Association for Information Systems
AIS Electronic Library (AISeL)

2005

How Intranets Differ From The Web: Organizational Culture's Effect on Technology

Dick Stenmark

Goteborgs Universitet, stenmark@informatik.gu.se

Follow this and additional works at: http://aisel.aisnet.org/ecis2005

HOW INTRANETS DIFFER FROM THE WEB: ORGANISATIONAL CULTURE'S EFFECT ON TECHNOLOGY

Dick Stenmark, Göteborg University, Department of informatics, stenmark@informatik.gu.se.
+46 31 7735566

Abstract

An intranet is what you get when applying web technology inside an organisation and therefore – seen from a strictly technical perspective – intranets are almost identical to the public Web on the Internet. Reviewing available intranet research, it appears most academics seem to assume that intranets and Internet are identical also in other aspects. In this argumentative paper it is suggested that this assumption is erroneous and instead I argue that usage of and attitudes towards intranet differ significantly from that of Internet. Since these differences seem to have evaded academic interest, intranet research has been too single-dimensional, and in this article the organisational culture perspective is suggested as a theoretical lens for understanding intranets. The effects of organisational culture on web technology use and management are highlighted and discussed and the paper presents implications for both research and practice.

Keywords: Intranet, web, corporate culture.

1   INTRODUCTION

It seems fair to say that the advent of the World Wide Web (hereafter the web) has revolutionised many aspects of every day life. The popularity of the web – amongst business people and ordinary citizens alike – has propelled Internet research of all sorts including such diverse areas such as technology, democracy, psychology and finance. However, in a critique of Internet research, Slevin (2000) claims that the bulk of these efforts have been concerned with what is happening *on* the net, i.e., in virtual communities and other superficial manifestations, rather than trying to understand the full social context in which such actions are embedded. A virtual community could not exist without real people and those real people live in the real world. Ergo, a useful analysis of the web as a phenomenon must inevitably involve cultural aspects, states Slevin (p. 4-7). Fagin et al. (2003), having studied (technical) intranet search problems, agree, saying that Internet research leading to quality results has been successful because it has reflected upon the social forces involved.

In recent years, business organisations have realised that web technology can be used also within organisations and hence the development of intra-organisational webs – intranets – has sky-rocketed (Knight et al., 2003). There are numbers suggesting that three out of every four web servers being installed are intended for intranet usage (Gerstner 2002). The growing interest in intranets seen in industry is, however, not reflected in a corresponding research interests from academia; most web-related research efforts still seem to be concerned with the public web. I see basically two reasons for this. Firstly, the web is generally available to each and everyone who has an Internet connection whilst an intranet by definition is accessible only by organisational members. To conduct intranet research, the scientist must engage in a relationship with an organisation and negotiate access to their environment. Although this certainly is achievable, it is more time-consuming and requires more efforts from the researcher's side. Secondly, and perhaps more intriguing, researchers may not appreciate the subtle but yet very real differences between intranets and the public web. Whilst the technology is the same, usage and content are different. Full-time scholars may have limited experience of work within a corporate setting and may hence not realise how intranet implementations – and here I refer to policies, staffing, and such; not to technology itself – are affected by the industrial culture.

This paper contributes to research by examining the shortcomings mentioned above; it discusses the differences between corporate intranets and the public web and it explicitly involves cultural aspects. The objective is to highlight the cultural differences that exist between intranet (corporate) and Internet (society) and how these differences affects usage, discuss the consequences of this divide, and argue for the need of more targeted and specific intranet research. In the following section, I shall explain the methodological approach taken for this study. *Thereafter, we look at some theories on culture and the industrial heritage that has shaped how work is being perceived. In section four, we examine the rise of the intra-organisational use of web technology and how it diverts from the original web design thoughts. After that, in section 5, I provide a tentative analysis of the consequences of this diversion for the information consumers. Section 6 synthesises the discussion and relates it to the concept of culture, before section 7 concludes the paper with implications for both researchers and practitioners.

2   RESEARCH APPROACH

Having worked as a professional information architect in a large organisation, I have been involved in numerous intranet-related projects and participated – as audience, speaker, panellist and moderator – in many practitioner-oriented intranet conferences. This engagement has generated a deep contextual understanding of organisational intranets; their implementation, management and use. In addition, the intranet as a phenomenon has also been approached in a more structured and scientific way. Since

1998 I have conducted a large number of intranet-oriented studies (cf. Stenmark, 1999; 2000; 2001a; 2001b; 2002; Lindgren & Stenmark, 2002; Stenmark, 2003a; 2003b; Stenmark & Lindgren, 2003; Magnusson & Stenmark, 2003; Lindgren et al., 2003; Stenmark, 2004; Stenmark & Lindgren, 2004; Stenmark, 2005a; 2005b), where empirical data has been collected and analysed more rigorously. In addition, a large number of other research papers describing intranet case studies have been reviewed, including Wachter and Gupta, 1997; Lai and Mahapatra, 1998; Newell et al., 1999; Cecez-Kecmanovic et al., 1999; Bansler et al. 2000; Curry & Stancich, 2000; Damsgaard & Scheepers, 2000; Ruppel & Harrington, 2001; Fagin et al., 2003, and; Knight et al., 2003.

This argumentative paper is thus based on several case studies, both as reported in the literature and those conducted by myself over the last seven or so years. During this work it has become evident to me that organisational members use their intranets very differently compared to how they interact with the web, despite the fact that the underpinning technology is identical. To understand this behaviour, the literature review has been extended to find a theoretical lens that may help interpret and explain this observation. In particular, the work of Slevin (2000) and Ciborra (2000) has been helpful in identifying useful perspectives. In his book "The Internet and Society", Slevin (2000) argues for the need to understand the rearranged social relations the Internet is facilitating by viewing it as a cultural transmission. This seemed like a useful approach and since the focus of this work concerned organisations rather than society, organisational culture was selected as the primary theoretical framework. Equipped with Tim Berners-Lee's (1989) original design proposal for the web, and Ciborra's (2000) account (and critique) of modern information management, I have used organisational culture, and in particular its role in fostering identity (Eisenberg & Riley, 2001), to reflect upon and analyse the differences between intranet and web management and usage. The objective of this paper is thus twofold; to make salient what I believe to be a problematic and unresearched issue, and to provide a tentative analysis of this issue.

3 THEORIES ON CULTURE AND THE PERCEPTION OF WORK

When trying to understand how a technology such as the web affects everyday life by making possible new ways of interacting with and articulating information, Slevin (2000) claims we are studying the web's involvement in cultural transmission. Cultural transmission in this context means the reorganisation of the social relations the media is facilitating. Therefore, Slevin continues, we need to look not so much on "Internet culture" per se, such as described by e.g. Porter (1997), but more specifically on the social context in with online actors are situated. Culture obviously is a complex term and both the understanding and the application of it in IS literature varies depending on who is looking (Iitari and Abrahamsson, 2002). Schein (1985), whose definition of culture has been used widely by IS researchers, sees culture as "pattern of basic assumptions - invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and integral integration - that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (p.9).

This article is in particular interested in *organisational* culture, a concept that has existed at least since the early fifties (Eisenberg & Riley, 2001). In their thorough account of the communicative view of organisational culture, Eisenberg and Riley note that although the origin of organisational culture is unknown, it rapidly became part of people's everyday vocabulary and received the public recognition that few other academic concepts come near. Still, due to the richness of the concept, there is little consensus on a definition, and Eisenberg and Riley conclude that "the beauty lies more in its heuristic value than in any determinant authority" (p. 292). This means that (organisational) culture is not a fixed set of beliefs shared by all community members; instead, culture is fragmented and pluralistic and constantly interpreted and reproduced in social relations (Iitari & Abrahamsson, 2002), and organisational culture therefore differs greatly between (and even within) organisations.

Organisational culture and technology use are intricately and intriguingly interrelated. Is it technology that shapes culture or is it the other way around; the organisational context that affects the use of

technology? Both views are represented in the literature. In an ethnographic study of IT-mediated organisational change, Cecez-Kecmanovic et al. (1999) focused on contextual features of a university's change process and the use of e-mail and intranet. They found that the use of e-mail and intranet was deeply situated and shaped by culture. However, they also noted that the new experiences of participation mediated by the technology affected the way individuals perceived their work environment. The changing patterns of social interaction, the increasing openness, the reduction of emotional distance and the equalising effects of the technology that they observed, gradually changed the very context in which it operated, the authors concluded. These observations suggest that democracy-fostering technology such as e-mail (cf. Sproull & Kiesler, 1991) and intranet – even when introduced to support existing power structures – can initiate subtle but nonetheless real attitude changes and cause a shift in organisational culture. However, as the authors point out, these changes were "slow, uneven and inconsistent across the organisation" (Cecez-Kecmanovic et al., 1999, p. 24).

There are also numerous accounts of how organisational culture dictates the use of technology, and these accounts seem to have stronger support than those described above. We have defined organisational culture as a pattern of basic assumptions that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to think, feel and act. This is similar to the inertia Orlikowski (2000) describes when she notes how organisations tend to use new technology to reproduce and reinforce existing organisational behaviour. Ciborra and Lanzara (1994) use the notion of formative context to denote the set of institutional arrangements and cognitive imageries that the actor brings and routinely enacts in work. The formative context is thus a pervasive and deep-seated texture of relations that influences the organisational member's execution of routines and constitutes a background for all her actions, although she typically remains unaware of its presence. Organisational culture can therefore be seen as one component of formative context, and as such, it affects technology utilisation.

Organisational culture is studied under many themes of which the concept of identity has been advocated as particularly important (Eisenberg & Riley, 2001). Identity is vital also to this study. Hofstede's (1983) well-known study of cultural differences across nations reported that nationality had a greater influence on people's behaviour than had organisational belonging (see also Hofstede, 1991), but also that culture on national level is a different phenomenon than on an organisational level. On national level, shared values seem to be what people use to build identity whilst on an organisational level it is the shared perceptions of the daily work that form identity (Hofstede, 1991; Hofstede et al., 1990). A relevant question is thus how members of the modern organisations perceive work?

As noticed by Dahlbom and Mathiassen (1993), the mechanistic world-view has since long influenced the way the corporate world organises. According to this view, which is based on the assumption that the world is ordered and stable, organisations know what to do and how to do it. The roots of this mechanistic view can be traced back to Taylor's scientific management (1911). Modern organisation can in many aspects be seen as closed and stable systems. The work performed in the mechanistic organisation can be described as knowledge-routinised in the sense that it has well-established recurrent activities characterised by repetitive tasks and known problems. The level of uncertainty is low and the ambition is to optimise performance and eliminate redundancy. In the rare occasions when rules do not apply, problems are escalated through layers of bureaucracy and decisions are made by management who is separated from the actual work. Some would perhaps argue that the mechanistic organisation does no longer exist, and maybe this is true in the pure stereotypical form. However, having grown out of a mechanistic understanding, the industry of today is still deeply rooted in rationalistic thinking. In other words, in today's industry, organisational culture continues to promote the perception of work as structured and well-managed.

Information plays a decisive role not only in the post-industrial society, but also in mechanistic organisations of the late twentieth century. However, whereas more innovative and post-modern organisations see information primarily as a communication vehicle, the mechanistic organisation uses information as a control instrument (Sveiby, 1997). Managers in mechanistic organisations are highly influenced by an engineering culture (cf. Kunda, 1992) where Tayloristic ideals are nurtured since

promotion in these environments is based largely on technical knowledge (Carlson, 1999), and hence when engineers are promoted into managers, they bring along their culture of measurement and control.

The perception of work being in need of measurement and control finds expression not only in the practice of modern organisations but also in the management literature. In Ciborra's (2000) critical review of the literature on the management of information infrastructures, it is concluded that the centrality of control is one of the basic tenets. In his studies, Ciborra has focused on management of infrastructure in general but it is obvious that the academic literature on intranets follow the path of careful alignment outlined by the management-infrastructure literature. The ability to effectively manage the intranet, the literature holds, is one of the most significant constrains to further development, and intranet content and use must effectively be controlled via standardisation and formalisation or the intranet will collapse (Curry & Stancich, 2000; Damsgaard & Scheepers, 2000). There is, however, no undisputable empirical support for such claims. Instead, these pieces of advice seem to stem from an analysis biased by the organisational culture of the modern industry.

4   THE UPRISING INTRANETS

What initiated the creation of the web was Tim Berners-Lee's observation that work and information flows at CERN were nominally organised into hierarchical management structures whilst the actual interactions needed to get the job done showed more resemblance with a web of evolving interconnections (Berners-Lee, 1989). According to Berners-Lee's observations, the traditional information systems in use did not model what went on in the real world, and he therefore deliberately designed an environment which would be less authoritative and more open-ended. The web, therefore, was designed to be "a pool of human knowledge, which would allow collaborators in remote sites to share their ideas…" (Berners-Lee el al., 1994, p. 76). Whilst traditional information systems relied on well-defined user domains and strictly enforced access control, the web technology affords a bottom-up approach to information dissemination and does not restrict publication rights to management functions only. The web does thereby acknowledge that anyone in the organisation may have valuable information to share.

The web quickly became a huge success in terms of both content and use, and before long companies started to bring this technique also inside their organisations. By shielding off a part of their network from the rest of the Internet by using one or several firewalls, authorised employees could access the Internet whilst those outside the organisation were prevented from getting in (Curry & Stancich, 2000). The resulting private networks that reside inside the firewall, use TCP/IP as the transport protocol, and have the web browser as the client interface are referred to as intranets (Bidgoli, 1999). Just as the web has had tremendous and undisputable social impact on the world, intranets have the potential of changing how companies conduct their business internally (Fagin et al., 2003). Although technically similar, intranets and the public web are different in many aspects. Amongst the perhaps most notable differences are the forces guiding their development and the measures for their success.

Intranets may be very different in nature and are far from being a homogeneous phenomenon – even within the same organisation. Some commentators actually speak of different layers of intranets or identify multiple intranets within a single organisation (cf. Swan et al., 1999). Although it should be acknowledged that there probably exist many sub-nets within any fairly large intranet, they are all interconnected. A main feature of web technology is that everything is connected *despite* having different structures, designs, and purposes. Not many would claim that there are many Internets or many world wide webs just because the Amazon site differs in design and audience from the EU parliament site. Consequently, I shall speak of corporate intranets as a *unit*, letting it include all sorts of sub-sites, -communities and –domains.

Whilst the web still can be said to honour the principles outlined when originally designed, e.g., heterogeneity, non-centralisation, and remote accessibility (cf. Berners-Lee, 1989), the intranets have

typically been subjected to the standardisation and control urge that shaped organisations of the industrial age. I shall argue that the differences between the web and the intranets that I introduce and describe below, are the result of organisational members identifying themselves with the industrial culture and thus share the perception of work as structured, predictable, and recurring. From this perspective, I have identified four rather obvious and quite fundamental differences between intranets and the web, summarised in table 1 below.

Internet	intranet
Content is provided in a democratic, bottom-up fashion	Content is provided top-down by a small group of professionals
Content is diversified and subjective and detailed information is available on almost any topic	Content is non-specific, "objective", and to a large extent business related
Content is intended to attract visitors and content providers measure success in terms of number of visitors	Content is intended to disseminate official information in which the content provider has no vested interest
Content is hyperlinked in an user-driven and seemingly ad hoc manner that transcends fixed categories	Content is organised according to a pre-determined corporate taxonomy manifested in consistent menus

Table1.   Major differences between Internet and intranet content provision.

Firstly, it can be noted that the underlying content generation processes for the intranet and for the web are fundamentally different. Whilst the web tends to grow in a bottom-up, user-driven and essentially democratic fashion, intranets are much more bureaucratic. Information is added via a centralised process where a (small) number of professionals are assigned the responsibility of maintaining a page or a site. This process is further subject to careful review and approval – and sometimes even censorship. Most intranets have few if any "personal" web pages where organisational members voluntarily share their experiences and points of view (Fagin et al., 2003).

A second observation is that intranet content is of a very general nature. The content providers are adding information that is supposed to be of concern to most employees, regardless of job position or organisational belonging. This means that general policy documents, company mission and vision statements, general business goals, telephone directories or in-house restaurant menus make up the bulk of the intranet content. In their attempt to reach every employee at the same time, there seems to be no room for niche information, i.e., specific information required and appreciated only by a small minority (Stenmark, 2003). This is a stark contrast to the web where every topic regardless of its size seems to be represented.

Thirdly, it can be argued that intranet sites are created for simple dissemination of information rather than to attract and hold the attention of an audience. This means that pages are designed to be informative in a minimal sense, i.e., they contain the facts they are supposed to communicate but no "extras" such as links to related information or other useful resources. This phenomenon can be ascribed to the fact that the content providers have no incentive for generating traffic to the site; the content provider is not the owner of the information and has no vested interest in its dissemination (Fagin et al., 2003). It is also for this reason metadata so seldom is exploited on intranets, despite its potential value to surfers and search engine users. On the web, in contrast, being visible and thereby generating traffic is what propels most content providers.

Fourthly, the design of navigation schemas also constitutes a major difference. Navigation trees, taxonomies, and sometimes even entire vocabularies for corporate intranets are often designed in a top-down fashion. The organisational culture of standardisation states that all corporate sites should comply to an agreed-upon design template that typically is devised with little or no end-user input. It is assumed that the organisation (who provides all content) is best equipped to tell users how to traverse the web. However, there is no "natural" way of arranging things and order is anything but neutral. All categorisations are socially constructed and whilst the prevailing order seems useful to some actors, it

effectively silences and marginalises others (Monteiro & Hepsø, 2002). In addition, intranets show a high reliance on explicit navigation menus and very little on embedded links, which effectively eliminates one of the fundamental features of hypertext; the hyperlink. By removing this option from the intranets, management stifles serendipity and restricts surfing to predefined paths that may not fit the users' needs. On the Internet, actors continue to embed hyperlinks in their text, linking to useful information across the entire net and turning it into a true "web" of interconnections. This "superconnectivity" means that "the content of the information on the Web becomes the address for delivery of the information" (Turoff & Hiltz, 1998, p.116).

5   ANALYSIS OF CONCEQUENCES

Needless to say, organisational members should have access to general policy documents, be updated on the company mission and vision statements, and understand the general business goals of the company. Although this type of information is best conveyed via department meetings and other face-to-face contacts between employer and employees, reference copies on the intranet can obviously be useful. However, even though organisational member may need to check on policy plans and strategy documents once in a while, it is hardly the kind of information the users need to consult on a daily or even weekly basis, and although the restaurant menu may be of interest, it provides limited business value. What employees are likely to need in their operational work is information more closely related to what they are actually paid to do. Such job-specific, highly situated information includes solutions to technical problems, help on budget calculations and cost estimations, or project set-ups. This information is far from general, and that is what makes it useful on an operational level – employees may act upon it. Today's intranets often contain very little such information.

It seems plausible that the specific information needed for an organisational member to carry out his or her daily tasks should come from colleagues, and not just from the human resource department, the information department, or from whoever "owns" the intranet. For example, a database administrator facing a problem is much more likely to need information from another DBA than from some central authority. When corporate culture discourages (or prohibits) grass-roots users to publish, i.e., to share knowledge via the intranet, end-users cannot expect to find the specific, job-related information they need. Research has suggested that when intranets fail to reflect local conditions they are perceived as less useful which obviously has a negative effect on intranet usage (Bansler et al., 2000; Stenmark, 2003a; b).

Allowing all users to publish would facilitate knowledge sharing and encourage debate and peer-to-peer collaboration. Nonaka and Takeuchi (1995) acknowledged the importance of "requisite variety" for organisations to be able to create new knowledge and although some authors recognise the benefit of the diversity in intranet information, the majority of the commentators conceive redundancy as one of the main enemies that should be fought with all means. To illustrate; when Wachter and Gupta (1997) report that one firm they studied had nearly 40 sites of which many had redundant information, it is evident from their way of writing that they saw this as an unwanted situation. This interpretation can be questioned; the authors' deprecation of redundancy is more likely the result of modern corporate culture and the Western idea that redundancy conflicts with efficiency (cf. Nonaka and Takeuchi, 1995), than of a user-expressed concern.

When the information department disseminates information, the intent is to reach all organisational members as quickly as possible and to inform them – not to engage in dialogue. The person adding the information to the intranet is most likely not the person responsible for the content. The intranet editor is typically acting on the behalf of management and may not be in a position to answer questions. In fact, the message is probably not supposed to be questioned. Consequently, the name of the author is omitted and contact information left out. In addition, other sorts of metadata, i.e., title, subject or keywords, may also be missing. Some data is obviously easy to come up with – date and time of publication can for example be added automatically by the publication tool – but most metadata is difficult to set correctly and to actively reflect upon it means an additional effort for the content

provider. Since the web editor has no vested interest in whether or not anyone reads the information, there is no incentive for making the information easier to find, which has negative consequences for the information consumer. As noted by Fagin et al. (2003), intranets – unlike the Internet – are virtually spam-free and contain no controversial (e.g., sex or drug related) information. Whereas Internet search engines have abandoned the use of metadata altogether due to the abuse by spammers seeking to attract visitors at all cost, intranet search engines – and via them also information consumers – can greatly benefit from metadata.

Quite often companies require information to be categorised according to a pre-established taxonomy; and some content management systems make sure authors comply. However, to correctly categorise a piece of information can be difficult even for experienced information managers. Not only is it difficult to predict what categories will be useful, the environment changes so quickly that their usefulness is short-lived (Davenport, 1997). Whenever categories are less than optimal, there is an obvious risk that content providers are tempted to cheat by putting everything in the miscellaneous bin, even though such behaviour is seriously impairing searchability. The difficulty of correctly categorising information shows also in the navigation menus. The menus, which often are consistent across the entire intranet, are typically designed from the information provider's perspective – this is the information we have; this is how we organise it. The upside of this approach is that the intranet can maintain a consistent look and feel. However, the end-user is left out of the loop and as a consequence, the menu labels become incomprehensible or confusing. This, too, negatively affects the employees' chances of finding the information.

Summarising the above discussion, the conclusion must be that the corporate environment and the organisational culture have both positive and negative consequences for the information consumer, as illustrated in table 2.

Positive consequences	Negative consequences
Homogeneous publishing staff. Corporate policies are known and followed	No niche information. Only general corporate information is available
No spam. Only correct and relevant information is published	Incomprehensible menus. The small set of navigation labels is insufficient and difficult to interpret
Consistent navigation. The user quickly learns the small set of menu items used	Difficult to search and navigate. The structure is seldom sprung from a consumer's perspective

Table2.   Consequences of industrial intranet information management.

6   DISCUSSION

Until recently, computers and information systems were only to be found in corporate or academic settings and access to such devices was restricted to working situations. This has changed radically. Our society has transformed into an e-society where information technology is becoming increasingly ubiquitous and where interaction with computational things is not limited to a working hours but part of everyday life. It seems plausible that this transformation and the growing use of computing devices for recreation and play have had – and will continue to have – an impact on how IT is used in work settings.

Intranet should not be understood as a homogeneous phenomenon. The open-endedness of web technology allows every organisation to shape its intranet according to their particular needs and preferences and this means that intranet implementations may span from tightly controlled and structured information systems to loosely coupled and almost chaotic environments (Bansler et al., 2000). Nevertheless, there is still a significant discrepancy between intranets and the public web and in this paper I have tried to highlight the cultural differences that I have observed between the two. It is quite evident that even though intranets may empower people to make things happen rather than to

have things happening to them, web technology does not accomplish this in and of itself (Slevin, 2000). This becomes obvious when we look at how today's intranets have been implemented and managed, and note the discrepancy between theory and practice. Many intranets are little more than electronic bulletin boards, actual use is sporadic at best, and the technology is used primarily to share static documents (cf., Lai & Mahapatra, 1998; Newell el al., 1999; Stenmark, 2003a; b). It is thus not surprising to see headlines such as "Why do intranets fail?" (Duffy, 2001).

The organisations from which I have gathered my experiences have all been large industrial organisations with long histories. Perhaps start-ups in the SME segment, more service-oriented organisations, or high-tech firms with a very young and IT-savvy workforce would have behaved differently? Maybe – and further studies are obviously needed in this area – but it seems plausible that the industrial culture that so profoundly has shaped our society including schools and hospitals, continues to have an effect also in these other contexts. Therefore, this study may have implications also for non-industrial organisations. Above, I have argued that intranets are shaped by the industrial culture's management ideals and that this approach has consequences – some good, some bad – for the individual employees. Would it, then, be possible to preserve the positive effects of a strict information management regime while eliminating the negative consequences? Would the modern organisation be interested in such a quest?

Information managers in modern organisations seem to embrace the "library model" of information management, i.e., assets are categorised and organised into neat rows of shelves according to a schema seldom grounded in real user needs. It is therefore not necessarily the case that management are aware of the negative consequences outlined above, or – should they be aware – interested in addressing these issues. When analysing why organisational members behave as the do, researchers often focus on what people say and take the response to be the reason for their behaviour (Eisenberg & Riley, 2001). From a cultural perspective, this approach is criticised by Schein (1985), who claims that in order to understand a culture we need to poke into the underlying subconscious assumptions that remains hidden but yet govern our perceptions. In other words, we must understand how the espoused way to perceive, think, and feel is being constructed by the organisational members.

Let us examine table 2. On the one hand there are the positive consequences; the homogeneous and well-educated staff of content providers, the absence of spam, the consistent navigation schemas, and the familiar look and feel. On the other hand, there are the negative aspects of lack of specific information, incomprehensible structures, difficulties in finding, and uncommitted and uninterested employees. A small and well-trained staff of content providers helps ensure that consistency is maintained. In analogy with the libraries, which would quickly degenerate were it not for the librarians, corporate intranets would become a chaotic web of interrelated pages should more liberal publishing policies be adopted. At least, this is what corporate culture teaches us. It is therefore interesting to observe that what caused the Internet to evolve from a file-sharing environment for academics to a meeting-place for everyday citizens was the introduction of the web; a highly unstructured set of linked pages with no governing design policy. Many organisational members who never contribute to their intranets spend a considerable amount of time sharing experiences and information via public web pages. To leverage this resource, organisations should encourage members to share internally by providing publication help via easy-to-use templates and useful "copy me" examples rather than to stifle them with regulations. Make it easy to do it right, and employees will gladly comply.

Intranets differ from the web in that the former are free of unsolicited disinformation; a fact which undoubtedly is positive. On a corporate intranet, the employees have nothing to gain by luring visitors to their web pages under false pretences. On the contrary, deliberate spamming would most likely generate bad-will and result in reprimands from both peers and management. This characteristic distinguishes intranets from the web and makes feasible the use of techniques that have seemed useful in theory but where abuse in practice has proven them the useless, most notably in information retrieval (Fagin et al., 2003). It can be argued, however, that whilst this trait must be preserved, intranets would benefit from a better use of metadata, since this would improve search precision even

further. On intranets, there is also a tendency to incorrectly equate spam with subjective, i.e. personal, information. This is unfortunate. Spam, in this context, is when information poses as something it is not. As long as personal information, e.g., homepages, clearly state that these are the personal opinion and experiences of individual employees and not official corporate policy, it is not spam. As argued earlier, such information may be exactly what a colleague needs to solve his or her task.

Many information managers and corporate internal web designers advocate the use of consistent navigation and familiar look and feel across their intranets. This, however, is not an uncomplicated matter. Studies in human-computer interaction have shown that users benefit from the higher predictability that follows a consistent naming convention, but this presupposes that the terminology is well understood by the users. Unfortunately, this is not often the case on intranets. Further, consistency makes sense within a site but not necessarily across sites. Not many users expect a political news site to have the same menu items as a recreational sports site. Yet, most companies have design templates and taxonomies that are supposed to be used on the entire intranet. This may not be the best solution; in fact, such an approach may result in alienation and the users feeling lost.

7   CONCLUSIONS

The implication for research sprung out of this paper is that it is not enough to study the Internet or the Web in order to understand web technology's effect on organisations. Corporate usage of information technology differs from usage in the society at large. The intranets, which currently grow at a faster pace than the Internet, constitute a whole new research arena and require dedicated and targeted research in its own right since the cultural differences highlighted in this paper are far from fully understood. The work context provided by the intranet is likely also to have an impact on ethical dimensions. Being free of spam, sex and other controversial content cluttering the public web, intranet users are likely to be somewhat less concerned about privacy issues regarding their surf behaviour. This could enable studies that would automatically be disqualified on the Internet. In addition, intranets differ from a technical aspect in that they are much smaller than the web. Consequently, novel and innovative algorithms that cannot be applied to the Internet due to its size may very well be feasible on an intranet. The wide-spread use of intranets in organisations means that such targeted intranet research is likely to be considered highly relevant.

The arguments outlined in this paper also have implications for practice. I have argued that there is a clash between the information management culture that exists in today's modern industry organisations and the principles underpinning web technology. It is unrealistic to think that organisations should be willing or able to replace their mindset overnight. However, being aware of the differences in culture that do exist may help organisations understand some of the issues they are facing when managing intranets. Management should reflect upon their motives for implementing intranets and more clearly communicate what they are hoping to achieve. If the main purpose is to establish a new channel for top-down information dissemination, this may be a straight-forward process, well within the reigning information management paradigm. However, if user commitment, cross-departmental communication, and active knowledge sharing is sought for, a more laborious road lies ahead. Hopefully, this paper can be a guide along that way.

References

Bansler, J., Damsgaard, J., Scheepers, R., Havn, E. & Thommesen, J. (2000). Corporate Intranet Implementation: Managing Emergent Technologies and Organizational Practices, Journal of the Association for Information Systems, Vol. 1, No. 10, pp. 1-39.

Berners-Lee, T. (1989). Information Management: A Proposal. Available at: http://www.w3.org/History/1989/proposal.html [29 March 2004]

Berners-Lee, T., Cailliau, R., Luotonen, A., Frystyk Nielsen, H. & Secret, A. (1994). The World-Wide Web, Communications of the ACM, Vol. 39, No. 8, pp. 76-82.

Bidgoli, H. (1999). An Integrated Model for Introducing Intranets, Information Systems Management, Vol. 16, No. 3, pp. 78-87.

Carlson, P. (1999). Information Technology and Organizational Change, in Proceedings of 17th International Conference on Computer Documentation, ACM Press, pp. 26-35.

Cecez-Kecmanovic D., Moodie D., Busutti A. & Plesman F. (1999). Organisational change mediated by e-mail and Intranet: An ethnographic study, Information Technology & People, Vol. 12, No. 1, pp. 9-26.

Ciborra C. (2000). A Critical Review of the Literature on the Management of Corporate Information Infrastructure, in Ciborra el al. (eds.) From Control to Drift, Oxford University Press, pp. 15-40.

Ciborra, C. & Lanzara, G. F. (1994). Formative Contexts and Information Technology: Understanding the Dynamics of Innovation in Organizations, Accounting, Management and Information Technologies, Vol. 4, No. 2, pp. 61-86.

Curry, A. & Stancich, L. (2000). The Intranet – An Intrinsic Component of Strategic Information Management?, International Journal of Information Management, Vol. 20, pp. 249-268.

Dahlbom, B. & Mathiassen, L. (1993). Computers in Context, Blackwell, Cambridge, MA. & Oxford, UK.

Damsgaard J. & Scheepers R. (2000). Managing the Crises in Intranet Implementation: A Stage Model, Information Systems Journal, Vol. 10, No. 2, pp. 131-149.

Davenport, T. (1997). Information Ecology, Oxford University Press, Oxford.

Duffy D. (2001). Why do Intranets Fail?, Darwin Magazine, November 1. Available at: http://www.darwinmag.com/read/110101/intranet.html [29 March 2004].

Eisenberg, E. & Riley, P. (2001). Organizational Culture, in Jablin & Putnam (eds.) The new handbook of organizational communication, Sage Publications, Thousand Oaks, CA.

Fagin, R., Kumar, R., McCurley, K., Novak, J., Sivakumar, D., Tomlin, J. and Williamson, D. (2003). Searching the Corporate Web, in Proceedings of WWW2003, Budapest, Hungary, pp. 366-375.

Gerstner, J. (2002). Intranets mean Business, Communication World, Vol. 19, No. 2, pp. 14-17.

Hofstede, G. H. (1983). National cultures in four dimensions, International Studies of Management and Organizations, Vol. 13, pp. 46-74

Hofstede, G. H. (1991). Culture and Organizations: Software of the mind, McGraw-Hill, NY.

Hofstede, G. H., Neuijen, B. Ohavy, D. & Sanders, G. (1990). Measuring organizational culture: A qualitative and quantitative study across twenty cases, Administrative Science Quarterly, Vol. 35, pp. 286-316.

Iitari, N. and Abrahamsson, P. (2002). The Interaction Between Organizational Subcultures and User-Centered Design - A Case Study of an Implementation Effort, in Proceedings of HICSS 35, IEEE Press, Maui, HI.

Knight, L., Steinbach, T. and White, J. (2003). Assessing Intranets: The Gap Between Reported and Realized Benefits, in Proceedings of AMCIS 2003, Tampa, FL.

Kunda, G. (1992). Engineering Culture: Control and Commitment in a High-Tech Corporation, Temple University Press, Philadelphia.

Lai, V. S. and Mahapatra, R. K. (1998). Evaluation of intranets in a distributed environment, Decision Support Systems, Vol. 23, pp. 347-357.

Lindgren, R. and Stenmark, D. (2002). Designing Competence Systems: Towards Interest-Activated Technology, Scandinavian Journal of Information Systems, Vol. 14, pp. 19-35.

Lindgren, R., Stenmark, D. and Ljungberg, J. (2003). Rethinking Competence Systems for Knowledge-based Organizations, European Journal of Information Systems, Vol. 12, Issue 1, pp. 18-29.

Magnusson, M. and Stenmark, D. (2003). Mobile Access to the Intranet: Web Content Management for PDAs, in Proceedings of AMCIS 2003, Tampa, Florida, August 4-5, 2003, pp. 1989-1997.

Monteiro, E. and Hepsø, V. (2002). Purity and Danger of an Information Infrastructure, Systemic Practice and Action Research, Vol. 15, No. 2, pp. 145-167.

Newell, S., Scarbrough, H., Swan, J., and Hislop, D. (1999). Intranets and Knowledge Management: Complex Processes and Ironic Outcomes, in Proceedings of HICSS-32, IEEE Press, Maui.

Nonaka, I. and Takeuchi, H. (1995). The Knowledge-Creating Company, Oxford University Press, New York, NY.

Orlikowski, W. (2000). Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations, Organization Science, Vol. 11, No. 4, pp. 404-428.

Porter, D. (ed.) (1997). Internet Culture, Routledge, London.

Ruppel, C. P. and Harrington, S. K. (2001). Sharing Knowledge through Intranets: A Study of Organisational Culture and Intranet Implementation, IEEE Transactions on Professional Communication, Vol. 44, Issue 1, pp. 37-52.

Schein, E. (1985). Organizational culture and leadership (2nd edition), Jossey-Bass, San Francisco.

Slevin, J. (2000). The Internet and Society, Polity Press, Cambridge.

Sproull, L. and Kiesler, S. (1991). Connections: New Ways of Working in the Networked Organization, MIT Press, Cambridge.

Stenmark, D. (2005a). Query expansion on a corporate intranet: Using LSI to increase relative precision in explorative search, in Proceedings of HICSS-38, Hawaii: IEEE Press, January 3-6.

Stenmark, D. (2005b). Knowledge sharing on a corporate intranet: Effects of re-instating web authoring capability, in Proceedings of ECIS 2005, Regensburg, Germany, May 26-28.

Stenmark, D. (2004). Failures of Reward-driven Behaviour in Industry: A case of Systems, Management and Creativity, in Proceedings of ECIS 2004, Turku, Finland, June 14-16.

Stenmark, D. (2003a). Knowledge creation and the web: Factors indicating why some intranets succeed where others fail. Knowledge and Process Management, Vol. 10, Issue 3, pp. 207-216.

Stenmark, D. (2003b). Intranets as formative context: A study of under-utilised corporate webs, in Proceedings of AMCIS 2003, Tampa, Florida, August 4-5, 2003, pp. 1697-1703.

Stenmark, D. (2002b). Information vs. Knowledge: The Role of intranets in Knowledge Management, in Proceedings of HICSS-35, Hawaii: IEEE press, January 7-10.

Stenmark, D. (2001a). Leveraging Tacit Organisational Knowledge, Journal of Management Information Systems, Special Winter Issue, Vol. 17, No. 3, pp. 9-24.

Stenmark, D. (2000). Turning Tacit Knowledge Tangible, in Proceedings of HICSS-33, Hawaii: IEEE press, January 4-7.

Stenmark, D. (1999). Using Intranet Agents to Capture Tacit Knowledge, in Proceedings of WebNet'99, Honolulu, Hawaii: AACE press, October 20-25, pp. 1000-1005.

Stenmark, D. and Lindgren, R. (2004). Integrating Knowledge Management Systems with Everyday Work: Design Principles Leveraging User Practices, in Proceedings of HICSS-37, Hawaii: IEEE press, January 5-7.

Stenmark, D. and Lindgren, R. (2003). Designing Intranet Applications for Knowledge Management: Towards Technology Affording User Participation, in Proceedings of AMCIS 2003, Tampa, Florida, August 4-5, pp.2600-2606

Sveiby, K.E. (1997). The New Organizational Wealth, Berrett-Koehler Publishers, San Francisco.

Swan, J., Newell, S., Scarbrough, H. and Hislop, D. (1999). Knowledge Management and Innovation: Networks and Networking, Journal of Knowledge management, Vol. 3, No. 4, pp.262-275.

Taylor, F. (1911). The Principles of Scientific Management, Harper & Row, New York.

Turoff, M. and Hiltz, S.R. (1998). Superconnectivity, Communications of the ACM, Vol. 41, No. 7, p. 116.

Wachter, R.M. and Gupta, J.N.D. (1997). The Establishment and Management of Corporate Intranets, International Journal of Information Management, Vol. 17, No. 6, pp. 393-404.