

# Rock the Internet Blues!

## A critical view of the evolution of the Internet from civil society

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*This article is dedicated to the members of the virtual community MISTICA, which disappeared from cyberspace in 2007, and to Michael Gurstein who dedicated his life to empowering citizens in community networks and with whom we shared parts of that reflection in the corridors of a meeting shortly before of his physical disappearance in October 2017.*

### ABSTRACT:

Starting from an analysis of the differences between virtual communities and social networks, a critical description is developed of how the Internet has evolved in the last 20 years towards a situation marked by the end of dialogue and the obsessive promotion of visions centered on egocentric interests. The historical singularity from which this situation was triggered is identified in Google's decision, in the early 2000s, to make advertising the focus of its business strategy and how it transformed, with the help of others **Technology Giants (TG)**, users in user-products and then agents of their own marketing, with the use of their *egomation*. The paper investigates the role played by civil society specialized in **global information society** issues, where it has presented little resistance to the changes that have arisen along the way. In addition to representing a divorce with the shared initial utopias, this evolution is a threat with important repercussions in the non-virtual world, including the weakening of the democratic foundations of our societies. After showing some dystopian perspectives, some concrete guidelines are proposed to change course, highlighting the most important measure: that of declaring a **digital emergency** that contemplates massive education programs to insert citizens in the ethical challenges, the potentialities and risks of the global knowledge society and especially in what **information literacy** means.

**Keywords:** Internet, virtual community, social network, technological giants, digital emergency, information literacy, global knowledge society, information ethics, multi-stakeholder, *egomation*

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## Introduction

One of the most powerful and interesting virtual objects that emerged in the early history of the Internet is the virtual community. A place<sup>1</sup> where a group of people who share a common interest or a specific topic exchange messages, usually in an environment of mutual respect. There are consensual rules that must be accepted by any person who aspires to join, and where anonymity is generally not allowed<sup>2</sup>. Some communities, also called learning communities, are fertile ground for the collective creation of knowledge. The cognitive enrichment of participants is fostered through intense dialogues, sustained upon arguments and cross-thinking.

One of the questions that motivates this article is how these especially creative spaces could evolve towards the insane and incoherent operation that we can observe in the current Net. We are facing a digital environment, based on the Internet, which includes the so-called social networks (SN) and the set of applications that configure a context with characteristics opposite to that which was once promoted. Broadly speaking, it can be recognized that, along with unquestionable benefits that it has as a tool, it is often a place for mutual disrespect, for the dissemination of false or biased information, without clear rules for the behavior of its inhabitants and, therefore, is a breeding ground for hatred and racism.

The authors were creators and animators of one of those spaces<sup>3</sup> where some 500 people gathered, mainly activists and academics, all motivated by the issue of the social impact of the Internet in Latin America and the Caribbean. It functioned, in the period 2000-2007, as a forum for reflection and collective construction of knowledge. At the same time, it served as a field for advanced experimentations on the very concept of virtual or learning communities..

This group was very active and had influence beyond the Latin American region during the World Summit on the Information Society process<sup>4</sup> (WSIS). From one of their meetings, the expression “*shared knowledge societies*” emerged, which the group considered more appropriate than “information society”, for two reasons. One was to highlight the importance of communication (sharing) and the other was to emphasize the plurality of possible options, referring to it in the plural. Today, the *Internet blues* that invades us (see [5]) could lead us to degrade the current situation as a “*shred knowledge society*”. In part this document could be a reaction, sometimes angry and deliberately exaggerated, to the pain of seeing the times gone when it was felt to be shared in these intense, productive and enriching dialogues in many aspects, professional and personal, emotional and rational. There are still wonderful realities and elements to be optimistic but it is necessary to face the dark side of the evolution of the Internet. The drift that has been taken is not the only possible option and we must avoid that the *synergy* proper to the original network now leaves all space for *antagonism*. A massive, articulated and urgent educational effort is proposed in relation to information,

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<sup>1</sup> Often supported by a simple discussion list, that is an email address that mails to subscribed addresses.

<sup>2</sup> Quite the contrary, subscribers are often invited to present themselves to the group.

<sup>3</sup> MISTICA (Methodology and Social Impact of Information and Communication Technologies in Latin America and the Caribbean) whose website remains largely preserved despite the fact that the project and the institution that supported it ceased operations: <http://funredes.org/mistica>. See [1].

<sup>4</sup> <https://itu.int/wsisis>

communication, knowledge and ethics. **Information literacy**<sup>5</sup> is an international emergency to empower users, developers and entrepreneurs who live in the digital environment. We recognize that users are the main actors who, with their behavior, must reverse the debacle that is in full swing.

## The end of dialogue

If one observes the dominant behaviors in the network, one detects what could be called the **end of dialogue** and the propensity to transform the act of communicating into one of just informing. In other words, the basic sense of "communication", as a dialogue exchange between people, has been transforming into broadcasting, an act of communicating one-way, one to many. The situation has reached such a point that each user behaves today predominantly as a "diffuser", in the sense of designing and carrying out one's own projection on the network. Thus, the original dialogue proposal tends to be set aside to favor a distribution of information that responds solely to the issuer's own interests. The extraordinary factor of *serendipity* that characterized the Internet is being replaced by some kind of highly redundant and elliptical circulation of information in a loop. Today the sequences of exchanges between people (threads) that are authentic dialogues are not frequent; they have been reduced to their minimum expression with the "*likes*" typical of the SN and to their maximum expression with a comment, which rarely will provoke a thread of responses or in statements. Statements are nothing more than the dissemination of definitive opinions which do not appeal to dialogue and cut off a potential collaborative process of building new knowledge. Finally, these platforms are increasingly being abandoned as a place to elucidate differences or to build consensus.

Dialogue has been replaced by what we are going to name with a neologism: *egomation*<sup>6</sup>. *Egomation* includes information that can be described as trivial and without charge of general interest, except, as we will see later, for those who want to market some products (examples: my current state of mind, what I am eating, where I am, and other *selfies*) and an articulated projection of the person, his virtual self. It can include statements based on issues relevant to the interests of that self and beliefs on any topic and whatever opinion on whatever subject.

It is noteworthy that the *egomation* processed by the **Technological Giants** (TG) with business motivation includes a series of elements that the user does not explicitly express, such as the content of their communications (for example: chats and emails), the sites they browse and the terms they submit to search engines. The purpose of this article is not the detailed analysis of what *egomation* includes, although there is strong suspicion that this analysis has been conducted in the research laboratories of the TG to better adapt the offer of advertising with the potential demand of users.

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<sup>5</sup>Reference [4] provides a commented definition of information literacy within its context (digital divide and the information society). It would be necessary to complement this concept with two elements that seem more necessary every day: the need to provide, from basic education, at all levels and also towards citizens in general, a minimum of cognitive tools for managing complexity and statistics.

<sup>6</sup>This new word does not pretend to have an etymological meaning, it was only formed that way due to its phonetic resemblance to information (something similar to the word "telematics" that suffered the same defect in its time). In a more etymological sense, it should merge the root "info" with the narcissistic condition of the dominant sense of circulating information on digital platforms. The drawback in this sense is that the phonemes have less charm for controversy.

The *egomation* is then a kind of predominance of the self together with information related to what is directly or indirectly relevant to that self. And, not surprisingly, each person seems to be much more interested in designing his *egomation* than in knowing that of others. These conditions are not very conducive to dialogue. The "*cogito ergo sum*" was reinterpreted in the virtual world in "*egogito ergo sum*" where "*egogitare*" would be another Latin neologism to "*design my egomation*" and its new meaning is then "*I design my egomation in the SN so I exist*".

The sum of *egomations* is a noise in terms of knowledge, a noise that TG learned to use for their benefits. And it is still a noise for society, no matter how loud it is and in blatant contrast to the amount of valuable information that the digital environment of the global knowledge society has managed to gather. That background human noise has always existed, but before the arrival of the mass media, that noise stayed close to its source, be it home, the pub or a telephone conversation with its ephemeral existence. In the global knowledge society, digital platforms magnify this noise, which has unavoidable social repercussions and could have as additional implication that the total *neguentropy*<sup>7</sup> of the Internet has initiated its slope down due to the growing entropy caused by that noise.

## The way we get here

How was the dialogue lost along the way? Why does the common mortal now behave as a marketing agent for himself? What makes a person believe to have the duty and the right to have an opinion, as an "expert", about all the human and the divine subjects and, unfortunately, too many times without having enough arguments on the subject matter which is addressed? How did dialogue transform into recursive and dichotomized exchange of *egomation*?

We have a fairly simple explanatory theory, perhaps too simple, for a first approximation to a phenomenon as complex as this one. We do believe that there is a singularity (original sin to put it another way) that triggered a series of events which pave the way that has led us there. It is the decision of the first of the hyper-powerful actors that emerged, Google, and that was followed by the others, creating a powerful and apparently irreversible pattern in the virtual business. This decision created the conditions for the TG to concentrate the ability to transform users into products and thus have made the business profitable. At the same time, they have managed to ensure that the same users assume massively and fully the product role that was assigned to them. The consummate expression of this fact is that they have become marketing agents of themselves without realizing that (through their *egomation*) they are the profitable product that benefits others.

What was that decision? In what context did it occur?

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<sup>7</sup> The *neguentropy*, the opposite of entropy, was introduced by Léon Brillouin, in "Science and Information Theory", 1959. He extended the work of Claude Shannon ("A mathematical theory of communication", 1948) for the physical definition of information and served as a starting concept for various following thinkers in their contributions to system and complexity theories.

The Internet was built in the 1980s within the world of academia and libertarian civil society groups<sup>8</sup>. Their DNA was to share, free of charge, openly and inclusively, the foundations of their creation and following developments from these principles and values. These traits, which condition the Net evolution in sociological terms, unleashed the multiple and attractive utopias that accompanied it in the early stages, while at the same time represented a barrier for profitable businesses, even when dealing with valuable initiatives. A notable example in this regard was the AltaVista search engine that did the job effectively<sup>9</sup>, without violating the privacy of users, and was dethroned by the young company Google between 2000 and 2003.

Fighting a culture based on gratuitousness, so anchored in the depths of the community of developers and initial users, was an impossible challenge and could only be overcome by the influence of an actor of a maximum power who managed to break another deep cultural foundation of academic and civil society heritage: not mixing advertising with inter-human professional relationships. In this context, to promote oneself it is common practice to demonstrate competencies by giving away to the community some added value, for instance, creating a free access sample of the offered services<sup>10</sup>.

At the beginning Google had two options:

- 1) Break the free status and propose services at a fair price.
- 2) Continue with the free culture and find another indirect way to generate its incomes.

Option (1) had a need for financial schemes capable of easily invoicing cents or fractions of cents. The system had the ability to do it. Either every search or every email sent could have been billed at those magnitudes. The benefits of option (1) would have been significant:

- The price parameters could have been adjusted so that the services generate the same income, without making it a critical amount for users<sup>11</sup>;

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<sup>8</sup>The official discourse confuses the history of Arpanet (and the Internet communication protocol, TCP-IP) with that of the Internet, and this obscures a much more complex reality that should not be interpreted with the sole prism of technology. The cultural and sociological foundations of the Net have little to do with Arpanet and its paternity is more clearly located in academic networks like Bitnet and libertarian networks like Usenet. The fact that there was finally technological convergence towards TCP-IP should not confuse the network of networks with the technical protocol that animates it. That confusion between Internet (the protocol) and the Internet (the network of networks) was abusively decreed by the Internet Society a few years ago. The fact that technologists continue to have the most control over the Net is questionable. In a way, that group has become an unusual gatekeeper (would you accept that the architect of your house tells you how to cook your lunch or paint your bedroom or that the builder of your car decides where you should go on vacation? ) and is one of the underlying symptoms of the drifts that we live. Information professionals (librarians, documentalists, and the like) should have more influence than technologists in a network where the upper layer (content and applications) ends up being more important than the lower layers of transport. For example, it would make perfect sense for IFLA (International Federation of Library Associations) to have more teeth in network stakes than ISOC, but this is not the case, and while that time comes, the fight to avoid unwanted drifts will be complicated.

<sup>9</sup> A search would keep absolute criteria of objectivity and scientific rigor and be independent of egomation.

<sup>10</sup> The wonderful Argus Clearinghouse site, now disappeared for having no sustainable solution and whose memory has been preserved by another extraordinary site, archive.org, is the best testimony to the immense human capital that culture managed to organize:

<https://web.archive.org/web/20051029102009/http://www.clearinghouse.net/>

<sup>11</sup> Something like paying a moderate fee for every 100 searches or for 100 emails sent.

- It would have meant the final end of spam in email, a toxic parasite generated by gratuitousness;
- It would have represented a solid basis for an *information ecology*<sup>12</sup>;
- It would have provided a solid foundation for an *information economy* and greater coherence for the long term<sup>13</sup> ;
- It would have kept intact other key elements of the original Internet culture that have to do with privacy policies and protection against improper and unwanted advertising.

Google selected option (2) and found no resistance from civil society. A terrible historical mistake was made in not understanding that the time had come to break one of the original principles so to allow adapting the Internet in order to make profitable investing to deploy new services. With that decision, Google opened the virtual world to the huge advertising market that eventually it will dominate<sup>14</sup>.

Thus, the users and their profiles were transformed, together with the *egomation* that they could directly or indirectly generate, into juicy products. The popular expression “*There is no free lunch!*” ended up hitting us in our virtual flesh: our data no longer belonged to us, Google had seized them and was doing excellent business with them. In doing so it was going to give rise to other powerful players to get in action, expanding and extending the same logic, mainly and not only Facebook.

The destiny was drawn:

- Google was going to keep the search history of each user and thus know more about each of them than their psychologist.
- Progressively, with an undeniable technical and prospective talent, the company proposed very effective free applications that were massively adopted and that allowed to complement the capture of egomation in all directions: the content of emails (1.5 billion active Gmail users in 2019<sup>15</sup>), visited sites (80% of websites use Google Analytics to collect traffic data<sup>16</sup>), registered images and videos, all complemented by the spatial positioning (via GPS) of cell phone users who use the Android operating system (88% of them<sup>17</sup>).

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<sup>12</sup>The unregulated use of Internet resources led to unbridled electricity consumption (mainly in the GT data centers), which in 2007 represented an impact on global warming comparable to that of air transport (see [2]) and today could probably be well above. Pricing could have played a natural regulatory role by reducing unethical traffic. On the other hand, a suitably structured tariff scheme could have avoided the acute financing crisis suffered by the traditional information media in the current situation where GoogleNews uses them without mercy and without cost.

<sup>13</sup> Negentropy highlights the physical nature of the information concept (as negative entropy). The theory provides an equation which allows, in practical cases, its weighting (in bits) using the probability of occurrence of the states characterizing the information:

$$N = \sum_{i=1}^n P_i \log_2(P_i) \quad \text{where } P_i \text{ is the probability of occurrence of event } i.$$

<sup>14</sup> A market of 560 billion US \$ (2019) of which more than 50% is on the Internet and of which Google has 33% (<https://www.statista.com/topics/990/global-advertising-market/> and <https://www.statista.com/statistics/193530/market-share-of-net-us-online-ad-revenues-of-google-since-2009/>)

<sup>15</sup> [https://en.wikipedia.org/wiki/Gmail#cite\\_note-Petrova-1](https://en.wikipedia.org/wiki/Gmail#cite_note-Petrova-1)

<sup>16</sup> [https://en.wikipedia.org/wiki/Google\\_Analytics](https://en.wikipedia.org/wiki/Google_Analytics)

<sup>17</sup> <https://www.statista.com/statistics/266136/global-market-share-held-by-smartphone-operating-systems/>

Somebody found advertisements about the car of his dreams came to his email right after he emailed about his intention to change car to a close friend; an amazing coincidence he thought. This naive user was not understanding that his virtual representation was being raped<sup>18</sup>!

So, we arrived, very discreetly and two decades later, at the moment where the Internet dog that said in 1993 "*On the Internet nobody knows that I am a dog!*"<sup>19</sup> is no longer anonymous. Not only does Google know that it is a dog, but it also knows its breed, what it likes to eat, its taste for bitches, what disease it possibly suffers from, when it will go to the groomer or buy a bone. Google reports this information, in some way and certainly not free, to companies that want to sell some bone to this dog.

Following a behavior consistent with its founding principles, Google proposed that content providers leave a space on their websites for dynamically placed advertising, selected according to its audience. Depending on the traffic, the producers will receive a remuneration that could reach significant figures. The motivation is twofold: enter the business and make the number of visitors as high as possible. Many actors in the digital world, including from civil society, entered that dance and were properly educated to join the trend that increases the number of visits as their most important goal and became intermediaries for digital marketing and advertising agents.

With the progress of this dynamic, users were nurturing the immense databases that TG have built on people and their personal profiles. These companies, treating this *egomation* with tools associated with Artificial Intelligence (AI), big data, data science and other technological developments, have been able to consolidate a business scheme based on the ability to predict the behavior of individuals and groups. The establishment of **surveillance capitalism** marked the period. We will expand on this point later.

Something that marked the beginnings of Google was the adoption of a contribution that would later be used to shape its business logic. Academia measures the prestige of researchers with the number of times that others cite their publications; That indicator is more meaningful than the number of publications. Google enhanced the algorithm introducing recursive valuation of the references: it is more significant to be referenced by a person who is in turn highly referenced than by someone less mentioned.

With that algorithm the sorting of the search results became highly meaningful and represents an important milestone in the history of the Internet. However, when its business model was institutionalized, this work initially conceived with the mindset of open access to knowledge was ruthlessly perverted. The direct distortion occurred by placing in top search results from paying sites. Indirectly, the algorithm evolved by presenting first the sites that generate the greatest advertising prospects. To manage that the algorithm incorporates additional parameters such as the user history of searches. A capsule is created that more accurately describes the market segment to which the user belongs and contributes to keeping the user closed in a bubble, despite the immensity of valuable content available. Thus, an authentic crime against virtual humanity was perpetrated. It only remained to lead the user-products to believe that it is not worth

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<sup>18</sup> Imagine what would happen if the Post Office opens and reads our letters. Why then do we accept it from the email provider?

<sup>19</sup> [https://en.wikipedia.org/wiki/On\\_the\\_Internet,\\_nobody\\_knows\\_you%27re\\_a\\_dog](https://en.wikipedia.org/wiki/On_the_Internet,_nobody_knows_you%27re_a_dog)



going beyond the first screen of search results to obtain the perfect crime. This tendency to enclose the user in an increasingly narrow niche of information (which is found in most massive applications) leads to the fact that, despite the growth of the Web, the average user has reduced its effective reach; this is a paradoxical negation of the very essence of the Web, universalism, and isolates the user inside certainties instead of confronting diversity.

Incidentally, the providing of the number of occurrences of results for a search term, which was an objective and reliable data which allowed valuable works on the Web<sup>20</sup>, became a mockery.

Now the most important thing is not anymore to present quality content but to reach the largest number of visitors, achieving the highest level of virtual fame, no matter the excellence of the proposal or under what criteria the visit originated. That evolution shaped the *opinion society*.

## The opinion society and "social contamination" via the Internet

As the number of visits and "likes" became the absolute criterion of "virtual success", everybody publishes opinion on everything and the opinion that generates more commotion has a superior presence, above that of competent persons on the subject. As Umberto Eco observed with humor and lucidity in 2015<sup>21</sup>:

*The Social Networks allow a number of idiots the right to express what they used to say inside a pub, a glass in hand, without disturbing many people, however, now they have as much right as a Nobel Prize. It is the invasion of the idiots.*

Unfortunately, it was not only the invasion of what Eco calls idiots (*imbecilli* in Italian), but also of those who disseminate as many conspiracy theories as necessary to support and motivate racist and hate speeches which would not resist to reason. While Google already knows that dog perfectly, the paradox is that other more rabid dogs can display their teeth and their slime, feeling protected by an apparent anonymity. The number of dogs that invaded and contaminated digital communication platforms with their rabies is such that the marginal cost to overcome to bring them to justice is apparently out of reach of police and judicial systems not prepared for that.

The tools certainly do not condition the uses and, in fact, nothing prevents a WhatsApp or Facebook group from supporting a quality virtual community; there certainly are, with valuable contributions. However, a trend of behavior induced by information illiteracy and technical laziness contribute to consolidate a situation where the common users are behaving as products. This means dedicating themselves in the digital world, mainly, to self-promote and self-market, a way to self-indulge in frank coherence with the economic model that manipulated them. The global knowledge society evolves into the *egomation society*, sister of the *opinion society* of mother of the *disinformation society*, the one where fake news prevails.

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<sup>20</sup> See for example the first works we carried out to measure the space of languages on the Internet in <http://funredes.org/lc>

<sup>21</sup> <https://www.lastampa.it/cultura/2015/06/11/news/umberto-eco-con-i-social-parola-a-legioni-di-imbecilli-1.35250428>

And it is not about questioning the approach of the business model only because of the deterioration in the quality of the services it generates or because of suspicion of the enormous financial benefits obtained using the *egomation* of users-products without their explicit consent. An increasing number of people take the behaviors observed in the virtual sphere as an unquestionable norm and use them as a guideline to shape their behaviors in the real world. Somehow the virtual world has polluting effects on the non-virtual world.

To take an example from those times of the Covid-19 pandemic, it has gone to the extreme of broadcasting *beliefs* (unproven approaches) as if they were scientific *truths* (supported by rigorously and verifiable arguments). Thus, with a survey, involving people who do not understand medicine or biomedical research, they "demonstrate" in France that such medicine is suitable to combat the disease. The promoter of the treatment fostered a deep *egolatry* towards him in the SN as he appeared to offer a universal remedy to a population in dire need. When questioned by a journalist about his perception of the prudent medical recommendation by the Minister of Health, he answers that you only have to measure our respective popularity with a poll to find out who had the medical reason. This media famous scientific no longer uses the references of his peers to weigh the quality of his scientific production, but rather the number of hits he has on YouTube and the "likes" he accumulates on Facebook. The physician becomes influencer and guru only through the grace and work of his positioning in the SN.

The fate of the Internet in the western world is determined by Google (with the entire conglomerate under the mantle of Alphabet) along with initiatives owned by companies such as Facebook, Amazon, Apple and Microsoft<sup>22</sup>. Together they constitute that framework that makes the TG the actors that shape the evolution of the global knowledge society, above the actions of heads of states and governments. Under the control of the respective non democratic governments of China and Russia there are similar companies that act as a counterweight to their power. In them, governments reserve relevant weight in decisions because their operation openly becomes part of the official infrastructure for political control, as well as engines of economic activity.

As dialogue ends, democracies become more tense and fragile. The acceptance that in a representative democracy system the majority decides who will exercise power on behalf of the people (while respecting minorities) is cracking and active minorities ignore the mandate by vote and claim, in the name of a participatory democracy, certainly longed for but still poorly defined, to seize power relying on polls and successes in the SN.

Another symptom of this new trend in which what happens on the Internet is displaced as a norm for behavior in the real world is the confused belief that **freedom of expression** has priority over all laws because if on the Internet I can defame, insult and threaten death without taking the risk that the corresponding laws apply to me so I can physically approach the person I am assaulting and, in the name of freedom of expression, insult and threaten them at their home.

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<sup>22</sup> Often referred to as GAFAM.

Democracy has lost a lot on this path and there is still a way to go. If we don't react now, fate may be even worse. Along this path, the extraordinary potential for the generation of knowledge using digital platforms would end up being pitifully wasted and reduced to the limited possibilities of the archaic BBS (Bulletin Board Systems).

## The role of civil society

Civil society concerned by the issues surrounding information and communication technologies (ICT) played a key role at the beginning and throughout the WSIS process. At that time, it clearly and objectively influenced the setting of the agendas for international organizations and, indirectly, for many governments. Simultaneously, in the kitchens of Google, the soup was prepared that would come to supply the substance to the evolution of digital platforms and before which civil society took a short view, remaining oriented only towards public policies for the sector. And it turned out that, within the same WSIS process, the anesthetizing pill emerged to moderate civil society actors on the issue of Internet governance: the **multi-stakeholder** approach<sup>23</sup>.

Civil society actors who had previously lived through the utopias of radio and television and, in the 1970s, the entire debate on “*the new world information and communication order* (NWICO)<sup>24</sup>” and the defeat that finally prevailed, tried to warn that the course could go the same way. However, many of us were optimistic and convinced that the Internet would take an alternative course. We bet on the extraordinary potential of the new medium in terms of its interactivity and marginal cost to be a producer or generator of quality content.

Why has society been so indifferent or naive with the aforementioned changes and especially why civil society specialized on these issues was left defenseless?

At the Baku Internet Governance Meeting (Azerbaijan), 2012, the situation was more than evident. The bulk of civil society continued to address very important issues, but without addressing essential issues that were already affecting the Internet ecosystem with significant consequences for subsequent events<sup>25</sup>. An image comes to mind and at that moment we share it with some colleagues. It was based on the Arab proverb “*Dogs bark and the caravan passes*” (Baku being a historical place as it was the passage of the old caravans that traveled between east and west<sup>26</sup>). We wanted to adapt the proverb to

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<sup>23</sup>So much so that ISOC thought it could recently take up the business of shifting the management of the main civil society domain (.ORG) to a commercial company created ad-hoc through a juicy transaction without the community reacting. There the shot went wrong because the civil society group active on that front mobilized in the face of such a direct threat and came out of anesthesia. It reacted so strongly that ICANN had to reverse that decision, showing that there is knowledge and capacity to act wisely, at least when the rationale and goals are clear.

<sup>24</sup> [https://en.wikipedia.org/wiki/New\\_World\\_Information\\_and\\_Communication\\_Order](https://en.wikipedia.org/wiki/New_World_Information_and_Communication_Order)

<sup>25</sup>In that same period, ICANN was, without encountering much opposition, opening the Internet domain system and creating a very juicy, albeit totally artificial, business, which was going to have the indirect consequence of a new tendency to monetize what was previously considered national sovereignty, the top-level national Internet domains. Thus, for example, Colombia proposed that .CO could be sold to companies outside Colombia as an alternative to .COM, and Haiti tried to sell .HT in the same way as something phonetically equivalent to “*acheter*” (to buy in French).

<sup>26</sup> As remembered by a famous restaurant in the city center that retained its caravan receiver architecture. [https://en.wikipedia.org/wiki/Bukhara\\_Caravanserai](https://en.wikipedia.org/wiki/Bukhara_Caravanserai)

the situation at hand: the image is that of a caravan called Internet deviating from its utopian and foundational route towards a path traced by the TG and their allies while the dogs calmed their barking, very busy biting the bone of the multi-stakeholder's governance. Those who still did so barked little and in the direction in which they have usually known how to do it: governments and international organizations. Thus, the way was clear for the private sector, especially those with the ability to define that new direction. The result was that the caravan, guided by the TGs, would continue its route without obstacles.

We had a very strong feeling that whatever appealing and promising was the concept of multi-stakeholder governance<sup>27</sup>, it ended up being a clever trap for civil society to look the other way instead of focusing on the essential problems and in its place that open and dialogue vision was torn and dismembered.

The trap was complemented by a redistribution of funds for projects focused on the use of ICT for development to be even more effective. These resources were provided by the emerging private sector and were allocated through partner organizations, such as the Internet Corporation for Assigned Names and Numbers (ICANN<sup>28</sup>) and the Internet Society (ISOC<sup>29</sup>). While this was happening, financing from other sources for civil society was fading out. After WSIS, governments took responsibility for information society projects, complying with the guidelines of international organizations, and the space of NGOs was naturally shrinking. Thus, those who were not willing to enter the new dynamic established by the actor with the greatest financial muscle of multi-stakeholderism, that is large companies in the sector, were marginalized.

In the world of civil society that works in health, it is not considered an ethical attitude to receive funds from large pharmaceutical companies, or in the world of the environment, resources provided by Monsanto are not well regarded. However, in the field of the Internet and digital platforms that make up the global knowledge society, the discussion on whether it is ethical for civil society to receive funds from TG or their allies has not been honestly assumed.

## Governments or TG: the cognitive bias

This situation has led to a cognitive bias with profound implications for the relationship between the multiple actors involved in the evolution of this **4th Industrial Revolution**. The tendency is that the distrust of initiatives led by democratic governments<sup>30</sup> is growing as the trust of initiatives from the private sector, especially if they come from the TG.

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<sup>27</sup> Participating in the construction and consolidation of a new utopia that would imply a consensual governance between governments, the private sector and civil society, the promise of participatory democracy.

<sup>28</sup> <https://en.wikipedia.org/wiki/ICANN>

<sup>29</sup> [https://en.wikipedia.org/wiki/Internet\\_Society](https://en.wikipedia.org/wiki/Internet_Society)

<sup>30</sup> It is important to highlight that this dilemma only occurs in democratic regimes. In the multiple systems of non democratic governments that exist on the planet, it is not possible, by definition, to challenge the mandates issued by the authorities on risk of being accused of serious crimes for the mere fact of dissenting.

An example of how this paradoxical trend materializes has been reflected in the midst of the de-escalation process of the confinement caused by the COVID-19 pandemic in France. The French government decides not to use the application developed jointly by Apple and Google to monitor the spread of the virus, but to design its own. A development of this nature requires that as many citizens as possible install it on their cell phones and allow intelligent management of infections by detecting potential sources of spread in nearby spaces. The dilemma arises because the government is criticized, firstly, because its ability to produce a better solution than the TG is questioned. Second, people deny trust to the official initiative because they perceive a high risk of their privacy being compromised<sup>31</sup>. The great paradox is that greater confidence is expressed in the TG, over whom there is no control whatsoever to audit their operations and who have so far amply demonstrated their interest in preserving user information, than in democratically elected governments which have perfectible mechanisms of accountability. *The users-product trust, the citizen untrust!*

When Edward Snowden<sup>32</sup>, in 2013, reveals that the National Security Agency (NSA) is spying on communications on a planetary scale, using the global digital platform, this caused a tremendous and healthy worldwide commotion. However, for well-informed people, it was known for many years that OECD countries had developed advanced telecommunication espionage systems with powerful infrastructures in several countries (USA, England and other Anglophone countries with Echelon<sup>33</sup>, Frenchelon<sup>34</sup> in France).

What is surprising is that the same people who declared themselves shocked by this revelation will not show comparable concern about the fact that the TG, for other reasons and with other resources, were doing the same, driven by the expansion of their businesses and without any control mechanism that regulates their actions.

Why is the retention of private information a sensitive point for citizens if the act is carried out by a government and not so much if it is perpetrated by private companies?

Journalist Carole Cadwalladr investigated and revealed in 2016 the endeavor of the Cambridge Analytica company<sup>35</sup>, created in 2013. She inquires about the key role of that company in the manipulation, in SN, of the opinion of undecided voters in the Brexit referendum. This was achieved by illegally using data from the profiles of Facebook users who were subjected to a continuous and dense bombardment of messages openly laden with disinformation about European Union. Despite the monumental scandal that occurred in those days, everything remained relatively calm and controlled, even though it was revealed that other important political campaigns used the same type of resource. Not even the excellent documentary presented on

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<sup>31</sup> The reality is that the application in question cannot prevent Google from knowing who is using it, since to download it on Android you have to identify yourself in PlayStore and, in addition, it uses the Recaptcha application from the same company. That represents another door for Google, although in principle neither of those two entries should give access to information about whether the person is infected or approached infected people.

<sup>32</sup> [https://en.wikipedia.org/wiki/Edward\\_Snowden](https://en.wikipedia.org/wiki/Edward_Snowden)

<sup>33</sup> <https://en.wikipedia.org/wiki/ECHELON>

<sup>34</sup> <https://en.wikipedia.org/wiki/Frenchelon>

<sup>35</sup> "Facebook's role in Brexit - and the threat to democracy".  
<https://www.youtube.com/watch?v=OQSMr-3GGvQ>

Netflix<sup>36</sup> mobilized massive sectors of the population to express the outrage at the abusive proceeding.

The facts do not stop at Brexit; this company was found to have acted similarly in many countries<sup>37</sup>, including the USA and Russia, without arousing a reaction of rejection. Neither the fines imposed on Facebook nor the negative impact on its listing on the stock market have meant a serious impact on the company's finances. Public opinion observes these events that demonstrate the criminal connection between the private sector and political organizations where the information of tenth of million users has been used for electoral purposes and still the reaction is quite tepid. The impact on the TG business is marginal despite the fact that it is a real and active threat against the entire democratic system worldwide. It seems that what happens on digital platforms is an accepted fatality. Another caravan that advances without much barking.

These three examples show that at that time people are accepting what Zuboff calls **surveillance capitalism** (see [6]), promoted by the TG or non democratic governments, while they are rejecting any monitoring coming from democratic governments. Will it be a fully thought-out and assumed decision or will it rather reflect the lack of education in betting on what happens in the digital world? Our main hypothesis is that the explanation is at the low level of what digital culture means. Consequently, we consider that education for this culture, to act harmoniously within ethical, humanistic and ecologically sustainable values in the environments proper to the 4th. Industrial Revolution is an absolute priority for the planet, at the same level as the fight against global warming<sup>38</sup>.

## The digital emergency

We are faced with the urgency of building a new paradigm focused on quality education to harmoniously integrate a digital culture with an environment where there is an overwhelming amount of information circulating without the majority of users being endowed with the capacity required to assess it. It is a complex environment where simplistic views, such as the cause-effect model, fall short to address the volatility, ambiguity and uncertainty (VUCA<sup>39</sup>) that is thrown on the inhabitants of the global knowledge society.

The effects of neglecting **information literacy** go beyond the mere functioning of the digital world. Its repercussions infect public spaces, introducing distortions such as

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<sup>36</sup> "The Great Hack" <https://www.netflix.com/title/80117542>

<sup>37</sup> "The executives of Cambridge Analytica confessed in 2018 that their company intervened in more than 200 elections around the world. Analysis of the documents confirmed that 68 countries were targeted for what can be called "a global infrastructure with operations to manipulate voters on an industrial scale." [https://en.wikipedia.org/wiki/Cambridge\\_Analytica](https://en.wikipedia.org/wiki/Cambridge_Analytica). The company formally closed operations.

<sup>38</sup> Although they seem totally disjointed, the two themes are related. It was not possible to accurately count the portion of Internet traffic that corresponds to bad practices (for example: spams, chains, expendable file downloads) but it does not seem far-fetched to calculate it in around a third of the total. In other words, educating users for a better information ecology could have a positive and significant effect on global warming.

<sup>39</sup> [https://en.wikipedia.org/wiki/Volatility,\\_uncertainty,\\_complexity\\_and\\_ambiguity](https://en.wikipedia.org/wiki/Volatility,_uncertainty,_complexity_and_ambiguity)

those generated by the manipulation of the information collected by the TGs and non democratic governments without the consent of the citizens.

Why do we consider this need so acute? Because the situation tends to get worse. A field study (see [3]) reveals that the level of information literacy of young students is decreasing over time, a seriously concern for the future. One thing for new generations is to show skills in the use of digital tools<sup>40</sup>, and another is the process of metabolizing information and transforming it into knowledge. Today's citizens, and young people even more, are subjected to the flow of unprecedented volumes of information while the ability to discern the true from the false, the validation of sources and the appreciation to detect manipulations requires competencies which are not included in the academic curricula of formal educational systems; a very damaging situation for humanity.

In one of the cited articles (see [4]), we talk about *paradigmatic divide* to explain the difficulties that decision-makers have in the digital sphere to understand that we are not facing merely technical problems but rather changes in the representation of a world redefined from a digital context that manages another reality (other spaces, other times, another interactivity, another participative modality, etc.) In this new paradigm the triangular relationship governments (global, national and local) - civil society - private sector and the disruptive and innovative models for socially appropriating technology are of a different nature and failure to identify and take it into account leads to incorrect decisions.

The bottom line of the strategy involves reaching all citizens in their respective and diverse roles and giving them an attractive proposal to adopt disruptive behaviors that allow creating an alternative digital culture. Clearly, the formal educational system<sup>41</sup> must be props in a change of approach where the task is to understand the threats that face our environment and disarticulate ethically harmful elements. It involves appropriate curricular interventions at all levels, from pre-school to higher through the various degrees of professional training. Obviously, it is not a trivial task and it does require dedication to build the necessary consensus.

In a recent work (see [7]) we develop in more detail the risks that exist due to the fact that the national, regional, international, multilateral and global bureaucratic bodies that are currently in charge of promoting and assimilating technological developments mainly collect optimistic and complacent trends, with little or no intention of making visible the issues that are already being noticed by various sectors of society and for which it is recommended to take prompt action. The initiative to declare a **Digital Emergency** would serve to promote a broader understanding of AI-based resources, stripping them of that impregnable character with which they are presented. It would promote a disruptive educational scheme to humanize the global knowledge society throughout life.

An educational effort of the aforementioned magnitude concerns many social actors, but in the first place it is the responsibility of those responsible for public policies who must ensure the well-being of their citizens and the proper functioning of the organizations under their management. Secondly, it is the responsibility of the ICT and information professionals to ensure that the quality of the services made available to citizens comply

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<sup>40</sup> Which should not be surprising since its design focused on intuition for easy adoption.

<sup>41</sup> Students, teachers, representatives and managers of public policies in education.

with the ethical and transparency standards that guarantee the rights of information and expression, without subjecting them to pecuniary or subordinate interests<sup>42</sup>.

Greater responsibility must be demanded of technology companies of all sizes and particularly of the developers of the components of the digital platform that surrounds us. It is time to ask them to explain the logical models that underlie the algorithms that they implement in their tools. Users have the right to demand **the transparency of these algorithms** in order to check for biases and safeguard the right to veto conceptualizations that include, for example, racist, xenophobic, anti-Semitic, homophobic, sexist, or hate speech perspectives. On the business side, they must demand that they make explicit the use of the information they capture from users, particularly those they take from social networks.

A primary aspect that requires specific attention is that of the leadership of the technicians and technologists who underpin developments in the digital world. They have managed to establish themselves as a separate category within civil society and do not want to let go of control even though the problems are not primarily technical. Along with this demand to the developers, ethical mechanisms must be created to **combat anonymity in the networks** that allows to hide the attacks of all kinds of criminals and slanderers who are protected under this figure.

**Information literacy** also involves, of course, influencing the culture of the public official, the politician, the businessman, the entrepreneur and the ordinary citizen. In rethinking the relationship of each one with the other social actors to clean up a dynamic that is consolidating serious anomalies and asymmetries. It's getting late.

## Conclusion

The 4th. Industrial Revolution is marked by an unprecedented technological convergence where ICTs come together with nanotechnology, biotechnology and cognitive sciences, creating a framework that makes it possible for the people, sooner rather than later, to be cybernetically integrated into what we call *the Internet of Things*<sup>43</sup>. The characteristics adopted by the TG, with the approval and contributions of governments and civil society, to influence citizens' behavior describe a route towards **surveillance capitalism** that seems unstoppable and that presents enormous ethical challenges.

The technological fabric has intricate dependencies with the productive and military apparatuses of the countries that dominate the world economy. Hence, it seems very complex to radically change a prevailing business model that is based on user-products targeted by digital marketing strategies. However, we believe that theories such as chaos, when acting on such complex systems, can uncover surprises capable of ending

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<sup>42</sup> In this sense, there are advanced experiences promoted from the public sector to help citizens combat fake news. An example is the one that has been going on in Finland since 2014 and that CNN reviewed in <https://edition.cnn.com/interactive/2019/05/europe/finland-fake-news-intl/>

<sup>43</sup> To give an example, it is not science fiction to fear a scenario where within 10 to 20 years augmented reality glasses are complemented by brain sensors that allow GT to capture and interpret brain information. With the subconscious of the user-products within the reach of the business world, the ethical consequences will be colossal. See [8]).



what seems irreversible today; the necessary condition for such chaotic changes being however the existence of a citizenship duly educated about what is at stake.

Google initially, and then other TG followed, fueled the massive trend of making customer information its top product. Users bit the hook and have flooded digital platforms with elements to strengthen that business scheme. The *egomation* circulates in abundance and with it has diminished the dialogue and the collaborative construction of knowledge that so many expectations had created around the Internet in its beginnings.

To a large extent, the scope achieved in the development of **surveillance capitalism** is based on the logic of the technological business imposed from that “original sin” of Google that was later institutionalized in the field of the other TG and the wide world of digital applications. It was the advertising payment scheme, placing results from the sites that pay higher in search results and, later, first presenting the sites that generate the greatest advertising benefits. The economic performance distorted the initial objective of the search engines and after it the other services and applications left. Dialogue, interaction between users to collaborate and generate new knowledge was sacrificed. The “popularity” of the contents was privileged and was put above the quality. Those who market themselves the best are rewarded: **buzz**, a word qualifying at the origin of a parasitic noise in sound equipment and **virality**, an extremely pathological contagion, are today considered the two supreme virtues of that toxic planetary marketing and the north of the new avatar of homo sapiens, *homo marketens*. Studies are needed addressing both the potential increase of the total entropy of the Web and the narrowing of the window of the Web the average user has access, as a consequence of being locked in small niches by the most used application.

Little interest has been shown by the user-products in leaving the guideline imposed by civil society itself has tended to continue battling against regulations from governments and has let its guard down in being critical of other actors involved in the multi-stakeholder governance mechanisms. And the caravan follows its path.

Finally, we believe that organized civil society should review and change its operating paradigm in the face of the evolution of the global knowledge society, even more so when the consequences of private sector decisions have more impact on reality than those policies. It is inconvenient to focus only on monitoring public policies that shape the behavior of our digital environments. Considering eventual alliances with governments is a valid way of inducing or forcing ethical behavior in the private sector or international organizations.

The great impact of the 4th. Industrial Revolution on the global knowledge society is beyond the reach of local or national public policies and demands widely concerted efforts, without imposition by any of the parties. Hence, our main recommendation is to highlight the urgency of addressing comprehensive awareness and education strategies for digital citizens with a solid informational culture. In other words, we believe in a strategy that must be taken from now on a call to declare a **Digital Emergency**, similar to the one existing with respect to climate change. The time to recompose the charges and attack the asymmetries is running out. Lack of action favors undesirable effects.

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