

## **Anarchy and the organisation: intranet 2.0**

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### **Introduction**

The paper introduces the concept of Intranet 2.0: the user-built intranet. It will suggest that the growing role of Web 2.0 technologies influence the future of intranets by generating pressure for the adoption of new technological approaches. It will argue that this pressure will be driven both from the top-down, as organisations seek increasingly to capitalise on the skills and expertise of their employees, and from the bottom-up, as employees seek the same kind of influence on the information resources available in their work as they experience on the World Wide Web. However, Intranet 2.0, the user-built intranet also introduces new risks associated with the management of information. Reconciling these risks with the benefits of the collaborative mode of knowledge creation and dissemination will pose a considerable challenge for the future.

The paper will first outline Web 2.0, problems that have emerged with defining the scope of Web, and recent criticism of the idea of Web 2.0 itself. The paper will build on this review to suggest that Web 2.0 is best understood as a reconstruction of the dominant understanding of knowledge and the knowledge creation process within the computing and information professions.

The paper argues that this view of knowledge and the knowledge creation process identified with Web 2.0 has important parallels with Knowledge Management. It explores the kinds of uses that might be made of Web 2.0 technology within the corporate environment to support knowledge working and collaboration. The paper suggests a new model of intranet development and management: Intranet 2.0, the user-built intranet. Finally, the paper explores some of the risks associated with the use of Web 2.0 within the organisational intranet.

### **Web 2.0**

Web 2.0 is not a new term. It has been current within web circles for many years suggesting a major development in the technology of the World Wide Web. It has been conventional within software develop world to identify major and minor software releases through the use of decimal notation. Web 2.0 therefore suggests a major software upgrade to the Web.

However, most of the recent popularisation of the term derives from a series of seminars organised by the information guru Tim O'Reilly, and on a paper written by him that sought to summarise the changes occurring to Web services (2005). The concept of Web 2.0 has quickly gained ground over the last eighteen months as a way of identifying a certain kind of innovation in web services and web technologies, and spread to other areas such as Library 2.0, and Intranet 2.0. In many ways it

represents a technology vogue, and like many such fashions, as quickly as it has emerged, it appears to have stalled. More about this backlash against the idea of Web 2.0, and why that backlash is at least in part based on a misunderstanding of what Web 2.0 represents in a moment. First it is necessary to ask what is different about Web 2.0, and why deserves our attention?

O'Reilly's (2005) own delineation of Web 2.0 is in many ways quite nebulous, outlining characteristic themes, rather than specific technologies. His famous meme-map sets out the ethos of Web 2.0 services, including such ideas as "hackability", "the perpetual beta" and exploiting "long tail". Web 2.0 is presented as a process of ceding control over applications to users, enabling users to extract information and data and reuse that information and data in a flexible way, and enabling them in the process perhaps even to change the structure of the information system itself. It is characterised by "play", the call to "trust your users" and the exploitation of emergent characteristics to organise information. These themes capture much of the essence of Web 2.0 but create a picture that is frustratingly short on detail. What it lacks is specifics.

Paul Miller (2005) has also attempted to outline the qualities intrinsic to the Web 2.0 programme. These include the freeing of data, to allow it to be manipulated in ways unconnected to the purpose for which it was gathered, the building of virtual applications that draw information and functionality from different sources, and the growing importance of user participation. For Miller, Web 2.0 is about the development of modular information services, where developers and users are able to build applications from interoperable modules. Most famously, Web 2.0 allows the exploitation of the long-tail. As Bradford's (1934) law articulated, in any collection a few items are used a lot, more items are used a little, and most items are used hardly at all. This creates a "long-tail" of information that is little used, and difficult to locate. Digital technologies allow that long-tail to be made more accessible.

Whatever Web 2.0 may also be, it *has* become quite closely associated with a set of technologies and business models that seem to exemplify the qualities that O'Reilly and others have outlined. In particular, the Wiki, blogs and blogging, RSS, social bookmarking, folksonomies, and other approaches to collaborative classification, cluster engines, the harnessing of user-generated content, and information reselling – which many would see as a menace to the Web rather than an innovation – all seem to be at the heart of the Web 2.0 concept. Whether this amounts to anything more than a collection of basically unconnected software applications is not entirely clear.

### **The web 2.0 backlash**

The basic lack of clarity in the definition of Web 2.0 is seductive, and perhaps even a deliberate rhetorical gambit. The idea of Web 2.0 appeals in part because it is slick, exciting, seems somehow profound even if we cannot quite identify exactly what that profundity is. Buzz-phrases such as "the long tail" and "trust your users" are evocative, and suggest articulated values to which we can easily subscribe without ever quite revealing how those values can be realised in real information applications. It never seems quite possible to bring Web 2.0 into sharp focus.

This has indeed been the thrust of most of the criticism of the Web 2.0 concept, which has been mounting over the last year or so. Russell Shaw (2005) has written 'The problem I have with this "Web 2.0" slogan is that it is a contrivance, meant to imply a unified movement or wave toward a better Web.' He argues that Web 2.0 is a cluster of technologies that share little in common, and the concept of Web 2.0 little

more than a means of marketing certain services. In a similar vein, John Dvorak has written that 'Web 2.0 is the latest moniker in an endless effort to reignite the dot-com mania of the late 1990s.'

Nate Anderson has recently posed the question:

"In what sense do all the sites do something qualitatively different than the sites which came before? In what sense do these sites do anything similar enough that they can all be lumped into a single category?" (Anderson, 2006)

Even Berners-Lee, the father of the Web, has been reported as sceptical about the Web 2.0 programme, seeing it as offering little more than what the Web was always supposed to offer. In a recent interview he stated:

"If Web 2.0 for you is blogs and wikis, then that is people to people. But that was what the Web was supposed to be all along." (DeveloperWorks, 2006)

So is Web 2.0 anything new, or just reheated ideas from the foundation of the Web itself? Perhaps, but it does not necessarily matter. By Berners-Lee's own admission (1999) the Web itself never became what the Web was supposed to be for a variety of reasons. If Web 2.0 does represent in part a return to those values that influenced the creation of the Web itself – which I believe it to be – then we should perhaps attend to the difference between ideas and reality. The Wiki in particular works more or less how Berners-Lee describes his intention for the original web. It is perhaps even more inclusive, more democratic than Berners-Lee would have allowed, but it is closer to his original model of the Web than the standard publishing model that has proliferated across the current Web.

This suggests that Web 2.0, rather than being a second stage of the Web, is rather a quality of the Web that has always to some degree been present, and which has always been part of the philosophical foundation of the Web.

### **Knowledge in the collaborative paradigm**

Let us be clear; the technological aspect of Web 2.0 – the frisson of technological advancement that in part contributes to its geek chic-ness - is a gossamer-thin veil that actually conceals something more interesting, particularly for its possible application with intranet and knowledge management contexts. There is nothing technologically very innovative about the software driving Web 2.0 applications. The wiki is just a database application – a database application well tailored for its purpose, but a database application nonetheless. Folksonomy classification usually relies of fairly straightforward cluster analysis techniques. Even PageRank is just a clever algorithm that has learnt its bibliometrics lessons well. We're no closer with Web 2.0 to machines actually understanding the information resources they house, however clever Amazon's recommendations appear.

But if the locus of innovation suggested by Web 2.0 is not technological in nature, but associated more nebulously with an *attitude* or *outlook*, what is the nature of that innovation? I want to suggest that the "innovation" of Web 2.0 is in essence a shift in the way in which information, knowledge, and the knowledge creation process are understood. A shift that marks out what the Web itself may become from what it already is.

Information within the information profession has largely been understood as something that exists independently of cognition, independently of the user, and outside of social processes. In Buckland's terms, as a *thing* (1991). The thing of information can be sorted, classified, collected, stored, recorded and subject to all the kinds of processes which fill-out professional practice. The thing of information can be adequately represented by surrogates. The thing of information is stable enough in its qualities and in its meaning to ensure a continuing agreement between information and the processes to which it is subjected. Once classified, it stays where it is put. Once a description of it has been made, that description generally holds true indefinitely. On the whole, the social processes within which information plays a part, and the processes by which information and meaning are generated, have not been the central concern of the information management profession (although the cognitive shift in Information Science did bring these issues closer to the surface). We can therefore suggest that the information profession tends to objectify information in two senses of that word: treat it as an object, and treat its meaning as objectively determinate.

Similarly, Knowledge Management has tended to see knowledge as something that exists semi-independently of cognition and of social processes, as if you could open-up someone's head and pour out the knowledge. Knowledge within knowledge management is not generally regarded as contingent on the processes in which it is formed, or to which it is applied, or used. If I know something, I know it regardless of how that knowledge expresses itself in particular circumstances. I apply the same knowledge to different circumstances. As a result, knowledge itself can be codified; the sum of knowledge of an organisation an aggregation of all the individual bits of knowledge held by individual employees. The distinction that is frequently drawn between *tacit* and *explicit* knowledge relies on this sense in which knowledge held exists independently of the cognitive processes in which it is involved, and can therefore be transformed into knowledge expressed, or information, without any fundamental transformation or reduction of its nature.

Now, the rightness or wrongness of this approach is not really a matter that needs much attention in this paper. It happens to work for the kinds of information artefacts that the information profession has traditionally managed. What is more significant for understanding Web 2.0, however, is that Web 2.0 manifestly understands different things by the concepts of *information* and *knowledge* than that just described. Web 2.0 assumes that information and knowledge are things that are irredeemably bound-up with social processes, that cannot be abstracted from social processes, that are in essence the trace or record or those social processes. Web 2.0 assumes that knowledge and information are in fact constantly recreated, and reconstructed in the day-to-day social dynamics in which we engage, and seeks to capitalise on that social dynamic to improve the quality of information services provision of various kinds. In this way, the knowledge-base is constantly shifting, not only in the sense that we are continually adding to the knowledge base, but also in the sense that existing knowledge is constantly re-invented in the light of the particular social events in which it is exploited.

The Wiki is perhaps the best example of this more dynamic understanding of information and knowledge. Information on a Wiki does not exist entirely independently of the use of that Wiki, but is constructed in the interactions of users. If something is found wanting, it can be emended. Thus the text of a Wiki becomes a constantly changing ground that reflects the changing understandings of its users. The text of particular articles change not only to reflect changing events, but also the shifting consensus of understanding on different topics.

The folksonomy, dependent on social bookmarking or social tagging, similarly exploits the interaction of users and information systems to build constantly mutating classification structures. How information is related to other information is not fixed, or stable, but constantly evolving. Meaning emerges through this social dynamic.

These are not just information systems that are more responsive to the behaviour of users, like Amazon recommendation, but information systems whose entire informational value is constructed out of user action, and user interaction. In other words, their value is precisely in their mutability – both that they change and that they can be changed, but that also they are out of the control of any individual.

One way of thinking about this is to explore the interaction of information or text and the wider social discourse. The traditional view sees information and discourse as radically separated realms. That is not to say that there is no interaction between the two, but that information filters through discourse. Information remains a stable foundation on which to build discourse. You can, of course, create more information, but once it is created, it is out there with an independent life of its own. You cannot go back and rewrite *Great Expectations*, or rather, if you did, you would simply *add* another text. What is different about information and knowledge in Web 2.0 is that you can intervene on the level of text – you can rewrite *Great Expectations* itself. Information, then, loses the stability it possessed in the age of print – at the level of information itself there is a constant re-invention.

In business process terms we can think about what an organisation knows – its tacit and explicit knowledge assets – and what an organisation does – the processes to which that knowledge is applied. The knowledge of the organisation becomes a foundation upon which the success of the organisation is built. The knowledge of an organisation, however, can of course seep away, particularly with staff turnover. This explains a kind of basic kleptomania that influences the implementation of many intranets – if we can retain the knowledge base in tangible form then we can retain the competitive advantage despite the churning social space of the organisation. One of the consequences of this, as I have described elsewhere (Tredinnick, 2004), is that the intranet can become mired in a glut of information that was once relevant and may even become relevant again, but which for current users is, figuratively speaking, yesterday's news.

But Web 2.0 suggests that there is another way of looking at this relationship between knowledge and information, and the information creation process. What is valuable about information is not the static information itself – the static traces of the past – but the social dynamic in which that information is used, understood, and re-invented minute by minute. If you can capture that process in which knowledge is created out of the contingencies of particular demands and social discourse, in which knowledge is created anew in each social exchange, then you have a much more powerful information tool than the static record that tends just to change by accretion. The information system becomes not just a record, or an archive of the state of knowledge at the time each additional piece of information was created, or of how the relationship between disparate information was understood at the time that relationship was defined, but a reflection of the evolving frontier of knowledge itself.

## **Intranet 2.0**

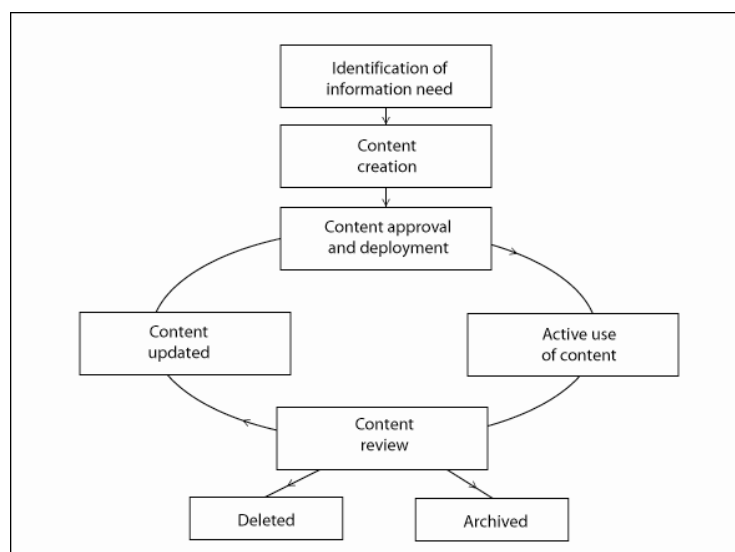
We have veered dangerously close to the kinds of nebulous qualitative descriptions of Web 2.0 that have frustrated so many critics already, so I want to turn at this point to look at what this might mean for the kinds of Web 2.0 applications that might be implemented in the organisational environment for the management of internal

information and knowledge resources, and the natural home of those applications, the intranet.

This discussion of the reconstitution of knowledge, knowledge creation and information ought to focus our minds on what Web 2.0 can contribute to intranets for two reasons: a) intranets have always in part been about capturing and better exploiting knowledge and information within the organisation – at least the good intranets that are more than just glorified document stores have been, and b) that has largely and increasingly occurred through treating information and knowledge as independent of cognition and the contexts in which they are created and exploited. I say increasingly because the more we have learned to manage intranets, the more we have inculcated a traditional view of information, and applied traditional information management practices. The first anarchic intranets were closer to the spirit of web 2.0 – as mention Web 2.0 is like an every-present possibility on the web – but of course failed spectacularly.

So assuming for a moment that Intranet 2.0 would represent something more than a simple bolting-on of Web 2.0 technologies to existing intranets (a point to which I will return), what could Intranet 2.0 mean for the future?

Well, intranets have traditionally been approached with a fairly static life cycle for information (figure 1).



[figure 1, information life-cycle, (Tredinnick, 2004)]

Information is created, goes through a cycle of use and evaluation, and is eventually destroyed or archived. Managing content successfully relies on managing the transition of content from one stage to another throughout this cycle. Formal procedures generally govern the transition of information through these stages – particularly at the start and end points of the life-cycle.

Two things are worth noting about this model. Firstly, the identification of need and the creation of content are abstracted from use. Generally speaking, you would hope to tie in these different processes, so that use prompts identification of needs, but making this work reliably is quite difficult, because the control users have over content is only indirect. One of the consequences is the perennial complaint that intranets lack relevant content. Secondly, the updating of content is similarly abstracted from use. For the same reasons, managing this process can be difficult.

Thus, again, the often heard complaint that intranets are out of date. I am not saying, of course, that these processes are impossible to manage, but that there is a constant battle to get feedback on needs and on content.

Intranet 2.0, allowing intervention at the level of text, and not discourse, potentially resolves some of these bottlenecks. Because information is created out of use, potentially, and because it is organised on the basis of use, evolving user needs become integrated into the evolution of the intranet itself.

All very well in theory, but what might intranet 2.0 look like?

In the first place it would be built from the bottom-up. The management of the intranet would amount to managing templates, and access, and categorically *not* managing content. That means something like the intranet as a wiki, with everybody able to edit the pages.

In the second place it would be dependent on equal access across the organisation. The ethos of Web 2.0 is collaboration, about information and knowledge being things which are created in the process of collaboration.

In the third place, it would be a total solution. By which I mean that the piecemeal introduction of Web 2.0 technologies into intranet will not lead to intranet 2.0. It may lead to something else, but not to intranet 2.0. There is an inherent contradiction between the ethos of Web 2.0 and its application to limited areas of intranets. If you really trust your users, then you have to trust them with the entire content. To trust them with only some of the content is to send out the message that you do not trust them at all, and that will discourage people from fully engaging.

But haven't we been here before? Didn't most intranet start out like this? Unmanaged, and unmanageable? Didn't this idea of self-regulation lead to all the problems of badly organised and poor content that so much has been done to address over the last two years? Isn't there, in fact, an irony in suggesting a return to a kind of anarchy in the organisation of intranets?

There is a difference between Intranet 2.0 and the early days of intranets, and this difference arises from the point at which the user can intervene with the content of an intranet. Intranet 2.0 is not an unregulated intranet, the content is not unregulated at all. In fact, it is more closely regulated than a normal intranet. Every user of that intranet also becomes a regulator. It does not lack regulation, it simply lacks centralised regulation. With existing models – centrally managed as is now common or anarchic as in the early days – if a user sees some information that is wrong, out of date, or irrelevant, their power to get that information changed is diluted by the hassle of doing so – sending an email, describing the problem, explaining why it is an issue, and so on. With intranet 2.0, empowering users to not only identify problems, but act on them instantly, should lead to a different kind of dynamic in the management of content. Total user feedback, if you like.

### **Opportunities and risks**

Why should we do this? What potential advantaged might it offer? Web 2.0 technologies generally disconnect content and design, thus freeing up the content creation process from concerns about consistency in design and navigation. Web 2.0 technologies also allow a far greater degree of collaboration in the creation of content. This makes possible the idea of Intranet 2.0, an intranet where only the visual design is determined in advance, and all the content and structure is provided

wholly by users. Of most obvious interest in this is the Wiki as a means of allowing users to create intranets from the bottom up, but Folksonomies, RSS, and Blogs all have a role to play. The information on an intranet built from the bottom-up in this manner would be authenticated not through formal content management processes, but through the self-regulation of the wider user group. What is most attractive about this is its potential to open up the full knowledge assets and expertise of the organization; to really make the users the most important part of creating a successful intranet.

But this kind of user-built intranet would also bring with it many risks, most of which are associated with the basis on which information is authenticated. Allowing users to create intranet content largely free from managerial control obviously brings with it evident problems. Chief amongst these are perhaps the risks of bad information being used as the basis on which critical decisions are made. The idea of empowering users in this way is perhaps the biggest impediment to implementing Web 2.0 technologies successfully in the business intranet environment, but is also an essential first step.

There is another level of risk associated with the quality of information: the impact of empowering the user in terms of legal and regulatory issues. Users being responsible for content without direct managerial regulation (which does not of course mean without any regulation) means that if user's fail to appreciate the legal or regulatory framework within which information is published, the organisation could be exposed to a considerable liability. This of course applies to data protection, freedom of information, copyright and intellectual property, privacy, client confidentiality – all the traditional areas of concern in intranet management. And it applies perhaps to regulators issues, such as financial services regulation.

But there is also another kind of risk: a calamitous failure in user participation. I have noted elsewhere (2004) that technology cannot by itself change organizational culture, and the kind of participation on which wikis, blogs and folksonomies rely depends upon an existing corporate culture in which individual feel free from possible repercussions for the information they contribute. Just as critically, recent research suggest there is a 1:100 ratio of content contributors to users on participatory websites (Guardian, 2006), and this kind of figure would spell disaster for most organizations trying to introduce such technology. Clearly, the successful implementation of the user-built intranet would be dependent on the kind of organizational culture in which participation with Web 2.0 could be made a norm, not an exception.

So Intranet 2.0, the user-built intranet is unlikely to suit many organisations. Unlikely, in fact, to suit most organisations. However, it does offer an exciting way of integrating intranet and knowledge management programmes in such a way as to really capitalise on the knowledge assets of the business, and to allow information resources to be created out of the social fabric of the business. The kinds of businesses which this approach is likely to suit are those where the organizational culture ties in with the benefits of Web 2.0 technology. For dynamic, fast changing business environments, where information plays a vital role and there are high levels of information literacy, where there exists a high rate of change in the competitive environment, and a very high degree of innovation, Web 2.0 technologies may offer real benefits. The use of such technologies may allow the intranet to better pre-empt information needs, and to better capitalise on the existing expertise within the organization. It may be in the technology sector itself, that the user-built intranet will emerge. But as technology begins to change the business environment more generally, the approach of Web 2.0 may be a pointer to intranets of the future.



## **Conclusion**

In conclusion, I want to summarise the main argument of this paper. Web 2.0 is something that is out there, something that exists. Yes, a lot of the discussion of Web 2.0 is hype, and a lot of it consists of smoke and mirrors which make some old ideas appear fresh and new. And yes, Web 2.0 does not really represent a radical break with the past. But it does represent a different way of constituting and approaching a usable understanding of knowledge, the relationship between information and knowledge, and the relationship between knowledge and knowing. That understanding is not quite social-constructivism, as I have been hinting at and modelling through this paper, but rather filtered through complexity theory and the idea of emergent structure. But through Web 2.0 knowledge is conceptualised as something that is generated in the interaction of independent social agents, rather than something that exists independently of cognition and independently of human social processes. It is something that is wedded to the contexts in which it is created and exploited, rather than semi-autonomous of them. In other words, information and knowledge are not things that can be captured, and frozen in a stable state as suggested within knowledge management and information management practices, but things that are always under negotiation – a constantly shifting ground.

There is nothing revolutionary about this new understanding of knowledge and information. It is in fact rather surprising that we had always relied on the absolute nature of information and knowledge. Surprising, that is, until we consider the kinds of processes in which information and knowledge have played a part within the information profession. However, despite the fact that it represents nothing intrinsically novel, it does provide a new way of thinking about, and managing the knowledge assets of organisations. This is of particular interest because it perhaps allows a more direct engagement with knowledge creation and deployment. That more direct engagement may help achieve some of the aspirations of knowledge management in harnessing the dynamic of social interaction within organisations.

Intranet 2.0 would be the intranet built from the bottom up, rather than imposed from the top down. It would be the intranet every element of which is hackable, and changeable, and whose very structure is dependent on the changing information needs and use of users. This would be a new kind of intranet; bolting-on Web 2.0 applications to existing managed intranets would not harness this social dynamic, because those applications would be housed within a context in which the user is not actually an active participant in the creation and deployment of information. This depends on a new kind of accountability within the organisation – accountability primarily to your peers.

There are obvious risks with this approach. One kind of risk is the danger of stagnation, and this will ultimately depend on the culture of the organisation matching or reflecting the values of Web 2.0. More significantly is the risk posed by legal and regulatory issues, such as intellectual property, data protection, freedom of information, and regulatory codes. These will not always be surmountable, and the ideal of Intranet 2.0 will not always be able to be reconciled with the business environment. Intranet 2.0 will not therefore suit many, perhaps most organisations.

But there are also potential benefits. And the chief of these is perhaps the central ambition of Knowledge Management – the ability to more fully exploit the knowledge and information assets of an organisation.

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