



Working Paper Series

21/2007

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**Institutional Entrepreneurship in the Linux Certification Field: The Role of Discursive Strategies
and Social Positioning**

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Abstract

The concept of institutional entrepreneurship has emerged recently within institutional theory as a promising way to account for divergent change, which breaks with the dominant discourse of an organizational field. Institutional entrepreneurs mobilize resources, including discursive strategies, to create new institutions or transform existing ones. In this paper, we draw on a discourse and institutional entrepreneurship perspective to understand how a Linux-based institutional entrepreneur, Linux Cert (LC), attempted to mobilize institutional change across the Linux certification field. Four key discursive strategies were identified, namely: theorizing change, aligning texts to broader discourses, skilfully promoting a competing discourse to multiple stakeholders, and negotiating competing discourses within the organization and across the field. Our empirical study illustrates how individuals' social positioning in the organization and across the field can enable/disable their ability to act as institutional entrepreneurs in mobilizing their discursive strategies. In addition, our research contributes to our understanding of the role of social and digital networks in enabling social positioning.

Keywords: Institutional theory, institutional entrepreneurship, discourse, social positioning, interpretive research, case study

Introduction

Institutional entrepreneurship has emerged recently to deepen our understanding of institutional change (DiMaggio 1988, Fligstein 2001, Maguire et.al. 2004, Greenwood and Suddaby 2005). Though somewhat ironic as a term (Hwang and Powell 2005), it symbolizes the recent turn in institutional theory to account for emergence and transformation in addition to its hitherto focus on the fixity of institutions as a source of stability and order (Scott 2001). While other theories, such as structuration theory, have recognized the importance of human agency in the dynamics of reproduction and change in deeply embedded practices (c.f. Giddens 1984), it is institutional theory's focus on the field as a level of analysis between the organization and society that is particularly appealing for the study of institutional entrepreneurship in the Linux certification field reported on in this paper.

Institutional entrepreneurs are actors who mobilize resources to create new institutions or transform existing ones. The literature on institutional entrepreneurship has focused on mature organizational fields such as accountancy (Greenwood, Suddaby and Hinings 2002, Greenwood and Suddaby 2005), and financial services (Lounsbury 2002), as well as emerging fields as diverse as HIV/AIDS treatment advocacy (Maguire, Hardy, and Lawrence 2004) or high technology innovation (Garud, Jain, and Kumaraswamy 2002). Further, the not-for-profit sector, notable for its difficulties in securing resources and requiring effective framing strategies, has been usefully analysed from the perspective of fields (DiMaggio 1988, Powell 1991, Fligstein 2001) as have social movement organizations (Hensmans 2003). Building on institutional entrepreneurship within this latter group we examine an attempt by a peripheral not-for-profit

firm as an institutional entrepreneur to challenge the dominant discourse of for-profit firms in the emerging field of IT certification.

Earlier research has highlighted critical resources such as economic, social, and cultural capital (Bourdieu 1993, Phillips et.al. 2000), and discursive legitimacy as symbolic capital, to be important mobilization strategies for challengers to undermine or even hegemonize a field through political struggles (Hensmans 2003). Further, Phillips et.al.(2004) propose that discourse can be valuable in examining and unpacking the microprocesses of institutionalisation with key implications for institutional entrepreneurship as a discursive activity. More recently, Suddaby and Greenwood (2005) empirically examine the rhetorical strategies of skilled social actors (Fligstein 2001) in legitimating profound institutional change.

Apart from this recent study, there is little empirical research on the role of discourse in legitimising institutional change. Furthermore, we know little about the mobilizing strategies used by peripheral not-for-profit actors in attempting to undermine an emerging commercial field. To address this gap, we draw on an intensive qualitative case study to examine institutional entrepreneurship in the emerging field of IT certification. We examine the efforts by a Linux-based firm that sought to revolutionize the concept of IT certification through the development of a competing professional discourse. In addition to framing and theorization strategies (Tolbert and Zucker 1996, Greenwood, Suddaby, and Hinings 2002), we examine the firm's mobilization strategies of resources in the field, which in part depend on the enabling role of individuals' social position (Battilana 2006). Building on the latter, our case emphasises the need for a more dynamic social positioning by institutional entrepreneurs within their

organization and across the institutional field. Further, we suggest that social positioning depends crucially on entrepreneurs' participation in social networks, which are increasingly enabled by digital media. It is in this sense, therefore, that we focus on the interplay between social and digital networks to examine how institutional entrepreneurs utilise social networks to promote their discursive and mobilization strategies in attempting to influence a field.

The remainder of the paper is organized as follows. The next section elaborates our theoretical position that builds on recent developments of discourse and institutional entrepreneurship to understand institutional change. Next, we describe our research methods and the case setting at LC. We then draw on our discourse and institutional entrepreneurship perspective to examine how LC attempted to mobilize institutional change across the Linux certification field through four discursive strategies and their constituting activities. In the subsequent section, we examine how these discursive strategies are mobilized through individuals' social positioning of institutional entrepreneurs in the organization and the broader field, and discuss the role of social and digital networks in this process. We conclude by highlighting our key contributions to the literature and some implications for the future of the Linux certification field.

Discourse And Institutional Entrepreneurship

There is a growing body of research in the IS literature that draws on institutional theory (Orlikowski and Barley 2001, Avgerou 2002) and discourse (Wynn, Whitley, and Myers 2003) separately to study IT and organizational change. A recent special issue on IS and organizational change (Barrett, Grant, and Wailes 2006) has highlighted these bodies of literature as important emerging areas for development. However, while a number of studies in the organizational

literature (e.g. Suddaby and Greenwood 2005, Oakes, Townley, and Cooper 1998, Covaleski and Dirsmith 1988) have used rhetorical methods to understand institutional change, such a blend of discourse and institutional theory is rare in the IS literature.

Drawing on a structural perspective, Heracleous and Barrett (2001) studied the role of discourse and rhetoric in promoting the adoption of electronic trading for institutional change in the London Insurance Market. They examined the skilful use of competing discourses by different stakeholders and the dynamic negotiations that emerged over time. They did so by identifying stakeholders' rhetorical enthymemes or arguments in use. Other research (Hayes and Walsham 2000) has investigated the competing discourses between empowerment and control surrounding the implementation and use of groupware in the sales division of a pharmaceutical company. The discourse approach in this paper focused on political and normative contexts and how they are deeply implicated in the reproduction of competing interpretations. We aim to contribute to these early developments in the IS literature by drawing on recent developments in the institutional theory literature (Phillips, Lawrence, and Hardy 2004, Suddaby and Greenwood 2005) that more explicitly links discourse and processes of institutional change.

Phillips et. al. (2004) draw on discourse analysis to develop an analytical framework to better understand the microprocesses by which institutions are produced and maintained. Their model, which they admit requires empirical elaboration and development, is of particular significance for our paper given its specific implications for institutional entrepreneurs. It suggests that institutional entrepreneurs are generators of convincing texts that are aimed at influencing the nature and structure of discourses. These entrepreneurs are successful when they affect the

discourses that constitute the institutions in a self-interested way and become part of central and enduring discourses in the field. Institutional entrepreneurship, therefore, is a discursive activity which changes the discourses upon which institutions depend through the production of influential texts. The production of texts is a strategic activity (Hardy, Palmer, and Phillips 2000), which may involve drawing on discourses from other fields, or from broader societal discourses. Through such strategies, they seek to increase their legitimacy, resources, authority, and centrality to produce new institutions, and in the process de-legitimate existing institutions.

Struggles and contests over legitimacy (Galvin, Ventresca, and Hudson 2005) are therefore a key component of institutional change often involving dramatic shifts in institutional logics that characterise the field (Friedland and Alford 1991). By examining a contest over a new organizational form to include multidisciplinary practices across the fields of accounting, law and management consulting, Suddaby and Greenwood (2005) demonstrate the strategic role and use of rhetoric in securing shifts in institutional logic, thereby legitimating institutional change within an organizational field. This political perspective suggests that institutional entrepreneurs attempt to skilfully interpret and exploit contradictions embedded in dominant institutional logics for their own hegemonic self-interest (Fligstein 2001, Seo and Creed 2002). Shifts in logics, or competing logics (c.f. Rao, Monin, and Durand 2003, Lounsbury 2006) change the criteria used to assess the legitimacy of a new organizational form following institutional change, which can emerge as a consequence of negotiations and contests over which logic dominates.

Competing logics or discourses may arise from institutional contradictions. Drawing from social movement theory, several studies have suggested that competing discourses often gestate in the

peripheries of organizational fields in organizations less privileged by existing arrangements (Haverman and Rao 1997, Suddaby and Greenwood 2005), though recent work (Greenwood and Suddaby 2006) have shown this can also happen at the centre of mature organizational fields. In line with a discursive perspective on institutional change, social movement theory suggests that, because institutional logics are hard to dislodge, entrepreneurs must try to develop a competing logic by connecting through language to higher order societal values or to core values within the organizational field (Seo and Creed 2002).

Further, the degree to which institutional entrepreneurs are successful in mobilizing collective action in the field depends on their social skills (Fligstein 1997, 2001) in theorizing change (Greenwood, Suddaby, and Hinings 2002). Theorization by ‘expert theorizers’ and intellectual elites involves effective critiquing of current institutional logics or discourses and searching for new possibilities or solutions (Strang and Meyer 1993, Seo and Creed 2002).

Beyond discursive legitimacy (c.f. Phillips, Lawrence and Hardy 2000), the ability for actors to embed discourses and so indirectly modify institutions depends on their social position and their ability to access critical resources in mobilizing collective action (Hensmans 2003, Phillips et.al. 2004). Concerning the importance of the individuals’ social position, Maguire et.al. (2004) suggest that institutional entrepreneurs in emerging fields are actors whose subject positions allow them to be legitimate to diverse stakeholders, and have the ability to bridge stakeholders (c.f. Greenwood and Suddaby 2006) that allows them to access dispersed sets of resources.

Battilana (2006) draws on Bourdieu’s (1990) conceptualisation of fields as structured systems of social positions within which struggles take place between individuals over resources, stakes,

and access. Some actors will have an 'incumbent' privileged position of power in the field with an interest to maintain the institutional logic. Others will adopt a challenger position in the field with different access to key resources. An important insight which Battilana (2006) develops is the fact that social position is influenced both within the field but also by an actor's position in their organization, which she notes without elaboration may develop or change over time.

Critical resources include economic capital (e.g. financial resources), social capital (a social network) and cultural capital (access to information) of the incumbents, which is often denied to the challengers (Hensmans 2003, Bourdieu 1998).

Our theoretical position starts with and builds on these theoretical developments of discourse and institutional entrepreneurship, and the enabling role of social position to mobilize discursive strategies. Firstly, actors need to be socially skilled to critique and theorise current institutional discourses. In finding solutions and developing a competing logic or discourse, the institutional entrepreneur (both individuals and organizations) needs to generate texts which have affinity with some members of the field and which connect to broader discourses if they are to successfully mobilize collective action. In mobilizing collective action and seeking to displace the dominant institutional logic, the challenger will likely have less access to economic capital resources than other firms in this field, and occupy a peripheral social position in the field.

However, the actors' social and cultural capital will influence the institutional entrepreneurs' positioning both within the IT certification field and in their own organization over time. Within their internal political arena, they need to sustain a well supported and convincing institutional discourse amidst the institutional contradictions that exist even within stable dominant logics (c.f. Suddaby and Greenwood 2005). As our research study took place 'in the making' rather than historically and retrospectively (c.f. Greenwood, Suddaby, and Hinings 2002, Greenwood

and Suddaby 2006, Suddaby and Greenwood 2005, Lounsbury 2002, 2006), we were able to explore active social positioning by the institutional entrepreneur in mobilizing collective agency through social networks, which are increasingly influenced and transformed by digital media. As elaborated below, our theoretical position was developed iteratively over time, and guided the data analysis of our empirical investigation of institutional entrepreneurship by a not-for-profit firm, LC, in attempting to promote institutional change in IT certification.

Research Setting And Methods

LC is a not for profit Linux-based organisation serving the community of open source (OS) software users, vendors and developers, with a mission to increase the professional use of OS software globally. Their strategic intent is to directly challenge the prevailing logic/discourse in the IT industry by developing IT certification programmes that are uniquely vendor independent. Furthermore, their business model of product (exam) development depends on an ideologically supportive virtual community of volunteers from Linux professional organizations.

Headquartered in North America, the organisation has grown rapidly through an affiliate model with affiliates located in as diverse a range of countries as India, Brazil, Jamaica, Venezuela, Japan, China, Taiwan, Singapore, Thailand, South Africa, Australia, Germany, Bulgaria, UK and Francophone nations (i.e. Senegal, Mali, Morocco and France), to name a few. These affiliates have the responsibility to proctor local exams, market LC as a brand, conduct exam-writing workshops and labs, as well as liaise with HQ regarding issues such as translation and customisation of the (exam) product.

The structure of LC is interesting from the point of view of it being established as a community based organisation. Within the context of its North American headquarters, it comprises a Board of Directors, an advisory council and a mixed network of staff and volunteer support. Within the staff of LC, there are specific groups working on exam development and psychometrics, affiliate relations and translations; while at the level of its affiliates, LC has established partnerships with local groups across the globe, in what is intended to be a mutually supportive relationship. As a policy, LC encourages and supports its affiliate partners to form links with local sponsors in order to be self-sustaining and not dependent on LC for its existence. Sponsorship and support for the affiliates ranges according to the country context, from the corporate sector to government and international development organisations.

As far as the communication of information and knowledge sharing within LC are concerned, there are three main channels in place to facilitate this. The first, and perhaps most widely used, is the electronic communication medium that incorporates everything from standard emails, to mailing lists and forums, to instant (secure) chat rooms and wikis. The second channel is through monthly teleconferences, and the third through face-to-face meetings. Given that LC is a not-for-profit organisation, it has limited resources for travel and hence the face-to-face meetings are few and far between. The exam development process is limited to the staff members situated within North America, and a few translators based in Europe and Japan. However communications with affiliates are maintained mostly through face-to-face meetings with LC senior management, as far as scarce resources of staff and money will allow.

We used an in-depth case study (Walsham 1993) to study *how* LinuxCert, LC, developed discursive strategies and attempted to mobilize collective action in promoting institutional change across the IT certification field. A key research question that emerged during the research at LC was:

‘How did individuals’ discursive strategies and social positioning mobilize institutional change in the Linux certification field?’

The field research was longitudinal in style and took place over a year and a half from April 2004 to October 2005. During this time, we interviewed people at all levels of the hierarchy, including senior management at the headquarters and country level, as well as other staff officers in seven affiliate locations. In total, we conducted 25 semi-structured interviews, which allowed us to investigate responses through more complex dialogues and discussions with the respondents. The majority of the earlier interviews were recorded by taking extensive field notes, to allow for openness and trust-building. A number of the later interviews were tape recorded and subsequently transcribed. In addition to these formal interviews, we had a wide range of additional informal contacts with staff of LC during our visit to the headquarters.

Put Table 1 around here

As the research relationship matured, we were extremely fortunate to further enrich our field data by gaining access to electronic mailing lists that the organisation used as a staple mode of internal communication. One of the co-authors joined these lists on a daily basis and monitored the virtual interaction of the community for nine months of the overall research period. Thousands of e-mail discussions/interactions were downloaded, archived and subsequently analysed by the co-authors. This resource not only offered us invaluable insights into the

workings of the organisation, the views and voices of consensus and dissent, but also offered us a unique perspective on how an electronic medium lent itself to facilitating community partnerships within the context of a globally dispersed organisation.

In order to appreciate and study the broader discourses in the IT certification field, we also attended Linux conferences where LC participated. We interviewed two professionals responsible for Linux training within large commercial hi-tech organizations who are proponents of Linux and LC. We also attended three meetings between LC, their affiliates, and a wider set of Linux certification providers in the field.

In terms of analysis, this took place in an iterative way throughout the research. Through multiple readings of the transcripts by the co-authors, we generated sets of themes from each of the major field visits, and discussed these amongst members of our research team and, as noted above, at times with LC staff as well. In the spirit of an open coding approach (Strauss and Corbin 1990), we also organized the e-mail messages into key categories, and analysed the discourses of multiple texts including electronic texts, interviews, and a range of primary and secondary texts in the organization and across the field. We discussed the relationship between our field data and these conceptual ideas during internal project meetings, while remaining alert to emergent themes from the data. The literature on institutions and discourse, and institutional entrepreneurship was of particular importance to our analysis. For example, Phillips et. al. (2004) highlighted the importance of the inter-relationship between action, texts, discourse, and institutions, while the institutional entrepreneurship literature provided conceptual ideas on agency, field dynamics and social positioning.

We shared our preliminary findings with LC staff at each main phase of the research. We held three teleconferences with our primary contacts and colleagues at headquarters over the course of the research project, discussing our research findings to date. The flow of communication in these audio-conferences was designed to be two-way. Hence we would report our findings and recommendations from our interviews and attendance at various meetings, while we would receive updates and relevant information keeping us abreast of the organisation's development and strategic developments in the IT certification field.

Discursive & Mobilization Strategies for Institutional Change

In this section, we use our case findings to discuss the discursive and mobilization strategies adopted by LC in attempting to promote institutional change in the Linux certification field. The first two strategic elements – *theorizing change* and *aligning texts to broader discourses* - constitute the actions that senior managers took in arguing skilfully and problematizing dominant texts or discourses in the field. The senior managers were skilful in knowing how to enrol discourses of professionalism, discourses for development and social exclusion, and broader technological discourse of disruptive innovation. The next two strategic elements – *skilfully promote competing discourses to multiple stakeholders* and *negotiating competing discourses within the organization and across the field* - focus on the mobilizing capabilities of this peripheral institutional entrepreneur in attempting to facilitate institutional change in the Linux certification field. We have separated these four strategic elements in the text below for analytic convenience, though in reality they overlap and interact.

Theorizing Change

The CEO and founders of LC were ‘expert theorizers’ (Strang and Meyer 1993) who carefully and effectively critiqued the dominant institutional discourse of IT certification from the very beginning. They developed a number of rhetorical strategies at different levels. At the broader societal level they argued that IT was an immature field, which was largely and irresponsibly disconnected from society, and did not instil public confidence

‘ICT’s are a phenomenally immature sector and it is amazing that society has tolerated it as an industry. One of LC’s goals is to drag ICTs kicking and screaming into a social maturity. ICTs are so out of touch with the public....(it is as if) the inmates are running the asylum’ (CEO of LC)

LC also focused on illuminating the inherent contradictions within the prevailing dominant discourse so as to allow space for establishing the legitimacy of LC’s competing discourse. LC’s main rhetorical strategy here was to skilfully theorize change using analogies from broader industry/societal norms to highlight the contradictions embedded within the dominant discourse of IT certification:

‘You don’t go to Ford to get a driving license; nor a medical doctorate by a Pharmaceutical company; why do we expect training and certification in IT from the vendors {e.g. Microsoft}.’

Related contradictions concerned the market focus of certification, which was depicted as being in ethical tension to what should be educational aims:

‘The current type of certification (Microsoft/Novell) is product based...certification sells training which is a profit centre...They are not used to generating standards but to selling other things...We don’t do it like them...(We) think of education... not selling a product....A vendor in charge of certification is making money...not necessarily educational in nature....so there are tensions, ethical ones.’

For LC, certification is at its heart a community standard and this was in tension with a market-focus adopted by other IT certification organizations who were perceived to inappropriately bundle product, certification and training.

Through skilfully critiquing and illuminating contradictions in the dominant discourse, LC made space for constructing a competing discourse. In their own words, there was a ‘need to fill the gap between the technology producers on the one hand and the vendors and consumers on the other hand’. As the CEO suggested ‘LC’s mission is to advance the Linux profession worldwide’. The root theme of LC’s discourse is ‘vendor neutrality’ with a strong separation between training and certification: ‘LC is certification but not training. We leave training to the market.’ As such, LC certifications cater to every Linux platform regardless of the vendor. Furthermore, as we discuss in more detail below, LC’s competing discourse was expected to be disruptive to the current dominant discourse: ‘What Linux was doing in software development, we are trying to do in software certification’.

Aligning Texts to Broader Discourses

LC adopted a number of strategies in aligning texts to broader discourses. Three key activities were identified as constituting this discursive strategy, namely: appealing to a professional discourse, appealing to a development and socially excluded discourse, and appealing to a disruptive innovation discourse. We discuss each in turn.

Appealing to a Professional Discourse

This was the most powerful and arguably successful rhetorical strategy, pursued doggedly by the CEO. Once again, analogies were used with links to the broader society for purposes of establishing legitimacy for their competing discourse:

‘LC is about ethics and professionalism – ‘like Bar exams for lawyers’ (Director of Business Development)

The creation of LC was to advance the professionalism of Linux through certification. No longer should the focus be on software or IT certification, but about system administration certification.

The vehicle pursued relentlessly by the CEO over many years was to be the first IT organization to successfully achieve worldwide certification from the National Organization for Competency Assurance (NOCA), which is accredited by the National Commission for Certifying Agencies (NCCA). He explained:

‘NCCA is a body that “certifies certifications”. For example, all medical, engineering and physiotherapists and other professions have NOCA certification...NOCA provides “ISO efforts on standardisation” ‘.

A critical part of the rhetoric was to distance LC’s certification from other software certifications and tie their claims closely with the codes and practices of other professions and their certification approach.

‘The argument that we’re making is that we’re not a software certification, we are a professional certification...our argument is that it’s not about the software, it’s about how professionally skilled are you, okay!’ (Director of Business Development)

Once again, LC drew on the reputation of established professions and their practices to undermine, even ridicule, the product bias in the IT certification field:

‘There is a belief out there that certification should be linked to the product that keeps changing, and companies say ‘Sorry, we’ve changed the software, you have to re-certify’, this has turned off people ...we’re saying that certification is not a product, it’s about you and your skills. We’re saying ‘Once you’ve passed, you’re a skilled professional; (after all) do doctors have to go and rewrite?’ (Director of Community Relations)

By building mimetically on the claims of professions, LC expected to strengthen their knowledge claims on certification and further undermine the dominant institutional discourse in the IT certification field:

‘What our CEO talks about is a code of professional ethics, which will require certain things that other professions require’ (Director of Business Development)

The successful accreditation of LC by NOCA was celebrated internally as a historical moment of immense importance, which involved not only the CEO's vision and persistence but also a lot of hard work by many to draft the 600-page application. On LC's internal listserv, NOCA's announcement provoked a lot of praise 'Three Cheers and Kudos' and positive momentum as to the great value to LC:

' With strategies such as this, we'll be able to show our value. Not only are we the premier community-based Linux certification, but we are also recognized as a professional organization, on a par with professional organizations on NOCA's list.'
(James on LU Listserv)

As we discuss later, this globally recognized 'professional' label was viewed as particularly valuable to local affiliates in promotion within their countries.

Appeal to a Development and Socially Excluded Discourse

From early on, LC's strategy and business model had a focus on the developing or 'Third' world. Unlike other competitors who relied on computer based testing and high exam fees, LC's business model was focused on lower fees through paper exams administered by a proctor-based system, variable pricing, and partnerships built with development aid agencies such as the UNDP. Ideally, these agencies would subsidize exam fees and allow LC to charge premium fees. The Director of Business Development explained:

'You know, another argument we're having is about going into the developing world. There aren't the price points there for the computer based testing, but for our proctor paper based system there is, it's a new market. The big (Linux) players, they're not interested. RedHat's not going to go into the developing world. There isn't enough price points there, but there is for us with our approach ... Our market's going to be the Third World, like the partnerships in Malaysia with UNDP.'

The paper based testing system, while perhaps inferior to the computer based testing (CBT), was LC's short-term solution with CBT development expected in the medium term. LC's top

management believed this approach was a clever disruptive innovation strategy, which as we discuss further in the next section, significantly influenced their rhetorical strategy:

‘With LC, the proctor system of testing people is actually crappy compared to computer based delivery, but it is good enough for the new market ... where the other players aren’t, right, they don’t have their computer based testing facilities in there, so what we do, we create a new market.’

In the spirit of Christensen’s disruptive technology thesis, therefore, the current short-term focus on the proctor-based paper based strategy allowed them to access new unexplored markets, some of which might be viewed as socially excluded markets in the current political climate.

‘We’re looking at our exams in Arabic, using a proper model, which is cost effective and adaptable to the marketplace..The Linux community in Syria and the government, they’re paying for me as a speaker to go there in March’ (Director of Business Development)

Appealing to a Disruptive Innovation Discourse

As suggested above, the discursive strategy of relating their texts to broader social exclusion and development discourses was tied strongly to a broader technological discourse of disruptive innovation. This approach resonated with their own subversive nature and was well established in the Linux community of software development.

‘ And, you know, the term disruptive technology in the context of Linux has been around for a while, and as I started looking at it and some of the ideas that Christensen was putting forward around Linux was disruptive technology, ... applied to LC as well.’ (Director of Community Relations)

The whole senior management team at LC, as well as other exam developers, carefully studied texts by Harvard professor Clayton Christensen (Bower and Christensen 1995) to understand and apply his thesis.

‘We were regularly looking at various business management models and how they applied to us.... Our CEO is literally reading Christensen’s stuff (books) right now... the Innovator’s Dilemma ...he’s also got Innovator’s Solution.’ (Director of Business Development)

They also attended conferences where Christensen was a keynote speaker and tried to enrol his active support for LC's certification as a disruptive innovation in the IT certification field.

'He (Christensen) was the speaker last year at an open source business conference ... and that's how I sort of connected the dots ... because many of the writers that were writing on Linux as a disruptive technology, they didn't make the connection with certification. We could see that the parallel with us on what they're doing in terms of his model.'
(Director of Community Relations)

Skilfully Promoting Competing Discourses to Multiple Stakeholders

Through the above micro-processes of aligning texts to broader discourses, LC developed a competing discourse reflected in its business model, and by which it sought to undermine the dominant discourse of IT certification. Mobilizing this competing discourse was attempted by skilfully promoting it to multiple stakeholders concurrently, namely potential customers, community-wide Linux software professionals, and global affiliates.

Promoting the Competing Discourse to Potential Customers

While serendipitous requests from Linux online magazines to 'comment on the certification field' existed, it was critical for LC staff to skilfully promote LC to potential customers through a few key mechanisms, namely 'earned media' and in-kind exchanges between different online communities.

Given LC's low level of resources relative to others in the field, they relied heavily on 'earned media' or writing an article in exchange for free promotion in different magazines/journals.

'Our CEO is very convinced that the best way to build our brand is through media relations, that because we don't have the resources like a Novell or a RedHat to throw behind penetration advertising...They have millions of dollars... what we have to do is we have to use 'earned media'.. We don't pay ... anytime we want to get into the two big international magazines in Linux, we just phone up the publishers and say 'We wanna do a story' (Director of Business Development)

Outside the Linux community, however, things were tougher as the Director of Community Relations explained:

‘ Yeah, what we need to do though is broaden beyond that Linux centric open source media to the wider IT media, which is Wired, ZDNet, Information Week. ‘

The NOCA recognition discussed earlier was expected to be ‘a stamp of approval’ that would legitimate LC as a disruptive innovation in the IT certification field and open doors for LC to access mainstream IT and business media:

‘When the NOCA accreditation comes out, we’ll be able to interest the mainstream IT media (such as Forbes or Wired or the New York Times) by saying “What open source did to software, we’re gonna do to IT certification and here’s the proof” ‘ (Listserv at LC)

The second strategy used to reach potential customers was to look for ‘in-kind’ exchange opportunities for promotion with other niche online communities.

‘There’s a catalogue which is distributed to all the CIOs in North America. They wanted to get to our community because people know our listservs, they know that there’s a lot of activity there, they know we have a pretty high profile within the open source community. ‘We’ll advertise your product on our listserv, you put a two page ad in your catalogue about us’, it didn’t cost us a cent. They want to reach our market, we want to reach their market... We constantly have to look for those in-kind opportunities’ (Director of Community Relations)

Finally, the lack of traditional advertising was strategically consonant with the historical practice of the broader Linux community. As the Director of Community Relations emphasised:

‘ Linux never had an advertising programme and yet look where it is now. They had this stupid little penguin, you know, and now when I walk into the grocery store (with a penguin shirt) they know ... the kids, you know, anyone that’s under the age of 30 knows immediately what that penguin means and there wasn’t a single advertising dollar behind that, that was through the internet, through the community and other people, other media picking it up. Now it’s a universally recognised symbol’.

Promoting the Competing Discourse to the Professional Linux Community

The professional Linux community was another key stakeholder to whom LC actively promoted their competing discourse. While many of these professionals may not have been interested in certification for themselves, they identified with LC's rhetoric of professionalizing Linux. LC was successful in enrolling the interest of Linux professionals at Open Source conferences, gaining their active participation as volunteers developing questions in both post-conference exam-writing workshops and subsequently through online forums. Professionals had a stake in ensuring 'the Linux standard stays high because then I'm a more valued professional.'

Leveraging the wider Linux community as volunteers was a key part of LC's business model involving low cost product development. LC argued that professional input ensured a high quality product, which, as discussed on the listservs, was necessarily reflected in hard exams with low pass rates.

Over time, LC became increasingly concerned about relying on volunteers without adequately recognizing them, as the Director of Community Relations explained:

'The next thing that we have to do is, and again this is in my role, is to start recognising our volunteers. Thus far, our volunteers have been entirely driven out of idealism and community spirit, and we have not applied the traditional rules of, like say, what is it, recruitment, retention, recognition, reward'

These measures were critical because as the director of business development went on to say:

'the problem is as Linux becomes more accepted, the volunteer base is starting to dwindle away.'

Diffusing the Competing Discourse through Global Affiliates

LC's global affiliate model was a critical mechanism in diffusing their competing discourse. LC successfully enrolled local country affiliates by directly appealing to global discourse elements of vendor neutrality and a community standard.

The affiliates all had some similar promotion strategies in targeting key social networks in government, academia or sponsoring multi-national companies. For example, the Brazilian affiliate was particularly successful in enrolling sponsorship of local training and global companies as well as the government:

Relata are the most important Microsoft training company in Brazil. They have agreed to do Linux training for LC exams, despite pressure from Microsoft not to do this. Their Board were persuaded of the Linux brand. The Federal Government are key players in open source and Linux...and IBM Brazil decided to certify all their people in Linux and chose LC certification. (*Research Fieldnotes*)

The UK affiliate emphasised the importance of vendor independence, which was very useful in enrolling the EC:

'The big advantage that LC has is it's vendor-independent. This will get on well with the EC wish-lists.'

The attraction of LC for the local affiliates was the credibility of an international organization, which was perceived to help entrepreneurs to attract business. The head of the Jamaican affiliate noted:

'My interest piqued from a business standpoint, understanding the marketability, the juxtaposition that an international organization, (such as LC) how much credibility that could give us as a fledging NGO...and certainly in the Third World credibility is a critical issue.'

However, in diffusing their competing discourse to affiliates, LC also encountered difficulties in reconciling their global discourse with local logics. First, LC's business model only provided commission revenue on exams with little reinvestment of funds for marketing support of local clients. Further, a common cry from the affiliates was the need for physical presence and timely communication as this Brazilian affiliate noted:

‘ We would like to have the Director of Business Development visit here to talk to everybody here ... We also need help in marketing from LC HQ’

Another challenge was manifested as competing community versus market discourses at global-local levels, which led to an uneasy balance and tension for some affiliate relationships. Similar to the Brazilian affiliate, the Jamaican affiliate wore two hats, one representing a global community standard and the other building their own business:

‘Well, being a technologist, I myself run my own company, C3. And there are times where I have to wear a hat, I have to wear the Linux User Group (LUG) hat and talk about LUG business and the other times I wear my commercial hat and talk about my company’

The Japanese affiliate was very clearly a distinctive outlier of the affiliate set. As the most successful affiliate responsible for a large percentage of business volume, they had relied heavily on a strong corporate board with a meticulous focus on professional service quality, and had benefited from the Japanese government's pro-OS policy in the late 1990s. They also believed in a universal high fee for certification globally irrespective of location and implemented a channel structure rather than relying on ‘earned media’ to build brand. LPI Japan voiced their disquiet with LC HQ concerning competing community versus market discourses:

‘ LC is being run at HQ level by people who have no management marketing/sales experience. They run the organization on ideological grounds, rather than as a service business.’

Negotiating Competing Discourses Within the Organization and Across the Field

In addition to the above-mentioned competing discourses between HQ and affiliates, LC also experienced and attempted to negotiate competing discourses between the executive team and the Board as well as with other players in the Linux community.

The tensions between the Board and LC executive team grew over time. Board representatives from the USA were dominant and had an agenda to improve LC's poor market share in the USA. Further, the Chairman of the highly successful Japanese affiliate was a very influential member of the Board. In summer 2005, a few months before the end of the research, financial (dis)stress became evident at LC. Despite revenue growth in a declining IT certification market, poor accountability was levelled at the CEO due to significant overspending on product development. The Board drew on this context of poor accountability and strategic planning to effectively challenge the validity of the community-based discourse, which they had long questioned as being less effective than a market-based discourse as 'proved' by the Japanese affiliate. The subsequent firing of the CEO ended a long, contentious and difficult time of Exec-Board relations. The Director of Business Development explained:

'They had very different styles and did not agree on a number of things such as the philosophy of running LPI, more as a community effort versus business. The grounds of the CEO leaving were not to do with revenues but accountability, reporting relationships, and denying the power of the Board.. 'He thought he was beyond the law'

While some key achievements of the CEO, in particular the NOCA certification, were duly recognized, there was now a clear shift of focus towards a solid business driven organization with clear lines of reporting and accountability ' taking a 'much more top down approach ' with affiliates, as well as setting up a channel structure in place of 'earned media' promotion.

A key Board representative who was a part of the new office of the CEO (OCEO) explained the shift:

‘LC has had this idealistic, romantic movement a sense of mission ...but the hard cold reality is that it cannot be (seen to be) just a bunch of volunteers bumming around, people in the organization need to make money, pay rents, mortgages, as a company manage cash flows.’

Nonetheless, the Board was careful not to throw the baby out with the bath water; appreciating the need to creatively manage the balance of being a community-based organization and a business organization:

‘It is important that the organization continue to be in touch with the community it came out of...out of the quest of the Linux world , it needs to represent Linux, these same people need to continue to buy into it..we have to network with the community.’ (Board and OCEO)

In addition to these structural contradictions of market versus community discourses, LC also experienced challenges by a dominant Linux certification company. Despite several attempts over the years, LC’s CEO had failed to negotiate with RedHat and enrol them in their competing discourse. RedHat, termed by a number of informants as ‘The Microsoft of Linux’, was not interested in communication or dialogue with LC. In Linux community forums, RedHat would publicly challenge the key claims of LC’s competing discourse as was the case at a national Linux certification meeting in the UK:

‘It was here that he (LC’s CEO) met with a major challenge...from the RedHat camp. Sharon objected to the driving analogy and remarked that while driving training and licences vary across different countries, IT is meant to be the same globally and hence has a far greater standard to uphold (i.e. the content of exams would be the same world-wide). (*Excerpt from Meeting Notes*)

Not only did this RedHat representative challenge a key claim of LC’s discourse, but they also refuted the CEO’s problematizations of the IT certification field being in distress as a pretext to then offering LC as a solution:

Sharon also contested that the certification industry in general was in decline or stagnation. A major point of contention appeared here when LC's CEO mentioned that the only distribution to not support LC in its efforts was RedHat. He complained that RedHat representatives would not even be seen on the same press release as LC and that this was against the spirit of collaboration showed by all other distributions and IT organisations. (*excerpt from Meeting Notes*)

The Role of Social Positioning

We have illustrated in the previous section that LC's ability, as an institutional entrepreneur, to successfully undermine the dominant institutional discourse depended on the effective development of discursive strategies and their constituting activities. In this section we focus on how individuals' social positioning is critical for effective mobilization of these discursive strategies. We start by examining individuals' social positioning in the field and organization, and then discuss the role of social and digital networks.

Social Positioning in the Field and Organization

Our study also provides empirical insights on the enabling role of individuals' *social positioning in their field* in mobilizing institutional change. Firstly, LC is very well positioned in the Linux field through their affiliates who have close social networks with local Linux User Groups (LUGs) and in some cases they are influential training and education practitioners in the professional Linux community. In some countries such as the UK, LC is well positioned within the UK open source communities of practice (OS COP), who have strong lobbying potential in the EU. So, not only is LC able to be an effective challenger to the dominant discourse because of its relatively low status (c.f. Battalina 2006) as a not-for-profit organization but their relatively high status within the Linux sub field has been critical in promoting institutional change.

Secondly, our case provides valuable insights as to the enabling role of individuals' *social positioning within their organization* for stimulating institutional change. Our research confirms propositions (Battalina 2006) that individuals who occupy higher hierarchical positions such as the CEO are more able to conduct institutional change. For example, LC's CEO and other senior managers were active and artful exploiters of institutional contradictions in developing and mobilizing competing discourses (Seo and Creed 2002). However, LC's senior management were less skilled in maintaining legitimacy because of their changing social positioning in the organization. The 'efficiency gaps' that became apparent as a result of budget overruns on product development and perceived ineffective strategic planning undermined their internal legitimacy with the Board. As a result, inter-institutional compatibilities grew between the CEO's community discourse and the Board's commercial discourse. The departure of the CEO and the takeover by the Board highlights how social positioning may not only play an enabling but a disabling role in the organization. Not only must the CEO be socially skilled in developing and mobilizing competing discourses in the field but s/he must simultaneously achieve and maintain collective action by mobilizing powerful internal actors, such as the Board.

The Role of Social and Digital Networks in Social Positioning

Our research contributes to our understanding of the *role of social and digital networks for institutional entrepreneurs' social positioning* in enabling mobilization strategies. We highlight the importance of this positioning for institutional entrepreneurs in their mobilization efforts by examining four key mobilizing strategies from our case to support this proposition. Exam development for LC certification was a classic example in which LC successfully positioned themselves in both social and digital networks to mobilize their strategies. In the true spirit of

open source they relied on the social network of volunteer professionals who believed in LC's professionalism discourse. They cultivated this social network both online in the Linux world and crucially face-to-face during Linux conferences and tradeshow, where they encouraged participation in exam writing workshops. Volunteers also contributed to online exam development communities subsequently on digital networks, which was critical for LC as a not-for-profit organization with very limited resources. The robustness of their exam-product was a direct result of the volunteer inputs – in terms of checking for accuracy, reviewing, comparing and updating the product continuously. This was one form the 'professionalism' discourse took, where a large number of unpaid staff devoted a great deal of their time, and effort juggling across time zones in order to create an end product that met high standards.

LC also positioned themselves effectively in social and digital networks around open source and other virtual communities. Strong social positioning in the Linux community afforded them the ability to gain free promotion through 'earned media', a critical alternative for LC to other expensive promotional channels beyond their reach. Additionally, the exchange of in-kind promotional opportunities with other virtual communities was a complementary approach that leveraged digital networks in the promotion of their certification.

Affiliate development is a third area where effective social positioning in both social and digital networks was shown to be crucial though problematic for LC. Their initial recruitment of affiliate representatives often relied on the social networks of local LUGs or at Linux conferences. However, LC was less successful in building some of the affiliate relationships, which were critical in mobilizing their discursive strategies and business model. The odd reality

that the Director of Community Development ‘never flies’ was most dissatisfying for affiliates who constantly complained of a lack of physical presence by LC at the country level. LC’s heavy reliance on (inadequate) digital networks missed the point as to the need for leveraging both digital and social networks simultaneously in building and maintaining affiliate relationships, one not being a substitute for the other.

Finally, the CEO’s social positioning in digital and social networks did little to facilitate effective mobilization of discursive strategies with the Board and for building his management team. Very much in keeping with the spirit of open source, the CEO had a highly visible, almost extreme on-line presence that he used as his sole form of communication. One of the CEO’s senior managers remarked:

‘This is one of the big frustrations of working with the CEO..he comes from that virtual world... he loves to communicate all the time by e-mail....and we’ve got some administrative assistants right now who find it really frustrating working with him [laughs] because, you know, they would like to pick up a telephone and have a conversation or have a face to face with him’

Furthermore, the CEO and senior management had infrequent face-to-face contact with the Board, with the norm being to use the digital networks for virtually all communication. This strategy proved to be a career limiting move for the CEO!

Conclusion

This paper has sought to develop some key contributions to the literature. Firstly, we introduce theoretical developments on discourse and institutional entrepreneurship to the IS literature to deepen our understanding of an increasingly important IS phenomenon, namely the development of the Linux certification field. Secondly, we contribute to the institutional entrepreneurship

literature in providing empirical depth on specific discursive strategies and their constituting activities as adopted by a not-for-profit challenger. These strategies included: i) theorizing change ii) aligning texts to broader discourses iii) skilfully promoting competing discourses to multiple stakeholders, and iv) negotiating competing discourses across the organization and the field. Thirdly, we further our understanding of the enabling role of social positioning in organizations and the field with specific implications from our case as to how an institutional entrepreneurs' mobilization strategies may be enabled or disabled. Additionally, through our case, we have contributed an understanding of the role of social and digital networks in enabling entrepreneurs' social positioning as they mobilize their discursive strategies.

Our study also provides a number of practical implications for institutional change in the Linux certification field. Undoubtedly, a lot of LC's success to date has been the product of highly motivated leaders who share ideological tenets of the OS community (Stewart and Gosain 2006, Raymond 2001, Markus et. al. 2000). However, to attribute success solely to ideology would be a biased and rather partial understanding. Rather, our perspective on institutional entrepreneurship unearths the critical discursive strategies deployed by LC's leaders, which deepens our understanding of their successes and failures to date. Specifically, the leaders were skilled theorists artful in exploiting institutional contradictions that belie IT certification field. They were also skilful in developing alternative or competing discourses through the aligning of texts to broader discourses of professionalization, development and social exclusion, and disruptive innovation. However, our case also emphasises the need for leaders to be sensitive to their social positioning not only in digital networks but also at the interplay of social and digital networks both in their own organization and across the Linux field.

We close with some implications from our study concerning the dynamics of institutional change and the role of discourse in the Linux certification field. While an old institutional theory perspective might focus on the mimetic forces of organizations in the Linux field following a community-oriented discourse, our institutional entrepreneurship and discourse perspective points us to the subtleties of the dynamics of change in organizations (e.g. LC) in the Linux field. For example, in our case the Japanese affiliate mobilized critical resources around its competing commercial discourse to modify LC's community-oriented discourse. This tension between the community versus commercial discourse at LC is not merely an outlier in the Linux certification field. Rather, it alerts us to the fact that human agency can always challenge and develop competing discourses within organizations, even in the Linux field where community and ideological discourses are well-embedded. Such potential for institutional change is enhanced when the commercial discourse is supported by the 'efficiency gap' (Seo and Creed 2002); what many might stereotype as the Achilles Heel of community based organizations. We are currently witnessing a period of flux and uncertainty in the Linux field, being shaped by competing discourses, and requiring a complex and sensitive understanding. Our institutional entrepreneurship and discourse perspective is a first step towards such an understanding.

Level	# of Interviews	Role of Contacts	Location
Headquarters	10	CEO, Board Members, Directors of Community Relations and Business Development, Senior Management, administrative staff	North America
Country	15	Heads of affiliate country offices, IT staff, exam development and administrative staff, staff of partner agencies	India, China, Japan, Brazil, Jamaica, UK, Germany

Table 1: Summary of formal interviews conducted

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