. . . 1984 won't be like "1984" ?

Alfredo M. RONCHI
EC MEDICI – Politecnico di Milano, Milano, Italy
Tel: +39 393 0629373, Email: alfredo.ronchi@polimi.it

Introduction

> *Exterior, night time, raining*
> *"I've seen things you people wouldn't believe. Attack ships on fire off the shoulder of Orion. I've watched C-beams glitter in the dark near the Tannhauser Gate. All those moments will be lost in time, like tears in rain. Time to die."*
> [ROY - RUTGER HAUER – BLADE RUNNER IS A 1982 AMERICAN SCIENCE FICTION FILM DIRECTED BY RIDLEY SCOTT AND STARRING HARRISON FORD, RUTGER HAUER, AND SEAN YOUNG.]

This is one of the most famous and quoted sentences kept from one of the masterpieces of science fiction movies from the 1980s. Will lives in the near future really get closer to the one depicted in the film, a dystopian Los Angeles in November 2019? Genetically engineered organic robots visually indistinguishable from humans will be integrated in our society. Cyborgs will perform the most dangerous or stressing tasks. We are already in that period of time but a similar scenario is still far or very probably not realistic in our future. There are a number of science and technology fiction-movies depicting our future lifestyle, from Fritz Lang's Metropolis (1927) to James Cameron's Avatar (2009), passing through The Lawnmower Man[1] and not forgetting The Matrix[2]. We probably feel much more immersed in an everyday reality similar to "Antitrust", directed by Peter Howitt (2001), or, even more realistic, and due to this concerning, "The Net"[3]. Why do we refer to fiction in order to introduce serious topics like e-Citizenry? Because fiction sometimes anticipates a reasonable scenario of future society and lifestyles.

We do not foresee in a near future "replicants", "precocs[4]", tele-transportation or flying cars[5] but we are aware of the potential revolution due to digital technology and e-Services.

---

[1] The Lawnmower Man directed by Brett Leonard (Allied Vision 1992).

[2] The Matrix directed by Andy Wachowski and Lana Wachowski (Warner Bros. Picture 1999).

[3] "The Net" directed by Irwin Winkler (Columbia Pictures Industries Inc. - 1995).

[4] Key actors in "Minority Report" they are able to predict future crimes and involved criminals.

[5] "Flying cars" were a typical representation of the future since the fifties.

"The Net" for instance draws a not completely unreal scenario of identity theft. This movie outlines, if needed, the potential fragility of our identity-based services and systems: police, banks, state archives, social security, ownership, personal data, etc.; they all rely on digital technology and are in some way exposed to hackers.

Citizens and e-Citizens

The present paper aims to contribute to draw and understand a realistic scenario of what we can term e-Citizenry even if, as stated many times, "prediction is difficult, especially if it involves the future![6]" Sometimes this term simply identifies members of the network, Internet users. This paper identifies as "e-Citizen" a Citizen surrounded by both public administration's and commercial's digital services and the transition from his traditional role and behaviour to the new ones. Of course, we cannot forget the huge set of services provided by private organisations as the completion of the scenario.

The major part of the population has already started this journey from Citizens to e-Citizens; they already ask and receive certificates on line, book a medical service and receive the feedbacks on line or pay taxes and vote in this way. Anyway, this is a critical process involving opportunities and threats, benefits and drawbacks. In addition, there is a gap to be bridged due to cultural behaviours, age and education.

At the early stages of cyber age major part of philosophers and humanists probably considered computer science too far from their domain of knowledge this, apart from some alerts or potential concerns about the impact of similar technologies on society, favoured a development of innovation purely "technology trained" with a limited vision about the impact on society. Recently we started to have a better vision about the impact that the cyber era is having and will have on our everyday life, in the 1980s the introduction of PCs provided a little impact on society, the true turning point was probably in the middle of the 1990s with the rapid spread of the Internet and web technologies together with the semantic shift from "computers" to household appliances[7]. Since that time major transformations in everyday life and society appeared even if the path of cyber evolution wasn't clear yet. A number of technology-based solutions appeared starting from on-line platforms; today we cannot avoid considering networks of sensors, Internet of Things[8] [1

---

[6] Quote from Neils Bohr, who won the Nobel Prize in Physics.

[7] Windows '95 targeted a new segment, the system as home appliance like telephone or television set. It was the time of the promo "Where do you want to go today?"

[8] Clever Care Framework for Remote Management, Guidance and Custom Care - http://www.clevercare.com.br

– Babel 2015] and drones in this panorama of solutions. Networks of sensors including CCTV[9] and, even more, Internet of things provide an incredible support both in safety and security[10], monitoring or inhibiting hazardous behaviours, alerting people in case of impending danger, activating counter measures or mitigation processes. An incredible number of risky scenarios, including crimes, is mitigated or "solved" thanks to CCTVs. We do not refer only to highway traffic control cameras and sensors or "snow" cameras on the mountains, very appreciated by skiers, to but even to forests' fire surveillance based on video cameras mounted on power distribution pillars. Accordingly with official data, in 2017 China was supervised by 180 million CCTV cameras, by 2020 Chinese on line cameras will be 450 million; they will control traffic and fine law's violations, identify bank account holders thanks to bio metric tools and enable ATM transactions or identify airplane passengers at airport gates. Internet of Things will contribute to making the environment "intelligent", enabling direct interaction between objects including smart phones and human wearables.

From "Monads" to Platforms

A computer was originally considered to be like a Leibniz's[11] "monad", an ultimate atom without windows and doors; a sealed entity. Intercommunication processes enabled external access to these monads, allowing information and data exchange between them and thus multiplying their added value; networks of computers possess expanded functionalities and services. A number of different standalone proprietary networks were gradually merged into the network of networks: The Internet.

"*The Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure. Beginning with the early research in packet switching, the government, industry and academia have been partners in evolving and deploying this exciting new technology.*" (Leiner et al. 2003[12])

---

[9] Close circuit television, small intelligent video cameras, nowadays connected to the Internet; it is possible, if allowed, to directly connect to each single camera and watch the scene remotely. This is a typical service available on motorways in order to avoid traffic jams.

[10] Critical Link is building a network of volunteer emergency First Responders, who are dispatched through SMS and Mobile alert to save lives when people are injured in Dhaka, https://play.google.com/store/apps/details?id=com.ionicframework.critical ink453552

[11] Gottfried Wilhelm Leibniz (also Leibnitz or von Leibniz) was born on July 1, 1646 (Leipzig, Germany), and died on November 14, 1716 (Hanover, Germany). School/ tradition: rationalism. Main interests: metaphysics, epistemology, science, mathematics, theodicy. Notable ideas: calculus, innate knowledge, optimism, monad. See http://en.wikipedia.org/wiki/Gottfried_Leibniz.

[12] B.M. Leiner et al. (2003) A brief history of the Internet. Internet Society, Reston, VA (see http://www.isoc.org/internet/history/brief.shtml)

Of course, one of the main drivers for Internet usage was the introduction of the hypertext transfer protocol (http), which led to birth of the World Wide Web, thanks to the contributions of Tim Berners-Lee and Robert Cailliau at CERN[13] in 1990 and the success of Mosaic at NCSA[14] in 1992, the first web browser.

Conceived and developed by "end-users", one of the most important characteristics of the Web community, in the first two or three years of its life, was the bottom-up decision mechanism it employed. Enhancements and extensions were proposed, discussed and implemented mainly by active members of the community of researchers and experts involved in the process.

The Web community at that time was a mixture of ICT experts and scientific content managers. The double role of these "prosumers[15]" was probably one of the key innovative aspects of that community during that period. The subsequent gradual shift from technology developers to general users is a natural process that often occurs with mature technologies. It happened, for instance, in the field of computer graphics, where computer graphics pioneers worked side-by-side with creative people and special effects (fx) designers. Starting from 1995 this shift was seconded by an increasing interest in web technology care of ICT companies.

The development of Internet technology unleashed creative energies, the first generations of web sites was mainly due to voluntaries often not belonging to the IT sector, don't forget that the cradle of the Web was CERN, temple of physics and subatomic particles. Web technology was for sure an enabling technology offering to almost everyone the opportunity to contribute to the creation of the textual and later on visual cyberspace.

The Internet has incredibly facilitated access to mass communication. This influenced even news and journalism. 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, and before those were invented, mainly printed materials or heralds. In addition, it

---

[13] The name CERN is derived from the acronym for the French "Conseil Européen pour la Recherche Nucléaire", or European Council for Nuclear Research, a provisional body founded in 1952 with the mandate of establishing a world-class fundamental physics research organization in Europe. At that time, pure physics research concentrated on understanding the inside of the atom, hence the word "nuclear". https://home.cern last access February 2018.

[14] National Center for Supercomputing Applications, http://www.ncsa.illinois.edu last access February 2018.

[15] Producer and Consumer at the same time.

is a medium that encourages collaborations and interactions between individuals and their computers almost without regard for geographic location.

Once exhausted the "publishing" hangover it was the time to manage, structure and index this "blob" of content and upgrade from information provision to service provision. Different parameters are actively influencing e-Services success or failure: cultural aspects, organisational issues, bureaucracy and workflow, infrastructure and technology in general, user's habits, literacy, capacity or merely interaction design. This includes: having a significant population of citizens willing and able to adopt and use online services; and developing the managerial and technical capability to implement applications to meet the needs of citizens. ICT based innovation "*It is not only a matter of technology*".

Well-being and ICTs

Dealing with ethical and social issues it seems reasonable to introduce more in general the concept of "well-being". Furthermore, nowadays we cannot avoid considering the relation between well-being and information communication technologies. The concept of well-being is attracting increasing attention in the context of development policies. However, the notion of well-being using digital media is still vague. It often tends to be confused with the concept of "interaction design" or "smart cities". Information and Communication Technologies (ICTs) as enablers of e-services have the capacity to allow processes of urban transformation, by helping cities become "smarter" and more "sustainable". To what degree do smart cities contribute to the well-being of citizens? By reviewing current trends in well-being policies the literature questions the concept of quality of life as limited to improved infrastructure and public equipment. It refers to well-being also as intangible collective capital, such as the preservation and transmission of cultural heritage, collective memory, political participation, social equity, and inclusion for minorities and vulnerable social groups, which in the long run contribute to increasing the well-being of urban inhabitants. Finally, it proposes the use of ICTs to enable institutions to provide and offer innovative citizen services to enhance quality of life.

Re-shaping the market: the power of platforms

Change in technology and user profiles cannot avoid impacting the market. The market is evolving in a very significant way. One of the first effects was the transition from the purchase of plastic boxes on the shelves containing DVDs plus printed user manuals to the on-line purchase

and download of applications with pdf or eBook manuals. The idea to buy something "immaterial" on line transferring the right to use in an immaterial way is now largely accepted by the market. iTunes as a kind of rule breaker promoted this approach in the field of the on-line music market many[16] years ago. This may be considered a kind of second digital revolution after the first transition from mainframes to PCs.

At the same time, we witnessed a significant shift from few expensive software solutions to many "tiny" and cheap APPs. This happened after a long period of time, software developers were mainly cut out from the market and the necessary skills to develop applications were relevant. This is in some way related to the interesting re-opening of the software market to single and small groups of software developers due to the availability of new successful development platforms to be "populated" by applications and the advantage of the new software market model based on online distribution and support. The last aspect has relevant effects on the software industry because on one side it bridges the gap between micro and small software enterprises and medium and big companies, both offering a set of very well-known e-commerce platforms and creating business opportunities for compact and well-focused applications. We are in the age of "platforms", platforms make the difference as we will see in the following paragraph.

The evolving scenario

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 opened up to former digitally divided. Technology is evolving toward a mature "calm" phase, "users" are overlapping more and more with "citizens" and they consider technology and e-Services as an everyday commodity, to buy a ticket, to meet a medical doctor, to access the weather forecast. It is a common understanding that recent generations represent a discontinuity compared with past ones [6 – Prensky 2001]. How do we identify e-Citizens?

Mobile devices 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. Smart phones before and immediately after tablets, two kinds of "non-computer" devices enabled

---

[16] Many years in the ICT time scale of course!

mass access to e-services. "Non-computer", yes; one of the last barriers was the approach to "computers", the inherited idea of complexity and high skills requested in order to use and not damage them; smart phones and tablets [2 - Ronchi 2010] were not perceived as "computers", they are something different, friendlier, more personal. In few words, you don't need to think "*do I need to take it with me?*"; it is like your wallet, you take it!

What to say about tablets? Early prototypes date back to the 1980s and earlier, Sony created Magic Link and Apple sold Newton in the 1990s, Microsoft promoted pen computing and in 2000 announced the Tablet PC. The turning point was, no doubt, the introduction of Apple iPad in 2010 and the creation of the APPs market.

The introduction of mobile devices and the long propaedeutic phase of tablets were in some way foreseen by researchers [5- Weiser 1999]. Thirty years ago, information scientists and computer users witnessed the unprecedented revolution due to personal computing. Visionary researchers like Douglas Engelbart[17] and his "oN-Line System[18]" and the concept of a revolutionary device: the "mouse", Butler Lampson, Charles P. Thacker, Robert W. Taylor and Alan C. Kay licensing in 1973 the Alto[19] computer and its object-oriented interface ten years before Apple Macintosh[20]. In the 1980s Alan Kay developing "Dynabook" introduced the concept of laptop computers[21].

An interesting, although also worrying, forecast for 2005 was published by a Japanese Bank association in 1999. This forecast was adopted by Masao Nakamura, President and CEO of DoCoMo, in 2001, upon the official disclosure of commercial figures for the i-mode market.

He presented an unconventional vision of the near future: that five years on, the vast majority of their customers could be non-humans—machines, computers, or at least animals. Most transactions would be performed directly by computers; for example, our cars would automatically pay highway tolls via telepayment systems or personal transponders that automatically access different resources. Micropayments would be performed by cell-phones which automatically call soda distributors, ladies would talk to their own pets via mini mobile

---

[17] 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.

[18] Developed by Douglas Engelbart and Dustin Lindberg at SRI International.

[19] Xerox Alto had a limited diffusion on the market, in the 1980s Xerox created Star a modified and cheaper follow-up of Alto.

[20] Steve Jobs understood the relevance of that revolutionary approach to computing and activated Lisa and later Macintosh projects.

[21] Both Alto and Dynabook, as many other key innovations, were conceptualised and released at Xerox PARC.

units embedded in their collars, and GPS and microprocessors would be able to activate car ABS and electronic braking systems if there was a risk of a dog being run over while it crossed the road. Part of this prediction is already reality, the injection of "intelligence" and IoT will enable some more achievements[22] in the near future.

Computers start to become intelligent and remind HAL 9000 envisaged in the fiction movie "2001 A Space Odyssey"[23]; the spaceship officer Dr. Dave Bowman used to interact with HAL by voice calling "Hello, HAL. Do you read me, HAL?" – HAL : "Affirmative, Dave. I read you.", Dr. Dave Bowman : "Open the pod bay doors, HAL", HAL : "I'm sorry, Dave. I'm afraid I can't do that" . . . We all know what happened later.

Nowadays we call "Hi Google: Set temperature to 24C", "Hello Mercedes play disco music" or even closer to science fiction Alexa taking full control of our daily life. If we refer back to science fiction this "world of machines" might generate big concerns about the future, I don't refer to "Terminators" but simply remind the movie "WarGames[24]" or "Eagle Eye[25]".

If on the side of "devices" tablets and smart phones were the turning point on the side of applications apart from the big shift from "computer program" to APPs the enablers of digital revolution were "platforms".

Platforms are the real "silver bullet" that created mayor opportunities and real impact on society and economy. Global markets are easily reachable via business (biz) platforms, revolutionary business models are based on platforms, innovative services, crowd [4 – Surowiecki 2004] based initiatives and even innovative financial and trading activities share the same component. Thanks to digital platforms and a lack of legislation a number of market giants have grown up managing incredibly huge assets owning none of them, simply think about RB&B or Uber but the list is almost endless.

The diffusion of platforms if on one side creates new opportunities on the other side "kills" a number of existent businesses. The access to global service platforms create a shortcut between offer and demand cutting out major part of the traditional added value chain, as it was long time ago for malls it is now for platforms. The big difference is that you don't need to invest relevant

---

[22] The Partnership for 21st Century Skills - http://www.p21.org/

[23] "2001: A space Odyssey" (1968), science fiction movie directed by Stanley Kubrick, written by written by Kubrick and Arthur C. Clarke – the name HAL was probably chosen simply using one letter before each of the letters of the acronym IBM – International Business Machines Corporation.

[24] Wargames cold war scientific fiction movie directed by John Badham (1983),

[25] Eagle Eye, action thriller film directed by D. J. Caruso (2008) – both movies depict a letal competition between humans and self improving artificial intelligence machinery.

capitals to feed your business, the key investment is the creation of the digital platform, the asset you own is the number of users both on the offer and demand side.

Following the schema of some of the recent revolutions the idea was: digital technology is disruptive cancelling a number of businesses but new businesses will be created, the key point is that the specific nature of digital technology is actually creating less positions than the one eliminated. The visible effect now is an increasing number of workless people replaced by software and robots. In some fields the transition is carried out adding some digital intelligence to optimize workers activity to evolve later on to fully robotized systems. By unit of product/service it costs less a hamburger of electric energy? Do we agree with this scenario, are we happy to live in symbiosis with "computers"?

The "appification" of society

Social media are one of the milestones recently introduced in the digital domain. Social media is the key of success of the digital domain, the reply to the Win '95 promo "Where do you want to go today?"; the real mass use of digital resources, the one creating "addiction", is the social side. Since the creation of the first blogs opening the opportunity to share opinions and beliefs with a significant number of users, the number of "social" applications have grown very quickly: Blogs ('90), Wikis ('95), Semantic Web ('97), Wikipedia ('01), Picasa ('02), My Space ('03), Facebook ('04), YouTube ('05), Twitter ('06), VKontakte ('05), Instagram ('10), SnapChat (2011), ... Social newspapers (e.g. YouReporter, Bambuser), and more, much more.

If the early stage of Internet communication was based on the so-called "netiquette", a kind of Galateo[26] or Bon Ton of Internet users, the advent of Web X.0 and the social web requires more specific rules addressing first of all 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 does not succeed 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 in some countries. So, it happens that Twitter, Facebook, YouTube or even some thematic web sites are not allowed. Here apart from political, ethical and philosophical issues may come to the fore the

---

[26] 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.

economic and financial aspect of entering that market adhering to the requested censorship or not[27].

Ownership, use, abuse and misuse

November 1990, on the occasion of COMDEX Fall, Bill Gates introduced the vision of "information at your fingertips"; few months later, to stress the concept, he said that the real wealth in the future will be access to information; people will no more ask "how many dollars do you own" but "how much information can you access". In a glimpse, this vision become reality and many years later "information" is still a powerful "transversal" asset: business, trade, policy, security, tourism, health, … rely on information, reliable information.

In a single generation, we witnessed the evolution of information technology from mainframes, exclusive patrimony of space agencies and super-calculus centres, to owning in our pockets a device ten thousand times more powerful, capable of observing and recording video, audio, location, and motion. These devices can communicate with nearly any other digital device from household appliances to cars and IoT. Collectively we have the ability to store, access, and process more data than humanity has created in its entire history. The actual "visual" trend is producing an incredible amount of photo/video documentation of our everyday life; does this mean "goodbye privacy?"[28].

The Internet Revolution gave a boost to data creation and dissemination: MAC addresses, web logs, intentional or unintentional sensitive data capture due both to applications and services; social platforms ignited the sedimentation of personal and many times sensitive information apparently lost in the cyberspace. Very soon the first drawbacks come on stage: privacy infringements, stalking, hacking, cyber-crimes, stolen identities, dark net and more.

However, Google, Facebook, Apple, Microsoft, Amazon, and any of the other hundreds of companies that can and do collect data about you can use "your" data for all kinds of amazing things[29]. In the "Appification" era there are almost no limits to data collection and reuse;

---

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

[28] Google - Privacy & Terms, https://www.google.com/intl/en/policies/privacy/

[29] This is not only a clear reference to Cambridge Analitica and abused information.

"someone" knows exactly where you are now and where you have been, APPs may collect your medical data, fitness program, your expenses or collect and analyse your contacts, your photos or video clips. Social and communication media complete the panorama adding a "private depth" to the general fresco. In recent times crowd data collection, open data and big data, more or less anonymised, have provided the big framework.

Following the same *fil rouge* on the borderline between licit and illicit activities, simply consider a typical example, an unseen observer that follows you and take notes about all the different places you visit and the time of your visits; he does nothing with this information, simply stores it in his notebook, he is unseen and you will never face him and discover his activity; basically in doing so he didn't break any law. His behaviour is unconventional but still legal. If you act in public spaces or visible by public there are no laws that state that you are the sole proprietor and owner of the information regarding your public life; the collection of this information doesn't violate any right. If we look in law, the closest legal offence in such a situation is stalking even if this offence usually is directly connected with harassment; but the unseen observer does not ever interfere with you so no harassment, no stalking even because the unseen observer is your smartphone and it can't be convicted of stalking you. This is what happens when some "autonomous" on-line applications start showing you your yesterday's paths across the city showing some geo-referenced pictures you shot asking for the reason you went there and what you did in the 15 minutes you spent stopping on the way to your destination. Of course, the system recognises your friends in the pictures and next time probably will ask you why you met them.

Anyway, on the reverse there is a real risk of abuse, misuse and misinformation thanks to these technologies. The movie "Citizen Kane[30]" directed and interpreted by Orson Welles in 1941 outlined the relevant "power" of journalism[31], the movie "Network[32]" directed by Sydney Lumet outlined the power of television in 1996 and perhaps "The Net[33]" and "S.Y.N.A.P.S.E.[34]" together with "The Social Network[35]" started to outline the power of the Internet.

---

[30] Citizen Kane directed by Orson Welles, 1941 RKO Pictures.

[31] The Italian title of the movie was "The forth power" in analogy with the third "The workers" depicted in the extraordinary painting by Pellizza da Volpedo.

[32] Network, directed by Sydney Lumet, 1976 Metro-Goldwyn-Mayer United Artists.

[33] "The Net", directed by Irwin Winkler (Columbia Pictures Industries Inc. - 1995).

[34] S.Y.N.A.P.S.E. (Antitrust), directed by Peter Howitt (Metro Goldwjn Mayer - 2001).

[35] The Social Network directed by David Fincher (Columbia Pictures 2010).

Computer biometrics is nowadays very advanced; so, starting from the Apple tools to recognize people appearing in your pictures once you gave the system two or three samples, a group of Russian developers released in recent times a powerful application, FindFace, that performs in real time the face recognition even of multiple persons and connects them to their V-Kontakte page, the Russian version of FaceBook. This enables users to take a picture with the smart phone on the street on in a disco and immediately discover the identity of the subjects[36]. Is this a potential infringement of privacy? Is this a powerful tool for stalkers? Technological evolution does not have limits; it is already available for the professional market, e.g. law enforcement, a full version of FindFace offering far better performances without the limitation to V-Kontakte subscribers.

News and Media are key elements in the global society. CNN, BBC, Al Jazeera[37], Al Arabiya[38] are writing the history of the planet 24x7 and on the grassroots side YouReporter[39] and Tweeter are complementing this effort. The risk of misuse of such technologies and misinformation is probably higher than in the past. So, it might happen that we will watch an updated version of the movie "Wag the Dog[40]" in the near future.

In June 1993 The New Yorker published a cartoon by Peter Steiner. The cartoon features two dogs: one sitting on a chair in front of a computer, speaking the caption to a second dog sitting on the floor "On the Internet, nobody knows you're a dog". Right or wrong, that's one of the features of the Internet. That's the story of the Syrian "lady" blogging in 2011, the starting point for the "dark power" of the Internet, the realm of hackers and cheaters. The key point is: what is written or anyway appears on the Internet is news by itself. There is no more time to check everything; the Internet provides real-time news. The evolution of on line news due to the social web and the birth of "prosumers" did the rest. Twitter, YouTube, Facebook and blogs represent a real revolution in the domain of news. People use to believe much more on news and information found on social media then on traditional media.

As already stated, the Internet is much more a counter-power than a power; the common idea about the Internet is the network as a powerful tool of freedom and democracy. This is probably true but the opposite is even true, the misuse of the network and misinformation disseminated and

---

[36] If they joined V-Kontakte

[37] www.aljazeera.com/ , last access February 2018.

[38] www.alarabiya.net , last access February 2018.

[39] A recent event in the field of newspapers is the birth of The Huffington Post, inventing a completely new approach to newspapers.

[40] Wag the Dog (1997), Dustin Hoffman, Robert De Niro and Anne Heche, directed by Barry Levinson.

empowered by the Internet and its powerful mechanism. As a side effect we obtain even the creation of a new community the "haters".

Cyber IDs allow multiple IDs and potentially Dr Jekyll and Mr Hyde. We are flooded[41] by user-generated content (UGC) largely without any qualification and certification of the source. Many times, the drawback attributed to the amanuenses is affecting even web publishers: information and content is re-used and re-published adding or replicating errors and bugs. The short content production chain, sometimes even limited to a one-stop shop, does not include an editor in chief or a supervisor; so far, the overall quality of prosumer content and information is quite low.

As an IBM top manager told some years ago on the occasion of the Global Forum: "*Do not trust in any information coming from unknown source.*"

As it might be already evident the "appification" of society has, as usual, both positive and negative aspects, we will outline the main drawbacks and potential abuse and misuse of information means. How many of you carefully read the informed consensus document before clicking on "I agree" during the download and installation phase of a new APP? Due to the spread of online applications and the need to process and file personal information such as names, addresses, telephone numbers and email addresses, national authorities all over the world have started, long time ago in the cyber time scale, to look for potential infringements of privacy by hackers. Indeed, there have even been some international-level infringements; for example, the customer database belonging to a very well-known underwear brand was cracked and personal information about various celebrities was made public.

The massive use of contactless devices and even more the large diffusion of social media, IoT and CCTV enhanced these concerns. With specific reference to e-Government a hot topic is for sure the release of "open data" sets and the analysis of "big data".

Even if at the end the effect is similar we can subdivide in two main branches privacy breaches: "voluntary" and "third parties".

The first group refers consciously or unconsciously to risky behaviours such as providing personal information to register for a service or authorizing the access to personal data in order to install an APP, and more. The latter refers mainly to hacking or the publication of non-sufficiently

---

[41] Roger E. Bohn, James E. Short (2009), How Much Information? 2009, Global Information Industry Center University of California, San Diego.

anonymised data sets by institutions and authorities. It may happen that in cross-referencing different open data sets some "identity" of the data holders is unintentionally disclosed.

In case of "voluntary" disclosure the recommendation is to carefully control the dissemination of your personal information and provide it only to trustable organisations protecting the access to their on-line resources with secure credentials. Do not share your mobile phone or smart phone personal information, including access to your location and photo camera, if it is not strictly necessary to obtain the requested service always from a trustable entity[42]. We are already aware about the use of our personal information by credit card companies to promote aimed marketing, misuse of our personal information re-sold in packages from business company to business company, the abuse of our personal information collected by APPs as a side effect, our medical data, our travels and interests, our paths and habits and more.

Of course, in such a case the role of public authorities, apart from regulate, is to advise citizens and provide proper information about the correct behaviour in the cyber space to avoid troubles. Starting from at least the "connected" government level there is no need to ask for personal information once the citizen is already registered on the platform; this releases the citizen from the tedious task of inputting many times the same information and provides a much more secure protection to personal information, stored one time and protected by secure credentials instead provided multiple times to a number of clones spread on different platforms protected by different often weak credentials.

The second potential breach in privacy is much more care of public administration; in addition, the diffusion of the one-time password (OTP) access application on mobile phones overcharges our phone of critical duties. If we lose our phone, if it will be stolen or even the session will be hijacked we will suffer a real nightmare, like the ones depicted in many Hollywood movies.

Rules and obligations may differ from country to country and from continent to continent, but the importance of keeping personal information[43] private is always recognised and protected. It is mandatory to ask for explicit[44] approval every time personal information is stored in any format, "… *consent as defined and further specified in Directive 95/46/EC. Consent may be given by any*

---

[42] How do we identify a trustable entity, does it exist ?

[43] Directive 2002/58/EE of the European Parliament and of the Council of 12 July 2002 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0058:20091219:EN:HTML , last access December 2017.

[44] Informed consent to store and use for specific clearly stated uses the requested information.

appropriate method enabling a freely given specific and informed indication of the user's wishes, including by ticking a box when visiting an Internet website[45]". It is also mandatory to ask for explicit approval when the data is updated, communicated or transferred to a different organisation. In addition, an agent responsible for the personal information must be nominated and referenced by the organisation. In contrast, owners are responsible for managing the personal information stored in their PDAs and mobile phones. Recently the European Union issued the GDPR[46] directive, a more specific and up to date regulation directly related to the state of the art of potential risks of infringement of privacy including aspects related to extra European activities.

1984 won't be like "1984" ?

As sometimes happens after revolutions, revolutionaries wonder if what they have got is actually what they were hoping for. The original idea of computer scientists in the "hippies" counterculture era was aimed to empower citizens and provide them much more freedom. The perspective in the early phase of ICT was probably to be "here & there", immersed in the core of the business while lying on a hammock hanging between two palm trees on a Caribbean island, having much more quality time thanks to technologies. An Apple advertisement on the occasion of the launch of Macintosh in 1983 recalled George Orwell's[47] most famous novel, stating *<<On January 24th Apple Computer will introduce Macintosh. And you will see why 1984 won't be like "1984">>*.

Almost forty years later, after the chimera of the "happy cyber-world", some of us have started thinking that the foreseen "1984" has simply come true ten, fifteen years later: globalisation, always on devices, position tracking systems, CRMs and users' profiles, CCTVs and IoT; are those technologies framing citizens?

Thoughts for some time have circled around how the speed of the new information revolution renders us less capable develop a critical approach able to foresee the social, ethic, economic impact of such revolution in a long-term perspective. So, in recent times we started facing a wave of criticism about the evolutionary path of the information and knowledge society, for quite a

---

[45] Directive 2002/58/EE of the European Parliament and of the Council of 12 July 2002 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0058:20091219:EN:HTML , last access December 2017.

[46] REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)

[47] George Orwell, Eric Arthur Blair's pen name, English novelist, essayist, journalist, and critic. Most well-known novels: Animal Farm (1945), Nineteen Eighty-Four (1949).

long time ICT gurus and humanists didn't interact too much, the true power of cyber technology was largely unexpressed, there were some alerts as Artificial Intelligence, Virtual Reality, Robots often seen from humanists as potential danger for the mankind, but nothing concrete happened. The turning point was probably, as already mentioned, the exploitation of the Internet and the dissemination of information. Information is built on top of single or aggregation of data, for quite a long-time people use to think that cyberspace is a "black hole" without memory where you pour data without any side effect. Young generations shared on line sensitive information in order to access a videogame or chat with friends and more recently posted images and clips about their private life[48]; does this mean that privacy evaporated? As a consequence of a lack of "culture" in the use of emerging technologies now we have to deal with serious problems related to information ownership, use, abuse and misuse, not mentioning cybercrimes. An additional drawback is due to the deep technological intrusion affecting our daily life, we feel framed by cyber devices more than supported.

Some evident outcomes of this feeling are the "right to disconnect[49]" - controversial reform of French labour law by the labour minister Myriam El Khomri back in May 2016 and the "right to obsolescence" or the "right to be forgotten" due to Viktor Mayer-Schönberger, the author of "Delete: The Virtue of Forgetting in the Digital Age" [7 - Mayer-Schönberger 2009]. All these to do not mention the cultural, social and economic impacts not always positive especially in a long-term perspective.

Technologies originally conceived by idealists to provide much more freedom and wellness to humans took then a wrong path framing humans due to all the constraints placed upon us with new technologies. For instance, as liberating as they are - by providing flexibility and instant connectivity - we have become enslaved to our devices, fearful of losing out information and access in an increasingly competitive and fast-paced world. Consequently, our bodies have suffered, as have our minds (due to information overload), what of our work-life balance -- and this is just to begin with! Ranjit Makkuni's paper "Betrayed IT Revolution" [WSIS Forum 2018] outlines a vision for new design of devices, clutter-free access to web documents to create deeper

---

[48] My data belongs to me, http://wsa-mobile.org/news/my-data-belongs-me-wsa-roundtable-discussion-personal-data-virtualisation-society-wsis10-review

[49] loi n° 2016-1088 du 8 août 2016 relative au travail, à la modernisation du dialogue social et à la sécurisation des parcours professionnels https://www.theguardian.com/money/2016/dec/31/french-workers-win-legal-right-to-avoid-checking-work-email-out-of-hours

learning experiences. At the implication level, the project rethinks implications for new design of web mark-up languages that support the creating of 'privacy' based secure browsing.

As a follow-up of the active discussion raised by the "IT betrayed revolution" panellists and some distinguished participants decided to activate a working group to further discuss about this relevant topic identifying the WSIS as the perfect framework to approach the human wellness centred development of the information society. The seeds for such a debate were already present since the 2003 Geneva phase of the WSIS, at that time Ethics and Info-Ethics have been a key discussion topic.

References

[1.] Babel Chris, Tackling Privacy Concerns Is Key to Expanding the Internet of Things, Wired Innovation Insights, Feb 2015

[2.] Ronchi Alfredo M., The fourth screen, proceedings Global Forum 2010

[3.] Bohn Roger E., Short James E. (2009), How Much Information? 2009, Global Information Industry Center University of California, San Diego

[4.] Surowiecki James (2004), The Wisdom of Crowds: Why the Many Are Smarter than the Few, ISBN 978-0-385-50386-0, Doubleday; Anchor

[5.] Weiser Mark D. (1999), The Computer for the 21st Century, Scientific American Ubicomp Paper after Sci Am editing, 09-91SCI AMER WEISER,Ä®

[6.] Prensky Marc,(2001), Digital Natives, Digital Immigrants, Part II: Do They Really Think Differently?, On the Horizon (NCB University Press, Vo 6, December 2001)

[7.] Mayer-Schönberger Viktor, Delete: The Virtue of Forgetting in the Digital Age, ISBN-13: 978-0691138619, Princeton University Press 2009