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Performing hackathons as a way of positioning boundary organizations

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Abstract

Purpose – The purpose of this paper is to compare two boundary organizations situated in Malmö (Sweden) and oriented toward opening production. Particularly, it looks at how the two organizations tried to establish and communicate their boundaries during their official opening events, which were structured according to the format of hackathon.

Design/methodology/approach – The authors adopted an ethnographic approach and followed the two events, observing and interacting with organizers and participants. The findings reported here draw upon data collected through direct observation, the authors' experience as participants, unstructured conversations, e-mail exchanges.

Findings – This paper analyzes the two events in order to show how different cultures of opening production lead to different ways of performing hackathons and, consequently, how these events affect the process of establishing and communicating the organizational boundaries.

Originality/value – The paper looks at the potential of events structured according to the format of hackathon as a way for boundary organizations to position themselves.

Keywords Organizational culture, Boundary organization, Hackathon, Opening production

Paper type Case study

1. Introduction

With the expression "opening production" this paper refers to an emerging modality of organizing processes of value creation, where openness and collaboration play a central role. Openness implies a broader possibility of participation in production processes, either through the creation of dedicated platforms and procedures, such as in open innovation practices (Chesbrough, 2003) or by making freely available resources and outputs of production, as it happens, for example, within open-source software (Benkler, 2006). Collaboration refers to the way in which such processes are organized, either through horizontal peer-to-peer mechanisms as in open-source software (Bauwens, 2008), or through the development of new forms of relationships between producers and users, where the latter are taking an active role in production processes (Bruns, 2008).

The mode of open and collaborative production is rapidly spreading in diverse realms: from the cultural sphere to consumer goods, from the market to the public realm. Several important experiences have emerged: from Wikipedia, an open-source encyclopedia, to Arduino, an open-source microcontroller; from examples of collaborative welfare where citizens are involved in designing and delivering public

services, to a number of interactive platforms which are organizing and managing open innovation processes aimed at valuing bottom-up initiatives and diffused creativity (such as OpenIDEO.org).

This diffusion is supported by political and ethical stands but also by the profitability and innovation potential of these practices. On one side, participation and sharing are understood as a possibility to exercise freedom and the opening of production is looked upon as an option to explore alternative modes of production relying on commons and collaboration (Bauwens, 2008). On the other, the economic success of open software has led to the emergence of paradigms such as open and democratic innovation (Chesbrough, 2003; von Hippel, 2005), which are showing the benefits of fostering collaboration among diverse kinds of stakeholders[1] (companies, NGOs, public sector, private citizens) even within a market perspective.

The opening of production therefore represents a phenomenon where diverse and sometimes contrasting understandings co-exist and are interwoven with each other, where words like openness and collaboration can assume diverse meanings and stand for different worldviews.

The interweaving and tensions between these diverse visions can be observed particularly well in physical spaces for opening production. These are facilities where access to technology and shared skills are leading to the emergence and visibility of grass-root technological innovations as well as the creation of politically engaged communities around technology access and use (Lindter and Li, 2012).

What appears to be a coherent landscape of spaces for sharing skills and explore technology possibilities is, on the contrary, a quite nuanced scenario, where technology and skills are shared for a number of diverse aims which are bringing together a variety of stakeholders, fostering, sometimes, alliances and collaborations between unexpected allies. Hackerspaces, for example, are grass-root and community-driven spaces where people interested in technology and making (such as hackers, programmers, artists, activists) share tools and knowledge to explore physical production and where processes usually rely on the same values that drive open-source software production (Hackerspaces, 2013). FabLabs, a format developed at MIT in Boston, are focussing on learning and experimentation aspects as well as on exploring the potential of open-source hardware and design (Gershenfeld, 2005); here, students, researchers and companies are often brought together by a common interest around emerging fabrication technologies. Maker-spaces, like hackerspaces, are also grass-root and community-based initiatives but usually they tend to target a broader public including crafters, people generally interested in do-it-yourself and children as well[2], becoming spaces where experts in digital and physical making encounter the broad society. Beside these more known formats other labs for opening tangible production are appearing, sometimes backed up by industry, such as Kitchen Budapest[3] which is financed by Hungarian telecom industry, some other times by academia, such as the New Factory[4] in Tampere. These spaces are bringing together research, technology and societal needs according to specific contexts in which they operate (Kera, 2012), and they have the potential of becoming platforms that foster the encounter and collaboration between stakeholders belonging to diverse communities, from companies to academia, from artists to people interested in do-it-yourself.

This paper aims at investigating the opening events of two of these labs, located in Malmö (Sweden) and initiated by MEDEA – a design led research center for collaborative media at Malmö University. The first lab analyzed is Fabriken, a maker-space placed in the city of Malmö, where citizens have free access to tools and

machines to explore different kinds of technology and design and production processes by sharing competences and skills. Fabriken originated from collaboration among MEDEA, an interaction design company and a local NGO that runs the premises where Fabriken is hosted. The second (newer) lab is Connectivity Lab, located inside MEDEA premises and run by MEDEA itself. Connectivity Lab aims at being an arena where companies, students and innovators develop new products and services in the realm of Internet of Things[5] according to logics of co-production and open innovation. Even if both Fabriken and Connectivity Lab embrace the culture of opening production, they perform it differently. More specifically, Connectivity Lab has been developed in order to respond to Fabriken inadequacy in being a space for establishing collaborative processes between big local players (including large corporations) and Malmö University researchers. Both the labs can be considered boundary organizations as they aim at facilitating the collaboration between players belonging to diverse communities but with some convergent interests, such as academia, industry, citizens and policy makers (O'Mahony and Bechky, 2008). The differences between the two labs will be further described in the paper.

This paper focusses on the first public events of the two labs, both modeled as hackathons, a format originated within the hacker culture as 24-48 hour events where participants gather for collaboratively developing software or building things and nowadays often used in platforms for opening production as occasions to foster collaboration between diverse stakeholders through the engagement of building something. We see these opening events as an attempt of Fabriken and Connectivity Lab to position themselves as boundary organizations. Two different cultures of opening production emerge from our analysis of the two events and these differences reflect the different positioning of the two labs as boundary organizations.

The paper looks at the potential of events structured according to the format of hackathon as a way for two boundary organizations to position themselves.

2. Literature review
The idea of boundary organization has been developed in organizational studies to describe organizations interfacing research and policy communities and facilitating communication and collaboration between them (Guston, 2001). This paper refers to a further development of the notion of boundary organization (O'Mahony and Bechky, 2008), which is looking at what kind of organizations could facilitate the collaboration between divergent communities with convergent interests, specifically between the open-source software community and commercial companies developing software.

The idea of boundary organization builds on the concept of boundary object (Star and Griesemer, 1989; Star, 2010) that is a sort of arrangement allowing different groups to work together without consensus and to facilitate translation mechanisms across different cultural configurations and contexts. Boundary objects are "both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites" (Star and Griesemer, 1989, p. 393). Boundary objects are characterized by interpretative flexibility and they allow the emergence of languages and the structuring of practices for doing things together (Star, 2010).

The idea of boundary organization derives from the concept of boundary objects. Boundary organizations facilitate the collaboration between diverse stakeholders through performing "tasks that are useful to both sides and involve people from both communities in their work, but play a distinctive role that would be difficult or

impossible for organizations in either community to play" (Guston, 2001, p. 403). Boundary organizations are plastic enough to adapt to the divergences of the different stakeholders involved, yet robust enough to reinforce their convergent interests over time. Unlike boundary objects, boundary organizations are not weakly structured (Star and Griesemer, 1989) but rather result in stable and durable settings (O'Mahony and Bechky, 2008) that favor organizational processes and mechanisms allowing collaboration.

The management of the boundaries of collaboration is a central aspect in boundary organization, since the stakeholders need to preserve their divergent interest and, at the same time, find ways of using their convergent interests to bridge their differences without threatening their core values (O'Mahony and Bechky, 2008).

Both Fabriken and Connectivity Lab aim at being boundary organizations fostering collaboration between stakeholders with divergent interests and agendas (academia, industry, NGOs, citizens, local government). However, as already outlined in the introduction, the way in which these two labs operate is quite different, as well as the kind of actors they are working with. Even if both of them are oriented toward "opening production," they do it with diverse expectations and from different worldviews.

Beside considering the two hackathons organized by Fabriken and Connectivity Lab as a way in which the labs express their take on opening production, this paper also looks at the two events as means for trying to establish and communicate the boundaries of the organizations. The cultural acts, forms and processes performed during the two events represent different views on opening production and elements that shape different boundary organizations.

The concept of "culture" and, more specifically, the concept of "organizational culture" has been extensively discussed and elaborated in scientific literature. This paper draws upon the symbolic-interpretive theoretical framework as presented by Mary Jo Hatch: the main focus of organizational culture studies is the investigation of "how people give meaning and order to their experience within specific contexts, through interpretive and symbolic acts, forms and processes" (Hatch, 2006, p. 14). The organizational culture is seen as a complex and animated ensemble of socio-material and cultural codes and practices shared by the organization stakeholders (e.g. the lab's directors, members, researchers, external collaborators, groups affiliated with the lab, companies collaborating with the lab, etc.). Within this complex ensemble, different, competing and overlapping cultures are at play at the same time in the same organization, as different stakeholders have their own viewpoints, knowledge, values, beliefs and habits. There is a double movement: the daily interaction among stakeholders with different cultural viewpoints (talks, discussions, e-mail exchanges, meetings, etc.) continuously shape and reshape the organizational cultures and the organizational cultures influence the way stakeholders see and interpret the organization and behave within the organization.

We consider the two hackathons as specific ways of performing cultures of opening production. We rely here on a broad understanding of performativity (Halse, 2008) that implies that organizational culture continually comes into being through its social and material performances. By adopting this perspective, the hackathons can be looked upon as two events where the cultures and the boundaries of the labs emerge from the interactions between the organizers, the participants, the programs and the material elements. When we say that during the events some boundaries are established and communicated we mean that the labs used the hackathons to present specific visions about themselves and their own interpretation of opening production.

We are therefore interested in this performative dimension that puts at play different cultures of opening production, as a way for the two labs to position themselves as boundary organizations.

3. Research framework

In the last few decades, the investigation of the cultural dimension of organizations has been an important element in organizational studies (Dandridge *et al.*, 1980; Schein, 1985; Schultz, 1995; Jones, 1996; Hatch, 2006). Also based on different concepts and definition of culture, different empirical frameworks have been suggested. More specifically, in the symbolic-interpretive theoretical framework we decided to apply it is quite common to find studies that rely on data collected across long periods of time – typically using ethnographic participant observation – and where the collected material is explained by the researchers through interpretative processes (Schultz, 1995). The application of an ethnographic approach with the direct involvement of researchers in the field has proven to be a common element of a good number of recent studies on organizational culture (Czarniawska, 2012).

The authors belong to the research center – MEDEA – which has initiated both Fabriken and Connectivity Lab. One of the authors has been deeply involved in setting up and in the everyday running of Fabriken (Seravalli, 2012). This closeness and direct engagement was another important factor that motivated the authors to adopt an ethnographic approach: methods such as participant observation, shadowing, interviews were extensively used during the two hackathons analyzed, but the authors could also rely on a broader acquaintance with the two organizations. This was also a critical element as our position as researchers was strongly entangled within the organizational dynamics of MEDEA. An extensive literature in anthropology has described the role played by the historical, economic, social, cultural positioning of the researchers in affecting the research (see, e.g. Marcus and Fischer, 1986; Clifford and Marcus, 1986; Clifford, 2003; Rutherford, 2012). Our internal positioning at MEDEA strongly influenced not only the selection of the cases (the two hackathons), but also the way we interpreted the two events and the resulting ethnographic account.

The collection of data was guided by an initial case study protocol (Yin, 2009) that allowed us to define:

- an overall plan for the case study research, including the selection of relevant literature;
- some field procedures, including the selection of sources of data of interest for us and the methods to collect these data, also taking into account the protection of human subjects;
- some case study questions that guided us in the collection of data; and
- a guide for compiling the report, containing some first ideas on the format of data and the final format of the report.

We also tried to follow some of the principles suggested by Yin (2009) for the process of data collection in case study research:

- Use multiple sources of evidence. We tried to collect evidence from different sources in order to check if there were convergences on the same findings. The two authors also conducted parallel and independent observations during the events and only subsequently shared and compared their findings.

- Create a case study database: all the empirical data from our fieldwork are stored in a case study database, that contains pictures, videos, notes and audio files and that can be accessed and verified by other researchers.

In operational terms, we followed the two events, observing and interacting with organizers and participants. The findings reported here draw upon data collected through direct observation, our experience as participants, unstructured conversations, e-mail exchanges. Field source data mainly consisted of notes, photographs, video-audio recordings and sketches. We also conducted a set of semi-structured interviews with the organizers of the two events in the period across March and April 2013. Findings from the interviews are interwoven within the account of the two hackathons presented further below.

4. Fabriken and connectivity lab as boundary organizations
O'Mahony and Bechky conclude their analysis on boundary organizations between communities of open-source projects and firms by stating: "Boundary organizations enabled collaboration not by blurring boundaries but by reinforcing convergent interests and articulating how interests diverged" (O'Mahony and Bechky, 2008, p. 450).

This interplay between convergence and divergence is one of the key drivers behind the history of Fabriken and Connectivity Lab.

Fabriken developed as a collaboration between three stakeholders: a local NGO working with culture in a broad sense and managing a quite big space used for concerts, exhibitions and happenings; the research center MEDEA and a local interaction design company. The three players – coming from rather divergent positions (nonprofit, academia, industry) – decided to establish Fabriken as an organization to foster their convergent interests in opening production. Since 2006 the NGO had been interested in creating a FabLab, but it was only in 2010, when MEDEA provided some financial resources, that the three actors started to collaborate to design and implement a common organization. More specifically, the idea was to develop a maker-space, rather than a FabLab, in order to account for the specificity of the city of Malmö and thus addressing not only university students, designers and people interested in technology – which are usually the main users group in FabLabs (Maldini, 2013) – but also to reach out for crafters, small companies from the creative industry, retirees and youth.

One year after the opening of Fabriken, a change in the management and strategy of MEDEA resulted in Fabriken not being anymore in line with the research center's goals. Specifically MEDEA wanted to create an arena that could foster collaborations between researchers and big players (both public and private) in the region. For this reason, the decision was to set up Connectivity Lab as a new lab for opening production aimed at fostering collaborations between companies, researchers and students with a specific focus on technology-driven innovation. Connectivity Lab aims at becoming a boundary organization fostering collaboration between local ICT industry, Malmö University and the public sector, on the basis of their convergent interest on Internet on Things.

This decision initially led to some tensions between MEDEA and the people involved in Fabriken, since there were concerns about Connectivity Lab jeopardizing Fabriken. These concerns progressively disappeared as it became clear that even if there were some similarities between the two labs (e.g. their interest in the theme of

opening production), their way of operating and aims were quite different. The opening event of Connectivity Lab played a major role in making this distinction evident.

At present, both Fabriken and Connectivity Lab are still running and working as boundary organizations, trying to establish their own way of opening production.

5. An account of the two hackathons: performing cultures of opening production

The paper now provides an ethnographic account of the two hackathons, distinguishing between the expectations and original plan of the organizers and the actual unfolding of the two events.

The Fabriken Hackathon (FH) took place the weekend of February 18-20, 2011 and marked the opening of Fabriken, even though the lab was not yet in place. In the process of designing Fabriken (Seravalli, 2012) a great concern was related to how to involve users in the design and setting up of the lab and FH represented a first step in this direction.

The Connectivity Lab Live Hackathon (CLH) was significantly shorter (24 hours) and took place across two days (December 7-8, 2012). Like in the case of FH, this inaugural event marked the beginning of the public activities of Connectivity Lab and aimed at gathering a potentially interested audience and at trying to establish an initial network of connections.

The fact that Connectivity Lab chose an hackathon as its opening event initially raised concerns among Fabriken's core group, since hackathons were the kind of events that they were usually organizing. These concerns progressively disappeared during the preparation and unfolding of the event when it clearly emerged that CLH was quite different from the kind of events and activities performed in Fabriken.

5.1 Planning the boundaries

5.1.1 Aims and hopes. FH was organized before the official opening of the space itself and "aimed at reaching out for possible interested groups and at starting creating awareness of Fabriken in the city," as stated by the NGO project manager. Particularly the event was aiming at involving the local hacker community, since they were considered as a possible core community for the space. However, some workshops and activities were also organized in order to broaden the participation to crafters and other people that were not necessarily already familiar with hacking and opening production.

As it emerged during an interview with one of the organizers, CLH's main goal was to set up "a 42 h inspirational and experimental event located in the borderland between the digital and the physical reality with challenges, talks, makers tables and live development at the site." Another interview with the director of MEDEA confirmed this borderland dimension as a way to engage industry and show a tangible example of the expertise of MEDEA and Malmö University.

5.1.2 Communication and preparation. FH communication was mainly organized by the NGO that took care of creating a flyer and spreading the invitation. A website was also developed, where people could register and communicate specific needs in terms of materials and tools. The involved researchers tried to establish direct contact with the different audiences such as the hacker community, groups interested in crafts but also companies of the local media cluster.

CLH was meticulously prepared with dedicated people working on several aspects of the organization. The event was organized in about two months and communicated

through a dedicated website, a flyer and personal invitations via e-mail. Communication strategy and branding qualities (colors, font faces, graphic style, etc.) were consistent and coherent across all media channels. People were invited to register in advance to participate to the hackathon through an online form where they also had to specify their skills and choose between some themes to work with.

5.1.3 Differences between the programs of the two events. The program of FH was quite under defined: beside the opening and the closure the only fixed events were lunches and dinners, when a NGO of immigrant women provided food. An ongoing two days workshop with Otto von Busch – a craft researcher/hacktivist – focussing on creating objects with an open-source building system was organized. After the opening, a matching session was organized for the people coming without a defined project or group to work with. The closure on Sunday afternoon consisted of a session where the participants got five-ten minutes to present their work. In the program of FH the idea was to stay as close as possible to the original hackathon format, but at the same time to provide some basic structure and planned activities that could ease wider participation.

The hackathon at Connectivity Lab was the central part of a wider event called Connectivity Lab Live ("a two-day creators event exploring innovative prototyping in the field of connected devices and social media"[6]). The hackathon itself was therefore wrapped up within a program that was articulated across some open talks (with invited international speakers from BBC, Arte, Georgia Tech, FabLabs, etc.) and some workshops open to the general public (Arduino, 3D in fashion design, mobile and game design, etc.). The hackathon itself was accurately planned, since Mads Høbye (an interaction designer both affiliated with the studio Illutron[7] and with MEDEA as a PhD student) together with some other components of Illutron – all people skilled in prototyping (programming, design, Arduino, sensors, etc.) – led the entire process moderating the initial brainstorming session, facilitating the formation of groups and helping the groups when needed (e.g. trying to give guidance in case of technical needs). The hackathon went on for 24 hours and at the end a jury selected and awarded the best projects.

When the program was made public it became clear for Fabriken people that CLH was quite far from the kind of hackathons that were organized at Fabriken and that they were aiming for a diverse audience and for a diverse kind of commitment from participants.

5.2 The unfolding of the two hackathons as a way of making and showcasing boundaries

5.2.1 Differences between the two locations and the scenic staging. At the time in which FH was organized, Fabriken facilities were not available yet, therefore another location had to be found. After considering diverse options, including MEDEA, the decision was to use a warehouse located just in front of the future Fabriken facilities (Plate 1). This choice was motivated by the fact that the NGO running the premises wanted the event to be close to the future venue. The warehouse was roughly furnished with some second hand tables, chairs and sofas. Some basic equipment for building things (such as hand tools and gears to work with electronics) was made available to participants who also brought their own materials and tools. Moreover, a local shop of electronics provided a delivery service for people in need of materials and components during the weekend.

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Source: Hackathon Day 1 (Photo by Elisabet Nilsson, www.flickr.com/photos/medeamalmo/5456669823/in/album-72157626083727272/)

Plate 1.
FH day 1 (2011)

The cold played a central role in the staging of FH: the premises were not heated and that weekend was one of the coldest of the season. Initially, some heating fans were used, but they overloaded the electric system that shut down several times. The solution was to move in smaller offices inside the warehouse, which were warmer. However, some of the participants remained in the main space working for the entire hackathon at a temperature of 5-10°C. The extremeness of the environment on one side discouraged some participants who left after the first evening, but on the other side reinforced cohesion between the ones who remained (Plate 2).

CLH's staging was significantly different. The event took place in the main premises of MEDEA, closely connected to the building of the Faculty of Culture, Communication and Society. This physical proximity played a central role during the event as the

Plate 2.
VJing during
CLH (2012)

Source: Photo by Luca Simeone

participants of the hackathon were able to use the laboratories and the machines of the university (laser cutter, saw bench, hand tools, 3D printer, etc.).

The space was accurately prepared for the event and organized in several corners and areas, where parallel events happened at the same time (Plate 3). In the larger room, a DJ/VJ corner provided music and motion graphics animations (Plate 4); special organic coffee and liquorice were offered at a dedicated corner and people who served coffee also provided a detailed explanation of its distinctive and special quality; a small area at the entrance was equipped with freely available Lego pieces; some students of the MA in Interaction Design provided demonstrations of their Kinect and Arduino-based projects; in another area, some small-scale commercial services were

Source: Photo by Anna Seravalli

Plate 3.
CLH day 1 (2012)

Source: Hackathon Day 2 (Photo by Elisabet Nilsson, www.flickr.com/photos/medeamalmo/5459572598/in/album-72157626089448904/)

Plate 4.
People at work
during FH (2011)

showcased (a student with his 3D printer offering printing services, a start-up with a special prototyping synthetic sand).

Colored lights (orange, red) created a visual atmosphere in line with MEDEA's official branding. Big post-it notes and paper table clothes were positioned in several places together with pens and markers. Origami cranes and white orchards sat on the tables here and there. A Japanese fan laid on a stand up desk. Free beers were provided on Saturday afternoon (December 8) together with some sandwiches served with a nice paper package and made of ingredients such as olive pâté with garlic, organic cheese, fennel.

The overall impression was that of a very curated space: hip and sexy. A comment gathered from a participant ("I'm very surprised, this is not academia") points out the staged dimension of the event. This comment also gives an idea of an event that is trying to establish a positioning of Connectivity Lab as boundary organization that bridges several domains (the event took place within a university but yet "this is not academia").

5.2.2 The unfolding of the two events. In the unfolding of FH a main aspect was the blurring of roles between participants and organizers, with a progressive involvement of the first ones in the management of the event. The problems with the heating and the electric system opened the possibility for some participants to actually play the role of organizers, spending time in understanding why the electric system was shutting down. This interplay between participants and organizers is a pattern that is still present in Fabriken where a core group of skilled and committed participants is in charge of the technical aspects of the space (such as taking care of the machines, deciding what should be bought next, etc.). The event became the occasion to establish the boundaries of Fabriken together with the participants, as well as experiment how they could be directly involved in the everyday management of lab.

When it comes to the participants the main group was the local hacker community. A group of students from the Interaction Design Master's program joined as well. In addition there were also other participants such as: a retired professor working with electronics, an amateur ceramist, a dad with his ten years old kid, an expert hacker from Denmark, two musicians who build their own instruments. Around 30 people participated to FH and 20 more just stopped by or participated for a few hours. Collaboration between the participants and the organizers developed well during the two days and most of the participants are still part of the core group of Fabriken. The event got covered pretty well by media (three local newspapers came by), however FH did not reach for crafters, and other communities as hoped.

In CLH, the hackathon was part of a wider event where the audience was invited to engage through workshops (named "creator's workshops"), open talks and tech demonstrations where it was possible to try prototypes and devices (3D printers, Arduino-based interactive installations, etc.) brought by both students and external companies. The hackathon was launched with a kick-off meeting open to all the audience and ended with a public presentation of the projects and with a prize ceremony followed by a closing party.

In the end, about 350 people attended to CLH and about 60 people registered for the hackathon. The event was not only attended by the participants to the hackathon, but also by many other people who were just mingling up, drinking beers, chilling out and enjoying the club-like atmosphere. Students from Malmö University were a big component of the audience, but there were also kids playing with Lego, and couples and friends who were hanging out there because – as one person told us: "I didn't know about the event but came because a friend invited me out."

A big effort was put in the recruitment phase of the hackathon to communicate the event to a large audience such as artists, small interaction design companies, people working within creative industries; even some Fabriken's core users were invited. Not all the registered people showed up for the hackathon. Even though some companies registered, not many of them attended to the hackathon, where the participants were mainly students. Some of Fabriken's core users passed by in the afternoon of the Friday, had a look around, drunk a free beer and then disappeared again. Talking with some of them some days later, they stated that: "There was nothing really interesting happening there, so we left".

6. Discussion

Both the events were organized following a hackathon format. Hackathons are generally characterized by horizontal and self-organized patterns, intense collaboration between participants, sharing of tools and materials with the final aim of creating something (Plates 5 and 6). Hackathons can be performed as gatherings of people exploring alternative production modalities, but also as events used by start-ups, companies, venture capitalists as a way to locate new areas for innovation and funding[8]. Different models of hackathons reflect different views on opening production.

The two hackathons we analyzed show how different perspectives on opening production are performed during the events and, at the same time, represent a way for the two labs to experiment with their position as boundary organizations. It is important to notice that we do not mean that during the events the two organizations got administratively structured (e.g. by choosing a legal structure, registering the organization, etc.), but that the format of the events allowed to test and experiment with the borders of the two organizations and consequently allowed to establish and communicate a tentative positioning for the two labs. When we say that during the events some boundaries are established and communicated we mean that the labs used the hackathons to present specific visions about themselves and their own interpretation of opening production. Using the concept of organizational culture

Source: Photo by Luca Simeone

Plate 5.
Participants hacking
together at
CLH (2012)

Plate 6.
Participants hacking
at FH (2011)

Source: Hackathon Day 3 (Photo by Elisabet Nilsson,
www.flickr.com/photos/medeamalmo/5462426070/in/album-
72157626096243610/)

presented in the introduction (Hatch, 2006), we can say that the two events put at play
specific cultures of opening production and, in so doing, they position themselves
within some borders: what the two labs mean by opening production, who are the
stakeholders to work with, on what basis collaboration can be activated, etc.

Table I summarizes some of the findings presented in the previous paragraph.
Was the format of the hackathon successful in this process of communicating and
establishing Fabriken and Connectivity Lab as boundary organizations? Perhaps
not entirely.

The activities we define as "planning the boundaries" elicited among the organizers
and labs' members questions such as: how should the communication materials
(invitation e-mails, flyers) present the two labs? Is it clear that the labs aim at operating
as boundary organizations and therefore do the communication materials speak to the
different stakeholders we want to target? In this sense, the communication activities

| | | Planning the boundaries | | Differences between the programs | Making and showcasing of the boundaries | |
		Aims and hopes	Communication and preparation		Location and staging	Unfolding
	FH	Communicating the upcoming space to Malmö citizens Involving hackers Involving other communities of makers	Not so many resources invested	Not structured, open	Rough and cold	Hackers Collaboration between participants and organizers Missing crafters community
	CLH	Showcasing MEDEA and Malmö University skills for industry	Prepared in advance and communicated through a specific, coherent and consistent strategy	Very structured	Very curated, club-like atmosphere	Students Missing industry

Table I.
Comparison between
boundary work at
the two hackathons

forced the labs to reflect upon their boundaries, for example, paying attention to their vision and their mission as presented in their official websites.

As regards the activities we refer to as "making and showcasing of the boundaries", FH and CLH represented a moment out of the ordinary life of the two organizations. These activities were (potentially) open to a variety of stakeholders and visitors, therefore they could give the opportunity to gather feedback from both internal and external parties. The two hackathons – as temporary events – had a limited duration in time and therefore they could be used in some sort of iterative processes to stage some versions of boundary organizations and test them (e.g. at Fabriken several hackathons have been carried out with different formats). The performative dimension of the hackathon also pushed the labs to reflect upon the elements to be staged: in what way should the lab present itself during the hackathon? What kind of positioning for the lab should be represented in the event?

Performativity became a way to continuously re-vitalize, re-state and sustain the boundaries of the organizations either proposing a pre-defined theatrical representation or directly involving the participants in negotiating the borders during the performance.

In the case of FH, this process of positioning was more oriented toward participatory dynamics. The event was aimed at engaging a wide array of stakeholders in the process of collaboratively establishing the borders of the lab. Moreover it also turned out to be a possibility to experiment with the collaborative management model of the organization.

In the case of CLH, some participatory mechanisms were still present, but they were framed through a clearly articulated theatrical representation. The event was a way to stage and test a pre-defined lab's positioning as boundary organization with a clear orientation toward tech-driven innovation and its market potential.

Fabriken was trying to involve grass-root communities interested in "making" that were operating in Malmö and only in a second step commercial actors. This focus is strongly related to whom and what Fabriken wanted to be accountable to, which are primarily local bottom-up initiatives and the ideals of democracy and empowerment that brought the founders together in the first place.

Connectivity Lab aims at a different positioning and more specifically at articulating convergent dynamics within various players (academia, industry, local government) with an eye to the market potential. Open and collaborative processes are understood as yet another source for commercially viable innovations. Within this perspective, the market potential becomes another party to be accountable to.

When it comes to organizational processes, FH framed a particular way of operating that is still present in the space today: an active involvement of participants in the management of the organization. This involvement is based on a co-ownership agreement between the NGO and the participants, which seems to have worked quite well, since some of the people attending FH are still in the organization. There is a sense of distributed ownership that also results in partially self-regulated models of governance. Serendipity is also a key component of the production processes and results and of the general organization.

CLH staged a different organizational model, where the organizers accurately prepared the event in advance. Some space for collaborative activities was planned, but it was framed within a clearly structured program (the support team, the jury, the final awards, etc.). CLH presented a boundary organization closer to the elements that O'Mahony and Bechky identified in their analysis (2008) as very important for the industry, such as retaining a certain level of control and having some sort of mid and long-term planning also in processes of opening production. Serendipity has still an

important value, but ideally should be driven in order to synchronize it with the organizational processes of industries tied to market needs and dynamics.

Within this perspective, notions such as autonomy and independence of the parties are interpreted differently by the two organizations and so is the idea of accountability that is also related to these notions.

A critical element that is connected to the idea of performativity (and also to organizational process) is the strong difference between the expected and the actual participation to FH and CLH. Both the hackathons aimed at gathering diverse communities, but in the end they had a quite limited and homogeneous participation.

FH was aiming at involving a broader variety of participants than hackers themselves, however it did not succeed in this (and still today, Fabriken's core users group belong to the hacker community). Was this a problem of communication, of reaching out for a wider participation? Or rather are there some issues with the format of the hackathon itself? In an interview, the project leader of the NGO co-running Fabriken stated that further events organized at Fabriken showed how more structured formats with pre-planned activities, such as workshops, work better in reaching out for a broader audience. Although these pre-planned events limit the possibility of the participants to structure the event on their own, they gain in a participation of a broader public, which might be not so comfortable with self-regulated structures and open formats.

The accurately planned events at CLH allowed reaching a broader participation, even though perhaps a more significant presence of companies was expected. The hackathon could have been a good occasion to test participatory dynamics between academia and companies in a setting clearly oriented toward prototyping innovative technologies, but in the end mostly students of Malmö University attended to the hackathon.

More generally it seems that the difference between the planned boundaries and the ones that unfolded during the process depends on the ability to figure out how to involve a specific community or party by understanding how the boundary organization could serve their agendas as well as being structured in a way that works for them. When it comes to Fabriken this means that, if for the hacker community a quite open and self-organized event might work well, for a broader public such format might not be the most appropriate one, not only in terms of values and references, but also in more practical terms, when it comes to organizational mechanisms that are put at play. In the case of CLH, the format of hackathon was clearly inspired by those events where innovative start-ups, venture capitalists, brilliant researchers gather in order to identify opportunities for innovation, but still at this first event we could not see a strong involvement of players from industry.

What strategies and tactics can be used to engage a wider set of stakeholders still remains an open point of our research.

It is though worth noticing that the limited participation of different stakeholders in both the hackathons seriously undermines the potential of the events in terms of establishing the boundaries for the two organizations. In order to use the hackathons as a way of testing the positioning of the two labs as boundary organizations, the presence and the active participation of different stakeholders at the events was needed. Boundary organizations can work as interfaces between multiple social groups and multiple organizational cultures, but in the two hackathons this multiplicity was not fully represented and therefore Fabriken and Connectivity Lab could only partially experiment with their positioning as boundary organizations.

Recalling O'Mahony and Bechky's reflections – "Boundary organizations enabled collaboration not by blurring boundaries but by reinforcing convergent interests and

articulating how interests diverged" (O'Mahony and Bechky, 2008, p. 450) – we argue that in the specific case of FH and CLH the limited participation of different stakeholders did not allow to set up collaborative processes to thoroughly experiment with this interplay of convergent and divergent interests.

7. Conclusions
This paper, by comparing two cases, discusses how a boundary organization can try to establish and communicate its boundaries through an event in the format of a hackathon. Specifically, the two cases refer to two Swedish labs for opening production and the events represented their public opening.

By describing the planning and unfolding of the two hackathons, processes of establishing and communicating boundaries are discussed, underlining how they are tightly connected to diverse ways of understanding and embracing cultures of opening production. We argue that there is a potential in the format of hackathons as a way of putting at play and testing boundary organizations, but in order for this potential to be fully expressed a precise strategy to involve a wide network of stakeholders is needed.

Further work is needed in order to analyze how the labs' positioning and the interplay with the participants during these events influenced the subsequent structuring or re-structuring of the boundary organizations with regard to several organizational domains such as their organizational structure, distribution of authority and management systems, formalization level, policies, procedures, etc.

These questions are something that will be interesting to look more closely at in a further work.

Notes
1. As in Freeman and Reed (1983), we consider a wide definition of stakeholders as all the actors that affect or are affected by the organization.

2. Examples of maker-spaces: http://opendesigncity.de/, www.mtelliottmakerspace.com/, http://lamakerspace.com/ (accessed April 17, 2013).

3. www.kitchenbudapest.hu/en (accessed April 17, 2013).

4. http://newfactory.fi/ (accessed April 17, 2013).

5. Internet of Things is a term that refers to the extension of internet to physical object and locations that are identified through networks of interconnected sensing capabilities.

6. As in the official description of the event, from Connectivity Lab Live website (http://connectivitylab.mah.se/index.php/about/ (accessed February 17, 2013).

7. Illutron is a Danish collaborative interactive arts studio: www.illutron.dk/ (accessed February 17, 2013).

8. See, for example, this report from the TechCrunch Disrupt SF 2012 Hackathon: http://techcrunch.com/2012/09/09/meet-the-disrupt-sf-2012-Hackathon-winners-livebolt-takes-grand-prize-auctopus-and-heatdata-are-runners-up/ (accessed February 17, 2013).

References
Bauwens, M. (2008), "Class and capital in peer production", *Capital & Class*, No. 97, pp. 121-141.

Benkler, Y. (2006), *The Wealth of Networks*, Yale University Press, New Haven, CT and London.

Bruns, A. (2008), *Blogs, Wikipedia, Second Life, and Beyond: from Production to Produsage*, Peter Lang, New York, NY.

Chesbrough, H. (2003), *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Harvard Business School Press, Boston, MA.

Clifford, J. (2003), *On the Edges of Anthropology*, Prickly Paradigm Press, Chicago, IL.

Clifford, J. and Marcus, G.E. (Eds) (1986), *Writing Culture: The Poetics and Politics of Ethnography*, University of California Press, Berkeley, CA.

Czarniawska, B. (2012), "Organization theory meets anthropology: a story of an encounter", *Journal of Business Anthropology*, Vol. 1 No. 1, pp. 118-140.

Dandridge, T.C., Mitroff, I. and Joyce, W.F. (1980), "Organizational symbolism: a topic to expand organizational analysis", *Academy of Management Review*, Vol. 5 No. 1, pp. 77-83.

Freeman, R.E. and Reed, D.L. (1983), "Stockholders and stakeholders: a new perspective on corporate governance", *California Management Review*, Vol. 25 No. 3, pp. 88-106.

Gershenfeld, N.A. (2005), *Fab: The Coming Revolution on Your Desktop – from Personal Computers to Personal Fabrication*, Basic Books, New York, NY.

Guston, D.H. (2001), "Boundary organizations in environmental policy and science: an introduction", *Science, Technology and Human Values*, Vol. 26 No. 4, pp. 399-408.

Hackerspaces (2013), "Hackerspaces", available at: http://hackerspaces.org/wiki/ (accessed April 22, 2013).

Halse, J. (2008), "Design anthropology: borderland experiments with participation performance and situated intervention", PhD dissertation, University of Copenhagen, Copenhagen.

Hatch, M.J. (2006), *Organization Theory: Modern, Symbolic, and Postmodern Perspectives*, Oxford University Press, Oxford.

Jones, M.O. (1996), *Studying Organizational Symbolism: What, How, Why?*, SAGE, Thousand Oaks, CA.

Kera, D. (2012), "Hackerspaces and DIYbio in Asia: connecting science and community with open data, kits and protocols", *Journal of Peer-to-Peer Production*, Vol. 2 No. 1.

Lindter, S. and Li, M. (2012), "Created in China: the makings of China's Hackerspace community", *Interactions*, Vol. 19 No. 6, pp. 18-22.

Marcus, G.E. and Fischer, M.J. (1986), *Anthropology as Cultural Critique*, University of Chicago Press, Chicago, IL.

Maldini, I. (2013), "The FabLab Amsterdam users: a survey on their profile and activity", available at: http://waag.org/sites/waag/files/public/Publicaties/fablabusersreport.pdf (accessed April 17, 2013).

O'Mahony, S. and Bechky, B.A. (2008), "Boundary organizations: enabling collaboration among unexpected allies", *Administrative Science Quarterly*, Vol. 53 No. 3, pp. 422-459.

Rutherford, D. (2012), "Kinky empiricism", *Cultural Anthropology*, Vol. 27 No. 3, pp. 465-479.

Seravalli, A. (2012), "Building Fabriken: design for socially shaped innovation", *Proceedings of DRS Conference, Bangkok, July 1-5*.

Star, S.L. (2010), "This is not a boundary object: reflections on the origin of a concept", *Science Technology Human Values*, Vol. 35 No. 5, pp. 601-617.

Star, S.L. and Griesemer, J.R. (1989), "Institutional ecology, 'translations' and boundary objects: amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39", *Social Studies of Science*, Vol. 19 No. 3, pp. 387-420.

Schein, E.H. (1985), *Organizational Culture and Leadership: A Dynamic View*, Jossey-Bass, San Francisco, CA.

Schultz, M. (1995), *On Studying Organizational Cultures: Diagnosis and Understanding*, Walter de Gruyter, Berlin.

von Hippel, E. (2005), *Democratizing Innovation*, The MIT Press, Cambridge, MA.

Yin, R.K. (2009), *Case Study Research: Design and Methods*, 4th ed., Sage, Thousand Oaks, CA.

Further reading

Boje, D.M. (2008), *Storytelling Organizations*, SAGE Publications, London.

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