Portals as a Multidisciplinary Field

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INTRODUCTION

Portals often fall into two major categories: as gateways purposed to consolidate services or applications, or to assist in community building. In the latter case, extensive communication tools (such as instant messengers, event calendars, and forums) facilitate and build networks within the community. It must be noted that these suggested categories do not assume exclusivity – and there are increasing instances of portals that are built for multiple purposes.

Various cases of portals have been studied with their technological applications, software, and business applications for communities and organisations. The portals that have emerged on the web, such as Smart Mobs (http://www.smartmobs.com) and YouTube (http://www.youtube.com), reflect communal identities of communities. There is often a core group of people identifying themselves as part of that community, and a mechanism for contributions from community members, which act to cement the communal identities that people in the community share with one another. This paper argues that the emergence and popularity of portals is not driven by technologies, but more by this sense of communal identity within communities.

Its broader goal is to identify a research agenda for the Community Informatics Research Network (CIRN) in the Asia-Pacific region, using the case of a portal informed by structuration theory and the notion of the knowledge commons, here considered as a virtual space dedicated to the sharing of understanding, memory, and practical know-how.

Through Giddens' structurational theory (1986), the paper first demonstrates how portals provide a sense of collective identity for communities and thereafter cultivate a knowledge commons space within the portal. Using this discussion, research dialogues are introduced to demonstrate the multidisciplinary nature of portals. The paper then presents a case study of a portal that is being developing for the upcoming Beijing Humanistic Olympics, and focuses on the role of that portal in contributing to the establishment of the knowledge commons.

STRUCTURATION THEORY AND PORTALS

Giddens (1984) offers the insight that

> *The best and most interesting ideas in the social sciences (a) participate in fostering the climate of opinion and the social processes which give rise to them, (b) are in greater or lesser degree entwined with theories-in-use which help to constitute those processes and (c) are thus unlikely to be clearly distinct from considered reflection which lay actors may bring to bear in so far as they discursively articulate, or improve upon, theories-in-use (Giddens, 1984, pp 34).*

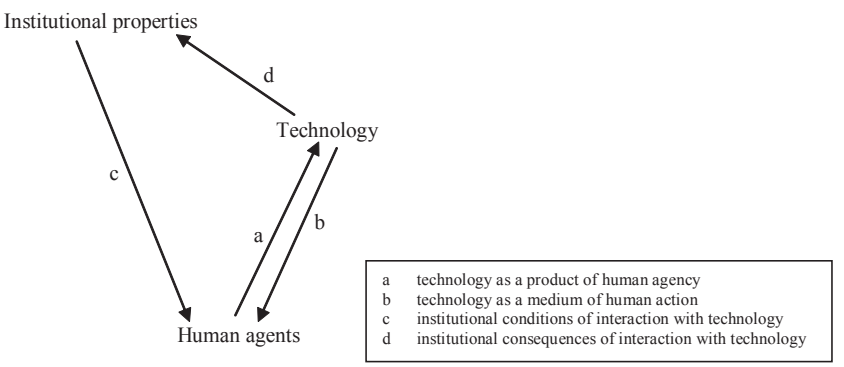
This insight implies the interdependencies of meanings, actions, and structures. The cumulative effect of people's living and working within social frameworks (through a dynamic that Giddens calls structuration) is the production and re-production of culture. According to Giddens, community cultures are generated and re-generated through the interplay of action and structure. Social structure both supports and constrains the endeavours of individuals, communities and societies. Giddens' theory of structuration is the cornerstone concept for this paper.

In Giddens' theory of structuration, he proposes what is known as the 'duality of structure', where human actions create structure or institutional properties of social systems, which in turn shape human actions (Giddens, 1986). It recognises that 'man actively shapes the world he lives in at the same time it shapes him' (Giddens, 1984). Information technology is well posited in the theory of structuration – its very nature reflects an underlying structurational duality: where human actions, the needs, wants, skills, and collaborative tasks of communities create requirements for technological systems, and with these structures, shape human actions.

Portals, when considered as an object of study, require constantly renewed effort at definition -- depending on context. It is now a reality of the techno-social condition that people need to grapple continuously with the multiple personae projected by portals and their enabling functions. It is worth explaining this interaction with portals. Orlikowski (1992) depicts a recursive model of information technology using structuration theory, applied to a vision of portals in this paper (figure 1).

The recursive nature of technology based on structuration theory is reflected in the structurational properties of portals as being created and changed by human action; but also supporting and constraining such actions. Through such interplays, memories of people are cultivated within portals.

Figure 1. Structurational model of technology (Orlikowski, 1992)



PORTALS PURPOSED FOR KNOWLEDGE CREATION

Pearce (2003) noted that portals have evolved and are expected to perform a number of diverse functions, including the access, storage, and organisation of information, gateway to enterprise applications, communication, and so on. Strauss (c.f. Pearce, 2003) suggested a trend of 'portalization', where organisations 'are rushing to produce portalware and portal-like Web pages without fully understanding the scope of a portal undertaking'.

This paper argues that the sustainability and usefulness of portals lie in the dynamics of the user communities and, in the same way, portals function as an important platform for the sustainability of communities. 'Community' as used here is intended in its widest sense, and includes communities of practice, communities of interest, and both local and virtual communities (Wellman and Haythornthwaite, 2000; Wenger and Snyder, 2000). Thus the scope of a community includes not only corporate-based communities, but also the vast variety of communities that make up the civil society as defined by the World Summit on the Information Society (Schauder, Johanson, Taylor 2005).

Figallo (1998) argues that a true community exists when 'a member feels part of the larger social whole', when 'there is ongoing exchange between members of commonly valued things', when there is an interwoven web of relationships between people, and when these relationships last through time, creating shared meanings and histories. Thus, the ties that bind people together transcend their formal tasks and work practices. As noted by Figallo (1998), this view of communities is altogether dialectic and multifaceted.

Behind the knowledge commons lies the memory of community for the common good: humans hunting together for food and developing conventions for shared use of grazing lands. Benkler and Lessig (c.f. Levine, 2002) defines a 'commons' as resources that are not possessed or controlled by any one individual, company, or government. The commons is rooted in communities of social trust and cooperation (Bollier, 2004) and is distinct from the market. Active defenders of the commons, such as the Friends of the Commons (2004) refer to the commons as 'a generic term which embraces all creations of nature and society that we inherit jointly and freely, and hold in trust for future generations'.

Such defenders regard it as critical that we make distinctions between what is shared and common to the society – so as not to allow market forces to create fragmentations caused by social differences such as income and literacy. The current movement of the knowledge commons focuses on knowledge-creating communities using technologies to empower or constrain their shared spaces and resources.

However promising it may sound, sceptics have referred to this concept as merely a metaphor – and regard it as risky to guide decisions based just on a metaphor. Others defend it fiercely – arguing that without it resources would be taken over by market forces (Bollier, 2004). Hardin (1968) writes about the tragedy of the concept of the commons, based on the assumption that equitable access and use would result in the degrading of quality, and emptying of resources. This suggested tragedy is based on the idea that in the commons, where lemming-like, 'every man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.' (Claude, 2002).

This paper argues that such ideas may be invalidated due to the changing nature of participative technologies, contemporary media scenarios, and the applicability of portals as a form of both structure and agent to sustain the commons within a specific community. Massimo (2006) further supports this claim, by stating that 'there is no common without community within which the modalities of access to common resources are negotiated' (Massimo, 2006).

Portals are gateways and central points of access to applications, services, and more importantly, networks of people within the community. Belonging and having access to a portal allows members to feel part of the community, to contribute and exchange commonly valued knowledge and resources with one another. In this way portals present an opportunity for a true community to exist. It must be emphasised that the communal identity does not imply compromise with the self. The portal as a participative and mediating technology allows for both the construction of self and communal knowledge of individuals and their communities. In fact, knowledge of both the self and the community are mandatory for each other to exist. The emergence and popularity of portals might be argued as evidence of a desire of people in a community to connect with the like-minded, alongside with the need to construct self-knowledge. This desire, or innate nature of people, is described by Calhoun (c.f. Castells, 2003):

We know of no people without names, no languages or cultures in which some manner of distinctions between self and other, we and they, are not made ... Self-knowledge – always a construction no matter how much it feels like a discovery – is never altogether separable from claims to be known in specific ways by others. (Calhoun c.f. Castells, 2003)

Castells (2003) argued that the construction of self-knowledge is an inevitable process when people come together as a community. In the process of constructing self-knowledge, one makes sense of existence, presence, and roles in the world. In doing so, people in communities make sense of their relationships with other people, and end up with multiple associations with various communities. Very often, the behaviour and roles they eventually take up in different communities are not independent of each other. Because there is such a multiplicity of intertwining of community consciousness in people, it is not possible to only include one aspect of a community without considering all of aspects.

People try to make sense of their identities in multiple communities, reducing the tensions between identities, and eventually it results in a glut of communities trying to collaborate within and with each other. As a result of such courses and discourses, it is necessary for technology, spaces, and other resources to be utilised.

Web portals present an interesting contemporary media environment which is a remarkably different state of the knowledge commons that Hardin (1968) spoke against. Equitable access that was thought by Hardin (1968) to be disastrous is now extremely easy within a web portal, as an individual frequently moves from creating his own knowledge to sharing it with others. The distinctions between knowledge for oneself and for collective action are often blurred, as individuals move back and forth within those realms. In the portal, knowledge that is produced also has the characteristic of increasing in value as it is used and shared. There are many examples such as Wikipedia (http://en.wikipedia.org), a web-based encyclopaedia leveraging the collective knowledge and collaboration of many people, not all experts. In this way, web portals present structure and agency properties as suggested by Giddens' structuration theory (adapted by Orlikowoski, 1992 in figure 1), and potentially a discourse against the suggested tragedy of the commons (Hardin, 1968).

Portals provide access to information technologies, resources, and contexts of use – they also provide a method by which multiple layers of identities, memories, and knowledge can be construed by communities. In examining the social reality of portals, they are regarded as forms of structure (Orlikowski and Robey, 1991) – created by and shaping human actions. Together with a vision of portals informed by structurational theory, this paper presents a snapshot of a case and examines the research dialogues which it stimulates.

THE CASE OF THE BEIJING HUMANISTIC OLYMPICS (2008)

The case study presented has been commissioned by the Humanistic Olympics Studies Centre for Beijing Olympics 2008, co-funded by the Chinese Ministry of Education, and with support from China State Administration of Radio, Film and TV (SARFT).

With the successful bid to hold the 2008 Olympics in Beijing, a team in CUC (Communication University of China), also a member of METIS Global Network (www.metis-global.net), the cross-cultural research organization in multimedia studies, began working on the project of producing an 'advertainment' (so called because the production would implicate the purpose of entertainment and advertising, whether commercial or not) portal for use in the Beijing Olympics.

The broad goal of the portal is to allow volunteers, spectators, and other participants in the Beijing Olympics to upload self-directed pictures, stories, video clips, and relevant advertisement clips associated with either the event itself or the lead-up to it, and to interact with one another within the portal. There are various reasons for them to do so – most of which are associated to their sense of belonging to the event. Access to these resources is open to these communities and facilitated through a web interface in the portal. This also includes business sponsors.

A prototype of this portal is being developed at present, optimised for streaming media content delivery. As informed by structuration theory and the recursive nature of technology, user studies were carried out iteratively with observations made in tandem in the manner of arrows a, b, and c of Figure 1. With the portal still in its prototyping stage, it has not yet been possible to study any possible institutional consequences.

The notion of 'advertainment' as the emphasis of the portal presents a case of an innovative portal that is born out of an age of convergence – as described by Price Waterhouse Coopers (2006) -- to refer to the ability of different network platforms to implement different services and the merger of consumer devices. In the case of the portal, this translates into layers of meanings and constructions contained in information objects. This in turn, results in the special treatment of information objects being deployed and redeployed in the functions of the website. The requirement imposed on the portal is a demonstration of institutional conditions that are reflected in the interaction between institutions and technology.

Each content object potentially belongs to, or can be used by more than one entity. From the user studies, it was found that different observers or users would evaluate the same content object based on diversified experience and knowledge, resulting in inconsistency in the interpretation of content features (Pang, Cao and Schauder, 2005). For example, users from diverse backgrounds and cultures, of various religions, and disparate social classes, could view a same colour with dissimilar sentiments. This finding, along with other findings from iterative user studies, was used to revise the functional specifications of the portal.

A strategy has been adopted to reinforce one of the preconditions of the commons – the idea that no resources are owned or controlled by a single entities but are shared by people in communities. The approach to developing metadata for information objects and resources has also been intricately designed to allow users to define their own tags to the multimedia objects they create and share, while including them in the description model of the portal's infrastructure, to manage uncertainties in such metadata.

This rationale is also based on the assumption that resources in the knowledge commons should not be controlled or manipulated by any one entity alone. Further user studies (Pang, Cao and Schauder, 2005) support the multifaceted meanings embedded in multimedia objects such as videos and pictures, which were expressed and categorised differently by users. As a medium of human action, the portal acted as a facilitator and repository where such meanings were exchanged, shared, and stored. At the same time, interactions also result in the shaping of the portal design, where humans act as the main agents.

As reflected in the recursive interactions between the portal and user groups, one of the main foci of the portal lies in the sharing of resources by the community. This is designed with the intention to cultivate shared memories of the event: public video captures of various members are shared with others, and through these shared resources, the sharing of stories on viewing the same event in the Olympics are elicited. At the same time, advertising videos are put up and shared by the business stakeholders, facilitating further identifications with the event as a whole, and cultivating further memories of the event as a community.

PORTALS AS A MULTIDISCIPLINARY FIELD: RESEARCH DIALOGUES

The focus of the project on the design, development, implementation and use of the portal has led to several multidisciplinary research ideas. The lens of the knowledge commons that has been borrowed to study the portal has been very useful to contribute to emerging dialogues. Development of the project that is ongoing has served to demonstrate that the study of portals is a multidisciplinary field.

The Case for the Knowledge Commons

The idea of having a portal advocating advertising values may trigger arguments that advertising and commercial sponsorship are opposed to the development of the commons (Levine, 2002). However, Bollier (2004) highlights that the commons is not necessarily unsympathetic to the market, pointing out both are needed to 'invigorate each other' or, in other words, to inspire and supplement each other. In the example of the open source versus proprietary software, while one encourages creativity, learning, and accessibility to knowledge, the very culture of such environments inspires and permits marketability. Even so, examples that could demonstrate the co-existence of both the market and the commons are few and far between, making this case study seem somewhat unique. Online donations to non-government organisations via a portal as a means of fund-raising may be another (Johnson and Johanson 2005).

In the case discussed, the notion of 'advertainment' is one that seeks to advocate a 'healthy' infusion of market forces. Information objects are seen to include advertising or entertainment (or possibly, both) values; and whether they originate from commercial sources are considered of little importance. The emphasis in this portal lies in the sharing of memories of the event from cross-cultural communities, of which commercial entities are a part, either as communities of business providers, or of consumers.

The paper has so far discussed a view of portals that is necessary for their sustainability – one that sees portals as not being driven by technologies or even accessibility, but sees portals as driven by the identities, resources, and spaces which people in communities share with each other. This concept of sharing and inclusion of community dialogue is congruent with the concept of the knowledge commons.

Communities are seen working and coming together for the production of knowledge, using portals (as viewed through the lens of structuration theory) as tools to facilitate the construction of knowledge and cultures. As with the knowledge commons, communities see themselves not merely as users and exchangers of information, but in themselves coming together to contribute to the knowledge commons belonging to the community. Portals provide such a space for this interplay and interaction; and in the process, establish a knowledge commons space consisting of both physical and virtual dimensions.

Research Dialogues

As a result of the ongoing work, a field trip was made to Beijing in July 2006, where researchers from Australia and China came together to study the development of the portal, and to reflect on the larger changes that were happening (such as the development of the Olympics venue, changes to the infrastructure of the city of Beijing, and the emergent social agendas in Beijing and other parts of China). Research interests emerging in China that were relevant to the project's work in developing the portal were also identified.

The outcome of such dialogues has been the identification of a number of themes that could form the basis of a research agenda for a CIRN (Community Informatics Research Network) group in Asia-Pacific, guiding cross-cultural perspectives in a field that has become multidisciplinary in nature. Some of these themes are:

- Digital storytelling and the use of communicative technologies.
- The capture, representation, sharing, and shaping of artefacts.
- Human-computer interaction of portals.
- Collaborative and commons-based design for cultural communities.
- New business models in the contemporary media environment.
- Search and retrieval of rich indigenous media objects.
- Research annotations and the making of meaning by communities.
- Issues around design and use of digital repositories for communities.

CONCLUSION AND FUTURE WORK

The project discussed has been concerned about the making, conservation and the transmission of community and individual knowledge, identities, and memories within a community bounded by a significant event.

Using the concept of the commons, the paper has demonstrated how portals can be used as a structure and agent to sustain communities and their resources. Although the concept of the knowledge commons is not new, there has been a considerable amount of interest in looking at it as a framework for considering the dynamics of communities and the successful design (and redesign) of technological applications and workspaces. More research findings from empirical case studies are desired. The knowledge commons movement also calls for radical rethinking of design methodologies to guide the design and developments of portals and informational resources accessed through portals.

This paper has also discussed the key features of the portal, designed to capture and share stories of the event, and cultivate memories for cross-cultural communities. The inclusion of collaborative tasks is another key feature of the portal that lends supports to the larger goal of cultivating cohesiveness and establishing a commons within the diverse communities of the Olympics.

This approach has assisted in the setting up of a research agenda for a CIRN group in Asia, set to convene in 2007. Such dialogues are ongoing, and raise

opportunities for future work in developing research around portals and their implementations.

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