies on society. The emerging technological trend in autonomous vehicles, robots, machine learning and artificial intelligence may pose significant ethical problems to innovation.

In addition to all these potential drawbacks, we observe the massive decrease in the level of critical thinking and the emergence of waves of information epidemics, both at the national and global level (mainstream communication, limited contraposition, censorship, and fake-news). Post-truth in its heyday, with public perception, shaped more by means of addressing feelings and predetermined opinions rather than actual facts, with fakes, click baits, hypes and other tools introduced to form post-reality in the political and media culture (Makkuni 2018). Post-reality is changing the system of values with the "new" normal (semantic shifts, etc.), of course may be politically correct. New ethics is putting personal free will and freedom of choice under question; traditional cultural regulators of social relations and processes being displaced by automated social algorithms (increasing role of algorithms and Machine Learning). Widespread simplified virtual mock-ups and simulacra are not only blurring the borders between the real and the digital world but also led to a mass collection of data for managing people's behaviour (evaporation of privacy, data protection). This has happened from the age of high concerns (lack of oil, drinking water, ozone hole, global warming, killer asteroids, pandemics, and more) to the formation of an appropriate economic imperative to direct the development for business, society, and states. It has also been contributing to the increasing level of conflict in both the society (between individuals and groups – haters, discrimination) and among states (XXI Century warfare (15 – Ronchi 2018), soft concerns (Ronchi 2021), and more (European Union 2016).

Freedom of expression

The Internet has incredibly facilitated access to mass communication. It combines a worldwide broadcasting capability with a mechanism for information dissemination, which offers us the opportunity to reach a wide audience with minimal effort. Before the Internet, the only way to reach wide audiences was radio and television broadcasting. Even before those were invented, it was mainly through the printed materials. It is a medium that encourages collaborations and interactions among individuals and their computers, almost without regard for their actual geographic location. This increases the ability to access mass communication together with freedom of expression as there are no filters or "editorial" committees to approve the messages.

If the early stage of Internet communication was based on the so-called "netiquette", a kind of Galateo[3] or Bon Ton of Internet users, the advent of Web X.0 and the social web requires more specific rules addressing first the field of ethics and privacy.

Of course, freedom of expression is one of the most appreciated opportunities offered by the network and it is already evident that any kind of top-down censorship or control fails even if the concept of Cyber Sovereignty exists and is promoted. The evident vocation toward freedom of expression is many times a direct cause of governmental censorship forbidding social applications, like Twitter, Facebook, Instagram, YouTube or even some thematic websites in some countries. Here, apart from political, ethical, and philosophical issues, may

---

[3] Monsignor Giovanni Della Casa was a Florentine poet, writer on etiquette and society; Galateo overo de' costumi was inspired by Galeazzo Florimonte, Bishop of Sessa.

come to the fore the economic and financial aspect of entering that market adhering to the requested censorship[4].

Freedom of expression is usually associated with the terms *hating, online libel, hoax, fake news*. This is because the improper use of freedom of expression can generate such negative behaviours. Of course, such extensive and negative interpretation of freedom might generate some reactions that can be even worse than the problem itself. A typical and sometimes concrete example is the establishment of a "commission" in charge of the fight against fake news, the one owning the "truth", the risk in an "information society" is to cancel debates, silence alternate views and take a dangerous drift towards the "Pensée unique" or single thought. A potential solution is to support the creation of "Independent Observatories for Ethics and Fairness", which, while guaranteeing freedom of expression, can promote self-regulation, respect for ethics and the identification of potentially fake news.

Freedom of expression is ensured by the Council of Europe at Article 10 of the European Convention on Human Rights[5] states:

> *"1 - Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers. This Article shall not prevent States from requiring the licensing of broadcasting, television, or cinema enterprises.*
>
> *2 - The exercise of these freedoms, since it carries with it duties and responsibilities, may be subject to such formalities, conditions, restrictions or penalties as are prescribed by law and are necessary in a democratic society, in the interests of national security, territorial integrity or public safety, for the prevention of disorder or crime, for the protection of health or morals, for the protection of the reputation or rights of others, for preventing the disclosure of information received in confidence, or for maintaining the authority and impartiality of the judiciary."*

Principles concerning freedom of expression are shared between the European Commission (EC) and the Internet Governance Forum (IGF). Let's start from the Internet Governance Forum established as an outcome of the second phase of the WSIS in 2005, thanks to the participation of the stakeholders. Based on the analysis of its activity, the IGF might be considered too close and too committed to the interest of a limited number of ruling members. This was already evident in the dispute on the issue of a new global agreement on Internet regulations. Anyway, the IGF Best Practice Forum in 2020[6] and the national, regional, sub-regional and youth IGF initiatives (NRIs) annual programme scores the interest in Digital Rights & Freedoms 28 on 30, higher priority respect to cybersecurity and Internet governance ecosystem.

Now let us discuss the key principles and objectives that guide the European Commission's work in this area.[7] The European Commission aims to defend access to open Internet and freedom of speech. On the annual global conference of the Internet Governance Forum (IGF) held in Baku on 5–9 November 2012, the European Commission defended the open Internet and promoted the Internet as a frontline in efforts to ensure freedom of speech globally. The delegation from across the Commission made a strong intervention into debates about the future of Internet governance at the IGF. The EC delegates strongly defended the view that there is no need for a new treaty to regulate the Internet. Instead, the multi-stakeholder model should be promoted further and be made more inclusive and responsive. More generally the Commission emphasised the need for the

---

[4] E.g. markets potentially offering "billions" of additional customers. Sometimes the censorship is not declared but the bandwidth devoted to the specific service or website is so narrow that it is practically impossible to connect.

[5] https://www.echr.coe.int/documents/convention_eng.pdf

[6] https://www.intgovforum.org/multilingual/index.php?q=filedepot_download/11138/2452

[7] Mr Andrea Glorioso, European Commission Policy Officer at the DG Information Society and Media, on Tuesday, 29th May 2012, to discuss the European Commission's position on various Internet governance issues.

Internet to remain a vibrant environment for innovation and economic growth, and to improve as a space where transparency, democracy and protection of human rights are guaranteed.

As a key funder of the Internet Governance Forum, the Commission co-organised four sessions of the IGF 2012 conference:

1. on the protection of the rule of law in the online environment, to discuss different issues related to the responsibility and role of Internet service providers in preserving freedom of speech.
2. on the evaluation of the Internet Freedom Initiatives, for the promotion of the No-Disconnect strategy and exchange of information about other similar initiatives in different countries.
3. on media pluralism and freedom of expression in the Internet age, which is currently addressed by the High-Level Group on Media Freedom and Pluralism established by the Vice President, Kores.
4. on how to make the Internet a better place for children, to discuss the responsibility of different actors in the area of child protection on the Internet.

The European Commission defines Freedom of expression and information[8] as:

> *"1. Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers.*
>
> *2. The freedom and pluralism of the media shall be respected."*

This right is enshrined in article 11 Freedom of expression and information of the Charter of Fundamental Rights.

On the occasion of the WSIS Forum 2021, Prof Lynn Thiesmeyer[9] outlined some drawbacks of digital transformation: "A number of countries, notably those with a high level of internal conflict, are monitored by international commissions and tech organisations due to their high degree of Internet filtering and censorship. Since 1 February 2021, however, the case of Myanmar has gone beyond censorship. It now includes blocking access to the Internet and the Cloud and shutting down a large portion of citizen access to the Internet and wireless technology (Thiesmeyer 2021). Further, Internet banking technology has been used to seize the assets of international organisations. These actions threaten the digital and informational freedom and security of the country, and of its regional partners in business and in development assistance. The digital transformation is a tool and a process that not only can empower and liberate nations and their capacities but can also be used to remove and destroy those capacities, including the digital transformation itself. In addition to working directly against Sustainable Development Goals 9, 11, and 16, these actions deny both domestic and international freedom of communication, knowledge, and economic activity among ordinary citizens as well as between the nation and its economic partners. The lack of international standards and countermeasures is hampering approaches to the growing regional cyber-insecurity, but we also need to examine particularly the incentives and disincentives faced by Myanmar if it is to regain free and comprehensive ICTs and access."

Summing up

The incredible pace of innovation in the field of information technology has deeply impacted different scenarios from the social to the economic one. The old dinosaurs, the calculus centres of the sixties, suddenly left the scene to desktop device, portable laptop, and recently handheld position-aware devices. At the same time,

---

[8] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012P/TXT&from=EN

[9] Dr. Lynn Thiesmeyer, Keio University, Digital Transitions to Digital Despotism: Cyber-insecurity and its Regional Threat to Connectivity - Outcomes of the WSIS Forum 2021 - https://www.itu.int/net4/wsis/forum/2021/Files/outcomes/draft/WSISForum2021_ OutcomeDocument.pdf

digital technology has become more and more pervasive and the number of digital "objects" always on and connected "somewhere" on the global network exploded. The need to be connected and act as a kind of intelligent peripheral of a "big brother" becomes a must. So, hardware devices were offered associated to "cloud services", smart phone, tablet, bracelet, Alexa and, finally, a thousand of IoT digital "buddies". They all offer, and take advantage from a digital platform where to upload data. Consequently, our "life" is poured in different "platforms" accordingly with the specific device or service. Ethical concepts like privacy, personal data ownership, freedom of expression has become more ephemeral. The following part of this paper entitled "Don't you feel framed?" will explore the "dark side" of digital transformation process.

To be continued in Part 2.

References

Council of Europe (2001), New information technologies and the young. Council of Europe Publishing, Paris

European Commission (2017), Resilience, Deterrence and Defence: building strong cyber-security for the EU, JOIN, 450 final

European Union (2014), Cybersecurity Strategy of the European Union: An Open, Safe and Secure Cyberspace

European Union (2016), Joint Framework on countering hybrid threats a European Union response, 2016

Ranjit Makkuni (nd).Betrayed IT Revolution, https://www.facebook.com/watch/?v= 1922884092966674

Ronchi Alfredo M., (2018), 21ST Century Cyber Warfare, in International Journal of Information Security, vol.39, ISSN: 1615-5262, Springer Verlag, 2018

Ronchi Alfedo M. (2019 A), e-Services: Toward a New Model of (Inter)active Community, ISBN 978-3-030-01842-9, Springer

Ronchi Alfredo M., (2019 B), e-Citizens: Toward a New Model of (Inter)active Citizenry, ISBN 978-3-030-00746-1, Springer

Ronchi Alfredo M. (2019 C), e-Democracy: Toward a New Model of (Inter)active Society, ISBN 978-3-030-01595-4, Springer

Ronchi Alfredo M., (2020), Digital transformation, proceedings ICCC New Delhi, CyberLaw

Ronchi Alfredo M., (2021), Soft but still concerns, proceedings International Conference on 'Homeland' Security Emerging Trends, Challenging Aspects - Hasan Kalyoncu University, Turkey 2021

Surowiecki J (2004), The Wisdom of crowds: why the many are smarter than the few. Doubleday, Anchor. ISBN:978-0-385-50386-0

Stuckelberger Christoper, & Duggal Pavan (2018), Cyber Ethics 4.0: Serving Humanity with Values, ISBN 978-88931-265-8, Globethics net

Thiesmeyer Lynn (2021), WSIS Forum 2021 Outcomes, https://www.itu.int/net4/wsis/forum/ 2021/Files/outcomes/draft/WSISForum2021_OutcomeDocument.pdf

UNESCO IFAP (nd), Information Ethics, http://www.unesco.org/new/en/communication-and-information/intergovernmental-programmes/information-for-all-programme-ifap/priorities/information-ethics/

UNESCO Information for All Programme (IFAP), International Conference on Media and Information Literacy for Building Culture of Open Government, http://www.ifapcom.ru/en

UNESCO WSIS (nd), Ethical dimensions of the Information Society (C10), http://www.unesco.org/new/en/communication-and-information/unesco-and-wsis/implementation-and-follow-up/unesco-and-wsis-action-lines/c10-ethical-dimension-of-the-information-society/

Weiser Mark D, The computer for the 21st century, Scientific American Ubicomp Paper after Sci Am editing, 09-91SCI AMER WEISER