Collaborative production of informational goods under Hackathon Methodology. Transformations on collaborative production: expectations and goals of social agents involved (AMBA, Argentina, 2016-2017).

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Abstract

During the last years, events known as "hackatones" have been generalized. The term is composed by the words "marathon" and "hack". These are events in which a diverse set of social actors (most of them programmers, graphic designers and others) gather in a common physical space for the development of software applications (or apps) as collaborative production (Bortz 2013). The duration of these events is relatively short (between one and three days, approximately) and generally includes the inclusion of incentives (of different type and significance) for teams that are formed *ad hoc* in the scope of hackathon.

This mode of production of informational goods (Cafassi, 1998) has gained relevance within the contemporary phase of development of the capitalist mode of production known as *informational capitalism* (Zukerfeld, 2010). The production of this type of goods in these events refers to a specific mode of realization outside of the traditional bureaucratic structures of the companies (Bauwens, 2006), which are enabled to a large extent by the breadth of the exchange capacities, discussion and dissemination because of the generalization of the Internet. This article intends to review these working methodologies, to identify tensions, continuities and ruptures in the "horizontal" production that these processes imply, as well as research the consequences on human resources that these strategies imply.

Keywords: hackathon - collaborative production - horizontal structures - recruitment - human resources.

1. Introduction

Lately, it has become widespread the hackathones, spaces promoted to produce software and other informational goods that assume the modality of programming marathons. This work methodology is oriented to the production and development of applications on a diversity of broad spectrum topics. Its fundamental characteristic is the speed assumed by the production process. At the same time, another specific attribute of hackathon is the formation of *ad hoc* working groups that assume an ephemeral character, while their duration usually extends for a relatively short period (between 24 and 72 hours, in most cases in an uninterrupted manner). Workspaces are shared, and the modalities of interaction occur in co-presence. The actors involved in this type of practice come from different disciplines: software technology, programmers, graphic designers, web developers, among others.

The term hackathon arises as a synthesis of two concepts: on the one hand, *hacking*; on the other, *marathon*. The notion of hacking refers to a sense different that which has been generalized in the common sense. In general, this practice assumes an exploratory and even playful nature in relation to digital and analog objects; its fundamental purpose is to identify its modes of operation and its potentialities in relation to new functionalities that they can assume. Hence, hacking must be distinguished from mere programming insofar as the former refers not necessarily to the production of an informational good, but also to the recognition of the "unknown" of the programming of a certain object. In this way, the hacker pursues a constant exploration of what he submits to examination, and intends to re-signify it, identifying new limits. Hackers therefore form a sub-culture that is organized around certain shared social meanings and a specific evaluative framework. It could be stated, in short, that the practice of hacking exceeds (but includes) the development of software and applications in the strict sense that assumes this type of practices in the mercantilized environment. Its specificity lies in the search for a new knowledge, anchored in a cognitive process that finds its materialization in the production of informational goods.

By the above, hackathones are events promoted by various social actors in enabling the possibility that the members of this sub-culture can form working groups that generate informational goods. Certain characteristics are specific to hackathons: speed in production, exploratory character, experimentation and search for new boundaries for existing informational goods, collaborative production under conditions of *"horizontality"*, among others. In sociological terms, hackathons

are privileged spaces for the production and reproduction of sociocultural elements shared by those who identify themselves as hackers. In general, the actors themselves are recognized as agents that promote a special working methodology and, being so different from the traditional and structured forms, they understand that they break with the conventional mode of production of informational goods (generally associated in such a conventional way to the development and research in business environments).

There are important varieties of hackathones, especially due to their thematic diversity (such activities have been organized in areas related to the academic world, the business environment and even to various sectors of government). However, in general terms, the dynamics of hackathones are similar: the organizing group proposes a "competition" between groups formed *in situ*, usually based on interests and common or related skills. The activity does not exceed 72 hours. The decisive moments are usually identified the closer the moment of completion of the event. After deadline for the work, the results are presented by each team, which are subject to an evaluation by a panel of experts who operate as jurors (this panel can be made up of various social actors: from potential investors and sponsors of the event to other recognized hackers). The winning projects receive, as a prize, various incentives. Some may be monetary; others may be sponsorship or host services. As Bortz (2013) explains:

> *"It is possible to distinguish different classes of hackathones in relation to the purpose of their use: either for the development of some type of specific application (mobile applications, operating systems, web development, video games); to create applications based on a programming language or interface (API) (for example HTML5, PHP or Ruby); as a way to develop applications that can be turned into start-ups detecting new business opportunities (for example the Start Up Weekend); as a way of identifying, conformation and recruitment of teams of developers by companies and investment groups (among others) "(p.135).*

In the last few years, civic hackathons have also taken a significant step forward, which are characterized by the promotion of the production of applications associated with the notion of open government and horizontal accountability. In this type of event, generally, the sponsor and organizer are a governmental agency, of different level (can be national, subnational or local). The issue that orders and centralizes the attention of the attendees is the resolution of some social

issues, so that the realization of these spaces is consistent with the consideration of the greater need for citizen participation in public affairs.

This article aims to characterize the general aspects that assume the processes of production of informational goods in the frame of hackathones. Likewise, it is intended to describe the characteristics of the organizational structure of hackathones and their specificities in relation to other modalities of collaborative production and to identify and characterize the sociological attributes of the conformation of ephemeral groups in the frame of realization of hackathones. Finally, it is expected to be able to explore the motivations of the social actors involved in the processes of collaborative production of informational goods in the scope of hackathones and how this is linked to the expectations of visibilización to be recruited by organizations oriented to the development of software.

The empirical information provided in this text is the result of a research work carried out during 2016 and 2017 in the Institute of Social Research of Fundación UADE, Buenos Aires, Argentina, and it's based on qualitative methodological perspective. Documentary research on secondary sources was carried out. The collection of legitimate sources of information on the empirical reality allowed the knowledge of the general aspects of the phenomenon associated with the sociological dimensions of the conformation of work groups, organizational structure and specificities of production modalities related to the empirical object. For the knowledge of motivations of social actors involved, it was proposed to carry out qualitative in depth-interviews to social actors who participated in this type of events. The interview is presented as the privileged strategy of collecting qualitative data to interpret subjective meanings by the social actors involved in complex processes (Sautú, 2010; Marradi, Archenti and Piovani, 2011). The sample of observation units was designed as a non-probabilistic sample, by subjective criterion or reasoned decision, combined with the snowball strategy for the inclusion of new units. The size of the sample was subject to the theoretical saturation criteria (Glaser and Strauss, 1967), having reached discursive recursion. Various social actors were interviewed: event organizers, sponsors, hackers and assistants. In addition, four non-participant observations on hackathones, with different themes (two associated with the field of social communication, one associated with academic activity, and the last one linked to open government) were made. Qualitative data were analyzed by using content analysis technique, which allowed to identify the subjective senses of the actors involved and to recognize their relevance to the analytical dimensions identified in the project design.

2. Production of informational godos and informational capitalism.

Much has been said in the field of social sciences about the advent of a new phase of development of capitalism, which is generally referred to as informational capitalism. This plethora of theoretical productions from various disciplines recognize different aspects of socio-cultural formation that are necessary to specify. In general, it is noticed that at least a little more than thirty years ago there have been significant transformations in the economy, social institutions, forms of production and the media, and even in the very subjectivities of the social agents that develop their lives in this changing environment. Castells (2003) argues that the social transformations created by the process of socio-cultural globalization and economic globalization make it possible to characterize the emerging sociocultural structure as an "information society". With the development of information and communication technologies (ICTs), the concern to recognize the role of knowledge in the various production modes has been much greater. To a large extent this is due to the remarkable capacity of new technologies for the production, storage and circulation of information, which has a significant impact on the ways of producing goods and offering services of all kinds. However, Boutang (1999) warns that knowledge was always an integral part of productive processes, whether it was oriented towards the production of instruments oriented to agricultural production or to the development of new sources of energy and machinery that gave rise to the so-called Industrial Revolution. However, the development of the current period has distinctive elements in relation to previous historical periods.

Cafassi (1998) states that contemporary production processes are characterized by having as a fundamental input to digital technologies. These should be understood as a type of knowledge instrumentally transmitted (and therefore, of a material nature) that allows the processing, transmission and storage of digital information. In turn, whether this information is in different supports, such as an image or an audio, the truth is that it is no more than a type of knowledge of instrumental order that is normalized under a binary code. In terms of economic production, digital information has a distinctive feature: its replicability (Bortz, 2013). This means that the production of the first digital information unit may have certain costs, but that once produced, the reproduction of the following units tends to be zero, with no relation to the production costs of the initial unit (Rullani, 1999).

Informational goods are those characterized by productive processes where the elaboration of digital information is associated with the main expenses that result from that production, whether capital or work; however, informational goods have minimal material and energy costs. Zukerfeld (2012) therefore identifies at least three different types of informational goods: on the one hand, the so-called primaries (consisting exclusively of digital information); on the other hand, secondary ones, such as digital technologies, which are responsible for processing, transmitting or storing primary goods (i.e. digital information); finally, the tertiary ones, mainly linked to the development of biotechnologies.

According to the theoretical proposal of Zukerfeld (2012), the current phase of capitalist development can be considered as informational capitalism, while the role of informational goods in production, distribution and consumption is exceptional. The specificities associated with the regulatory and productive aspects provoke the need to identify a new economic sector to the traditional ones (agrarian, industrial, services): the informational sector. At the same time, Sociology of Work is rich in theoretical-conceptual production that recognizes the specificities assumed by informational work in relation to previous forms of work. Generally, informational work is considered to productive activities whose economic agents use as an important technical means of work an informational good to produce a primary informational good (for example, a software or an application). Informational work does not require that the production purpose necessarily have a mercantile character. In fact, in the field of collaborative production of hackathones, it is usual for the informational goods produced to lack this characteristic. However, this last condition must be problematized and relativized (Muela-Meza, 2005).

3. Collaborative production

Throughout history, productive processes have undergone profound transformations. In the context of informational capitalism, the traditional structures under which the division and coordination of tasks were organized (commonly known as organizational structure) have been the subject of congruent modifications. In productive spaces it is possible to notice the formation of "network companies" in the traditional environment of the business world. This type of organization favors organizational structures that face traditional bureaucratic structures, where it is possible to see a strong task coordination around the notion of authority and hierarchy

(Mintzberg, 1992). Organizational structures are not rigid; on the contrary, they must be understood as "a complex means of control that is produced and recreates continuously in the Interaction, and yet gives shape to such configuration: structures are constituted and constituent" (Ranson, Hinings and Greenwood 1980: 134).

According to Mintzberg (1992), organizational structures increasingly tend to conformation of adhocracies (although, of course, the design of an organizational structure is subject to a number of factors typical of market environments, types of tasks, productive sector, etc.). According to this author, the adhocracies are characterized by an organic structure, where the coordination of tasks depends mainly on the mutual adaptation between members of the organization, generally experts, who have high levels of training and specialization. The modes of link between the different subjects that make up the structure are generated from different devices (many of them of virtual order, especially in the contemporary context of development of the digital technologies). Usually, experts are grouped into functional units, but are mobilized around market-based task forces to perform their tasks (Mintzberg, 1992). The formation of these work teams is verified at all levels of the structure; the dimension of power, typical of any organizational hierarchy, is blurred at different levels. For this reason, Mintzberg (1992) states this type of structure is selectively decentralized, in a double sense: both vertical and horizontal, given that the distribution of power is not only generated by the occupation of a given position in the structure, but also around the knowledge and experiences associated with the needs of each case.

Beyond the fact that in the organizational sphere, traditional hierarchical structures are deeply questioned, these more decentralized modalities are also observed in other environments outside the commercial sphere. The so-called collaborative production is the conceptual category generally used to refer to the mode of production of goods (in this case, informational) that uses and has digital technology and the Internet to establish the links between agents involved in the process. Zukerfeld (2012) points out that the decentralization of production processes has generally been treated separately and even independently, whether it is developed in business management environment, or whether it is developed in the cultural and communicational field. Nevertheless, both tendencies have a primordial element in common: the productive processes appear to be a net. In both cases, however, the most notable common element is the construction, diffusion, and revision of intersubjective organizational knowledge.

The widespread development of the Internet and the "revolution" brought about by the generalization of this type of technology provoked a serious transformation in the modes of organization of productive processes. This new way of organizing the production process has been more accentuated in the developments associated with free software, especially because in this type of process, unlike the production for profit or public, the product does not count with mercantile exchange value, but with a value of use for the user community. Bauwens (2006) explains, therefore, that the main difference between one and another lies in the orientation to profit or not that assumes production. Bortz (2013) explains that collaborative production associates a superstructure in terms of relations of power, ownership and governance related to reticular productive organization, decentralized and non-hierarchical, independence of capital relations, reluctant to exclusive rights. Bauwens (2006) emphasizes the fact that peer-to-peer (P2P) production evidences the emergence of a third mode of production (specific to informational capitalism), but also a peculiar way of production, governance and, primarily, another mode of ownership, which is absolutely new in relation to the development of the capitalist economy.

Bauwens (2006) stance seems to be somewhat exaggerated. While it is true that collaborative production implies significant transformations in relation to the production of goods, it is not appropriate to characterize the emergence of a new mode of production. If it is understood as a mode of production the historical way in which a human collectivity produces and reproduces its material life (classical definition coined within the field of Marxist theorization). It's possible to see transformations in the capitalist mode of production, but they are not sufficiently significant to assume that certain structures of accumulation that follow the same logic of capitalism in their previous developmental phases do not persist. It's necessary to recognize that collaborative production is restricted to the production of a specific type of (informational) goods; far from being a way of producing for the economy in general. In this sense, Zukerfeld (2012) argues that the collaborative production should be understood as a mode of organization of production processes typical of informational capitalism. It would rather be a way of arranging and organizing the tasks associated with the production of informational goods.

There is a vast diversity of the semantic field associated with collaborative production. In this case, each different way of naming the process illustrates with greater emphasis some specific aspect of the phenomenon. In the specialized literature, it is possible to notice denominations such as "P2P production" (or peer to peer), a fact that highlights the horizontal nature of the process (Bauwens,

2006). Vercelli (2006) calls the process "collaborative production or mode of production of common intellectual goods". Whatever the term, there is a consensus among specialists in recognizing certain common characteristics: the production of (informational) goods is generated in pairs (it is assumed that there are no structurally defined hierarchical differences) and openly (i.e. there isn't protection of the produced by means of the traditional mechanisms of copyright). Bortz (2013) highlights the fact that collaborative production has largely exceeded the field of software production. It is possible to notice modalities of collaborative production in other areas, such as the production of knowledge compiled in encyclopedias (Wikipedia is the emblematic case), musical contents, digitization of documentation or the production of specific contents for social networks. Beyond thematic diversity and applications, the common element that links all of them is that collaborative production is restricted to the field of informational goods (in its broad and general meaning).

4. Hackathon. Some findings based on observation of the practice.

Generally, hackathones are considered by the same participants as an instance of the collaborative production between pairs. However, following Bortz's (2013) approach, it is important to recognize the particularities and differences between production of informational goods within the frame of hackathones and the "traditional" forms of collaborative production.

On the one hand, the temporal dimension acquires significant relevance. As Bortz (2013) states, most hackathons are geared to the rapid production of software (and even applications). That is, the temporal variable acquires relevance in terms of the capacity of inventiveness and innovation that the event allows to develop. If the hackathon were oriented to experimental practice, the inventive step will be greater; on the contrary, if the activity of the hackathon were oriented to development of technological enterprises, the inventive step will be smaller. Even in certain types of hackathons (civics, for example), the activity is rather oriented to the replication of previous developments, so that the action of innovation and inventiveness is much less relevant.

On the other hand, peer-to-peer collaborative production assumes a condition of continuity in the production process. According to Vercelli (2006), this modality of production has a diachronic character, in turn, by the conformation of networks of exchange and linkage between the agents involved. The case of Linux can be enlightening as an example of this attribute of the collaborative

P2P production. However, the hackathon is characterized by the opposite; the developments of informational goods are restricted to the period and place in which the event takes place. There is no continuity or linkage between the agents who integrated working groups, which results in an inability to form a true community (in the sociological sense of the term). In the words of Matias, a software developer who supports a hackathon:

> *"In general, you meet a lot of people, and during the time that we are developing the software you can generate very strong links ... anyway, all that is there ... these people will not meet again, or you meet them in another hackathon, but you don't keep in touch ... that's what I mean ... I think a lot of people are more interested in making contacts with event organizers than with those who work in development..." (Matías, 26, software developer).*

Bortz (2013) points out that hackathones operate as instances of production of primary informational goods. The ways of sharing and circulating information can be very varied (email, Dropbox, pen drives, removable disks, among others). In general, repositories are used to make available, both during and after the event, the information produced. Although some hackers point out hackathones can operate in the "analog world", the fact is that most of them are oriented to the production of software or applications of different nature.

A distinctive feature of hackathones is the "net" or dispersed structure assumed by productive processes. Benkler (2006) points out the importance of adopting an organizational structure that challenges the old bureaucratic hierarchies in the processes of collaborative production of informational goods. In general, the condition of horizontality or "modularity" assumed by collaborative production promotes interaction spaces that facilitate the integration of contributions from diverse individuals, who have different resources (quantity and quality) and are dispersed in time and space. However, hackathones do not meet the last condition, while the participants are concentrated in the same geographic space and work synchronously. Bortz (2013) also relativizes the "granular" nature of hackathons: software or application developments are executed by work teams that conform to the hackathon framework, and then released through different publication paths. In practice, there is no subsequent intervention of other social agents not involved in the experience to recover that prototype or development and add their cognitive flows to make some further modification. Likewise, horizontality must also be problematized. Indeed, it is a common sense shared by the hackers involved in these events that the production of informational goods

occurs between pairs, without implying any degree of hierarchy of one over another, based on different motives (i.e. resources cognitive or professional majors to others). However, the practice of hackathon also implies the necessary functional differentiation of tasks and a certain coordination of them. It is possible to identify, therefore, the existence of a project leader, who is responsible for the coordination of the activities of the group, and even of a project owner, who is the one who brings the idea or formulates the problem that the team will work on. Denis, a hackathon participant, explains:

> *"When you're working on the teams, it's like a very special work dynamic ... nothing to do with how you can work in a company ... there are no bosses here ..." (Denis, 28, software developer).*

However, in another section of the interview, Denis states:

> *"Well, you really have to think that there's always someone who's going to sort things out ... otherwise, we'd all do the same things, or no one would do something that would have to be done ... there's always someone who organizes a little how it goes do the homework ..." (Denis, 28, software developer).*

In some way, the notion of horizontality is relativized by the interviewee's own words, which indicates that the work dynamics in the teams tends to the formation of an informal (and probably dynamic) structure that implies a certain degree of supra-subordination between the agents involved.

Pinch and Bijker (2016) problematize, from a constructivist perspective, the modes that assume the structuring of the working groups within the framework of informational capitalism. Certainly, the classical conceptions that understand the groups as instances of socialization that congregate to a set of social actors oriented by common instrumental ends must at least be questioned. Such conceptualizations must consider groups under two conditions: their "structured" character and their durability over time. Work groups can be shaped under different conditions: ephemeral groups assume specific sociological conditions that cannot be analyzed through the traditional sociological categories.

In the hackathones that were observed within the framework of the research, most of the participants were programmers and graphic designers (who make feasible many of the applications

proposed by the programmers). However, they are not the only actors involved. Members of NGOs, public officials, members of academic institutions and even entrepreneurs eager to promote business ideas were also identified. Most of them are immersed in the *organizational world* (working in companies or working in institutions), although agents are also working independently.

The motivations that guide the decision to participate in this type of events are varied: in some cases, certain agents fully share the "*hacking culture*", understood as a certain motivational orientation to innovation and the production of knowledge that does not necessarily have commercial purposes. This type of motivation is marked by the pretension to overcome the "*limits of the known*"; could be said a search for knowledge by knowledge itself. However, other participants find in the hackathones the privileged spaces to be able to establish networks of contacts with potential employers or colleagues with whom to start an entrepreneurial project. At the same time, hackathones are often visited by recruiters of consultants dedicated to the production of software for identifying new talent. In the field work done during the research, this information has emerged and has been verified:

> "*The IT sector is very complex ... the type of talent we are looking for is not always committed to the expectation of getting a job ... they are very young guys, from another generation ... the guys who come to these events know that they live the technology of another way ... then for us we have the opportunity to be able to detect them and recruit them ... "(Juan José, 34, selector of personnel).*

Not only the availability of the talents all gathered in the same space (the hackathon) is an incentive for the consultants of IT; also, the fact that many of the attendees intend to "show up" in front of potential employers. Such is the story of one of the attendants to the observed hackathons:

> "*Many of these events are driven by important consultants ... Many of us know that they come from other consultants as well to be able to detect who they could hire ... I am currently working in an international consultancy, but I am always open to new opportunities ...*" (Daniel, 27 years old), Informatics Engineer).

For companies involved in the software industry, hackathones are spaces that congregate potential collaborators. In economic terms, it is much more convenient to recruit in these areas, rather than other alternatives, such as assesment centers (situational assessment interviews or group

interviews). Thus, it is revealed that hackathones also form a new mode of selection of staff that allows specialists to detect skills that might otherwise be much more costly and complex

All the above also relativizes and problematizes another aspect of collaborative production that differs, to some extent, from the practices that are developed in hackathons. The collaborative production of informational goods under the hackathon modality assumes as a primordial characteristic the fact that the inputs for the production (whether digital technologies, or subjective knowledge) are typical of the attendees. In many cases, open data or digital information under Creative Commons licenses is also used. Products that emerge from collaborative practice can be made available through repositories or shared under previous (or similar, like Mozilla Public License) licenses. However, certain hackathons open the possibility that such products (especially the programming code) are not published, or are protected by other licenses that protect their copyright.

Bortz (2013) explains that hackathon attendees share a set of values (as an integral part of a subculture) that underlie the production of informational goods and that match those identified by Zukerfeld (2012) for collaborative production. Some of these values are the search for continuous improvement, the pursuit of knowledge, the expectation of belonging to a community. All this operates as a framework of shared social meanings that is internalized in a specific way by the subjectivities of the agents involved, but which somehow or other guide the activity of production of informational goods without pursuing an economic retribution *per se*. As Bortz states, "the cognitive fuel" for production in all cases are subjects who produce and consume digital information flows without being paid to do so (prosumers) "(2013: 144). This feature is further sharpened in those agents who communicate and are identified with the philosophy of free software. For them, vocation to collaborate in the production of knowledge is main motivation, rather than the pretension to obtain goods because of the process. Even in many of the participants, there is a motivation that is anchored in the possibility of overcoming that involves the challenge of developing a software or an application in a relatively short time.

However, it is also true that not all hackathon attendees promote this free software culture. In many cases, attendance at these events pursues an interest of different kind: although none of the interviewees manifested a direct commercial interest as a direct result of what happened in the hackathon, some of them expressed the expectation of being able to obtain indirect material

benefits, as a result of being able to generate a network of contacts or to establish links with officials of consultancies or IT companies.

Bortz (2013) points out that, although it is notable that in the hackathons the consumer aspect predominates (associated with the personal satisfaction of "crossing the limits" and testing the available knowledge, very typical of the hacker sub-culture, too it is possible to appreciate that many of the involved ones are oriented by an aspect of economic-instrumental order. This assumes a character especially remarkable in certain types of hackathones where, for example, those organized for the development of business ideas, technological and similar undertakings Many of these events are organized by private companies, some of them especially renowned in the market, such as Facebook, Google, Accenture. In other cases, it is intended through these meetings to generate spaces that concentrate potential candidates with specific skills to be able to generate informal "selection" processes. For those attending the hackathons, although there is not always a pretension associated with the search for a job opportunity, attendance at these events allows them to establish a network of contacts, "show" themselves in front of potential employers and even train themselves in certain knowledge (for example, in a specific programming language or technology). So that, although the motivations of consummatory order could be privileged, the attendants also have an economic interest, even for a future benefit. In qualitative interviews conducted in the space of hackathons, this became manifest:

> *"These events are very good, especially when they are sponsored by good consultants like this ... You know many people, colleagues who are working on issues like you ... It is also like a window ... if you do things well and I show you well, comes an offer to have a personal interview ... I've had contacts of that type ... "(Rodrigo, 26, software programmer).*

Another of the interviewees said:

> *"I'm not much into that free software culture... but I come to hackathones because you make contacts ... Often appear very hard work opportunities ... In many cases, companies look for you at these events ... It's like a job interview informal ... "(Daniel, 27, computer engineer).*

Many of the attendees of hackathones not only hope to come to realize a future employment alternative, but also pursue interests associated with launching their own ventures or start-ups.

Thus, the hackathons are also spaces of socialization where it is possible that investors are found with those who try to promote a certain business idea.

Bortz (2013) states: "Although the economic aspect of collaborative production, associated with feelings of little affection for corporate logic, has been underestimated historically and philosophically (Zukerfeld, 2010), in the case of hackathons - in both production methodology of informational goods - it is possible to observe how the evaluative split between the consummatory and the economic-instrumental, inherited from industrial capitalism, has been permitted in informational capitalism "(2013: 146).

5. Some possible conclusions

Hackathons have become significant in recent years as a way of producing software, applications and start-ups linked to a variety of issues and problems. Its work methodology, characterized by the formation of ephemeral expert working groups, aims to fulfill one of the fundamental purposes of this way of producing informational goods: speed. In general terms, on the part of the expert literature on the subject, the methodology of hackathon work would be framed as emergent modalities of the collaborative production or P2P production, within the broader framework of informational capitalism (Zukerfeld, 2012). However, following Bortz (2013) it can be verified that some characteristics of the production of informational goods peer to peer are flexible in the specific frame of the realization of hackathones. Among some of the characteristics of collaborative production that are problematized and relativized in hackathon methodology it is possible to recognize at least some of special significance: the continuity in time of the productive processes of informational goods, the granularity and modularity of the contributions made by the participants, the motivations of the participants, generally associated with the interests of a "*hacker sub-culture*" that does not always comprise all the members who participate in the work groups, among others. This research sought to outline some of the assessments primarily associated with this last condition.

Generally, it is sustained that the "*hacker sub-culture*" pursues interests and motivations for the collaborative production of informational goods associated with the expectations of being able to overcome the limits that the technological developments imply; recognize that the understanding of "how things work" allows a space for greater accessibility to knowledge and, ultimately, a break

with the *status quo*. These elements, strongly associated with the postulates of those who maintain that the information is of free access for all, are present in great part of the attendants to hackathones. However, the scientific observation of some of these events, combined with in-depth interviews (aimed at recovering the shared social meanings associated with the motivations of the social agents assigned to their practices) makes it possible to recognize that there is a greater diversity of motivations and interests between the participants of these events, many of them that do not communicate with the basal elements of the hacker culture. Although one of the basic presuppositions of collaborative production is the consummatory aspect that the agents involved pursue in their practice, it is also true that many actors (not only direct participants, but also sponsors) favor an instrumental-economic motivation. This is particularly notable in certain types of hackathons promoted by private companies and IT consultants who understand that the realization of these events can provide an instance of recognition of talents required by the market (and that would otherwise prove to be very costlier to identify).

In this way, it is possible to recognize that in some cases (and for some participants) the hackathon has been "commodified" in a double sense, as identified the motivations of the different actors involved and the aims pursued by them. On the one hand, for software specialists (in a broad sense, which would involve programmers, web designers, graphic designers, among other specialists), it is an instance valued to "be seen and considered" among potential employers (or investors, in the case of the start-ups). In this way, many agents understand that participation in this type of event would allow them to generate a network of valuable contacts with the expectation of being employed by IT consultants or companies related to software development. On the other hand, sponsors or organizers of hackathons (especially when they are organizations linked to the technological market) promote the organization of these events with the purpose of identifying (and even evaluating) potential candidates that can be incorporated as a workforce in modes of production of information goods of a "traditional" character (that is, under the usual commercial rules). In the face of the serious difficulties that the IT industry has for recruiting talents (proper identification, recognition of their expectations, attractive proposals that are of interest to potential candidates), hackathon has become an alternative to recruiting new talents.

As Bortz (2013) points out, "we have seen how personal motivations for participation by developers are often more oriented towards the consummatory, satisfaction and personal challenge of the activity than to the procurement of goods - in line with what which we have described at the

outset about the hacker culture" (p.156). Nevertheless, both the specialized literature and the results of the field work allow us to recognize that the instrumental economic aspect is undeniable. Either because many of the hackathones are oriented to the generation of business ideas linked to technological enterprises, either because they are oriented to experimental developments of existing software or previous prototypes within the sponsoring company, in many cases the assistants and organizers of these events orient their practices based on motivations that move away from the basic precepts of the "*hacker sub-culture*".

At the same time, hackathons also show limitations of another kind, and to some extent they can give evidence that there are other underlying motivations that propitiate their organization, beyond the intended collaborative production that guides their original practice. Many of the actors involved (both participants and organizers, sponsors and coordinators) warn that the methodology of collaborative work under the hackathon modality should be reviewed, because certain assumptions typical of collaborative production do not seem to prosper. For example, the certainly ephemeral character of *ad hoc* working groups created in the event environment does not promote that what has been developed in that specific environment (generally published by means of open access reservoirs) is then used and improved. There would not seem to be, at least in general terms, a true "community of practices" that gives diachronic continuity to the project developed in the hackathon environment. Hence, many members of the "hacker sub-culture" argue that, to support the "original" hackathon character, it would be necessary to review some of the practices that have become widespread. For example, they affirm that it would be a positive incentive to recover the value of this collaborative work methodology by eliminating the modality of competition for incentives among the groups of participants involved, and even to consider the possibility of such groups being composed prior to the realization of the events. In this way, the groups would be more capable to elaborate the ideas associated with the project in greater depth. For organizers, this would facilitate the convening of expert experts linked to the themes to be worked on (and not necessarily related to the programming practice itself, but to the problem around which a solution is sought in a collaborative way. This would facilitate the continuity of the project initiated to the heat and fervor of the hackathon activity. In general (especially this situation in the civic or educational hackathones), many of the developments realized in the event do not find a continuity. Thus, in many cases the information produced in the collaborative environment is shared by various means, but it is not resumed later, largely because the hackathon assistants assume the

interaction by project as something casual and bounded in time. Finally, many specialists question the ability to produce meaningful solutions. In some cases, such as hackathones oriented to start-ups or revision of previously developed applications, this variable is not so significant; in other cases, such as civic hackathons (whose fundamental orientation is solving social problems), the limited development time of the events leaves little time frames for innovation, experimentation and the "search for new boundaries". In these cases, an "instrumental" purpose (the development of a new application or software) is privileged, without it implying a substantive revision of what is assumed is the basic purpose of the hackathon.

To conclude, it is possible to notice that some hackathones promote the conformation of a set of common practices, tending to the formation of a true community associated to the sub-culture of the hacking. At the same time, however, the use of hackathons as spaces for the recruitment of new talents, as "stained glass" to show itself to potential employers and investors, promotes the participation of social actors far removed from "subculture hacker ". All this leads to privilege economic-instrumental interests above the motivations of consummatory order, perhaps the main and original feature that promoted the realization of this type of events.

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