

# Looking for the Social Hackers

Ricard Ruiz de Querol<sup>1</sup>, Karolin Eva Kappler<sup>2</sup>

<sup>1</sup>Coperfield For Social Good SL, Plaza Real 18, 08002 Barcelona, Spain  
ricard@coperfield.org

<sup>2</sup>FernUniversität Hagen, LG Soziologie II: Gegenwartsdiagnosen, 58084 Hagen, Germany  
karolin.kappler@FernUni-Hagen.de

**Abstract.** Motivated in part by the rising interest on social innovation, and also by the emergence of the networked social movements such as the Spanish ‘indignados’ and the ‘Occupy Wall Street’, the focus of this essay are the ‘social hackers’: innovators (or groups of innovators) which combine the technical skills of hackers with the civic or political orientation of social innovators.

Hackers, working at the boundaries of or even outside established institutions, created the code of many of the key elements of today’s Internet, including the WWW. The meaning of hacking has since then evolved in diverging ways. On one side, there are the ‘bad’ hackers, willing to exploit the (occult) weakness of the new IT connected infrastructures to commit crimes sanctioned by law. On the other side, ‘good’ hackers are praised, nurtured and financed by investors competing to come on top of the next wave of ‘disruptive innovations’. But as these innovations frequently seek to disrupt pieces of the accepted social fabric, they end up entering in conflict with established laws and regulations, which they propose to change in the name of progress. As progress is in fact an ideological concept, many of these ‘good hackers’ end up ‘de facto’ aligning themselves with the ultra-individualistic, capitalist, ‘winner deserves it all’, ideology of their investors,

We thus argue that this type of hacking is indirectly (and maybe unwillingly) behind the growth in inequality that has been taking place during the last decades. Even more, this ‘perverted’ brand of hacking is even seen as a menace to the preservation of the ‘internet as we know it’. A combination of social and technical skills incarnated in what we would call ‘social hackers’ is needed for social values to grow together with the Internet society. But it won’t happen spontaneously.

**Keywords:** social hacker, social media, social innovation

## 1 Introduction: Warning signals

*“The economy is an expression of its technologies”.*  
Brian Arthur [47]

The first decade of the 21st century has seen the greatest improvement in the capacity and performance of computers, mobiles, broadband and Internet enabled ser-

vices. It has also been rated on more than one count as the worst decade after the second World War [60][61]. According to the techno-utopia of the early 90s, IT technology was, almost inevitably, going to change the whole world for the better. It does not appear to be so. No yet, not for everybody at least.

True enough, the economic and social impact of the Internet is reportedly getting bigger—just about everywhere. Internet's contribution to 2010 GDP in the UK is more than that of construction and education [48]. In the U.S., it exceeds the federal government's percentage of GDP. The Internet economy, which already accounts for more than 4% of GDP countries, is expected to reach 5.3% of GDP by 2016.

Nonetheless, one can also argue that the Internet is failing most of us in an economic sense. There is evidence that the inequality on the distribution of the wealth has increased sharply during the last decades, and continues to do so at world level [50]. In the USA, where productivity and GDP per capita have grown steadily, a fact largely attributed to the impact of the adoption of IT, household incomes have actually stagnated [49][61], because incomes in the 10% top percentile have been doing much better than the average. Not only that; incomes in the top 1% are doing even better.

Holding the Internet and the technology sector responsible for this rising inequality would be naive and unfair. Nonetheless, it is undeniably true that IT entrepreneurs rank high among the highest world fortunes and that entrepreneurs under 30 who have made billions of dollars over just a few years are posted as role models for doing so.

When looking outside of economics, a similar polarity of effects also appears. The beneficial effects of the ubiquity of digital technologies can hardly be overstressed. It shows up, among many others, in the access to information and education content, in the ease of establishing new contacts, in the increase of opportunities for self-expression, in the rising number of convenient options for consumers.

At the same time, there are manifestations of other less desirable effects. Cyber-crime is on the rise [51] and cyberterrorism is recognized as a growing threat [52]. The 'unholy weeding' [13] of hackers and adventurous financiers created, in the name of progress and the improvement of risk management, sophisticated financial products backed up by algorithms and computer models were one of the key ingredients of the current financial crisis [32][33][34][35]. Social and legal arrangements in fields like intellectual property or privacy are being challenged by new technology based proposals without a consensus on how to replace them. The disappearance of many newspapers and the struggles of others to survive under the competition of electronic offers raises concerns about the survival of journalism [55]. Activists postulate an electronically enabled direct democracy as a replacement of existing representative arrangements [56]. Attempts by a national government to enact regulations on some aspect of the Internet finds opposition from the industry and from Internet activists that proclaim that the Internet cannot and should not be regulated [58]; not by governments, in any case. Adding to the confusion, the transnational entities that used to be in charge of sorting out technology affairs of this kind seem now unable to harmonize the positions, laws and regulations from different countries [57].

What happens, of course, is that the pace at which the processes of 'creative destruction' [23] triggered by the Internet challenge existing social and institutional

arrangements is much faster than the speed of the ‘creative construction’ at which new stable arrangements are being designed and implemented.

Langdon Winner once observed that “*in the technical realm we repeatedly enter into a series of social contracts, the terms of which are revealed only after the signing*” [30]. He therefore recommended that, when faced with a proposal for a new technological system, citizens or their representatives would do well examining in advance the terms of the implied social contract. His advice is clearly not being taken into account. The technology developers and their backers are the ones which in practice exert the largest influence on the contracts between the new technologies and society. As technologies and its implementation are not free from ideologies and values [51][52], those contracts tend to reflect the values of their promoters. Which, when chasing “winner-takes-it all” prices, do not necessarily express the values and priorities of the majority of society.

This clash of values arising from the recent dynamics of IT is even beginning to show up within the technology circles. In an article in Scientific American [1], Sir Tim Berners-Lee, the inventor of World Wide Web, argued that the Web “*is being threatened in different ways*” citing large social-networking sites and wireless Internet providers as two of these threats.

What happens is that the primordial Internet is also experiencing a phenomenon of ‘creative destruction’. The Internet which exploded during the 90s “*was born at the unlikely intersection of big science, military research and libertarian culture*” [2]. Finance and economics had very little direct influence at this early stage. A much more influential role was played by the so-called ‘hacker culture’, later qualified as ‘the spirit of the information age’ [5], in which economic considerations played a minor part, if any. This can hardly be said of the likes of the Apple, Google, Facebook or Amazon of today, which are depicted in the covers of magazines as The Economist [62] or Fortune [63] as battling for the future of a Web which, according to Berners-Lee wishes, should be ‘ours’, not ‘theirs’.

## 2 Hacker’s role in the development of the Internet

*“Hacking might be characterized as ‘an appropriate application of ingenuity.’”*

The Jargon File (<http://catb.org/jargon/html/>)

The productions of the ‘hacker culture’ in the history of IT are quite remarkable. They include the introduction of the @-email by R. Tomlison in 1972, the creation of the Usenet in 1979 and the development of the WWW [9] by Tim Berners-Lee. In the computer field, the development of the original UNIX operating system at AT&T [53], its evolution at Berkeley led by Bill Joy and the later introduction of LINUX by Linus Torvald [54] are also productions of the ‘hacker culture’.

One of the characteristics of the ‘hacker ethic’ of this time was its advocacy of ‘open’ systems. Code was considered a cultural creation to be collectively shared and collectively improved [6]. The potential value of this culture of sharing was well perceived by the DARPA itself. After declaring the TCP/IP protocols as the standard for ARPANET, the DoD donated the TCP/IP standards to the ‘technology commons’,

encouraging entrepreneurs as well as private industry to develop hardware and software that would interconnect heterogeneous computers using TCP/IP. That clever move found an enthusiastic response. IBM was at introducing its personal computer; Ethernet products for Local Area Networks were already in the market. TCP/IP quickly became the ‘de facto’ standard for both local and extended networks, displacing X.25 and the OSI standards proposed by the official standardization bodies. When in 1991 the U.S. administration opened the use of Internet to commercial applications, many private and public organizations were ready to use the Internet to connect their LANs. The Personal Computer began to be seen as a ‘network appliance’ [6]. The technical, meritocratic culture of the early Internet was ready to merge with that of the broader IT industry and markets.

### **3 Hackers turned into ‘golden geeks’**

Then, in 1993 another sequence of cultural overlaps launched the exponential increase in the number of users that turned the Internet into ‘the network’. In a document headlined as “Technology for Economic Growth”, the Clinton Administration postulated that technologies for civil applications, including computers and networks as distinguished ones, would replace military ones as the core of its R&D and technology policies. The Internet was proposed as the core of the future ‘National Information Infrastructure’ and an array of policy actions, including fiscal stimulus for venture capital investments were implemented [8]. The metaphor of the ‘information highway’ appeared on the cover of TIME magazine [7].

In parallel, the rapid adoption of the Internet stimulated the interest of investors. Only a year after the CERN liberated the WWW technology, the output of Berners-Lee hacking effort, for anyone to use without paying a license, Netscape was founded in order to market the Web browser coded by Marc Andreessen. Netscape went public just 18 months later, marking the beginning of the dot-com bubble [10]. Andreessen, an ex-university hacker, made it to the cover of TIME magazine [11], headlined as a ‘golden geek’.

By 1995, when the National Science Foundation (NSF) stopped funding the operation of the Internet infrastructure, the hacker culture had bred with that of speculative financing. Hackers, scientists, economists and experts of many kinds heralded a new Internet economy, a discourse echoed and amplified by new publications such as Wired magazine, which also emerged in the early 1990s. Futurists qualified the exploration of cyberspace as the ‘next frontier’ [12]. The pristine cultures of the early Internet had wedded with capitalism in what has been labeled as an ‘unholy marriage’ [13]. In 1999, the Internet made it again to the cover of TIME magazine; the headline was then “GetRich.com” [59].

This process of hybridization continued even after the burst of the dot-com bubble. Google, which started as a hack in a Stanford University dorm, would be another instance of geeks taking the golden path. In order to fulfill its mission to ‘organize the world’s information and make it universally accessible and useful’ [14], Google’s founders had the option of giving away their technology as Berners-Lee did, or even

to create a foundation like Wikipedia [15]. They chose instead to take the company public and become a dominant player in the business of delivering advertising through the Internet. Somewhat ironically, Vinton Cerf, one of the early developers of TCP/IP within the DARPA would become Google's chief Internet evangelist [16].

Facebook is another company displaying a blend of the culture of hackerism with that of finance. In a letter to future shareholders prior to its IPO, Mark Zuckerberg, Facebook founder and CEO, asserted that his company cultivates "a unique culture and management approach that we call the 'Hacker Way'", stating that "*the vast majority of hackers I've met tend to be idealistic people who want to have a positive impact on the world*" [17]. This may indeed be the case. Nonetheless, some people could well find it hard to reconcile the archetype of the idealistic hacker [45] with that of a company with a business model based on selling advertising for the consumer market. Even more when the financial backers of this company include entities like Goldman Sachs [64].

Another significant exponent of Facebook's culture was set forth by its CEO answering a question about the company's privacy policies in a TV interview [18]:

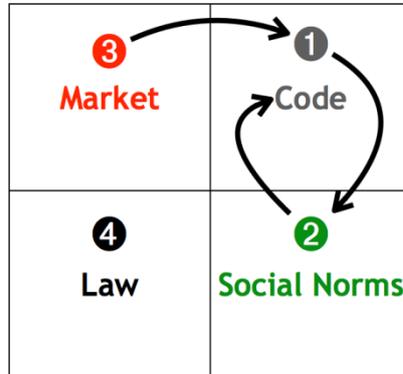
*"People have really gotten comfortable not only sharing more information and different kinds, but more openly and with more people. That social norm is just something that has evolved over time. We view it as our role in the system to constantly be innovating and be updating what our system is to reflect what the current social norms are"*.

One could nevertheless contend that it is rather the other way around. That Facebook is in fact influencing what the social norms are, not simply responding to the its 'spontaneous' evolution, because its business model gets stronger as a larger number of people are enticed to share a greater amount of information about themselves through Facebook's platform.

In fact, Facebook's stated ambitions go beyond reflecting social norms. Facebook hopes to "*rewire the way people spread and consume information*", "*improve how people connect to businesses and the economy*" and even "*change how people relate to their governments and social institutions*" [17]. It therefore aligns itself with the cyber-libertarians [46], would-be social reformers who postulate that the evolution of social norms and institutions should adapt to the requirements of new technology offerings, rather than the other way around.

## **4 Hackerism and social norms**

We can conceptualize this situation by borrowing a framework proposed by Lawrence Lessig [19]. He suggests that there are four basic constraints which influence the behavior of individuals: norms, markets, architectures and law: "*Norms constrain through the stigma that a community imposes; markets constrain through the price that they exact; architectures constrain through the physical burdens they impose; and law constrains through the punishment it threatens*".



**Figure 1.** Hybridization of hackerism, social norms and capital markets.

Lessig also indicates that “each modality has a complex nature, and the interaction among these four is also hard to describe”, but “they are linked and that, in a sense, they combine to produce the regulation” which affects individual behavior in any given area.

In the cases being discussed here, those linkages can be depicted schematically as in the diagram. Code and software platforms started by hackers outside of the R&D of formal organizations, appear first. They are often more the response to a personal challenge than to an already explicit need, fulfilling the vision of a new thing “that people might need or just be able to use” [20]. The adoption of new social codes by an initial nucleus of early users gets magnified through the network effect [21], thereby extending the adoption of these norms to a larger number of people.

When this is the case, the access to capital allows for the scaling up of the platforms which, owing to its increasing return on scale typical of this type of operations, leads to situations where no more than one or two big contenders dominate the market [22]. As this cycle of business development is typically faster than the one defining and enacting most laws and regulations, the evolution of some social norms ends being shaped by an ‘unholy marriage’ of a minority of coders and venture capital investors [13].

Sensitive issues arise if the new social norms affect areas which have in the past been understood to be shaped by the formal political and democratic procedures. This is the background, for instance, of the current debates and power struggles about the nature and role of journalism, libraries, intellectual property and privacy. Debates like this one shouldn’t properly be framed, as they often are by technocrats, as a struggle of vested interests to resist the impact of the Internet. In the context of the framework we just outlined, they rather appear as power struggles among contending sectors of business and investors.

## 5 Precedents from the industrial age

It is frequent in this context that references to the imperative of ‘progress’ appear, wrapped by the ideological identification of ‘change’, even disruptive change, with the public good, deliberately veiling the fact that progress is an ideological concept [26][27] which, as it is the case with all ideologies, hides at least as much as it explains [28].

Schumpeter’s concept of ‘creative destruction’ [23] is often recalled in this context. Google’s strategy is to break established markets and business models and then propose to reconstruct them using Google’s products as a glue. Facebook’s ethics includes the recipe “*Move fast and break things*” [17]. Which, as restated by a clever marketer, reads as: “*The definition of a revolution: it destroys the perfect and enables the impossible*” [24]. This might be acceptable when restricted to the domain of economics and business, but dangerous and ideological when its imperative extrapolation to the social and political domains is taken for granted. As pointedly observed by an official of the Federal Trade Commission in a particular instance, “*unlike a lot of tech products, consumer privacy cannot be run in beta*” [25].

It might be instructive to recall that similar issues arose on occasion of the industrial revolution and the rise of capitalism [26][27][28]. As tersely put by The Economist, “*the Industrial Revolution involved hugely painful economic and social dislocations*” [36], well described, among others, by the classic work of Karl Polanyi [37]. It is also true that “*nearly everybody would now agree that the gains in human welfare were worth the cost*” [36], but massive institutional interventions and social innovations were required in order to achieve an acceptable balance among winners and losers. This is a fact that tends to be ignored by the ‘digital maoists’ [31] of today, the inheritors of the “*specialists without spirit, sensualists without heart*” about which Max Weber wrote in its time [29]. As observed by Langdon Winner, “*one looks in vain to the movers and shakers in computer fields for the qualities of social and political insight that characterized revolutionaries of the past*” [30].

## 6 Looking for the social hacker

Peter Drucker noted that “*The decades of the 19th century following the first and second industrial revolutions were the most innovative and most fertile periods since the 16th century for the creation of new institutions and new theories*” [38]. He also observed that “*the central feature of the next society, as of its predecessors, will be new institutions and new theories, ideologies and problems*”. While we are certainly not short of ideologies and problems, the same cannot be said of the new theories and institutions that might be required to enact and implement the laws and regulations that might be needed for a better balanced society.

The issue nonetheless arises of how and by whom these theories and institutions would be fostered. More so in a time like ours, when the trust of citizens in the political parties and institutions is quickly evaporating; when it should not be forgotten that the troubles in the financial sectors were a consequence of practices that ran afoul of

the regulators and from the spirit of the regulation [32][33]. On top of that, national regulators in many countries will face difficulties in enforcing the regulatory compliance of global Internet multinationals away from their jurisdiction. What is needed is a force of ‘creative construction’ that counteracts and balances the forces of ‘creative destruction’ unleashed by the cyber-libertarians and the investors behind them. There is where social innovation and the social hackers could play a significant role.

An innovation is social “*to the extent that it, conveyed by the market or ‘non/without profit’, is socially accepted and diffused widely throughout society or in certain societal sub-areas, transformed depending on circumstances and ultimately institutionalized as new social practice or made routine*” [65]. The rising interest on social innovation arises from the realization that the traditional ways in which the market, the state and the civil sector have responded to societal demands are no longer sufficient, along with the awareness that technological progress and technological innovation reveal limitations when it comes to resolving pressing societal challenges alone [66].

Many public and private organizations around the world are expressing expectations of social innovation playing an important part in addressing current societal challenges, even in developed countries. Although “*the field of social innovation is still largely captured within silos between sectors, disciplines and expertise working at different stages of an innovation’s life-cycle*” [67], there is a generalized expectation [68][69] that the Internet and the social media will help to the development of the full potential of social innovation. Nevertheless, this expectation has not yet been realized. In practice, the Internet and the social media are nowadays used to support technological and business innovation to a far larger extent than to support social innovation.

This is where ‘social hackers’ who combine the skills, cultures, interests and objectives of technology oriented hackers with those of social innovators [40][41][42] could play a significant role. Returning to the diagram of Figure 1, their code development would be inspired towards primarily helping societal development rather than new market developments [43].

A remainder is here in order. According to their self-constructed ‘jargon file’, hacking has many meanings, that include that of “a person who is good at programming quickly”, but also that of “an expert or enthusiast of any kind” and “one who enjoys the intellectual challenge of creatively overcoming or circumventing limitations”.

In this context, the profile of social hackers would have many traits in common with that of a technology hacker. They would seek to achieve their goals through the development and implementation of technology. They would have a practical rather than academic approach towards solving societal challenges, believing in the power of learning by doing, embracing the design thinking paradigm of iterative prototype design and validation. They would also be aware that, as most of the current challenges will not yield to quick fixes and solutions, creativity would be needed in order to imagine and implement new approaches. They would be ready to break with established conventions and work in alternative contexts and institutions, knowing that, as most of the current challenges are systemic, their solutions would require team or

community approaches. They would also be social in the widest sense of the word, enjoying meeting people and being confronted with different views of things. They would most likely be stimulated by working in the context of multidisciplinary or interdisciplinary teams, as quite often the most innovative ideas sprout at the intersection between disciplines and knowledge areas.

Above all that, the really distinctive characteristic of ‘social hackers’ would be that their humanistic, ethical and social qualities and inclinations would dominate over technological abilities. Their visions and goals would be aligned with that of ‘social innovators’ or ‘social entrepreneurs’, rather than with the ones of venture financiers. Contrary to what appears to be the case of many ‘normal’ hackers.

We believe that this profile of a ‘social hacker’ will be found attractive from different constituencies. Idealistic youngsters, familiar with the technology and disenchanted with a system that generates inequalities, including high youth unemployment, would find the prospect of social innovation attractive. On the other side of the spectrum, there is an increasing number of organizations, both public and private, competing to attract talent through ‘idea contests’ on social innovation topics.

There are nonetheless some challenges to be overcome. We’ll name just three of them. First, there is not yet a proper theory of social innovation. Secondly, there is a significant cultural and language gap among the communities of researchers and activists in the sphere of social sciences and humanities with those working on technology research. In particular, many of the social scientists working on the concepts of social innovation have little inclination to include IT in their conceptual frameworks. Thirdly and partly as a consequence from the above, there are few academic and educational programs aiming to train the would-be social hacker in the theory and practice of their trade. The strategies and programs to tackle these challenges remain to be investigated.

## **7 Postscript**

This essay should be properly considered as ‘work in progress’, as it touches only the surface of some of the topics it addresses. We are particularly aware of the need of a more profound analysis of the culture of the likes of Google and Facebook in the context of the framework suggested in the diagram of Figure 1. A more rigorous approach to the influence of these platforms on the social norms, as well as to the characterization of the domains in which this influence might be judged as excessive would also be needed. Last, but not least, a more thorough approach to the theory and practice of the proposed hybridization of the hacker culture and social innovation needs to be properly developed.

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