

Web information architecture: A participatory practice

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Abstract

Web information design, or information architecture (IA), is a critical aspect of organisational use of the web to deliver information and to communicate with their clients. It is a relatively new instance of information organisation and, although it draws from traditional practices such as library and information science (LIS), web information architecture has its own characteristics and unique contexts. The practice of web information architecture must forge its own identity. This research paper contributes to a greater understanding of web information architecture as a participatory practice that requires myriad conversations, negotiations and collaborations as it is carried out in large organisations

Introduction

This paper reports research that is situated in a maturing era of organisational use of the internet to inform and communicate. At the forefront of an organisation's use of the internet is its official website, which represents a digital information channel of increasing significance and audience demand. The corporate website presents the opportunity for rapid publishing of extensive amounts of information to a global audience. From humble beginnings, the world wide web has emerged to become a major communicating and informing medium that every organisation is compelled to attend to as part of its public communication.

Web information architecture is a term that is used to describe both the information design process and the outcome of that process (Morville & Rosenfeld, 2006). Intrinsic to the nature of hypertext, a website will have an information structure regardless of whether an organisation consciously implements a process for web information architecture and structures their web information with awareness and expertise. Thus a website's information structures may present an optimal information space or a frustrating and unsuccessful experience for its users. Information structures are a front on which "the struggle for commercial supremacy through information is being fought" (Evernden & Evernden, 2003, p. 95).

The provision and structuring of web information is relatively new in organisations (Morville & Rosenfeld, 2006, p. 8) and the unstructured information of the web lives close to the surface of an organisation's entire repository of information. Many individuals within an organisation contribute to its creation and ongoing existence (Morrogh, 2002, p. 99). Whilst other information organisation practices have informed the practice of web information architecture, they remain distinct from the realities of structuring information on corporate websites. The importance now attributed to an

organisation's website requires a deeper knowledge and closer investigation of the context in which web information is structured.

Literature

Intentionally avoiding the pitfalls of language and representation, Morville and Rosenfeld (2006), consistently offer the set of four descriptive and defining statements about information architecture that they first proposed in 1998. They suggest that this approach serves multiple perspectives and approaches to information architecture itself and that the ensuing discussion of these statements is what truly conveys the meaning of information architecture:

1. the combination of organisation, labelling, and navigation schemes within an information system;
2. the structural design of an information space to facilitate task completion and intuitive access to content;
3. the art and science of structuring and classifying websites and intranets to help people find and manage information; and
4. an emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape (Morville & Rosenfeld, 2006, p. 4).

Because organisational use of the web for providing vast quantities of information has become mainstream, significant efforts have been made to define and optimise a design method or systematic approach for the design of online information spaces (Rosenfeld & Morville, 1998, 2002; Morville & Rosenfeld, 2006; Wodtke, 2003; Batley, 2007). As a result, a maturing design method and practice of web information architecture has emerged (Hider, Burford & Ferguson 2009). Rosenfeld and Morville's book for practitioners, *Information architecture for the World Wide Web*, first published in 1998 and now in its third edition, is described as a "milestone" in the development of web information architecture processes and as the "bible" for the practice of web information architecture (Dillon & Turnbull, 2005, p. 1).

Morville and Rosenfeld (2006) propose and document a series of phases that form a structured design method for the practice of web information architecture. They consider web information architecture as a project with the sequential stages of research, strategy, design and implementation. The project of web information architecture concludes with an acknowledgement of continuous evaluation and change that Morville and Rosenfeld (2006, p. 232) entitle "administration". Their approach is top-down, "conceiving the full product and its human or organisational impact" (Dillon & Turnbull, 2005, p. 2). They present a formulaic, sequential approach where research, strategy and design outcomes and deliverables are developed via a "structured development process" (Morville & Rosenfeld, 2006, p. 231). Thus web information architecture is presented as an ordered and logical process that reaches a stable end-state. Consultation with business stakeholders and website audience is recommended throughout.

Rosenfeld and Morville's (1998) seminal methodological approach to the practice of web information architecture came from a library and information science (LIS) tradition. This is recognised by Morville himself:

We became evangelists of the LIS school of information architecture. We argued passionately for the value of applying traditional LIS skills in the design of websites and

intranets. We hired “information architects” and taught them to practice the craft. (Morville, 2004, p. xiii)

Dillon and Turnbull (2005, p. 2) note that “IA is an interdisciplinary field of practice and research” that borrows heavily from other fields of expertise including “library and information scientists who have long dealt with classification and categorisation of recorded knowledge”. Mahon and Gilchrist (2004, p. xviii) also embrace the usefulness of LIS traditions and skill sets for information architecture, saying:

We have always tended to take the LIS view—even before we began to look at IA, in dealing with the management issues arising as a consequence of the widespread introduction of IT and associated networking in organisations. That is not to say we have always felt that LIS had all the answers but there were, and are, skill sets in LIS that lend themselves efficiently to IA.

The skills and tools of classifying, cataloging, indexing and controlling vocabulary have been developed and used over a number of centuries with librarians at the centre of the work. Morville and Rosenfeld (2006, p. 54) go so far as to say “we’re all becoming librarians” and “we unknowingly adopt the language of librarians” in our pursuit of organising information on websites. It is noteworthy however, that LIS theories and practices were developed for and within a relatively stable and ordered environment “where taxonomy work is often simply a matter of using and integrating existing standardised taxonomies” (Lambe, 2007, p. 136). Library and information science is purposed to “impose control over the entire world of knowledge, long-lasting and ephemeral” (Schwartz, 2001, p. 145). The traditions of library and information science are well established and the practice is characteristically performed by those who have expertise in the tasks and theories.

Eschenfelder (2003) examines the organisational conflict involved in developing a web information architecture for a large organisation. She focuses on web classification schemes (WCS) that she describes as

systematic informational infrastructure that defines the arrangement of web content into groups for storage or retrieval, the description or presentation of the groups, and the relationship of groups to one another. (Eschenfelder, 2003, p. 419)

According to Eschenfelder (2003, p. 420), web classification schemes are covert, powerful, ubiquitous and influential “tools that represent content, direct attention, influence perception and promote or detract from customer satisfaction” Eschenfelder (2003) writes that a website must often serve multiple audiences leading to goal conflict between different organisational sub-units with different target customers. Eschenfelder’s (2003, p. 421) research reveals the “growing importance of organisational websites and WCS as fields in which issues of organisational power, conflict and control are worked out”. Her study goes some way to providing an understanding of the organisational negotiation involved in the development of an information architecture for a public facing website.

In his research into the management of enterprise websites, Cox (2007b) reports that local bitter tension between information technology and marketing is evident. Polarised perspectives about design in general are discussed by Conklin (2005, p. 30) who suggests two extremes of design work within organisations. Firstly there is the world of need and desire, which is often expressed as what “ought to be”, and is more likely to be inhabited by a marketing department (Conklin, 2005, p. 30). It is complemented by the world of “what can be built” (Conklin, 2005, p. 30) within the available resources,

knowledge and timeframe that is often represented by the technologists. These two polarities of design need to be reconciled in an elegant way in the design process, claims Conklin (2005). Organisations must take care that a design process, such as web information architecture, does not turn into a non-productive interdepartmental war with neither worlds understanding the other or the whole (Conklin, 2005, p. 32).

Participatory design theory (Kensing & Blomberg, 1998; Kautz, 1996) has considered the role of the worker in the design of information spaces. Active participation by organisational staff in the design of any system that they will use is recommended with a promise of a “more human, creative, and effective relationship between those involved in technology’s design and its use” (Suchman, 2003, p. vii). This participation remains invited and initiated by managers and design professionals. Participatory design does not extend to include the multiple stakeholders in organisations who are not the users of the information.

Research design

Approaching the research using a grounded theory methodology, this study explored the realities and complexities within organisations as they strive to make effective use of their websites for information delivery. The research quests for a deeper understanding of the way that web information architecture is enacted in large organisations. Grounded theory provides a systematic and explicit process for conceptualisation from data—theory is constructed (Charmaz, 2006). Constructivist grounded theory (Charmaz, 2006) has enabled the study of web information architecture processes within the enterprise to be taken into a social realm—involving people and the complex interactions involved in achieving an appropriate information architecture for an organisation’s website.

Seven large organisations that use the web as a significant information delivery platform to communicate with and service their clients were investigated as cases in this study. The criteria for selecting an organisation were that it has a website that is information-rich and public-facing. In order to establish that the organisation is of a considerable size, only those with over four hundred employees were included.

A qualitative approach to data collection was used throughout the research. The first method employed was to ask those people with responsibility and involvement in information architecture to tell the story of how it is done within their organisation. These group narratives were analysed and followed up with relevant semi-structured interview questions to further the development of theory. The data (the narrative and interview transcripts) were coded to allow concepts and their relationships to be established. The research also examines web information architecture documentation that exists within the organisation—be it policy, process or best practice documents.

Findings

This research reveals the broad canvas of people who are involved in organising information on the web and the myriad negotiations and conversations that are needed to achieve information delivery via the enterprise website. It reveals an organisational interaction that goes deeper than the recommended consultation processes. An ongoing, deeper conversation about web information architecture exists in organisations, a dialogue that originates from many parts of the organisation and does so in its own time. The negotiations of designing information structures for the

organisational web have a life of their own and are often steeped in conflict. Optimal web information architecture is frequently compromised and the expert in web information architecture is not always driving the communications and decisions.

Collaborating in web information architecture

Much of the work of designing a website's ambiguous taxonomies to serve the business and its clients takes place in small impromptu teams, sometimes with the participation of IA expertise. There is no predefined membership of these teams—they are formed as needed with the most appropriate membership available at the time. The possible inclusion of a central web professional with IA expertise in such a team varied greatly across the organisations studied. At one extreme, devolved business units have complete control of their information architecture and do not involve central expertise. More often, however, there is an element of collaboration and teamwork between central IA expertise and devolved business units as a new site is planned or a redevelopment undertaken. Organisations revealed a sense of shared responsibility for and participation in web information architecture:

It is working together. It is us bringing our expertise in web and in design. It is them bringing their expertise in the business and also the communication priorities that they face, and trying to meet in the middle and come up with something.

The IA capability of a central web team finds a collaborative and integrative style, working alongside the business units who are the knowledgeable owners of the information that is provided on the site. Centrally employed information architects are called on to encourage, transfer their skills and mentor the people in business units to do the work of information architecture as effectively as possible. This is consistent with the findings of Cox (2007a, p. 776) who writes that “this work was carried out in a context where there is little direct formal power” and required cajoling and winning consent. One information architect described his way of working work as a “velvet glove” approach:

It is all about persuasion, horse trading skills. It is not like they say in the textbooks where you can go away and do this research and come out with some wireframes and then that is kind of it. That is the easy bit really.

And his manager agreed with this approach. Consultation and cooperation is her preferred way of working and she is very convinced that the work of web information architecture would not be supported by conflict or confrontation that was initiated by central web staff.

That is the reason why we employed him—seductiveness. Yeah I think the approach should be consultation first, and confrontation as the last resort, and we probably wouldn't bother unless it was something that seriously embarrassed the organisation.

Influences and constraints from the world external to the organisation impacted on the practice of web information architecture. The nature of collaboration and involvement must be flexible and adaptive to the subtle and political situations that arise in the business world. Political circumstances outside the immediate sphere of the practice of web information architecture can exert unknown influences. Wisdom is demonstrated by this web manager:

There's another area, a redevelopment there and that one's sort of gone a bit pear shaped but not anyone's reasonable fault, the politics maybe also and I think there it's probably more, what's the word, it's probably better for us to make sure we're there or maybe be seen

in a way a bit more, you know, in-between the IA and, and the line area. It's the nature of the content they're looking at and the actual political thing in the real world at the moment.

At times the negotiations of web information architecture were reported with a cooperative spirit. Interactions and communications, although at times lengthy, were frequently harmonious and achieved consensus. Casual communication and discussion about web information architecture was common place and, when conducted in the absence of formality, reasonableness often prevailed. A web information architect was able to gently negotiate an information design to avoid it being six levels deep:

I have talked to people, just not formally and just said, "Look you don't need to have six levels in this menu, it is okay, just let it go". Just explain the issue. Usually it is okay to sort of informal discussion or a chat and they will go . . . as long as they understand your rationale. It is when you start making it formal and calling people in for meetings, they can get quite defensive.

Tensions arise

As much as central web staff sought to avoid conflict with business stakeholders, on occasion tension and conflict arose in the practice of web information architecture. Relationships were not always harmonious. In one organisation, a web team was left to implement the dictates and directions of a senior executive group that were authoritative and unyielding in their requirements of corporate web information structures. The information architecture did not give prominence to divisions within the organisation and created conflict that was not resolved when the website was made live. The web information structures that were launched delivered legacy tensions and subtle ongoing relationship sensitivities that required consideration in the ongoing conversations of web information architecture:

When we first launched, the divisions were very down, about five clicks deep into the website and you wouldn't believe how much angst it caused us. And we ended up pulling them up and giving them a direct link from the home page . . . Politically, it just wasn't worth it. There is still some, I think, bitter memories perhaps, in there, that, those are hard to get rid of . . .

The conversations of web information architecture are not restricted to a central web team and business stakeholder dichotomy. Goal conflict (Eschenfelder, 2003) leads to tension and combativeness amongst the business divisions of organisations. This study confirms the competitiveness between the sub-divisions of an organisation for prominent presence within web information structures. The business to business competition within the processes of web information architecture can place central web staff in the role of facilitator or adjudicator. As a shift in business focus triggers a need for change in the high level web information architecture, the jostling for position begins anew:

Normally the area would drive that change and say "we need something to happen with this". I guess the problem is that would also mean losing something from those top six positions as well, so they're fighting very heavily that xxxxx should be up there on the top page and yyyy should still be there and things like that. So it's probably more those areas who would kick up the fuss and say "well, why are we being moved down here?"

Several organisations had implemented and were trying to maintain a thematic or topic-based organisational scheme at the highest level of their website's information architecture. Multiple organisational sub-units contribute to a single theme and any one sub-unit may be involved in a number of themes or topics. An ability to collaborate

proved to be essential to lift a website out of an organisation structure and present a thematic scheme. A workplace based on silos and lacking in integrative structures and strategies caused gaps and replication in topic-based web information architectures. The lack of collaboration in the workplace is reflected on the web:

... which replicates bits over here so it's like if we try and do it holistically do we take that bit out here and have it over here or do we bring that bit out there and bring it in here? we don't know, I don't know what the right solution is for that, so that's an issue, so that is a silo type thing and people not talking to each other.

Responding to the business

The business stakeholder with no expertise in information architecture has a strong sense of ownership of the process and the outcome. The business owner also brings a sense of urgency in the provision of appropriately organised online information. The study reveals that organisational use of the web for information delivery is characterised by volatility and a need for reactive changes to online information and its structure. Business stakeholders are well acquainted with the potential immediacy of web publishing and make significant demands on those who have responsibility for online information delivery. This is revealed in a typical comment from a research participant about his work with business stakeholders:

“now this website needs to be live this Wednesday”, you know, and so it's like “well okay, let's get it up and we'll worry about it later”.

This study reveals the need for agile and organic change to an organisation's website—in a timeframe that best suits the business purpose for the information. This type of change was often embedded in the daily activity of organisational life. Varied patterns of activity were developed within organisations for the achievement of small changes to an organisation's web information architecture. The following account reveals processes that lack formality but that demonstrate a workable approach that has become the norm and that is effective in responding to a reasonable request for change on a small scale:

more often they come to us and say “we're getting so many phone calls, is there something we can do to our web pages to reduce the work that's coming in, enquiries coming in”. So basically then we have a meeting with them and we sit down and say “okay what do you want, what have we got, what do you want to do, what do you want to achieve?” and try and work out the best way and the best way of laying those things out, the most logical, so it's pretty simple.

Another type of response needed was to a business change of significant proportion—such as the case of a business restructure, or an acquisition or loss of a function or business unit that must be reflected on the web in a time-dependent manner. Outcomes of budget restriction or expansion, government elections, change of government, reviews, and changes to the business model all made significant impacts on web information structures. Restructure and expansion in an organisation include the business need to mirror the change on the website of the organisation:

But I guess it came to a head recently because the department restructured as a result of the budget and xxxxx is now a big thing for the department, and so there's a new division of xxxxx within the department and they wanted that reflected on the home page.

Where business changes are volatile, so must be the work and outcomes of web information architecture. Those responsible for information structures on the web must

respond rapidly to business shifts, large and small. Hence responsive change is a key characteristic of the practice of web information architecture in large organisations. At times rapid and substantial changes to the business can occur faster than an information architecture can stabilize, as discovered by this research participant:

Recently two of our divisions shut down and merged with existing divisions and that has generated an enormous amount of workload. So first we had to convert everything through into the new division, and then the decision was made, after the last round of budget cuts, to actually merge that in with other divisions. So it sort of, just as we were getting near the end of the first job, we had a whole new job.

Compromising web information architecture

The work and outcomes of information architecture in its situated context of the business world involve a compromise in which best practices and methods cannot always be accommodated. IA practitioners are forced to compromise optimal outcomes that they know could be achieved with the full application of their expertise. Changes to digital information, especially on the web, can be made very quickly and a close to real-time informing of a web audience is a possibility. But this speed of publishing can come at a cost to the quality of the information structures when responding to the business pressure for websites to go live immediately. One research participant expressed this tension between business deadlines and optimal web information architecture:

we're so flat-out, we're doing stuff we're going "oh we know this isn't quite right but you know it's got to be live tomorrow, we'll put it up, we'll worry about it a bit later".

The work of organising information on websites must be agile in order to meet the business demand. It must also be characterised by pragmatism. The power structures in some organisations allow executives to overrule optimal information structures and an information professional must know when to concede and compromise in these situations. Those who make significant demands of web and IA professionals in requesting immediate and specific change often have the power and authority to request such responses as indicated in these various accounts:

Yeah certainly here and when I worked in other places, the boss has a lot of power and it can basically be the boss wants this and to hell with good IA . . . Yeah, we get things imposed, we get told to do things because someone decides that's what it's going to be, like definitely!

The following scenario again reveals a compromise in the work and outcomes of web information architecture brought about by power imbalances in relationships. An information design found lacking by central experts was brought to the table by people working directly to a strong authority figure and its implementation was demanded. This information design decision is made by the more powerful person who lacks expertise:

. . . all of a sudden the Minister or the Minister's office wanted a page about xxxxx, yeah and he wanted it structured by topic1, topic2, topic3 and topic4 . . . and it, this was the first time ever and so I don't think it was the Minister, but I think it was someone in his office but they kept saying it was the Minister wanted it, so when we went to do it, it was like well this isn't practical, you know, it's missing out all these other things, so we did one this way and "no, no we don't want that" so we did it another way and "no, no" and then it's came back "no we don't want . . ." and I was like "no we're not doing that"!

It was reported by this research participant that the Minister's alleged requirements, however contrary to best practice and expert advice, were duly implemented.

Significant pushback from the expert in web information architecture was exerted but to no avail. The availability of expertise was not valued and the quality of the implementation suffered. A rationale for the demanded web information architecture was not provided. A very reluctant information architect conceded his know-how to the more powerful business stakeholder.

Compromise is a common aspect of the participatory nature of web information architecture. Acceptance that power and political situations would intervene in an optimal information design was widespread amongst research participants. In one organisation, in order to achieve a whole of organisation website, there were political trade-offs in the information structures of the new website. Yet there is acquiescence for the situation in the comments of this web information architect and knowledge that a big picture improvement that accommodates some politically based minor imperfections is a step forward:

Yeah and xxxx and yyyy actually had in the past going a long way back had their own domains and their own websites and they were separately managed, and then that was brought together under the departmental banner. So I guess there were some compromises made for political reasons in terms of coming together with the new IA, in terms of reflecting that.

Engaging with experts

When business owners of devolved sub-sites did seek out available expertise in web information architecture, there was sometimes a tendency to disengage with the process. “They just think an external person is just going to blow in and fix it and magically sort everything out”. This was interpreted by one research participant by a fearfulness of information architecture. Web information architecture was seen as a mysterious and difficult process best completed by a “guru with a magic wand”.

“Participating in a practice entails taking part in a professional language game” because language transmits propositional knowledge of practice (Gherardi, 2006, p. 23). Speech acts are units of action, writes Gherardi (2006, p. 23). The language of web information architecture used in organisational context is then part of the practice and confusion in the use of language, as noted in this research:

And the whole terminology thing is very confusing to everyone. IA to me means wireframes, you know, structure charts, navigation and all that sort of stuff, but I don’t know if that means, that’s IA to you or others.

Language and hence communication about web information architecture is fraught. At the top of the pyramid of language pertinent to web information architecture, the term *architecture* frequently required explanation. “Usually I’ll mention in an email, ‘information architecture (structure)’ and I usually say structure and navigation but . . . ” Quickly a short, pre-emptive attempt at clarification may need re-explanation:

. . . and then I say, if they still don’t understand, “you know like a table of contents in a document, this is how it’s laid out, this is how the information is related, you know, these are a subset of this bit” etc. So, and you know that might not be technically correct but . . .

Web staff are aware that their language may not be appropriate for other organisational staff involved in website information provision and the special words and metaphors of web information architecture form barriers to communication and collaboration. This awareness triggered attempts to improve communication by clarifying and softening the language of web information architecture:

And so when people say “oh we need to design a new site”, I say “okay what do you mean by design?”, you know, “oh we just need a new look and feel” so there’s all those different terminologies which are being used by different people and mean completely different things, so we’re trying to get a common vocabulary across for all of the organisation.

The mystique of web information architecture continued in the tools and artefacts that were used to communicate design to stakeholders. It was noted that wireframes, site maps and taxonomy diagrams did not convey a conceptual picture of information structures to the majority of people with an interest in the design, especially those that make decisions:

It’s not enough for them to feel confident that if they approve that thing they’ve done the right thing, it’s not until they actually see it in the design, in a graphic design, it’s not until they see that that they are happy to sign off on the structure.

The conceptual leap to understand a skeletal, yet logical, information design separated from its eventual website was frequently not possible. “They want to, they can’t go there”, reported one research participant. Low fidelity diagrams of web information architecture outcomes were not useful in dialogue with many stakeholders who could not separate information and visual design. And when presented with a higher fidelity design, there were other abbreviations and short-cuts that caused concern: “even to the extent ‘why is it in Latin?’ you know back to that sort of thing, it’s, it’s a real big problem”.

Marketing and web information architecture

This research reveals a fractious relationship between the marketing or public relations functions of an organisation and those whose focus is on optimising the web information space. Numerous accounts of opposing perspectives were reported and unrealistic expectations that could not be achieved by web staff. There were also instances of the boundaries of responsibility for work not being well enough defined to create productive working relationships and successful negotiations of web information architecture.

Conklin’s (2005, p. 15) theory of the “polarity of design” is at play in the organisational use of the web. The research participants in this study expressed the dilemma and difficulty of implementing the espoused marketing needs and desires in web information design. They noted the tension around what was wanted by marketing and public relations departments and what they, as the web team, could reasonably achieve. One of the areas of disconnection and discontent was the time frame of delivering the expectations of the marketing department. In one organization, the marketing unit required the global implementation of a newly designed template that housed IA components. It was not plausible or rational to expect this requirement of the marketing department to be implemented in the desired short time frame:

The tension tends to be, for marketing communication, centred around speed of execution for certain things like—“make all web sites comply with this new template”. Well, this doesn’t happen quickly, because, well, we don’t look after all of them anyway and you need propagate that down to people that aren’t necessarily driven in the same sense that the marketing communication . . . I think that there is also tension around the speed of innovation side where the marketing efforts tend to be fairly short term focus and very, I guess, driven by response cycles—we need this thing now!

“Any design problem is a problem of resolving the tension between what is needed and what can be done” (Conklin 2005, p. 15). The design of web information structure is no exception. Understanding that the perspectives of marketing/public relations departments are different from those of other business stakeholders and from those of the web team is an important requirement in the negotiation of web information architecture.

The inability of the web team to fulfill all the needs and desires of those with a marketing/public relations focus impacts on the relationship between the two areas and the people within them. “The tendency is for the polarity of design to be reflected in a polarity of roles” (Conklin, 2005, p. 16). One web manager expresses the difficulty in managing the ongoing extreme of “what is wanted” by the public affairs department and how it affects his role in managing the web. He is always the one who says “no” and tensions mount within the organisation as a result:

... the relationship with Public Affairs is fraught, Public Affairs still sees the web thing, or particularly sees me as the person who won't let them do anything fun, I'm the one that always says “no, you've got to do, think about accessibility, you've got to think about the Australian Government Standards, web standards etc” ...

The perspectives and demands of marketing and public relations departments are just one of the forces that must be kept in balance in designing a website with effective information structures. Those responsible for the design of the web information space must balance the sometimes competing requirements of multiple stakeholders. The web is considered a platform for many aspects of business improvement and, as a result, becomes a nexus for multiple and sometimes opposing organisational goals. Thus an organisational website is also a site of competing business forces. In the implementation of the integration of all business requirements of the website, a web team is also beset by the need to accommodate technical standards and requirements that exhibit good practice. Accessibility to the web for people with disabilities, privacy issues, compliance with standards all sit in the delicate balance of achieving an effective information delivery platform. These requirements also compete and affect the negotiation of web information architecture with internal stakeholders, especially those in the marketing and public relations domain:

It is a sort of tense area. Can be. Particularly around the difference between websites as having usability and accessibility issues so we most often have, you know, disagreements and privacy for example. Disagreements around, “yes this creative concept might work in the print medium but in fact the contrast is not sufficient to be read on a web site”, that sort of stuff.

There was strong evidence in the data that the boundaries of responsibility for the web should be clearly drawn. Working out the defining boundaries of responsibility and making them explicit proved to be an important balancing action in the negotiation of web information architecture. In one organisation, a web team presented an example of a well defined set of responsibilities for themselves and the marketing communication function. The components of the homepage could be described in terms of ownership. In these circumstances, with boundaries well established and a shared understanding of who is responsible for the information architecture, tension between web and marketing staff were minimal.

The Marketing Communications people are particularly interested in the dynamic content that's on the left side of the page. They produce that content, they are responsible for the content and the branding of that stuff, so that's the audio and video pod casts, the

newspaper, media releases, that kind of thing. They're also interested in the three graphic ads in the centre of the page that we have only just introduced. They're happy for us to be responsible for the global navigation, the state navigation, and searching and finding kind of tools.

But in a contrasting situation in another organisation the conversations of web information architecture were troubled by the lack of clear boundaries of responsibility. The global template for the organisational website was the widely accepted responsibility of the web team. In the process of a consultant-led development of multimedia objects, the public affairs department extended the consultant's commission to include a redesign of the global information architecture. The negotiation of web information architecture became a "big battle" with the involvement of executive staff in an adjudicating role:

We had a consultancy to develop some Flash objects to go into a website redevelopment and the Public Affairs person sort of turned it all around to get the consultants to totally develop a whole new website design template and it was like "no, we've already got our templates, it needs to fit in this" and that ended up being a really big battle . . . that went all the way up to the executive and lots of backwards and forwards and important people involved . . . and it was very stressful and all that sort of stuff but it came back on sort on our side . . .

Discussion and conclusions

Many people across an organisation have strong interest and input into the timely delivery of information to web audiences. Multiple perspectives, diverse participants and ongoing dialogue in the construction of information structures for enterprise websites are key characteristics and web information architecture is best embraced as an ongoing engagement with multiple stakeholders. Other information practices such as library and information science are characterised by information professionals who take an authoritative lead and consult the business. But this is not a suitable balance for the practice of web information architecture where the business stakeholder is intrinsic to the work in an ongoing interaction—consultation is too remote. The demand for immediate and agile responses to the information structures that inform the organisation's client creates the need for close liaison with the business. Responsive and integrative work with the owners of information for the web is essential to the practice of web information architecture.

Compromise is another key characteristic of the practice of web information architecture. There will be occasions when timelines, politics and power will win out over optimal information design. Information on public-facing websites is allied to an organisation's political stance in the world and web information architecture is affected by the worldliness of the information that it shapes. Similarly, internal organisational politics has its impact on information design. Restrictive timelines for their creation contribute to compromised assemblages of information on the web. The outcome of web information architecture does not always reach the ideals of its expert practitioners. Web information architecture can be a political and contentious activity—elements of competition for information space are revealed as are the polarities and tension between marketing needs for the website and its optimal information design.

Web information architecture is conducted by the masses as well as the experts—at times it is carried out by novices in the practice. An organisational website is a collage of these two extremes and all of the information design that occurs between them. These

research findings disrupt the traditions of information organisation as the closed domain of the specialist information professional. It makes good sense to expect the participation, the negotiation, the compromise and the close involvement of business stakeholders in the practice of web information architecture and to develop processes, attitudes and approaches that enable this to occur. Attending to the social complexity of web information architecture will lead to more valuable outcomes.

As engagement in the practice of web information architecture is undertaken by many and diverse contributors, organisations are required to adopt new thinking and approaches to information organisation for the online information space. The new approach must cut across organisational structures and see people working collaboratively and temporarily in structuring web information. The nature of the web and the ongoing, emerging change in the way that organisations are using the web call for a new way of utilising expertise in web information organisation practice. Expertise in web information architecture cannot be remote or distant from the many practitioners. If the practice of web information architecture is considered as a participatory one, frequently taken up by the non-expert, yet strongly influenced by expertise and knowledge, then web information architecture must be recognised as an intensively inclusive practice and fostered within organisations to function in that manner.

Participatory design theory holds that purposely involving organisation workers in the design of information interfaces and systems that they will use will benefit the design (Kensing & Blomberg, 1998). An extension to this body of theory is needed to include a participatory construct that does not view non-expert participation as consultation. It must extend to acknowledge the full inclusion of multiple stakeholders in the practice of web information architecture. The practice of web information architecture must continue to develop its own identity and shared understandings.

References

- Batley, S. (2007). *Information architecture for information professionals*. Oxford, England: Chandos.
- Burford, S. (2008, April 5-9). *Understanding how organisations achieve effective web information architecture using a grounded theory approach*. Paper presented at the 14th Australasian World Wide Web Conference, Ballina, NSW.
- Burford, S. (2010, March 18-21). *Knowing the practice of web information architecture in large organisations*. Paper presented at the IADIS International Conference: eSociety 2010, Porto, Portugal.
- Charmaz, K. (2006). *Constructing grounded theory*. London: Sage.
- Conklin, J. (2005). *Dialogue mapping: Building shared understandings of wicked problems*. New York: Wiley.
- Cox, A.M. (2007b). The power and vulnerability of the “new professional”: Web management in UK universities. *Electronic Library and Information Systems*, 41(2), 148-169.
- Cox, A.M. (2007a). Beyond information: Factors in participation in networks of practice, a case study of web management in UK higher education. *Journal of Documentation*, 63(5), 765-787.

- Dillon, A. & Turnbull, D. (2005). Information architecture. In M. Drake (Ed.), *Encyclopedia of Library and Information Science* (2nd edn.) (pp. 1-9). New York: Taylor & Francis.
- Eschenfelder, K. (2003). The customer is always right, but whose customer is more important? Conflict and web site classification schemes. *Information Technology and People*, 16(4), 419-439.
- Evernden, R. & Evernden, E. 2003, Third-generation information architecture. *Communications of the ACM*, 46(3), 95-98.
- Gherardi, S. (2006). *Organizational knowledge: The texture of workplace learning*. MA, USA: Blackwell.
- Hider, P., Burford, S. & Ferguson, S. (2009). The use of supporting documentation for information architecture by Australian libraries, *Journal of Web Librarianship*, 3(1), 55-70.
- Kautz, K. (1996). User participation and participatory design: Topics in computing education. *Human-Computer Interaction*, 11(3), 267-284.
- Kensing, F. & Blomberg, J. (1998). Participatory design: Issues and concerns. *Computer Supported Cooperative Work*, 7, 167-185.
- Lambe, P. (2007). *Organising knowledge: Taxonomies, knowledge and organisational effectiveness*. Oxford, London: Chandos.
- Mahon, B. & Gilchrist, A. (2004). Introduction. In A. Gilchrist & B. Mahon (Eds.), *Information architecture: Designing information environments for purpose* (pp. xvii-xxii). London: Facet.
- Morrogh, E. (2002). *Information architecture: An emerging 21st century profession*. New Jersey: Prentice Hall.
- Morville, P. (2005). *Ambient findability*. CA, USA: O'Reilly.
- Morville, P. (2004). A brief history of information architecture. In A. Gilchrist & B. Mahon (Eds.), *Information architecture: Designing information environments for purpose* (pp. xii-xvi). London: Facet.
- Morville, P. & Rosenfeld, L. (2006). *Information architecture for the World Wide Web* (3rd edn.). Sebastopol, CA: O'Reilly.
- Rosenfeld, L. & Morville, P. (2002). *Information architecture for the World Wide Web* (2nd edn.). Sebastopol, CA: O'Reilly.
- Rosenfeld, L. & Morville, P. (1998). *Information architecture for the World Wide Web*. Sebastopol, CA: O'Reilly.
- Schwartz, C. (2001). *Sorting out the Web*. Connecticut, USA: Ablex.
- Suchman, L. (1993). Forward. In D. Schuler & A. Namiola (Eds.), *Participatory design: Principles and practices* (pp. vii-ix). N. J.: Lawrence Erlbaum.
- Wodtke, C. (2003). *Information architecture: Blueprints for the Web*. Boston, Massachusetts: New Riders.