THE EVOLUTION OF A BOUNDARY ORGANIZATION IN AN ONLINE FIELD

As firms increasingly leverage online communities, the need to mediate across divergent interests has increased. To achieve such ends, boundary organizations are often set up. Understanding the evolution of such organizations towards adequately addressing the needs of multiple parties is crucial as such organizations mediate divergent practices and interests involved. To understand the evolution of such boundary organizations, we investigate a boundary organization within the complex virtual world of "EVE Online." Through an eight-year, longitudinal, qualitative archival case study of an evolving boundary organization, we uncover the characteristics of the social field upon which various agents engage with each other, mediated by the boundary organization. Over time the boundary organization shifts from one configuration to another. Such shifts are precipitated by various types of crises and underlying tensions between the various positions within the online field. This study therefore contributes to our understanding of how boundary organizations evolve, as well as how shifting interests and attendant capital stocks may change as such organizations evolve.

Keywords: online communities, boundary organization, online field, capital stocks, evolution

INTRODUCTION

Increasingly we are observing the emergence of online communities that carry a central tension at their core: being "hosted" by a firm (Fitzgerald 2006; von Hippel and von Krogh 2003; Watson et al. 2008) yet dependent on an emergent community of volunteers or customers (Chadwick 2007). These are communities which are intentionally nurtured by a firm, to service a customer base of some kind. Prominent examples of such communities include online multiplayer games such as World of Warcraft, web 2.0 sites such as YouTube, and crowd-based companies in the vein of Uber and AirBNB. These communities are neither fully managed by the top-down organizing mechanisms familiar to traditional organizations (Thompson 1967), nor do they completely rely on fluid and emergent organizing mechanisms, as the extant literature traditionally have made online communities out to do (Faraj, Jarvenpaa, & Majchrzak, 2011).

To capitalize on the emergent dynamics of such communities, companies are increasingly trying to create boundary organizations—structures set up to "accommodate the varying interests of

parties by providing a mechanism that reinforces convergent interests while allowing divergent ones to persist." (O'Mahony and Bechky 2008, p. 426). Such boundary organizations facilitate interactions between the hosting organization and the community upon which it relies (Newman and Robey 1992; Szmigin et al. 2005). For example, the ridesharing service Lyft[1] has established a driver advisory council, the restaurant ratings site Yelp has an "Elite Advisory Council"[2], early on YouTube established a community council[3] which later on evolved into the "Trusted Flagger Program"[4], and Autodesk recently transformed their beta program into a "year around customer council" to receive early feedback on new software features[5]. Such mechanisms represent ways for firms to manage diverse interests and knowledge bases. They do so through fostering dialogue with the community at a level of richness that goes beyond gathering insights using surveys or isolated focus groups. Rather, these mechanisms aim to create incisive and sustained dialogue so as to enable development of the platform and the community while balancing diverse interests.

Boundary organizations continuously manage divergent as well as convergent interests through formalized policies, routines, and relationships (Guston 1999; Guston 2001; O'Mahony and Bechky 2008), but also through emergent practices (Yeow et al. Forthcoming). While prior research has examined the characteristics of such structures and practices as well as their

1 https://thehub.lyft.com/driver-advisory-council?utm_medium=Email&utm_source=ExactTarget&utm_campaign=83043019

2 https://www.yelpblog.com/2014/02/why-do-you-yelp-new-elite-advisory-council-shares-their-stories

3 https://YouTube.googleblog.com/2007/11/meet-inaugural-community-council.html

4 https://YouTube.googleblog.com/2016/09/growing-our-trusted-flagger-program.html

5 http://autodesk.blogs.com/between_the_lines/2015/08/autocad-beta-program-transforms-to-year-around-customer-council.html

evolution over time, we do not fully understand *how, in hosted communities, do boundary organizations evolve to address the mutual interdependence of community and firm?*

To answer this question, we conducted a longitudinal archival case study of the virtual world EVE Online[6] (hereafter, "EVE"), examining how a boundary organization evolved over a period of eight years. EVE is one of the most complex virtual worlds developed to date and has a very dedicated community. This makes it similar to well-studied virtual worlds such as Second Life (Animesh et al. 2011; Berente et al. 2011), or open source software communities oriented towards creating complex artifacts (Crowston et al. 2012). In EVE, a virtual world based on science fiction, participants construct complex social relationships through alliances, supply chains, trading hubs, markets, military fleets, as well as websites and web apps, external to the game interface, that serve as specialized databases and analytical tools for use inside the virtual world. This may, for example include mapping (https://tripwire.eve-apps.com/) or market analysis (https://eve-marketdata.com/) applications for use by players. We studied the evolution of a boundary organization built in concert by the community and the hosting firm, known as the "CSM"—the Council of Stellar Management. This group consists of elected community representatives who work with the hosting firm to discuss which features are of interest to the community and what kinds of resources it would take to implement such features.

To theorize our findings, we draw on Bourdieu (1977) to conceptualize EVE as a "field of practice," i.e., a set of interrelated social positions defined through the production of specific practices and resources (forms of capital). The boundary organization exists within this field and is itself in a relationship with other agent groups constituting the field, while the field evolves

[6] https://www.eveonline.com/

from one configuration to another. This process is gradually evolving in response to actions of agents in diverse positions, and, hence, capital stocks in the field, trying to maintain or improve their position. The evolution of the boundary organization's role and actions over time can be understood as an ongoing response to these struggles.

The remainder of this paper is structured as follows: first we review the literature on boundary organizations as well as how Bourdieu's field theory can be used to understand their evolution. Then, we provide a basic introduction to EVE, its hosting firm, as well as the CSM. We then detail the methods of the longitudinal archival case study, followed by the findings. Subsequently, we develop a theoretical process model for how boundary organizations for managing divergent and convergent interests evolve over time and how these processes lead to the expression of various voices, which in turn builds (and erodes) the symbolic capital of the boundary organization. Our study also holds a number of implications for the literatures on boundary organizations and their evolution.

RECONCILING HIERARCHICAL AND EMERGENT ORGANIZING MECHANISMS THROUGH BOUNDARY ORGANIZATIONS

The tensions between volunteer contributors to the "hosted" online communities and the hosting organization are of increasing importance to online communities (Germonprez et al. 2017). For example, in the context of open source software development, we are increasingly seeing projects which have to balance both volunteer and corporate participation (Fitzgerald 2006). Such balancing acts leads to conflicts between the emergent and hierarchical organizing mechanisms of online communities and corporations, respectively.

First, online communities are generally understood to be managed using a number of approaches, such as establishing standardized, information hiding interfaces (Baldwin and Clark 2000) or through establishing boundary spanning practices of various kinds (Levina and Vaast 2005). These approaches, however, seem problematic when viewed from the perspective of hosted online communities, because of the extensive conflicts between the organizing mechanisms under which corporations operate, and the organizing mechanisms germane to online communities. First, establishing standardized interfaces, such as APIs (Eaton et al. 2015), largely assumes that work of various kinds can be neatly divided, so as to reduce unwanted interdependencies. Yet, recent work (Lindberg et al. 2016) shows that "unresolved" interdependencies inevitably remain across both participants and shared artifacts.

Second, boundary spanning practices are well-researched within traditional organizations. Using this approach, formal and informal activities constitute boundary spanning practices, through which objects and forms of communication are used to synchronize information, interpretation, and adjudication of disputes of various kinds (Carlile 2004). However, these approaches generally assume that each organization (or subunit within a larger organization) exists within a clear "container" (Winter et al. 2014), which helps to make sure that practices within each container are relatively stable. This allows for the establishment of stable boundary spanning objects and practices (Guston 1999). Hybrid online communities do not necessarily have multiple, stabilized organizational containers whose boundaries can be spanned. Rather they consist of a corporate container surrounded by a fluid community, within which practices are constantly in flux, and no clear counterparts with which to collaboratively build boundary spanning practices or objects exist (Abbott 1995).

Hosted online communities thus pose an interesting governance problem. How can such communities go about managing tensions across a fluid community governed by bottom-up dynamics and a firm governed by formal coordination mechanisms? Previous approaches fall short because they either assume that interdependencies can be reduced in a way that avoids the need for explicit coordination, or that boundary spanning practices developed in traditional organizations, existing within organizational containers, can be applied.

Boundary organizations are set up to manage such tensions (O'Mahony and Bechky 2008). The literature on boundary organizations has largely emphasized how to set up formal structural arrangements, including roles, responsibilities, formal authority, communication channels, decision-making processes, and routines, to identify convergent and negotiate divergent interests (Guston 1999; Guston 2001; O'Mahony and Bechky 2008). Recently it has also been suggested that practices of such organizations need to be flexible, and emerge dynamically over time through self-organizing processes to address new situations as interests of diverse groups change and new problems arise (Yeow, College, Soh, & Chua, Forthcoming). In online platforms, with unknown and ever-changing user bases, the social context in which the boundary organization is embedded is volatile. Further, the role of the boundary organization itself, as an agent, with its own goals and interests, has largely not been considered in prior literature. In order to unpack the evolution of a boundary organization embedded in a set of power relations, we will next turn to Bourdieu's notion of fields-of-practice and their temporal dynamics Bourdieu's (1971, 1972, 1986).

UNDERSTANDING THE EVOLUTION OF BOUNDARY ORGANIZATIONS WITHIN AN ONLINE FIELD

Bourdieu's concept of a field denotes a social arena within which agents take various positions in relation to each other. These positions, defined by how they relate to other positions, indicate the degree of power that an agent can wield within the field. Agents' positions are driven by differential accumulation of different forms of capital—social, economic, cultural, and symbolic. These forms of capital capture resources which are available to certain individuals due to their positioning with regards to relationships, money, legitimizing capacities, as well as knowledge of the inner workings of the field. Through leveraging these forms of capital, agents can move themselves into more advantageous positions (Emirbayer and Johnson 2008). The particular structuring of relational positions and associated capital stocks within a field is referred to as a "field configuration."

Of particular interest here is Bourdieu's notion of "symbolic capital," which he defines as:

"any kind of capital (economic, cultural, academic, or social) when it is perceived according to the categories of perception, the principles of vision and division, the systems of classification, the classificatory schemes, the cognitive schemata, which are, at least in part, the product of the embodiment of the objective structures of the field on consideration…" (Bourdieu 1998, p. 85).

By this Bourdieu means that symbolic capital is what endows words and action with the ability to utilize various capital stocks so as to exercise power, i.e. to restructure a situation so that it suits ones needs. This is, in essence, the heart of politics—the wielding of power, and is therefore an essential component in understanding how organizations, including boundary organizations, are able to function within social fields.

Bourdieu's theory of fields of practice has been extended by IS scholars in a number of ways, including the conceptualization of an online field (Levina and Arriaga 2014) as "a shared social

space engaging agents in producing, evaluating, and consuming content online that is held together by a shared interest and a set of power relations among agents sharing this interest (p. 477). In more traditional organizational settings, Levina and Vaast (2005) discussed the role of temporary "joint fields-of-practice" that emerge across boundaries of institutionalized professional and organizational fields and enable negotiation of interests and knowledge across diverse practices (Levina & Vaast, 2005). Boundary organizations, built to span boundaries across groups, often occupy a position within a shared online field and may themselves represent a new such joint field of practice with its own set of internal power relations and unique capital. Agents inhabiting a joint field of practice often practice separately in the external fields (e.g., open source developers versus corporate employees) as well as together in a joint field (as part of open source governance boards). Within these joint fields, these agents form unique power relations enabling specific moves in negotiating diverse external interests.

Social fields change in their configurations through tensions that occur across various positions. Different interests, or values (Thornton et al. 2012) come into conflict with each other, and the differences are negotiated so as to create new temporary truces (Zbaracki and Bergen 2010). Because agents adjust their practices in a contextual manner, tensions across established positions emerge dynamically. Such tension leads to subtle realignments of positions, and therefore also to gradual evolution of field structures. While fields change continuously as various positions come in tension with each other, there are also specific events which may unmask a particular tension or structural arrangement which has become untenable in relation to the current conditions of the field. Such events can "expose" tensions that have remained dormant, as expressed by (Bourdieu 1977, p. 168):

> *"The critique which brings the undiscussed into discussion, the unformulated into formulated, has as the condition of its possibility objective crisis, which, in breaking the*

> *immediate fit between subjective structures and the objective structures, destroys self-evidence practically."*

Given that agents in privileged positions within a field will work towards maintain the status quo and even strengthening their positions by "masking" power relationship in the field through a variety of symbolic representations justifying the existing social order, fields are likely to remain relatively stable over time (Bourdieu & Thompson). However, maintaining positions of power is difficult, and therefore there are times when specific "critical" events unmask structural power relations and the existing order unravels rapidly. This is a phenomenon well documented in the organizational literature which emphasizes moments of "punctuation," followed by another period of stability (Tushman and Romanelli 1985; Gersick 1991).

Boundary organizations can therefore be expected to evolve over time as power relations among agents in the wider field in which they are situated surface and agents start to question the existing social order and therefore also drive change. We will thus focus our attention on these critical events in the life of the boundary organization that we have studied, as these events are likely to reveal underlying tensions, power relations, and stakes in the wider online field.

A CASE STUDY OF AN EVOLVING BOUNDARY ORGANIZATION

EVE is an MMOG (massively multiplayer online game) launched in 2003 by CCP Games (Crowd Control Productions), with headquarters in Reykjavik, Iceland. The firm was founded in 1997, with the explicit purpose of producing virtual worlds and online games. Today, the firm has roughly 600 employees. Additionally, CCP represents a major economic force in the home country—Iceland—of its corporate developer, CCP, has brought in $53.7 million in revenues

during 2015[7]. EVE is a virtual science fiction world in which you take on the role of a spaceship pilot. Certain features of EVE community make it particularly interesting for our study.

First, EVE is what is referred to as a "*sandbox*" world (as opposed to a "*theme park*" world where most of the content is provided by the developers), meaning that most of the content are provided by community members themselves, which makes this community a good candidate for understanding the social dynamics on user-generated content platforms (Levina & Arriaga 2014). The participants tend to be mature (in 2014 the average age of community members was 29.4 years old[8]) and college educated. Participation in the virtual world often requires dozens of hours each week, where, for instance, specific military operations may last full weekends. Participants self-organize into corporations and alliances, which may contain up to tens of thousands of participants. These huge organizations often develop their own forums, databases, and apps, external to the virtual world itself (e.g., https://goonfleet.com/), and have specialized divisions for spaceship and equipment manufacturing, training of new community members ("human resources"), propaganda bureaus (e.g., https://imperium.news/). They also engage in managing complex virtual supply chains and trading hubs.

Second, the EVE universe represents a single world, where continuous interaction has been happening across 13 years. EVE can have up to 65,000 participants logged in simultaneously into a single server[9], making it one of the largest shared virtual worlds we have today. Much like a real-world society, it is fraught with conflict and complex social dynamics. For example, in

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[7] http://marketsforisk.blogspot.com/2016/04/ccp-financial-statements-for-2015-review.html

8 https://www.YouTube.com/watc h?time_continue=88&v=nVWC6I-FLEA

9 http://www.eve-offline.net/?server=tranquility

2014, Forbes featured a story[10] on EVE explaining how the equivalence of $300,000 was lost in a single battle involving over 4,000 participants, lasting a full weekend. Similarly, journalist Andrew Groen has published a book (2016), detailing the history of economic and military conflicts between increasingly large and well-organized groups.

While the specific nature of practices within EVE online is unique among MMOGs, what is common between EVE and many other online communities hosted by corporations, such as YouTube, Reddit, Yelp, TripAdvisor, and Ubuntu Linux, is the need to govern the relationship between diverse community groups and members participating on the platform and the for-profit corporation itself. In this sense, EVE serves as a representative case study of the emergent phenomenon (Eisenhardt 1989) of understanding community-corporation relationship dynamics and governance in hosted online communities.

The Council of Stellar Management

In 2015 The Atlantic featured a story[11] on EVE discussing its longstanding, democratically elected community council, which participates in the design of the virtual world—the Council of Stellar Management (CSM). The CSM is a community council set up by CCP to solicit feedback on various features. It has been active since 2008 and consists of roughly a dozen democratically elected community representatives. Elections are managed in such a way that every paid account gets a vote, so if an individual customer has multiple accounts he or she can vote multiple times. Candidates must announce their candidacy in one of the online forums, and be approved by CCP. Once the CSM has been formed for that particular year (or in the first few years, for a term of six

10 http://www.forbes.com/sites/erikkain/2014/01/29/massive-eve-online-battle-could-cost-500000-in-real-money

11 http://www.theatlantic.com/technology/archive/2015/03/the-very-real-politics-of-a-virtual-society/386698/

months), the CSM is given access to a number of communication channels including voice, asynchronous chat, as well as forums. After only a few years of operating, the CSM also started to conduct physical meetings in Reykjavik, Iceland, at the CCP headquarters. This enabled the CSM to sit down, face to face, with CCP developers to discuss specific features. To provide the CSM with insight into features which are yet to be released, without risking the public disclosure of business-sensitive information, CCP demands that CSM representatives sign a non-disclosure agreement (NDA), effectively limiting what information they can share with the community.

The CSM has been described in what is known as the "*CSM whitepaper,*"[12] which is a living document, prepared by CCP, which has evolved over time. While the CSM was initially imagined as a democratic governance council for a virtual world, this lofty vision has gone through a number of revisions in order to help the council to perform a more limited set of functions more effectively.

While the specific activities of the CSM has changed somewhat over the years, the mainstay of such activities have centered around integrating knowledge with regards to features that are either being planned, under development, or which have been launched recently. Through integrating knowledge with regards to how the community sees various features, with knowledge with regards to development resources and constraints, the CSM contributes to the ongoing design and redesign of EVE.

Data Collection

The data consists of archival records detailing the evolution of the CSM across the years 2008 through 2016. Because of the nature of EVE as an online community, there are rich traces of data

12 http://cdn1.eveonline.com/community/csm/CSM-WHITEPAPER.pdf

available in multiple formats: meeting minutes, forum posts, news articles, opinion pieces, video-recorded presentations and Q&A sessions, as well as podcasts. This data was collected in the following way: we started by collecting the meeting minutes from each of the 28 CSM meetings that have occurred so far (in excess of 1,000 pages). We then turned our attention towards each of the three main EVE media outlets: TMC (TheMittani.Com), EN24 (EveNews24.com), and CZ (CrossingZebras.com), from which we sampled all articles that contained the keyword "CSM" (756 items, in excess of 5,000 pages). Such articles also included a string of comments, posted below the article. When coding each of these items, there were sometimes links or suggested items that were relevant, such as podcasts, other news articles, or forum conversations. These were also included in the overall sample. We also searched the official CCP YouTube channel using the keyword "CSM." Most such videos were recordings of panel sessions and lectures held at the various "meetups" hosted around the world by the EVE community, as well as an annual "fanfest" hosted by CCP in Iceland. In total, we collected 822 items, as tabulated in Table 1.

Table 1. Data Sources

Type of data	**N**	**Comment**
Meeting Minutes	28	Minutes from CSM meetings 2008-2016
News items	760	Articles from EN24, CZ, and TMC, including items sampled through snowball sampling
Audio/video content	34	• Videos about the CSM on CCP's official YouTube channel • Videos and podcasts linked from sampled documents

This data represents the distributed conversation occurring within the community specifically around CSM and various issues within the virtual world that the CSM discussed. Other potentially relevant data that we did not have access too might have included interactions that took place within CCP offices, within private chat channels, or internal forums managed by particular player groups. We also did not include in our analysis the over 280,000 forum messages posted on forums geared towards discussing issues relevant to the CSM during the

study period. Following Grounded Theory guidelines, we stopped pursuing new data sources when our theory reached theoretical saturation.

The sampled data, however, does represent the particular conversations that emerged as central, or of public interest to the wider EVE community, as indicated by the major in-game news outlets picking them up. As such our particular data constitutes a suitable way for "taking the temperature" with regards to what issues were paid attention to by the EVE community at large.

Data Analysis

These data sources were then coded using a standard process of open, axial, and selective coding (Glaser and Strauss 1967) geared towards establishing process theory from digital traces (Vaast and Walsham 2011). Tangibly, this consisted of first mapping out who were the key agents (stakeholder groups) participating in the Eve Online field as well as major characteristics of each. The key agents, defined by their diverse relational positions and interests included CCP, the CSM, as well as elite and causal players within the community. Each of these were characterized in terms of their general modus operandi and their relations to each other. Characterizing relational positions involved identifying specific species of capital active in the field and mapping out the differential accumulation of these stocks of capital (economic, social, cultural, and symbolic) by an agent.

We could then trace the evolution of agents relations over time. This occurred in two steps. First, we identified events across time that were deemed salient from the emic (Headland et al. 1990) perspective of developers and participants in the virtual world of EVE. This captured major events such as the "*Incarna scandal*" or major changes to the ways in which the CSM was elected. These events thus constituted a temporal landscape, effectively providing the analysis with checkpoints in time, which various emergent themes could be temporally attached to. Then,

in a second step, specific themes were identified, that were conceptually connected to the changes in practices of CSM and how these changes were related to the relational positions of all agents in the field.

Following the analysis of the Eve Online field of practice, we go deeper into unpacking the challenges specific to the functioning of a boundary organization within this field. We map out the movement of the boundary organization through four phases showing how various challenges were addressed in each and how that effected the configuration of the online field as a consequence.

FINDINGS

The fundamental relationship between CCP and the EVE community as a whole consists of both aligned and divergent interests. CCP creates a technology platform that is designed to enable and constrain certain user behaviors as well as rules and rewards that encourage certain actions and not others; it then charges fees for the use of the platform. Simultaneously, individual players and groups within the community are trying to achieve various goals within the virtual world. Ultimately, it is the various activities geared towards achieving such goals that delivers valuable experiences to community members. CCP and the community thus co-create a virtual world in which CCP provides the platform and the community fills it with meaning through use. Together they co-create an experience that users are willing to pay for.

Following Bourdieu (Bourdieu 1998), when agents participate in a field they have both an interest (or inclination) and an ability to pursue stakes offered by the field. Thus, CCP has both the knowledge of the platform technology and an interest in making the user experience worth the fee for as many players as possible. At the same time, the knowledge of the virtual world

experience and what would make it more enjoyable is distributed across a wide set of dispersed community members. These players, in turn, have both convergent and divergent interests in the game and the desire to satisfy their own individual or alliance interests rather than attract as many paying users as possible. CSM, as a boundary organization, was eventually created to negotiate these divergent interests of different kinds of players and CCP, as well as to integrate their diverse knowledge bases.

To explain how this boundary organization functions, we will first describe the field of the EVE virtual world, and the different agents within this field, how they engage with each other, forming a unique set of power relations. We then will map out the evolving position of the CSM within the field as the positions of different agents in the field are reproduced and eventually transformed over time.

Agents Upon a Field

We are examining the characteristics and relationships occurring within Eve Online field across multiple agent groups: CCP (hereafter, "the firm"), elite players, casual players, and the CSM (the boundary organization). The configuration of the field consists of specific positions, or roles, which house various forms of capital, which in combination can be used to imbue speech, expressions, and other actions on part of the agents with symbolic capital. The firm designs the platform upon which the virtual world runs, while the community consists of a chaotic set of volunteers organizing themselves organically (Table 2).

The firm is structured as a privately-owned corporation, dedicated to developing virtual worlds. With regards to EVE and its community, the firm attempts to provide a "*sandbox,*" within which individual participants and groups can create their own adventures, challenges, and structures:

> *"'It's not our game', says Jon Lander, EVE's senior producer…"We're the janitors of it; we sweep up and make sure the power's still running and whatever, but it's their game. EVE is the sum history of their personal interactions, and we don't own that. We just look after it."*[13]

This means that an essential component of the value that EVE provides to its customers (i.e. community members) is the content and relationships produced by the community of players. Therefore, the firm actively seeks to nurture community creativity (by acting as "*janitors*"), rather than create a "*theme park*" experience providing pre-packaged activities to the visitors.

Table 2. Key Agents in Eve Online Field

	Characteristics	**Forms of Capital**		
		Economic	**Cultural**	**Social**
Firm (CCP)	• Develops and owns of the platform • Operates under a for-profit corporate structure • Provides the rules under which the virtual world operates	Use income from fees to develop and run the platform	Has deep expertise about the current design of the game and future features planned and limited expertise about the experience of playing the game	Personal relationships with a few community members
Casual players	• Community members who spend a few hours per week on the platform • Loosely organized, fragmented player groups and individual "*solo*" players • Develop little content	Collectively contribute a large number of subscription fees	Experience of playing the game casually, especially certain niches of the game	Limited to small groups or no social relations with other players
Vocal elite players	• Community members who spend dozens of hours each week on the platform • Highly organized into blocks and alliances • Develop large portions of content on the platform	Contribute significant number of subscription fees	Key organized producers of content of the game with deep specific knowledge based on lived in experiences	Organized groups of players with strong social relations ("*powerblocs*")

13 http://www.gamesindustry.biz/articles/2012-05-03-ccp-games-embracing-the-law-of-unintended-consequences

The firm possesses economic capital due to the subscription fees that it collects as revenue. Further, individual developers foster personal relationships with community members, and therefore also wield some degree of social capital. In terms of cultural capital, the firm has the knowledge of skills, resources, and methods involved in developing various features—knowledge which is usually inaccessible to community members. As the designer of the virtual world, exercises power through effectively endorsing various styles of participation in the virtual world as a matter of course during the prioritization of development resources.

The community in turn, provides "*content"*—activities of various kinds such as battles, market trading, and varied forms of social organizing—which makes the lived experience of participating in EVE rich and engrossing. Community members have both shared and diverse interests in influencing how the firm develops the virtual world:

> *"Constructive interaction and open dialogue between the legislator— CCP—and society members took place with the mutual aim of improving the society as much as possible."*(CSM Whitepaper)

The community, as a collective, controls economic capital in the form of monthly $15 subscriptions, which provide revenue of the firm. Last, individual community members and groups possess deep specific knowledge about various niche aspects of the virtual world, knowledge which the firm may want to access in some situations. The community can therefore, to the degree to which it is organized, exercise power through protests and demonstrations, voting, as well as through dissent on forums ("*threadnoughts,"* i.e. very long forum threads).

Notably, the community consists of different types of players with distinct objectives and interests. Analytically, the two most interesting types are the elite players and the casual players. These two types of players differ in a number of respects. First, elite players tend to be highly organized into what players refer to as "*power blocs*." Such organized groups often have special

interests lobbying for changes that are of greater value to large organized alliances than to smaller, less organized groups of players. Second, casual players, who tend to commit less time and fewer resources to the game than elite players tend to be able to voice their concerns less effectively. Such players can, if properly represented, wield large amounts of power, because of the vast size of the whole set of casual players.

The Council of Stellar Management

To help to integrate knowledge based on first-hand experience gained by *living* in the virtual world, with the development expertise housed inside of the firm, the firm established a boundary organization intended to mediate across the firm and the community. This also helped to satisfy demands on the part of players to have their voices heard to a greater degree, with regards to issues of how the game development should proceed in terms of new features:

> *"… the Council of Stellar Management (CSM) [is] a vital part of game development. The Council is included in the development process to ensure that feedback and opinions from EVE Online players are brought to the attention of the development team and that viewpoints from members of the EVE community across all demographics of play style are represented and heard…After features are shipped, delegates can forward community feedback to CCP."*

This boundary organization wields no substantive forms of economic capital, but has important forms of social capital through its ties to developers as well as community members. This unique position makes the CSM, as intended, an intermediary between the community and CCP. Last, the boundary organization is uniquely positioned to integrate cultural capital across the community and CCP. Voting community members look to elect individuals who possesses cultural capital on the council. As a community member expressed it, "*The other thing we look for in a candidate is figuring out what exactly they bring to the table in terms of knowledge and skillsets*.".

In sum, various forms of capital are distributed differently across the field that makes up the virtual world of EVE, and these forms of capital form the basis of the symbolic capital that agents use to wield power. The boundary organization seeks to negotiate interests of diverse parties by relating various forms of capital that agents accumulate in the field. As capital in the community is shifting and fluid, the challenge of creating a boundary organization that is able to negotiate diverse interests represents a central conundrum. To keep up with the changing configuration of the EVE online field, the boundary organization does not stay static, but rather evolves through a number of phases, which we will describe in the next section.

Phases of the CSM

We will describe configurations of the CSM across four phases. We have labeled each of these phases based on the change in the relative capital of key agents within each phase. In the initial phase, 2008-2011, the focus mainly rested on establishing the basic procedures of the CSM, thus indicating an inwards focus. During 2011-2013, the focus shifted towards integrating the CSM into the software development processes of CCP. During 2013-2015, the focus shifted towards integrating the CSM better with the community, through adapting the systems through which the CSM is elected. Last, during 2015-2016, a crisis of trust occurred, which led to efforts to hold CSM members accountable for their actions.

Figure 1. Timeline

The field, which the CSM was supposed to help integrate, continuously shifts in terms of the positions of various agents and their relative capital accumulation. Further, different struggles between the original agents (the firm and the community) gave rise to various challenges often surfaced due to particular "crisis" events (captured by individual markers above the timeline in Figure 1), which had a drastic influence on the relative positions of agents in the field.

2008-2011: Triaging Bugs & Feature Requests. The CSM was first established in 2007 when a developer, working for the firm, nicknamed "*T20*" was caught leaking specific virtual goods to a community group that he belonged to. Through doing so, he conferred an unfair advantage to this group, thus effectively strengthening their capacity to "*win*" within the context of the virtual world. Effectively, this represents a form of collusion between an elite player group and the firm, at the expense of everyone else (and eventually, also at the expense of the firm). T20 used his cultural capital, bestowed upon him as a firm employee, to advance the interests of his player group. This caused a great uproar within the community, leading to a great loss of confidence in the firm:

> *"On February 9, 2007, a player known as Kugutsumen hacked an enemy corporation's private forum to find out and reveal that Eve Online developer t20 had provided his corporation, Reikoku, with six valuable blueprints, giving them an advantage over competing corporations. Some within the Eve Online community asked for t20's dismissal. While an apology letter was left for the community in the form of a dev blog, he remained an Eve Online developer until late 2008."* (https://en.wikipedia.org/wiki/Eve_Online)

This punctuation moment signified a loss of symbolic capital on the part of the firm and led to calls from the community for a "*check on CCP,"* so that further abuses could be prevented. Hence, the T20 scandal was the key event which pushed the firm to establish a boundary organization, CSM, thus symbolizing a significant change in the relationship between the firm and the community:

> *"The purpose ... is to establish the foundation for implementing a deliberative, democratically elected, council in EVE."* (CSM Whitepaper)

At this point, the establishment of CSM could be seen as purely symbolic as it had no formal mandate or direct influence over the firm. In this sense, the CSM was endowed symbolic capital from the firm. The first iteration of the CSM were, according to the CSM Whitepaper, *"selected from a pool of player applicants by CCP personnel. Selection criteria included factors such as the size of their respective corporation, total time spent online, and "visibility" on the EVE Online forums."* This pool of player applicants announced their candidacies on the forums, and were appointed by the firm. This initial appointment of well-known EVE players from large power blocs represented a first step towards lending more symbolic capital to elite players.

The original configuration of the CSM focused on leveraging community representatives to collate bug reports, feature requests, and other suggestions from the wider community, discussing and prioritizing them. CSM would deliver prioritized requests to the firm, which made its own decisions development priorities, without any direct oversight from the CSM. It was not clear to CSM or the community how seriously the firm treated their suggestions and priorities. Hence, the overall integration between the two entities was fairly low, as well as lopsided. The CSM was afforded little insight into the workings of the firm, while the firm had complete insight into the activities of the CSM. To the degree to which CSM was afforded insights into the plans of the firm, the CSM members were also forced to sign a Non-Disclosure Agreement (NDA), effectively preventing them from sharing privileged information with the larger community.

A large amount of time at this stage was also spent trying to formulate the working procedures of the CSM itself. Initially, the CSM mostly resembled some type of a governance "board" working

according to Robert's rules of order[14] and voted on specific propositions put forth by individual CSM members. The term of service on the CSM was initially six months, but this was soon changed to a full year, as the CSM and the firm realized that it took several months for CSM members to learn the ropes before they could participate productively.

2011-2013: Agile Stakeholder. In the early days of the CSM there was an idealistic view of the CSM among players suggesting that the council was a "*democratic elected government*" that would be a "*check on the firm*." In practice, however, the CSM was a group of elite players who voluntarily enlisted to collate and prioritize bugs and feature requests from the community. This discrepancy between perception and reality lead to disillusionment with the CSM, which started being portrayed by some elite players and commentators (e.g. in-game journalists) as a Public Relations tool for the firm and nothing else.

This disappointment with the firm and, by implication with CSM that failed to voice player's concerns properly, boiled over in the form of the "*Incarna crisis.*" The crisis started with the firm offering for sale excessively expensive digital vanity items such as a virtual monocle for $70. Tensions rose further around the planned sale of "*high performance*" items which would allow newcomers to outcompete old-timers through a "*pay to win*" approach instead of relying on hard-earned "*skills*." Within dedicated gamer communities, such features are largely regarded as anathema, and therefore stirred ire across the EVE community. The tensions boiled over around the "*Incarna*" feature expansion, which was meant to incorporate activities not performed while piloting a spaceship, such as "*walking in stations*," shopping and gambling. In May of 2011, an internal firm newsletter was leaked that discussed the pros and cons of selling various items as

14 https://en.wikipedia.org/wiki/Robert's_Rules_of_Order

part of the Incarna expansion. The memo led to an uproar throughout the community. For example, one user complained: *"I just don't want EVE to turn into a cashshop free2play game, like was hinted at [in the leaked memo]."*

This time period is popularly referred to as the "*Summer of Rage,*" which largely consisted of community members posting "*threadnoughts*" as well as assembling at a central point in the virtual world, the trading hub "*Jita,*" to shoot at a monument built just outside the docking bay. This monument, and the shooting of it, thus came to symbolize the resistance to the new features promoted by the firm. At a later point, the "defeated" firm even altered the graphical image of the monument to represent that it had been destroyed, see Figure 2 below.

Figure 2. The Jita monument before and after the "Summer of Rage"[15]

The relationship between the firm and the community was so fraught with tension that the CSM was called to Iceland for an emergency summit:

[15] https://www.engadget.com/2011/11/16/eve-online-monument-commemorates-the-summer-riots/

> *"We're here called for an emergency meeting of the CSM to try to come to an agreement with CCP and discuss some of the issues of the controversies, scandal, we guess you'd say, of the Incarna deployment, the virtual goods store and the various leaks that have been coming from inside of the company that have inflamed the playerbase, and you know, put us into crisis mode."* (Official CSM Emergency Summit Video)

During the emergency summit, the CSM and the firm worked to reach a shared understanding with regards to an appropriate way to proceed with micro-transactions. This summit led to the release of two separate, public statements by the firm and the CSM, each affirming their commitment to avoid non-cosmetic micro-transactions, especially those that could lead to "*game breaking*" effects, that is, increasing various forms of military or economic performance within the virtual world. The CEO of the firm, Hilmar Veigar Pétursson, also wrote a letter apologizing to the community, in an effort to stem the loss of symbolic capital:

> *"You have spoken, loudly and clearly, with your words and with your actions. And there were definitely moments in recent history when we wish we would have listened more and taken a different path.*
>
> *I was wrong, and we admit it."*

The Incarna crisis resulted in massive loss of economic capital on the part of the firm, since many community members simply "*unsubbed*" (i.e., ended their paid subscriptions) in protest. This forced the firm's hand, and led the firm to fire 20% of its global staff, while asserting their strategic commitment to, and orienting their new product development strategies towards "*flying in space*"—the core value proposition of EVE, as expressed by CSM chairman, The Mittani:

> *"In response to this backlash, CCP made efforts to refocus on game quality and rebalancing, going back to the roots of Flying in Space (or FiS) and iterating on what makes EVE unique…No other expansion has been as ambitious or backfired so strongly against CCP. Iceland has been angel-footed ever since. This is understandable. Having been so close to the brink, there are strong incentives against risking it all once again."*

The Incarna crisis also made it clear that in the first phase of its existence, the CSM was not taken seriously by the firm. By withdrawing subscriptions, the players made it clear that the

power relationships between the firm and the CSM had to change. As expressed by a community member on the official forums:

> *"The thing we must remember is that CCP is not a democracy, and while the CSM may have influence, it possess no power to speak of in the corporate hierarchy… But CSM 6*[16] *did prove one thing during the Incarna Crisis, that if CCP fails to heed our elected officials we can always vote through our unsubscribing.*"

As a result of the crisis, the CSM's role and position within EVE online field has changed. The firm started incorporating the CSM's opinions and ideas into its development workflow on an ongoing basis, making the CSM a real "stakeholder" in its agile software development process. The CSM was increasingly seen as an authoritative representative of the community. In field analysis terms, the CSM acquired symbolic capital not only as a valid source of knowledge with regards to what community wanted, but also as a legitimate authority on what users would be willing to pay for with their subscription dollars, as expressed by "*The Mittani."*:

> *"The CSM has sort of evolved from a parliamentary paradigm in the old days to now being more of an advocacy group for the players, lobbyists, essentially, and our power comes from access."*

As the CSM were more effective in aligning their public image to what they could actually do (i.e. influence the firm through advocacy), this led to increasing confidence, even if the original idea of a "*democratic council*" which would wield actual decision-making powers, continued to influence the community's perception of what the CSM should be, and the CSM found it hard to distance itself from such impressions. Despite this, the new equilibrium proved more effective with regards to infusing the firm's development process with knowledge garnered from the community.

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[16] The expression "CSM 6" refers to the 6th CSM, i.e. the set of representatives elected 6 years after the CSM was initially formed.

2013-2015: Modified Voting System. Elected representatives of the CSM were not necessarily representative of the entire community or even the whole electorate (which typically had constituted 20% or less of the community). This caused tensions, since many community members still believed the CSM was supposed to be a "*democratic governance body*" created in the image of real-world democratic institutions. Many community participants instead saw their democratically elected representatives as "*pushing their own issues*." However, the firm, focused on collecting as many subscription dollars as possible, wanted to gather feedback on the importance of features and other issues from as many users as possible. Instead, they often got a biased view representing certain elite users and their "*powerblocs,*" which often organized their voters effectively so as to push a particular agenda. Organizing voters often consisted of providing members with a pre-filled ballot (*"Our ballot is very specifically picked to…support our allies"*). Such efforts, in turn, fueled fears that certain segments of the EVE community might become overrepresented on the CSM, as suggested by multi-term CSM representative Trebor Daehdoow:

> *"…any new CSM voting system should, at a minimum: … Reduce (but not eliminate) the advantages held by highly organized voting blocs. In the previous election, for example, one voting bloc did extremely sophisticated exit-polling; if they had chosen to use this information to efficiently split their votes, they could have won 3 of the top 7 positions on the CSM."*

Such fears were not completely unfounded. Indeed, influential powerbloc leader, "*The Mittani,*" stated that *"the CSM can wield a frightening level of influence if someone of sound mind and a knack for political manipulation is in charge."* This meant that some elite player groups could, and on occasion did, use the social capital that they possessed because of their organizing capacities to benefit themselves over other elite player groups as well as over underrepresented casual players. To remedy this situation, the firm pushed the CSM to evaluate several candidates

for a new voting system, and eventually an approach labelled "*Single Transferable Vote*" (STV)[17] was chosen:

> *"In an STV-based voting system, instead of voting for a single candidate, each voter chooses up to 14 candidates and ranks them from 1 to 14. The Wright System is then used to calculate how each voter's ranked votes are applied to the field of candidates."* (Official announcement in a CCP Devblog)

Establishing a new voting system thus represented a punctuation point which changed the relative position of the boundary organization in the EVE Online field, moving it closer to casual players and further away from elite players. The change was meant to increase the symbolic capital of the boundary organization by making sure that it was better integrated with the community as a whole.

2015-2016: Accountability. The CSM was historically structured to maintain a balance between protecting sensitive information shared by the firm, such as detailed development plans, and providing transparent information to the community about what the firm was doing to improve the firm-community relationship and aid communication. Managing this tension was largely governed through a number of interrelated measures including: a) the firm limited the amount of information it was sharing with the CSM, b) members of the CSM were subject to an NDA with the firm, c) procedural aspects of CSM meetings were diligently documented and shared with the community.

In spite of these measures, however, CSM members occasionally leaked NDA-protected information to specific elite player groups. These leaks affected the relative positions held by

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[17] STV is a "voting system designed to achieve proportional representation through ranked voting," see https://en.wikipedia.org/wiki/Single_transferable_vote.

various agents within the EVE Online field, as expressed by "*Sion Kumitomo,*" representative of the elite player group "*Goonswarm*":

> *"One of the issues that came up on CCP's side was the issue of trust and NDA breaches, and CCP claimed, 'Look, you guys leak, that's a problem for this institution's ability to be trusted.' But despite the fact that we had meetings about these leaks and the general annoyance about how it was supposedly tanking CSM-CCP relations, no one was willing to do anything meaningful to attempt to resolve the situation. The CSM-CCP relationship continued to slide..."*

While the leaks provided valuable cultural capital to specific council members' powerblocs, they eventually served to diminish the symbolic capital of the CSM. The firm was reducing the amount of sensitive information it was willing to share with CSM, limiting both its legitimacy within the community (its symbolic capital) and its ability to provide useful feedback to the firm.

Even when CSM members obeyed the NDA, the fact that they gained so much proprietary information about future game releases created an impression that it was an exclusive club, distancing the firm from the community at large—contrary to the idea of having a community council. To navigate these tensions, the CSM constantly modulated the way that it dealt with confidential information shared by the firm by sharing partial insights and obscuring details while relaying some general information to the community. If specific details could not be provided without breaching the NDA, the CSM focused on providing procedural details to maintain legitimacy. This led to an increased formalization of the CSM minutes, which grew more voluminous and detailed over time.

By the latter half of of 2015, CSM had become highly formalized and demanded a high degree of time commitment among elected members, while still dealing with occasional leaks of confidential information by some members. This situation led to multiple CSM representatives resigning either due to dismay with the CSM or because of their involvement in leaking. This, according to CSM member "*Sion Kumitomo,*" effectively rendered the CSM defunct:

> *"It was really productive, really good, a lot of good things about it, and then a lot of that stuff all got smashed into tiny little bits. There was a huge NDA breach on by the CSM or parts of the CSM or certain members of the CSM, and it obliterated all kinds of trust, like we are borderline not functional as an organization right now because when you don't have that trust, when people don't actually have the freedom to talk to developers, to talk about this stuff.*"

The symbolic capital of the CSM was at an all-time low ("*CSM is effectively dead*"), thus also indicating diminished symbolic capital stocks on the part of casual and elite players. To remedy this situation, the firm, together with the remaining members of the CSM, decided to change the whitepaper governing the basic structures of the CSM, specifically, adding a clause for replacing CSM representatives who were either not performing their duties or violating NDA. This action was aimed at restoring the symbolic capital of the CSM by ensuring some personal accountability. By 2016, at the end of our study, the judgement was still out on whether this change would restore the CSM's legitimacy.

DISCUSSION

We asked the following research question: *how, in hosted communities, do boundary organizations evolve to address the mutual interdependence of community and firm?* Based on our findings, we can now synthesize a theoretical framework that sheds light on this question. We do this by showing how the boundary organization responded to various types of challenges, each of which eventually erupted in a series of crises. These responses embodied different types of "voice" as well as transparency on the part of the firm. The evolution of voice is in turn associated with the rise and fall of the boundary organization's symbolic capital, therefore enabling (and inhibiting) its functioning.

Towards a Theory of Evolution in Boundary Organizations

We identify three challenges associated with the capacity of the boundary organization to address the mutual interdependence of community and firm within the online field: *authority vis-à-vis the firm*, *representation of diverse types of users*, and *appropriate sharing of the information disclosed by the firm*. First, a boundary organization struggles to establish its authority in terms of being able to influence the firm that provides the platform on which the community runs. At the end of the day, the firm is "voluntarily" supporting the boundary organization, and as a private enterprise has no obligations to listen to its input. The firm benefits from learning about users' interest in certain features, new ideas, and bug reports, but has no official obligation to address them. Thus, when users' interests do not coincide with the firm's interests, the firm would rather ignore the input it receives form the boundary organization. Such actions undermine the boundary organization's authority, thereby reducing its symbolic capital in the field. However, given the economic, social, cultural, and therefore also symbolic capital that users collectively hold and that is represented through the boundary organization, the firm's repeated ignoring of users' interest and delimitation of the boundary organization may result in users rebelling. In our case, such a rebellion came in the form of mass unsubscriptions, but we can envision other forms of rebellion, for example, users creating an alternative platform, or sabotaging the firm's success in other ways.

The second challenge experienced by a boundary organization has to do with the tensions among different types of users. Thus, at the beginning of our case, the boundary organization overrepresented interests of powerful user groups and experienced players at the expense of less powerful groups and casual players. Much like voter mobilization during political campaigns, powerful groups can undermine democratic processes during the election. If that happens, the

boundary organization delegitimizes itself as a representative of a wide set of interests vis-à-vis the firm, which is only willing to grant it legitimacy if it represents a wide user base (many subscriptions). Its symbolic capital diminishes, and it social capital becomes skewed towards certain groups, and it may not even be fully aware of the wider needs of diverse players, limiting its cultural capital as well. In our case, a new voting system that ensured proportional representation of different subgroups of users was instituted to address this problem and restore legitimacy to the boundary organization.

Finally, a boundary organization, by the virtue of its role, is privy to the firm's sensitive information without which it cannot properly integrate diverse perspectives and provide the firm with useful input on, for example, planned features. However, this "insider" information is valuable to players who can plan strategic moves based on such disclosures. Because members of the boundary organization are also users of the platform and members of various alliances, they are tempted to disclose this privileged information to accumulate their individual symbolic or social capital. In this way, boundary organization members (and their alliances) are in tension with other (non-participating) members. This improper use of the information, in turn, prompts the firm to stop disclosing, undermining the symbolic and cultural capital of the boundary organization. In our case, the emphasis on the boundary organization's procedural transparency was used a symbolic substitute for the community's demand for the full sharing of disclosed information. Instead of reassuring the community, however, it created extra unnecessary work. The eventual resolution of this challenge, instead, came in the form of removing offenders from the council.

Each of these challenges were related to various crises that occurred across the timeline of our case study. These crises served to expose a particular challenge to the attention of the firm and

the community. The response to those crises create punctuation points redefining the relative positions of agents and the position of the boundary organization in the field. Table 3 depicts our analysis of each phase defined by a significant change in the relative positions of agents in the field in response to a "crisis" leading up to the change.

Table 3. Four phases of the boundary organization

Time Period	Precipitating punctuation	Focus	Community Voice	Firm's Transparency
2008-2011	T20 scandal	Triaging Bugs & Feature Requests	Informational Voice	Limited
2011-2013	Incarna crisis	Providing continuous feedback on features under development	Influential Voice	Extensive
2013-2015	Crisis of representation	Diversifying community representation through voting	Diversity of Voices	Extensive
2015-2016	Confidential Information leaks	Increasing accountability of CSM representatives & processes	Misuse of Voice	Limited

As various punctuations change the relative positioning of various agents, the degree of community voice and firm transparency is modified. The firm's transparency initially starts out as limited, but is then successively increased, only to fall back again as confidential information starts to leak out from the CSM. In concert with these changes, the degree of voice that the community is being afforded by the relative positioning of various actors changes. What starts out as informational voice, i.e. a one-way flow of information from the community to the firm, evolves into influential voice as the Incarna crisis prompts the firm to include the CSM as an agile stakeholder. This allows the CSM to exert direct pressure on various decision points within the firm. As the STV voting system is being implemented, the diversity of voices that are allowed to be heard increases. Finally, voice is being misused, as the CSM leaks confidential information.

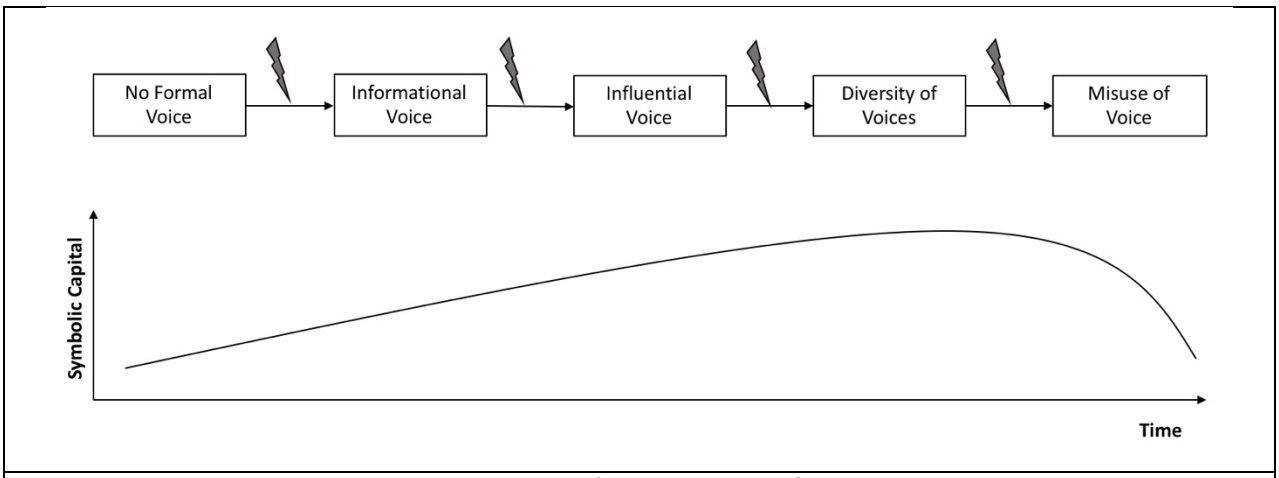

Figure 3. Evolution of the Boundary Organization

The evolution of voice over time is driven forward by various crises, and is related to the overall growth (and decline) of symbolic capital on part of the boundary organization (see Figure 3 above). The change in the voice that is being afforded in the community thus has a direct impact on the amount of symbolic capital that the boundary organization is able to amass. Inversely, symbolic capital is also needed in order for agents to be able to express their preferred vision of the world, and have such expressions taken seriously by other members of the same online field. Hence, the rise and fall of symbolic capital is directly tied to the boundary organization trying to address the challenges that it faced within the online field.

Our theoretical synthesis thus highlights an important aspect of boundary organizations: by necessity they continuously manage various tensions, and therefore can only progress towards more effective functioning temporarily, and in spurts. Since there always will be new challenges, conflicts with regards to power, and tensions between various capital positions, there will also always be new crises. These crises will force a boundary organization to adjust, through implementing new policies, guidelines, and structures, which then modifies the symbolic capital wielded by the boundary organization—sometimes for the better, sometimes for the worse.

This perspective challenges the modernistic myth of "progress" embodied by stage theories of IS development and implementation, which assume that organizations and IS projects evolve towards higher degrees of functioning. In contrast, we show how the boundary organization continuously struggles for legitimacy vis-à-vis multiple other agents, whose interests it needed to represent and balance. At the same time, we saw that boundary organization itself, as an agent in the field, through its actions, shifted power relations with other agents. For example, by gaining the power to influence the firm's development plans on an ongoing basis, the boundary organization increased the relative influence of the community's cultural capital within the field as compared to the firms' interest in gaining economic capital (e.g., by charging for expensive accessories and weapons). Inversely, the establishment of the boundary organization as an agent itself within the field led to other tensions, as members of the boundary organization were split between the interests of the boundary organization, and their own interest, related to specific player groups. This caused additional crises in the forms of inappropriate disclosures. Therefore, the boundary organization is continuously contending with various power dynamics, and solutions to past problems may lead to the emergence of new problems.

Theoretical Implications

The literature on boundary organizations have largely treated the evolution of boundary organizations along the lines of systems development lifecycles (Yeow, College, Soh, & Chua, Forthcoming). Our findings, however, indicate the ways in which boundary organizations attend to the ebbs and flows of capital stocks throughout the lifecycle. This leads to a number of implications with regards to (1) challenges, (2) power, (3) the adaptive nature of boundary organizations, as well as (4) governance. Below we discuss each of these implications in turn.

First, the identification of three challenges: authority vis-a-vis the firm, representation of diverse users, and appropriate sharing of information, provide essential insights into the factors and dynamics which drive the evolution of boundary organizations. These insights are important because they help us to dispel the notion of boundary organizations necessarily developing in a teleological manner (Van De Ven and Poole 1995), or through planned information systems development cycles (Yeow et al., Forthcoming). Such views assume and predict a particular trajectory of development. The perspective provided by the study at hand, however, allows us to analyze a multitude of potential directions in the evolution of boundary organization, which enables us to also analyze processes of decline and potential dissolution of such organizations. Such analytical tools are helpful, because they help us to study not only success stories, but also to compare various trajectories that boundary organizations may take, so as to identify the factors and processes which may help to explain why growth and increasing performance of boundary organizations occur, as opposed to disintegration.

Second, the explicit integration of power in the analysis through the virtue of Bourdieu's framework further recognizes that boundary organizations do not necessarily evolve towards greater effectiveness and efficiency (Yeow et al. Forthcoming). Rather, the perspective provided by the study at hand suggests that boundary organizations are contested spaces, within which multifarious groups attempt to advance their interests, while at the same time recognizing that their interests are simultaneously in tension and interdependent with the interests of other actors within the same social field.

The evolution of the boundary organization, in our case, was largely driven by responses to various forms of crises, and lead to changes in the voice exercised by the boundary organization, and indirectly by various community groups. These changes lead to the increasing empowerment

of the boundary organization as an agent itself, which eventually lead to additional crises related to the disclosure of sensitive information. In this sense, the solution to yesterday's problems lay the groundwork for tomorrow's problems. This further suggests that boundary organizations do not simply evolve towards greater maturity and effectiveness, but rather have to continuously manage various conflicts, crises, and tensions, due to the inherent power dynamics that such organizations are set up to manage.

This reframing of boundary organizations opens up a vista of potential analyses. For example, using this lens we can better understand how boundary organizations not only grow, decline, or increase or decrease their level of integration, but also how they come to favor some groups at the expense of others. Arriving at such insights would represent crucial value for boundary organizations looking to provide fair representation of all involved stakeholders (O'Mahony and Bechky 2008), as well as for representatives of individual groups participating in boundary organizations, who wish to advance their status within said organization.

Third, the case study shows how, at different times, the boundary organization possesses differing capacities to handle boundaries of varying degrees of sophistication (Carlile 2004). The findings suggest that evolutionary pressures (i.e. the demands to manage various tensions) push the boundary organization to adapt, hence over time leading to an increase in the degree of requisite variety (Ashby 1956; Beer 1984) on the part of the boundary organization (at least temporarily). As such, the boundary organization moves from being a "message passing" mechanism (i.e. triaging bugs and feature requests) towards being a sophisticated and refined interface (i.e. a representative stakeholder situated in an accountability matrix) that allows for boundary spanning practices which help to negotiate conflicts with regards to the relative powers of the firm and the community, as well as across multiple, shifting parts of a fluid community

(Carlile 2004). This suggests that boundary organizations are difficult to design a priori, but rather must be "battle tested" in the real world, so as to over time evolve to embody the requisite degrees of variety vis-à-vis its environment.

Fourth, and last, the idea of "hosted communities" has implications for the governance of a large range of online communities, platforms, and social networks which rely on the dynamic interaction of firms (i.e. "hosts") and customer-, fan-, and user-bases of various kinds. While in the past, online interactions might have been susceptible to "swift trust" (Jarvenpaa et al. 1998; Jarvenpaa and Leidner 1999; Robert et al. 2009), the increasing embedding of users within systems exhibiting great complexity and increasing integration into the private aspects of our lives calls for mechanisms for achieving trust which are increasingly intricate. Our study suggests that such systems needs to be governed in participatory ways, so as to provide voice to diverse types of users, as well as transparency into the underlying platforms and infrastructures upon which users interact with each other. As a research field, we can, for example look to political science (e.g. Fung and Wright 2001) to understand how democratic institutions serve to (or fail to) engender trust in various situations.

Practical Implications

This case study holds important lessons for firm managers wishing to work more effectively with the online communities with which their firms interact and intersect. Most notably, the insights within this paper hints at how managers can create trust within online communities, through arranging for participatory development processes which enable diverse voices to be heard at the same time as providing transparency into decisions made with regards to the online community. In particular, our study suggests that endowing community members with voice is a tricky

endeavor—voice can also be misused, and may in such situations erode capital stocks that have been strenuously built over long periods of time.

Recent crises within the online community world (e.g. the Cambridge Analytica-Facebook scandal) has raised questions with regards to trust, transparency, and voice on social networks and other platforms. Seen in this light, our case study highlights an important opportunity—creating governance systems, which akin to political systems, allow online community members to participate in the shaping of the communities, platforms, and social networks that they are part of. As such communities become important parts of the basic information infrastructure of contemporary societies, finding ways of democratizing the underlying systems becomes increasingly important.

Limitations & Future Research

This study is limited in that it examines a single case, from the context of MMOGs. MMOG participants may have different incentives compared to volunteer participants in other online communities (e.g. hedonism vs. utility), which may impact the idiosyncratic characteristics captured in this case study. However, volunteering is at the root of all online communities hosted by firms, and therefore it can be expected that the overall patterns hold across different types of such communities. To further examine this, research focused on establishing contextual differences across different types of hosted online communities will be valuable. Further, these communities leave ample digital trace data, which thus provides opportunities for computational analyses of various kinds. It could, for example, be interesting to examine how social network structures evolve in relation to different capital stock configurations, as well as how semantic indicators extracted using text mining techniques vary along as the evolution of boundary organizations progress.

Conclusion

Hosted online communities increasingly negotiate tensions between the organizing mechanisms of corporate control and community volunteering. This study examines how boundary organizations in such contexts evolve to adjust to the ebbs and flows of divergent and convergent interests in the organizations that they span. Through emphasizing power as it manifests in different capital stocks, our study enables us to move beyond rational myths of constant improvement, and towards a view of boundary organizations as contested spaces.

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