Beyond information: factors in participation in networks of practice, a case study of web management in UK Higher Education

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Research paper

Purpose

To explore the pattern and significance of cross-organizational ties in an emergent professional field, web production in UK Higher Education.

Methodology/Approach

The research is based on in-depth interviews with 21 practitioners and analysis of activity in cross-organizational spaces, such as an online community and a series of annual practitioner conferences on the web in HE (1997-).

Findings

The cross organizational spaces have support and symbolic roles as well as informational ones. They have overlapping but different membership and agendas. Key factors that govern individual participation and so the shape of cross-organizational spaces are differential involvement in technical innovation, degree of organizational embedding or marginality, differences in organizational position and role, orientation towards centralisation or decentralisation and orientation towards marketing or IT. There is some sense of occupational community among web managers, but within that also diversity and a significant fracture line between marketing and IT perspectives on the role. This may explain the lack of formal professionalization. As a more natural boundary practice between organizations than

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marketing, IT has more public visibility, possibly influencing the course jurisdictional struggles over who should control the web.

Research limitations/implications

As a heavily contextualised study, its detail reflects particular features of HE in the UK at one period as well as specific aspects of the web as a technology. Nevertheless, underlying factors which seem to influence participation and non-participation in cross-organizational networks may be generalisable to many occupations, particularly where knowledge is rapidly changing.

Practical implications

Some suggestions about how cross-organizational knowledge sharing is most effectively supported can be derived from the analysis. IT is a natural focus for cooperation, but there is a risk of this masking the importance of other professional practices. Efforts at formal professionalization may be devisive because people have different professional ambitions and there are individual and organizational benefits in not professionalizing the role formally. New practitioners may be the most active in using extra-organizational networks to assist them to become more embedded locally. Old hands, though they have high prestige and centrality, may increasingly take their own path away from the community. Aspects of local roles such as involvement in innovation or decentralist strategies favour participation in cross-organizational networks.

Originality/value of paper

Most studies of knowledge sharing have focussed on the factors which influence it within an organization, yet cross-organizational sharing is also of importance, even for established professions as the boundaries of organizations become more open. For new occupations cross-organizational ties may be a critical resource, and not only for sharing information or support, but for making sense of what the job is about at the deepest level. The research is also original in analysing a relatively little researched occupational group, those producing web sites for a living. It will be relevant to those interested in online and people centred information seeking, in professionalization and occupational identity.

Keywords

Networking, networks of practice, occupational community, communities of practice, professionalization.

Introduction

With increasing interest in the value to organizations and individuals of networking and (often engineered) "communities of practice" there is a need to understand better what determines participation in such activities. This paper examines a case study of those involved in the production of UK university web sites to consider factors in participation in cross-organizational networks of practice. In such relatively new fields colleagues in different institutions may be quite important in offering practical help and support but perhaps also in how the whole practice is understood.

A discussion of theoretical background and methodology is followed by two sections of findings. These first analyse the character of the cross-organizational spaces themselves and then consider what factors have determined the shape of these activities and what influences individual participation.

Theoretical background

A familiar phenomenon on the Internet is the expert forum in which practitioners share information and discuss common "professional" interests, be this through a bulletin board, Usenet or email list or another of the burgeoning range of social software. In such groups colleagues in different organizations help each other, often expending a surprising amount of effort to do so. Brown and Duguid label such "loosely coupled systems" networks of practice (NOP) (2001, p.205), a term hinting at a continuum with more tightly knit communities of practice (Wenger 1998). It seems useful to make a distinction for, at least in Wenger's earlier work, a community of practice seems to mean a small, intensely interacting face to face group (1998, p.125) - most online groups have huge memberships, who are distributed in space and interaction is intermittent, semi-public. NOPs seem more like networks forming at the boundaries between local communities of practices (Wenger refers to such structures as constellations of practices, 1998, pp.126-33). NOPs are perhaps particularly common in the IT area, but may be increasingly found in many professional domains.

Kotamraju (2002) has suggested that in the web design field such informal groups are for "keeping up", which implies a desire to maintain existing skills and parity with others. Barley and Kunda in their study of IT contractors stress both lower level "fixing problems" (2004, p.301), but also "keeping ahead" (ibid., p.245) - implying the need to differentiate oneself from others and a willingness to cast aside old skills and reinvent oneself through acquiring knowledge of the latest technology. None of these authors is seeking to produce a complete picture of the information shared in such groups. A more comprehensive approach might seek

to evaluate the information shared in these groups, in terms of such parameters as relevance, timeliness, currency, authority, depth and accuracy, completeness, coherence, reliability, cost and uniqueness (Smith, 1997, Miller, 1996, SOSIG, 2005). Yet if not comprehensive, Kotamraju's and Barley and Kunda's summaries may encapsulate some key motives for participating in NOPs. Using such forums fits with technicians' known preferences for practical know how (Brown and Duguid, 1998, Finholt, Sproull and Kiesler, 2002) and hands on experience of using tools (Hertzum, 2000, Hertzum et al, 2002). It is logical to suppose that the qualities of information shared will also be influenced by such factors as the differential cost of generalising local problems so that they can be understood by those outside the context and organizational fears about leaking valuable knowledge. Actually the knowledge sharing dilemmas may in some ways observe in reverse the more familiar logic of why people share information *inside* an organization. For example, Constant, Sproull and Kiesler (1994) suggest that length of service in an organization increases the likelihood to share knowledge locally; perhaps in cross- organizational contexts newness would favour cross-organizational sharing.

Brown and Duguid comment that NOPs share information but do not take action or create knowledge (2002, p.142) so the stress is on the limited nature of relations. Yet Wasko and Faraj (2000) point to the range of motives and informational and learning benefits to belonging to an NOP. These motives include a sense of professional obligation (Faraj and Wasko, 2001) and a desire for reputation and to be part of a community, especially where participants are isolated, the authors comment (Wasko and Faraj, 2000, p.167). As in other forms of cross-organizational contacts (eg practitioner conferences and meetings) there is also a sense that they may act as a source of moral support, particularly for practitioners isolated in their own organization. It is possible also that activity in such forums may have symbolic importance in realising latent occupational community (van Maanen and Barley, 1984) based on parallel experience and media exposure. This could have pragmatic benefits but also be about drawing professional boundaries around new practices. Thus Kotamraju (2002) suggests that in web design such informal groups "substitute" for professionalization and seems by this to mean through information sharing. Whereas sharing information sounds as if it could be unproblematically beneficial for all concerned, the advantages of the professionalization process may be less clear, if one acknowledges that the primary project of professionalization is social closure (MacDonald, 1995, Noon and Blyton, 2002). Social closure is a process by which an occupational group try and control entry in order to boost their social prestige: in a sense it is a restrictive practice. So, full professionalization may promote some forms of knowledge sharing more effectively, reducing the risks and costs to the organization of people keeping up-to-date (Scarborough, 1993), but it is often also a block

to more fundamental forms of innovation (Drazin, 1990, Swan and Newell, 1995, Swan, Scarborough and Robertson, 2002). The struggles for professional jurisdiction identified by Abbott's system of professions will presumably take place at this level (Abbott, 1988, Kotamraju, 2004). So NOPs may be about knowledge sharing but potentially also have a role in the operation of professional conflict and power.

The previous paragraph points to the role of NOPs in professional conflict, one may also ask about their role in the relationship between the individual and the organization. A relevant perspective here is Zabusky's (1997) study of IT "support specialists", which points to the isolation and conflict that arise from practitioners' connection to an external expert community. In essence this is a reworking of the classic dilemma of loyalty between the organization and the profession (eg von Glinow, 1988). The support specialists' extra organizational connection creates a conflict of values, which may be the cause of mistrust from management and/or result in social and physical marginalisation. Actually Zabusky is hazy about the nature of the connection to the expert community. We might think that such groups would work collectively to develop arguments and practices that can be used to empower and embed the participant locally, rather than creating conflict with it. Certainly such brokering roles between an organization and communities that produce technology are seen as quite powerful, because defining user requirements are key to the impact of the technology on the organization and to the continuing development of the system for the supplier. Gornall (1999), in her discussion of the position of "new professionals" in universities, has stressed the association of power with liminality[2] if people are in organizationally anomalous positions because of a connection to change strategies valued by senior management. So there seem to be connections between membership of extra-organizational groups and local power and embedding.

There seem, then, to be some interesting questions about the full significance of cross-organizational knowledge sharing between practitioners working in the same field, whether it takes place online or face to face. Such processes would be particularly interesting in a field such as web production, as it is a new practice lying outside or across obvious professional demarcations and where the co-operative resources of the Internet are particularly available.

A further level of interest revolves around the reach of participation in cross-organizational activities like NOPs. Faraj and Wasko (2001) suggest that there is a marked difference of motivation between expert participants and the mass of people who use the Usenet lists they

[2] The word "marginality" would fit this concept quite well but because Gornall (1999) uses it (echoing Turner's (1969) fundamental work on community) "liminality" is the preferred term.

studied. Certainly some people seem to invest a vast amount of time in their participation. Also the reach of such groups is patchy; i.e., not everyone who might be interested in the topic joins or participates (they are non users). The pattern of participation seems to be determined by a complicated interaction of factors, including chance, the internal processes and history of the online or face to face group, aspects of the subject itself and such factors as identified by van Maanen and Barley (1984) as underlying occupational community eg how far work is a central life interest. It must also partly be the outcome of local circumstances of potential participants. It would be a solecism to only examine participation through studying the activity of the online community itself because clearly off line contexts (Baym 2000) are important in determining how the value of forms of information, support or identity can be gained through a cross-organizational group.

To explore these issues this paper presents a case study of "web production" in HE in the UK, looking at the pattern and significance of cross-organizational ties not just in sharing information, but in accomplishing a form of community. The term web production is intentionally vague, encompassing both the information and communication web. This is a very specific case study, but by delimiting the complex factors that seem to work here in detail we may move towards generalizable conclusions about the strength and shape of cross-organizational ties.

The paper proceeds as follows. After outlining the research methods used, the paper begins by discussing the character of two significant cross-organizational spaces in the field: a mailing list and a conference series. These spaces serve not only as information sharing forums, but also have support functions and have, importantly, a role in constructing a sense of community. The paper then considers the factors that would seem to underlie the differential response to such community spaces. Participation seems to be linked to aspects of the practitioners' local roles and positions, such as their degrees of embeddedness or liminality in the organization. The diversity of local organization of the web cuts against community, as do different approaches to centralisation. Particularly critical is a discursive divide between marketing and IT and the reasons why the community forms around IT more than marketing are discussed. The systematic connections between factors underlie the shape of the conference series in particular. A coda considers the implications to the organization and the individual of the lack of formal professionalization.

Methods

The research began (in 2003) as a study of an online community, subjecting samples of postings to genre and subject analysis and analysing subscriber lists. An online questionnaire

was also a source of data. The research was expanded to a parallel face to face conference series, applying rather similar forms of investigation such as content analysis of papers presented and of delegate lists. However, the impossibility of understanding the online community or the conference without understanding the wider real world social context in which it existed led the researcher to seek more rich, in-depth data representing the lived experience of actors. In this emergent pattern (typical according to Patton (2002) of qualitative studies) the primary data source came to be 21 interviews with practitioners in web production (conducted March-July 2004). Interviewees were chosen purposively with a desire to represent different types of university (from the older research led institutions through to newly created teaching orientated ones), those using different technologies, and especially those where practitioners find themselves in different organizational locations. Different levels of participation in the cross-organizational networks were another factor. Interviewees were identified through web searches, but primarily from visibility in an online community, an annual practitioner conference series and the HEIST awards for web sites for university marketing. All the interviewees were people who could claim to have a central responsibility for the informational/communication university web, but how this was interpreted varied from institution to institution. Several people at the same institution might make such a claim. And though there is some usage of the concept of the "institutional web manager" - the word webmaster is commonly but not universally derided - it was not consistently used or understood.

Interviews were transcribed and through iterative reading (McCraken, 1988) and open coding understanding of the themes in them developed. To a certain extent the analysis was influenced by discursive psychology (Potter and Wetherell, 1987) and Billig's (1996) characterisation of common sense as being composed of endless ideological dilemmas, eg in identifying the split between information and content as discursive resources. However, the data was seen to reflect interviewees' consistent beliefs, expressed in good faith, not as essentially rhetorical constructions, the view taken in discursive psychology. Quotations made here were chosen because they seemed to eloquently express signficiant features of the case. It is acknowledged because there is no neatly definable method of analysis the study lacks the immediate reliability of more transparent methods. It nevertheless represents a valid approach long used in social science (eg Okley, 1994). It is acknowledged that other interpretations could be made of the data.

Cross-organizational spaces: The online community

The starting point of the research was a mailing list based online community, WWW-list. Started in 1994, the group produced around 30,000 messages over the period of the extant archive (1998 to 2005). Unlike many Net forums (eg webmasterworld) this is a sector specific group with about 75% of the membership of between 650 and 700 persons (at the end of the period) having ac.uk email addresses. In many respects the group should be seen as a "boundary community". Firstly, it does include a smattering of non ac.uk membership; indeed the highest poster was from outside this domain. Secondly, data suggest that the ac.uk group not only include those with a central responsibility for the web, but also "web authors" who maintain web sites are the departmental or faculty level. The topics are inclusive in covering aspects of the web relevant to people writing HTML code, those writing scripts, those looking after servers and those choosing tools for support across an institution. Although all these topics relate to technological aspects of the web, they encompass a range of activities, which are likely to be relevant to different people in the same institution. While it is inclusive in this sense, the list's reach is rather limited in terms of patchy membership across institutions, with a concentration in the older universities. The major figures of the list are often in relatively anomalous roles, or in jobs with a cross-organizational role.

It is characteristic of the list to have relatively short threads, with a question and answer structure orientated to helping fix immediate problems, explaining how to perform some task or recommending tools. Longer threads are often concatenations of simpler questions, though a certain proportion are longer discussions of best practice. One could characterise the list as *reactive*, lying somewhere between the single unanswered message at one end of the scale through to true interactivity (Rafaeli and Sudweeks, 1998). In informational terms the list's main activity seems be at the fixing problems level identified by Barley and Kunda (2004). It is efficient, reaching a large population with relevant, timely and current information, and able to be accurate, because artefacts like code can be easily included by copy and paste.

There was also evidence (from questionnaires) that some people did expand their personal professional network through the list. Certainly it offered a form of moral support, if more implicitly through enacting helpfulness than explicit empathetic behaviour. It is the willingness of people to help each other quite generously - a level of reactivity and demonstrated helpfulness - that suggests there is a community, in combination with some relatively low level processes such as: the egalitarian character of off the cuff, contributory answering, a level of politeness, a lack of a sense of anybody in control or there being strict rules, a few people taking time to maintain an identity, and glimpses of interactions between people who know each other (Baym, 2000, Blanchard and Markus, 2002).

At another level WWW-list can be seen as limited, lacking any real narrative infrastructure (Davenport and Hall, 2001). There was little creative activity or unique locally created repertoire of genre or in-jokes. The topical reach of WWW-list is narrow within technical questions, whereas many of the key professional issues - certainly for managers - are about local culture and organizational politics. This could be interpreted in various ways. One interpretation would stress limited technical affordances, eg that the lean nature of the media limits discussion to technical and informational questions. Another interpretation might stress that local problems cannot be aired on a public list, as one interviewee commented:

> The last thing you want to say is "we are having a big problem with this: help!" - if it's something that affects the way people are going to perceive the institution. Because there is a certain - you are always aware - that a lot of the people on the list, come from competitor institutions.

Yet another interpretation is that the list be in some ways symbolic, staking the claim that web production has a fundamental technical basis. Certainly it was open to that use. One of principal activists in the field stressed that the voluntary helpfulness on the list proved the existence of a community. He made the claim that WWW-list (and a parallel information management list) was a major channel of communication for the web or web management community, and that the conference series and WWW-list were linked. Another interviewee continued to see it as "an extension of the general conference chat" and in an extreme statement of identification saw it as "pretty much like my days". There is some evidence, then, for the list having a symbolic role.

On the whole, however, the interviewees in more management roles offered very qualified approval for WWW-list, mostly focussing on limited instrumental uses. For example, one saw it as useful in getting answers to questions, but it was implicit in this that he did not really care that asking the question made him seem stupid. So its use was premised on a lack of relationship.

Thus, the list works at an information level. It offers support. It can help people network. It is also a tool in symbolically constructing community, for some.

A cross-organizational space: the professional conference series

Another key cross-organizational space was a practitioner conference, which has been held annually since 1997. It is more difficult to evaluate the informational aspects of the conference, partly because of the difficulty of investigating the informal side of such meetings (often said to be the most valuable). The following analysis is based on the archive of past presentations and observation of two of the more recent conferences. A subject analysis of papers suggests that the conference is positioned in a techno-management area: focussed on

achieving organizational change through technology. Often the conference seemed to have a role in identifying "the next big thing" (an example of "keeping ahead"?), and of discussing the issues with technology and its implementation.

For it to be worthwhile to have a sector specific conference on the web implies the existence of sector specific technical and other trends. And indeed, such tools as Content Management Systems (CMS) and portals seem to have particular patterns of development in HE. Again the impact of accessibility legislation is a general issue, but there did seem to be sector specific aspects. This points to some common ground in information needs across HE, giving rise to a particular value in cooperation at this level.

If common information needs arising from innovations such as CMS were common ground, there were also those whose information needs were somewhat divergent from those realised in the conference. Several interviewees expressed scepticism about the applicability of many fashionable or once fashionable IT developments to their institutional context. Participation in the cross-organizational network, then, is clearly premised to a certain extent on involvement in innovation, and in turn resourcing and organizations' technical needs. Yet differences in participation are not attributable solely to information needs.

A deliberate effort was being made to give the event a community feel, which is evidenced by the following:

- It takes place on a campus of a university, generally one that is associated with a prominent figure in the community

- Most of the speakers are either from an HEI talking about their local experience, or from the HE sector IT lead body, JISC. Commercial speakers are rare.

- Most of the attendees were from UK HEIs, of which a large proportion are represented. For example, in 2003 there were delegates from 72 different institutions (including new universities), meaning that only a proportion of institutions were represented. It was notable that there were very few non-ac.uk (five and eight), non UK (one in both years) people present.

- At the 2004 conference the main organizer made strenuous efforts to construct a sense of community, through several speeches reflecting on the history of the conference, its big personalities and the ethical challenge of the job.

Thus the event is deliberately organized to stimulate a sense of community. To understand the processes better it is useful to refer to Amit's (2002) argument that the visceral, intense quality of imagined community (Anderson, 1991) requires that it be imagined immediately in experience of direct human contacts.

> the emotive impact of community, the capacity of empathy and affinity, arise not just out of an imagined community, but in the dynamic interaction between that concept and the actual and limited social relations and practices through which it is realized. People care because they associate the idea of community with people they know, with whom they have shared experiences, activities, places and/or histories. In turn, they use these interpersonal relations to interpret their relationship to more extended social categories. (Amit, 2002, p.18)

Thus actual meetings evoke and realise latent imagined community based on common context and experiences. This sense of community, in the web arena, however, is battling against the primary organizational loyalties of potential participants, the lack of a clear public image of the profession (which helps to construct a community from the outside), the lack of formal professional socialisation and the seeming lack of a sector specific job market.

It is also important to observe that participation in the conference series was limited in various ways. It was UK centric (in terms of speakers and topics). Commercial speakers were rare. FE delegates were few, and there had only ever been one FE speaker - even though rhetorically political correctness required one to talk about the HE/FE community. The rest of the public sector, with which the group might seem to have much in common did not attend in great numbers. These limits were partly deliberate on the part of the organizers, linked to the idea of creating a community feel. The most significant limit was that the conference takes a rather techno-centric view of the web and through this, perspectives from marketing are excluded; thus up to 2004 there had only ever been one paper that could be said to express the marketing perspective. This masks the fact that it has often been disputed locally whether the web should sit in IT or in marketing. As later discussion will show this is a key aspect of participation in the conference. The conference draws some clear boundaries and it is important to problematise how it comes about that the boundaries were drawn in this way.

As with WWW-list, responses to the conference were diverse. Many of the interviewees evaluated the conference positively and were involved in its organization, speakers or frequent attendees.

> I know lots of other people at different institutions, throughout the country, I think that's largely down to [the conference organizer] - the [conference] - it's a fantastic opportunity to meet with people and share ideas. He's kept, in a sense he's provided the only point of focus within the community for people to meet and discuss their needs and share ideas and people are very cooperative within that community […]

Another commented on the lack of a sense of rivalry, the willingness to share knowledge and to admit lack of knowledge.

> Whereas as I say with web managers for Higher Education, it seems to be that we're all or most of us are kind of trying to just create a community really.

Other interviewees were, however, rather negative, tending to see it as too technical. Some had ceased to be actively involved. Certainly the level of integration of individuals into local and cross-organizational networks was strikingly diverse.

Local roles and cross-organizational ties

WWW-list and the conference are the main cross organizational spaces in UK web production. There is another email list more closely tied to the conference but this sees little posting activity. The membership of the two spaces overlap; in 2003 most delegates were on one of the two lists, and delegates constituted about 10% of list membership. One interviewee saw the list as "an extension of the general conference chat". However they have different agendas: WWW-list focuses on low level technical fixes, whereas the conference is much more in the area of management of technology and policy. WWW-list is more inclusive, eg of web authors, whereas the conference is more for central web teams. At a theoretical level we may see them as separate but connected NOPs, together representing a level of occupational community less strong than understood by van Maanen and Barley (1984) and falling short of formal professionalization.

The paper thus far has investigated these two main cross-organizational spaces, stressing as a starting point informational purposes that lay behind participation. But it has begun to problematise the shape of these communities. The rest of the paper tries to make sense of the pattern.

A major influence on the shape of the community was interviewee Z, whose centrally funded role gave him time to spend on facilitating activity across the sector, deliberate community building activity, such as organizing the conference or posting to the list. Nearly every respondent - even the most apparently isolated - referred to him without prompting as a personal contact, seeing him as a key figure. In this role he acted as the agent of the Joint Information Systems Committee (JISC). JISC provides "strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration" (JISC, 2005) and is funded by top slicing of all universities. JISC's focus on encouraging technology orientated collaboration, with a stress on interoperability and use of open standards (JISC, 2004) was influential in the topical focus of the conference. More generally its sector wide activities and common services (eg its legal service) were clearly a major influence on how the space was defined; that is, it sets the limit at a national level and focuses on HE (not the whole public sector) .

The next sections examine some of the factors that may underlie the pattern of response to these deliberate community building activities.

Liminality

Zabusky (1997) argues that IT support specialists are marginal in universities because they have a prior loyalty to their technical community. Though this analysis points to an important dynamic, it does not seem entirely accurate as regards those working in web production. Whereas many, perhaps most employees in HE do have a strong loyalty to their disciplinary community (academics)[3] or their profession (among support and administrative staff, eg librarians), those working in the web area have a relatively low level of professional organization, if one takes the conference series and online community discussed above as the only major institutionalisations of this. This would suggest their loyalty to an external community is likely to be actually *less* than that found in most occupational groups in HE. They are potentially more orientated to the organization. The pattern of professional organization in universities offers an obvious model to web production for the formation as a community at some level, even without formal professionalization. One interviewee commented that in a sense the networks in the web community piggy backed on pre-existing networks, for there are strong traditions of collaboration in academia. But this may be more superficially developed than in more formalised professional fields.

Therefore, whereas Zabusky (1997) argues that support specialists are marginal to the university because they have a greater loyalty to their technical community than organizational values, the logic of some of the involvement that does occur in the web field may be more or less the reverse. Locally isolated because of where they sit in the organization or being new in post they seek wider networks with similar isolates to do collective work with the purpose of trying to decrease their *local* isolation. Community activity is a response to isolation, directed at reducing it, not a cause of it. It is also different from Gornall's (1999) conception of the liminality of the new professionals, because it is a position of relative weakness, rather than linked closely to organizational change desired by senior management (p.48; see also Oliver, 2002, p.245).

[3] Campbell, in the context of a study of the divergence of departmental web sites from institutional standards, writes that: "It could be speculated that academic staff tend to identify themselves more with their subject area, than with the institution they teach in, and see their web pages as a way of differentiating themselves from both the rest of the academic departments in the institution, and other departments in the same field of study." (2002, p.70)

Thus a major factor in one interviewee forming a regional group seemed to be the lack of knowledgeable people locally. This is somewhat consistent, if the reverse, of findings about knowledge sharing in organizations which tend to stress embeddedness and organizational citizenship to willingness to share (Constant, Sproull and Kiesler, 1994). The newer and less embedded one is the one most likely to use external sources of knowledge.

Interviewee Z stressed the political vulnerability of web managers, seeing the conference as a place to moan, for "counselling". The points also echo the concerns that some other interviewees remembered from the early years of web management and motivated their decision to get involved in cross-organizational activity.

> The reason we started that was because I started at [Institution name] and became very aware very quickly that I was without a peer within the institution – so I was completely isolated and completely alone – I needed some reference point externally with whom I could share information and in a sense get to this thing we always talk about best practice.

The quote conveys a sense of isolation from being the first, but also from being ahead of the field. Note that this individual saw these as problems now in the past, since the web had started to be "taken seriously", meaning there was less sense of being misunderstood and more local peers to talk to. In contrast again, another interviewee seemed preoccupied with local contacts now and his participation in the cross-organizational community has dropped. Success in winning resources had opened up a gap with newcomers and those who were still struggling in a liminal position. However, organizational liminality remains a recurring issue, especially for newcomers, and it fuels some activity in the cross-organizational spaces.

To complete the picture it will also be argued that there is a reverse logic in which those who are successful locally have high status within the cross-organizational community while newcomers having low status, despite what has just been argued about their greater need for the extra resources. This places a contradiction at the heart of the community creation process.

Diverse roles

A major defining factor in response to cross-organizational community building was the diversity of individuals' roles, organizational position and self conception (for a much fuller account see Cox, forthcoming, also Armstrong et al, 2001). This is not in itself an obstacle to community necessarily: the diversity gives a potential richness to interactions in reworking the professional practice. Community of practice theory often stresses the importance of diversity - and Land (thinking about learning technologists) reflects on it as a necessity in a C21st "development community" (2004, p.194). However, it also creates competing potential

professional loyalties and trajectories and divergence of "occupational socialisation"; i.e., parallelism in experience.

There is space only to consider a couple of the most significant aspects of this diversity. In the web domain there continued to be uncertainty of where the function should sit, in particular whether it should be in IT or marketing. There was also differences in where it sat in IT; for example, some interviewees were in MIS, others in IT services, others still in separate units broadly under the information services banner. The fact that one interview was based in registry gave him a different perspective, he thought - an ambiguous position between IT and content - and may partly explain his declining participation in the community. The occupational trajectories of interviewees were diverse. Some had a relatively clear cut trajectory towards IT management, from within an IT department. In contrast others essentially saw themselves as marketers. One was an out and out marketer with membership in the Chartered Institute of Management. On the other hand, though two others worked in a marketing department, they saw themselves more as techies in a non-technical organization. So whereas in a unified professional field there might be a range of classic trajectories, in web production positioning was more complex, often with trajectories out of the specialism towards more mainstream professional positions or cutting against their actual organizational position. This was revealed in quite diverse core conceptions of the job, values about IT or content.

One interviewee saw the group as on the same development path, but because of differential resourcing very spread out:

> From what I've seen of other institutions and from speaking to folk in similar roles to myself, the spread across the sector of what folk are doing probably spans a couple of years. So I'm six months, 18 months behind the folk at the front and there are folk 24, 36 months behind me.

This quote implies a colossal divergence; in fact, he did not think the sector had a position. This would make creating a community less than simple.

It is a classic move in professionalization that the forming professional body calls for only trained people to do the job and for them to exclusively specialise in that job (MacDonald, 1995, p.193). Exclusivity is important to maintaining professional identity. Some interviewees were exclusively a web manager (or was happy to portray such a clear image). Others had roles beyond the web which would arguably diminish the likelihood of identifying with web production constructed as a community. Thus one worked on a range of IT projects and was in charge also of high performance computing.

Yet if it is argued that individuals in the web production space had in fact significantly different roles, there were some roles that were particularly orientated to collaboration in a

wider network. Several saw an important part of their job to be a "watching brief" to track new technologies and work out their application locally, a role that seemed to be linked to participation in the cross-organizational community.

Web managers often saw themselves as bridges or ambassadors. The conference showed a concern to develop ways to understand end-user needs (usability), to influence web authors, other departments and also senior management. The thrust of the role - like that of the learning technologist, (Oliver, 2002, pp.248-9) - is integrative and collaborative, therefore, rather than itself being just a silo of expertise. Most people working in the area were members of multiple communities themselves (through their diverse roles) as well as trying to integrate the work of others. As a result, diversity within the community itself could also be accommodated.

Interviewee A, through his success within the terms of the community and his fitting the aspirational model of being a manager, gained great centrality in the conference. Yet there were some ironies to this centrality. He himself saw his position as unique. Through innovation he gained centrality, but the consequence of innovation was not merely to, for example, do things more efficiently, but transformational in terms of what could be done, and leading him to re-envision his role. He shared with some others, who were also involved in portal projects, an increasingly business orientated way of speaking, distancing him from many in web production. He also saw the whole web manager community represented at the conference as increasingly parochial, as his wider "engagements" around the organization expanded his vision. Thus those most central to the community were reinventing the whole role, creating a break with those less well resourced in smaller, less prestigious institutions who continue to struggle with more known issues. Whether this is divisive or not depends on whether the path pursued by the most successful represents the trajectory of the whole HE sector in the long run or whether it will be confined to the bigger, richer organizations.

The challenge of legitimation

To a large extent the role of being an "institutional web manager" is a role of trying to "control and influence" web authors distributed around the organization to meet institutional requirements such as the use of logos and conformance to legal requirements, good standards of mark up and navigation structures (Egan, 2003). Sometimes controls can be forced on web authors, partly built into systems such as CMS, but often it is a matter of winning consent, "cajoling", as one interviewee put it, "herding cats" in a context where there is little direct formal power. The centralisation process has been balanced by arguments and pressures for decentralisation, such as the sheer quantity of information, the logic that those who originate

or own content are in the best position to keep it updated, the desire of individuals and departments to express their own identity, further linked to the concept of academic freedom. These dilemmas, and the attempt to legitimise a professionalized role within a space often seen as limited to enthusiasts and amateurs is a common challenge faced by all those in central roles, and can be characterised as one of legitimation.

The problem of legitimation is two sided. It exists both in relation to web authors, but equally there is an issue of legitimation with senior management, a need to demonstrate the importance of having a central web team and win resources. Z, who organized the confrence, commented:

> So in a way we're in that same community, we're having to respond from lack of funding, lack of support from above, pressures from users from below.

In neither case can well established professional standards be drawn on to say how the web should be organized or resourced, so a variety of strategies are pursued to establish legitimacy. There is a common interest across the field to attempt to define a good practice. This seems to be a primary basis for forming a cross-organizational community: as a forum to help with local legitimation, often through discussing strategies for gaining legitimacy rather than collective action as such. It is perhaps a first step towards social closure.

It was evident that the more the interviewee was in the position of weakness trying to influence others, the more likely they were to orientate to participation in the wider cross-organizational community. This might be partly because they drew less distinction between their own working on the web and that of other web authors.

One of the most interesting cases of this was described by B. She stressed that the institution was "democratic", many of the departments being very large and seeing themselves almost as separate organizations. There were 400 web servers across the university. This gave rise to "tricky" institutional arrangements:

> Broadly speaking I fit into - rather informal places within the university as well. I don't have any formal connections with other things around the university like the admin offices or the departments or anything. But I have a kind of floating role, I suppose. I suppose it's a kind of ambassador for the computing service.

Clearly this required the political acumen implied by the term ambassador. It was a personal relationship between her as an individual and others, built up over time.

Interestingly, as at many other institutions, B's local contacts were somewhat institutionalised as a "web liaison group" that met a few times a year and had an email list - the same media through which, at a cross-organizational level, UK HE as a whole was organized.

Not surprisingly, she also drew parallels between Z's role in the wider community and her own locally: "[…] one of his jobs was to have - be a focus nationally like I'm a focus here". This hints at a mental model of nested circles of support, in which there was a similarity between national and local networks. Z also thought that there were many local local versions of WWW-list:

> Now the web is mainstream you can get help from you know students on campus, anyone from campus, so there will be I suspect many institutional [WWW-list] type lists can carry out those initial functions. So in other words a – you tend not to get the queries how do I – you know – or I don't understand – because they can be solved in other forums.

Thus, collectively such fragments hint at the way media of support at national and local levels echo each other.

If those who were in a position of primarily trying to influence others seemed to be also strongly orientated to wider networks across institutions, it would seem equally that those who were in a stronger position of control were often low participants in the cross-organizational community. This can be illustrated from another interview. A key aspect of this indivdual's strategy was to reengineer who controlled departmental web sites: by taking the technicality out of web publishing the CMS would put control into the hands of managers rather than local enthusiasts, the "hobby farm". He was unapologetic that this might threaten the roles that such people had built up for themselves: it was justified in terms of a form of business rationality. The conflict is a "change management process", i.e. rationalised within a recognised professional discourse. There is a logic that if he was in a struggle against the local "hobby farm", he would equally be uncomfortable with similar characters in wider communities, so that influences his involvement with cross-organizational groups. Not surprisingly therefore, his comments about the community were dismissive:

> **Interviewer:** Is there a particular reason why - you say you don't involve yourself in that
> **Interviewee**: I suppose I can put this on your machine. I've got very little respect for the majority really. Blazing arrogance, but there it is. I look around at what other people are doing and most of it is diabolical. And so I'm not really interested with aligning myself with with the hobby farm people - who continue to work in this kind of stuff. So what I do is align myself more with information professionals.

Division between marketing and IT

So far the discussion has shown how community activities such as the conference series and email list are linked to the deliberate community building activities of JISC and draw on a pre-existing pattern of pseudo professional community and to a relatively distinctive set of information needs. Cutting against this to a certain extent is the degree to which individuals' roles remain diverse, variability of embeddedness in the organization and differences in strategies of legitimation. These factors underlie community and diversity, but there is also a

significant fracture line cutting across the space. The paper now turns to examine this in more detail.

The programme of the conference clearly envisions the web as a technology, its primary concerns being how to choose and implement IT, and related policy making. The email list is even more narrowly focused on the technical. However, in this an alternative set of discourses and professional practices are silenced. Exploring this opens up one of the key boundaries across the field of web production.

- Marketers tended to ask a powerful rationalising "why" question about why any piece of content should be published, who is the audience? what is the purpose?

- From PR/journalism marketing professionals had a confidence in writing, a knowledge of how to present ideas in an interesting way and a desire to make content interesting and inspiring, not merely informative. Information people commonly did not like to rewrite content.

- They had professional discourses about the power of imagery (Porter and Gibbons 2004)

- Marketing people had a willingness to commission content and to go to external providers for technical work

The focus is clearly on *content*, and though there would be internal divisions (word people and image people), the range of professional groups in marketing bring important concerns about doing the web which are largely invisible in the web community as realised in the conference.

The IT view of the web tended to focus on providing a stable infrastructure in which people are free to publish, limited only by the law, acceptable use, some technical guidelines to ensure accessibility and a core navigational structure. Information could be judged by objective tests of quality of content such as spelling, up-to-dateness, accuracy of links (most of which can be verified automatically). The IT approach can effect a strong laissez faire mentality, but there is leverage in security issues for control. For instance, blocking running cgi scripts, a common complaint against IT, can serve as an excuse to block innovation. The split between marketing and IT is a division of values or discursive resources that cuts across the web space. Yet both bring a lot to the role.

If there are signs of local accommodation in the accounts of individual practitioners, at the cross-organizational level the marketing view is blanked out. This may be partly the result of

JISC's IT focus in its agenda and how decisions have taken to position the conference. But we can also point to more structural factors especially the particular advantages of technology as boundary practice.

Both cross-organizational spaces had a technical focus, as has been argued. Technology often also seemed to be the locus of collaboration on an individual level, eg one interviewee talked to his one main external contact partly because they had the same Student Record System. One reason is that technology is well suited to being a boundary practice between organizations.

1. Technology is inherently at a level of generality. One key reason for using IT is to localise an externally produced system (like a CMS) or realise value from a set of technical possibilities (the web). At the point of taking it into the local organization it is generalised, therefore already available to be discussed with others working in different contexts. In contrast, local content or processes are unique to one institution - marketing is in some sense about identifying what is uniquely good about the organization. Work of generalisation has to be done to explain the relevance or problem to others from outside the organization. The effort of doing so may outweigh the benefits in terms of support or other help. This means that while technology is a natural boundary object, local issues are not. The web specifically is of very general relevance since it is a universal architecture, not a specific solution or application, like a particular CMS. These solutions, especially proprietary ones, form user communities around different CMS, as is the pattern of activism in cross-organizational spaces in the library systems world. The web is relevant to all, helping to create an inclusive community.

2. There is a strong tradition of collaboration in the IT world with strong models from the Internet and the Open source movement.

3. The technology of the web is a dynamic area, it could be argued, continuously generating new learning needs, which could be collectively met. The intense commercialisation of IT discourses creates a strong need to talk to other practitioners to collectively filter out sales hype. Yet it should be noted that several of the respondents thought that IT was actually quite stable. So the centrality of keeping up to date is itself a belief tied to (and reinforcing) beliefs about what the job is inherently about.

4. Marketing perspectives are potentially competitive, premised on differentiating a particular university as a product. In particular they cut against cooperation with organizations which were most like themselves, in purely informational terms the most

likely partners. Thus if the so-called new universities in the UK were more geared to marketing, it precluded cooperation, especially with other new universities. Because IT is infrastructural it tends not to be seen as a direct source of competitive advantage in the way that good marketing content is. Therefore information sharing is safe.

5. As Kotamraju (2004) argues, in web production IT skills have come to be taken more seriously and valued more highly. This may be linked to quite profound (gendered) social evaluations of different forms of knowledge, and were reflected in the interview data. It was noticeable that several interviewees backgrounded their accredited design knowledge in favour of technical knowledge. Emphasising the more socially valued aspects of the web (technology) could be a way to valorise the whole activity of web production, and, for example, validate it as a "serious" activity with local computing services. Marketers also benefit from this.

6. Larger, more prosperous institutions are more invested in home grown technology and they may use their general prestige to influence the agenda of the cross-organizational community.

7. Jarvenpaa and Staples (2000) argue that those who like computers are more likely to be disposed to use computer based knowledge sharing systems. This suggests that those who use computers intensively may more intensively use computers to share information. For one thing it is therefore possible to copy and paste raw data from almost any technical problem and share it using computers, in a way that other sorts of problems cannot so easily be shared.

Thus there is a professional jurisdictional struggle over whether the web should be about IT or marketing. The advantages of IT has as a boundary practice tend to give it more public visibility, so this is likely to influence the course of the struggle. More research is needed to investigate the impact of this at the workplace level, but it is hard to believe that it is one factor helping IT to dominate over other professional practices.

Interconnection of factors

Interviewee A was arguably the most central individual in the web production field at the time of the interviews. He encapsulated the factors in favour of participation in the community which this paper has explored. He was an innovator in the terms of the conference, which leads him both to talk to others, and to have experience and information which others want to hear about. He was a decentralist, though intensely engaged with others as part of his attempt to recruit people locally to his strategy. His specific role of ownership of the local strategy

and as local spokesman for the policy seems to be associated with skills and orientation towards participation in cross-organizational space. He had centrality in the community through claiming the status and clarity of being an IT manager in an IT department, with a IT management trajectory. Although ironically a marketing man by background, he distanced this and rehearsed common arguments against the web being based in marketing.

A's place is linked to his coming from one of the large old institutions which were over represented in the conference. They have a tradition of decentralisation, but invest resources in technical innovation, often locally developed rather than bought in systems. Arguably the scale and complexity of the organization itself prevents the simple adoption of commercial products. They do not tend to compete through marketing, which is deprecated as commercialism. They also use their general prestige and resources to buy centrality for their agenda. Thus A sought respect from coming from one of the prestigious Russell group universities: in his public speeches his specific claims seem to seek some validation from an initial rehearsal of impressive facts of the size of the university and web site.

If we treat A as a model, the lesser participation of others can be explained through their divergence from the model. Thus another is involved in a similarly innovative organization, but it seems to be that his role is less as owner; it is far more a collegial effort. He is a stalwart of the conference, but with a less glittering role. Others are, like A, decentralists, but with far fewer resources, so still at a DIY technical level. Another has experienced major failures in local relationships, become blocked from resources and so has become disillusioned. Another does have the resources, is an IT manager type but is pursuing a centralist model of control, an aspect of which is to create distance with others doing the web.

At the other end of the spectrum is interviewee Q. He is from a new university, with its centralist traditions. Marketing is seen as a central use of the web. He is innovative, but in email marketing techniques, not IT, and is not concerned with developing or implementing high level systems. The information shared at the conference seemed less relevant to him.

Thus the various factors examined in the paper cannot be disconnected (see Table 1 below). The large, old institutions tended not to do so much marketing and the web continued to be seen as an information source. They would put resources into the most fashionable forms of development, eg portals - as a way of controlling access to a proliferating range of content - rather than integrating it at the publishing stage through CMS. Success in obtaining resources would enable the responsible party to have something new to say. It would also boost their individual status in the community, high anyway since public evaluations of universities also apply in the community. The result is that the work of the bigger institutions is more visible,

and influences how the sector as a whole is perceived. The big institutions used their general prestige to promote their own agenda. They were in a better position to host the conference and buy centrality this way.

High participation in the conference	**Low participation in the conference, orientation to Heist awards and WWW-list**
Old university	New university/FE
Good resourcing	Low resourcing, liminality
Decentralised power	Centralisation
IT infrastructural approach	Marketing focus
Portal and high innovation	CMS or low innovation
Network influence on community of web authors	Control of content

Table 1 Factors in participation in the conference

Newer institutions or smaller ones and FE tended to have a more marketing focus, have far fewer resources to do new development work. They would probably be more centralised institutions, so there would be less comfort with networking skills.

This begins to explain the pattern of activism in the conference judged by the affiliation of speakers: that the old institutions predominate, and the point of view of under-resourced, new universities, small HEIs and FE get a poor airing. This is not necessarily dysfunctional. It may be that the information needs of less innovative individuals are more easily satisfied by general resources on the web. It is only in the context of innovation that major new information needs are generated. There may be a collective benefit in focussing on the innovative work because it generates interest, a sense of importance that can be used locally to legitimate positions even of those who are not being innovative.

"Failure" to professionalize

As a coda to the analysis it may be useful to reflect on the significance of a "failure" of formal professionalization in web production. Professional membership among the interviewees was low. The most frequently mentioned body was the British Computing Society (BCS), but no one was a member of it. On the side of the professional association (eg for BCS) the group might be too small a group, too marginal to justify great efforts to accommodate them.

If web management fails to emerge as a new professional SIG, this leaves those in the space with dilemmas about legitimation. The problem was acute for one interviewee, who wanted to draw a firm divide between himself with his "professional" team and the mass of what he dubbed disparagingly as hobby web authors. Professionalism was one discursive resource he

tried to use to mark the boundary. Yet though he himself had a fairly long track record, he had no real credentials and he was not a member of a professional body. He justified the lack of professional membership from a belief that a professional body would not be able to keep pace with technology change. But the logic of his position suggests an unsatisfied desire for professionalization.

While he faced a problem because of the lack of professionalization of the space, another saw the lack of professional definition as of value personally in creating space for him to make choices.

> I've always felt as if I've had not quite a free rein, but I've been able to make suggestions and develop things the way that... I've been able to steer things quite well. Because people basically they don't know enough about it, and it could be quite dangerous: I could have been just sitting here for the last eight years doing nothing. But I have felt as if I've been able to have a real an impact and a real input into the way the institution has developed in this particular area, because they are looking to people like me to tell them what they should do and what they need to do. So I've had quite a bit of freedom, that my other administrative colleagues might not have had.

So the lack of formal professionalization gives the job greater potential, just as the lack of exclusivity gives it variety. This echoes Gornall's (1999) suggestion about the key place played by liminal "new professionals" in reinventing universities.

This freedom results in equivalent personnel having rather different, rather unique roles. It offers a form of individual closure; the individual's position is protected by the adaptation of the organization to the individual, the uniqueness of their position which makes them difficult to replace. In contexts where a role is well understood and standard across organizations people are more replaceable, a job market emerges and mobility is greater. Then, professionalization is more of value as a form of collective action for social closure.

On the other hand there were clearly some costs attached to lack of professionalization. One interviewee is not uncomfortable with the range of roles he has; he sees them as multiple sources of legitimation, but for others the complexity may be difficult. For two women interviewees, who are somewhat less successful in winning resources or establishing stable roles, it may be that the lack of formal professional definition leaves them with little defence against political pressures and wider professional struggles. Inter-organizational mobility is less easy because there is a less clear job market. This itself is a factor in there being weaker networks than in professional or disciplinary communities. The lack of a clear career path for those working on the web was a recognised problem with implications both for individuals and organizations, but it was partly offset by the development of the web itself which opened up a natural career path for those like AM or BM equipped or desiring to follow it.

Advantages for organization	*Drawbacks for organization*
Innovative, change, flexible Lower salaries Loyalty is to organizational values, there is little conflict of loyalty There is less leakage of knowledge into cross-organizational community	Lack of definition of roles, ability to apply measures of value Lack of professionalism Disconnection from wider best practice Lack of a job market
Advantages for individual Freedom, influence, variety, creativity from lack of pre-definition of role	*Drawbacks for individual* No career path within or across organizations Vulnerability, uncertainty - the costs of flexibility No counterweight to organizational culture

Table 2 The balance of advantage of non-professionalization

Conclusions

The paper has examined the factors that lie behind cross-organizational contacts in one very specific occupational field. We have seen how the coordinating actions of JISC, partly through Z, not only help to build community, but also tend to set its limits within HE, within the UK, within an IT focus. Over time with a relatively stable smallish group, and with the obvious paradigm of professional organization as a model there is a basis to form a community of some sort. There are common information needs, though innovators and the new or liminal may set somewhat greater value on it as a resource. There is common ground in attempting to legitimate a quality control role in a context of a powerful self publishing ethos, yet divergence between the decentralists and the centralisers. Diversity of underlying roles cuts against the common ground. IT does seem to be a natural focus of sharing, but the exclusion of marketing makes a division across the space. Collectively these factors seem to explain the main features of the conference and WWW-list, and the pattern of involvement among the individual interviewees.

Although the detailed character of the factors identified are quite specific to the context they are likely to have wider applicability. The parallels with learning technologists that have been mentioned a number of times are striking - eg in the yearning for cooperation (Oliver, 2003, Beetham, 2002) - though there are many differences as well, eg in discursive complexity (Land, 2004) and the extent of development towards professionalization (Oliver et al, 2004). Investigating the contrasts between these cases would be a useful avenue to expand the findings of the research. Undoubtedly the situation has changed over time and following the pattern of development in the future will be interesting.

More broadly factors such as the relation between organizational embededness and cross-organizational ties seem to be generally applicable, and build on the work of others such as

Zabusky (1997). At this level, the research has helped to produce a more detailed account of the character of networks of practice which both makes them seem more varied, creative and supportive than Brown and Duguid (2002) suggest, and in their role in jurisdictional struggles less obviously an unmitigated good. The paper has looked beyond the important information flows between colleagues in different organizations that occur in some networks of practice in order to examine their supportive and symbolic roles in creating occupational community and enacting jurisdictional struggles. NOPs are not just about information sharing, they have some role in developing an understanding of the nature of the job (occupational identity) but may also therefore play a part in conflicts over who should control the web. Certainly, studying such cross organizational relationships is important given the increasing stress in the organizational literature placed on extra-organizational networks and networking as resources to both the organization and the individual (eg Wellman et al, 2003, Nardi, Whittaker and Schwarz, 2000, Barley and Kunda, 2004). The concept of NOP emerges as a useful reformulation of the notion of occupational community in the era of networked individualism.

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