

Bibliotek i endring

FINAL PROJECT REPORT

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1. Project goals

The goal of this project was to study the management of significant change at two academic libraries – Bergen University College Library (HiB) and University of Stavanger Library (UiS) – by looking into workplace learning and information practices over a period of specific change in the two institutions. More specifically, the project studied change, information management and organisational learning as collective, dialogic (Linell 2009) and social processes “that underlie knowledge sharing between the different subunits of a single organisation” (Tagliaventi, Bertolotti and Macrì 2010, 332).

Beneficiaries of the project include:

- academic libraries and their directors, managers and staff
- researchers and practitioners with an interest in change management, information management and workplace learning

2. Research design and project activities

Project activity	Time
Literature review	Spring - autumn 2013
First interviews, including network analysis	June 2013
Ketso sessions	Autumn 2013-autumn 2014
First project participant workshop	5 September 2013
Second interviews, including network analysis	September 2014
Data analysis and findings	Autumn 2014-spring 2015
Final project participant workshop	19 March 2015
Dissemination: Website	Spring 2015
Dissemination: Report	Spring 2015
Dissemination: Presentations and publications	Spring 2014 throughout 2015

Table 1. Summary of project activities 2013-2015.

2.1 Literature review

A literature review was carried out on the research area at hand. The literature review is summed up in Whitworth et al. (2014).

2.2 Concept mapping sessions

Participation in the project was voluntary. A total of 28 library staff members participated in the project, 15 from UiS and 13 from HiB, representing around 50% of the library staff at each location. The project participants represented a wide variety of library staff profiles: library management, clerical staff, librarians and academic librarians. Data collection procedures were subject to institutional review by both the University of Manchester and Norwegian NSD, both of which granted their approval.

Library staff at the two locations used Ketso (see below) to map their information landscapes over 6 sessions, held at each location at approximately two-monthly intervals for one year (early October 2013 - late September 2014). The six group concept mapping sessions spanned considerable changes at each library: HiB's merger and move to the new campus took place in summer 2014; UiS's new director arrived in January 2014. All sessions lasted around 90 minutes. The sessions were audiorecorded.

Ketso (see www.ketso.com) is a participatory concept mapping tool designed by Joanne Tippett of the University of Manchester. Ketso was designed to allow as many members of a group as possible to contribute to the mapping of a problem space, and the resources existing within the information landscape to address problems. The image below shows a fragment of a Ketso map. The colours and shapes of the tool are deliberately 'natural'. Each 'leaf' can be written on and then wiped clean, and repositioned on the map if necessary. The durable nature of the material mean that it is easy to store maps from one session to another, and then revise the previous map. At each location, two separate maps were created; the



physical size of each Ketso map means that around 6-7 people per group is optimum, and creating two maps at each location doubled the amount of data available, and offered more variation in perspective.

At the sessions, library staff were asked to map the following: the tasks they were working on; the information they needed to address them; the sources of this information; blocks on acquiring it; priorities; and actions to be taken by the next session. These factors cluster around topics, represented by the oval leaves in this diagram. Small circular markers indicate priorities. For example, around the topic "Teaching" on one map appeared tasks (brown leaves) such as "teaching information literacy"; "Endnote"; and "mentoring students". Next to the last task was placed

the information need (yellow leaf), “Knowledge of curriculum”, and the source (green leaf) of the teaching and learning administration of different academic departments. A relevant action might be to then chase up the needed information. The image here shows different themes, but again illustrates the relationships between tasks, needs, sources, blockages and actions.

The main researcher and the research assistant had a facilitating role during the Ketso sessions (see section 3.2).

Each session after the first one began with a review of actions placed on the map at the end of the previous session, recording which member(s) of staff were the agents of actions that were undertaken and/or completed. Maps from the previous session were then revised (though in the final session at Bergen we experimented with creating a fresh map). In the case mentioned, if someone had indeed chased up the necessary information on curriculum, both the action and the information need might be removed. Thus, the maps throughout the session served to record changes in resources and connections between them, revealing the evolution of the information landscape. Importantly, these data are also immediately available to project participants, helping reveal gaps in knowledge and areas of work which need prioritising.

Not all participants attended every data gathering session, with some being missed because of pressure of other work or illness, but most participants remained throughout the project and participated in the final interviews and the majority of the sessions. One participant at each institution dropped out in the course of the project because they left the employment of the libraries, and one other dropped out for personal reasons.

2.3 Interviews and social network analysis

In addition to the Ketso sessions, two individual interviews with each participant were conducted, first in June 2013, second in September 2014. The aim of the interviews were to elicit perspectives on who they were proximate to at work; ability to enact changes in practice; and, in the final interviews, their views on the changes they had undergone, and



giving feedback on the project itself.

At both interviews, data were gathered for a social network analysis through participants being asked to draw a map of their working relationships.

We recorded the order in which participants drew colleagues or teams on their map and used this as data on their proximity to other team

members. *Sociograms* (see diagram, and Scott 2000) could therefore be drawn, which were

representations of the connections between team members at the start and end of the period of change. All names of the participants were anonymised and randomly distributed in gender.

2.4 Participant workshops

Relatively early in the project (5th September 2013), a participant workshop was held at which project goals and initial work were presented and discussed.

A final project participant workshop took place on 19th March 2015, where we presented project outcomes, and further promoted the project methodology as a professional development tool for potential use across library institutions. Attendees also used Ketso in a 'strategic visioning' session, working in cross-institutional groups to discuss where they saw their libraries and the profession as a whole being in five years' time and what resources existed to help reach these goals. This workshop also served to disseminate the project outcomes, having approximately 25 attendees from the University of Bergen library and NHH library as well as HiB and UiS.

To conclude, the methodology used in this project is sensitive to the nature of practice and facilitates self-reflection and action research in the project participants, at the same time generating data for analysis for the project team. Thus, it is an example of cooperative inquiry of the sort called for by Heron and Reason (2001), having involved significant contributions from the management and staff of the libraries being studied. For a more detailed discussion of the methodology and research design used, the reader is referred to Whitworth et al. (2014).

3. Project findings and its benefits for the Higher Education library sector

The project methodology was intended to facilitate knowledge sharing, learning and development, change management and information management across the participating libraries.

Its key theoretical concept is that of *stewarding*. Wenger et al. (2009) use this concept to describe the tasks undertaken by members of a *community of practice* that are oriented to maintaining a technological environment which all members of the community can draw on to fulfil shared learning needs. We widen this idea, going beyond just a focus on the purely technological elements of the work environment, instead considering how staff members manage the "information landscape" (Lloyd 2010), the broad configuration of informational resources — including technologies, but also including procedures, texts, other people,

external information sources etc. — that are drawn on in the course of work. Wenger et al. (2009) note that the stewarding role often falls on a limited number of people, often only one, and that a community will be stronger if the steward role is more widely distributed, with community members checking and balancing each other in this regard. Thus, our methodology had a two-fold intention:

- to record, over the period of change faced in both locations, how library staff collectively stewarded their information landscape and, through analysis of these data, identify key issues in library change management procedures;
- to raise awareness of issues such as information management, task allocation, prioritisation, blockages and other problems among staff, so that they could develop a more active and distributed stewarding role as the project unfolded. In other words, we did not just gather data for analysis at the end, but the data were revealed to participants as the project proceeded, for the purposes of professional development within and across institutions.

The first aspect is discussed in section 3.1 which follows, and the second in section 3.2.

3.1 Key issues in library change management procedures

In order to investigate the key issues in library change management procedures (e.g challenges, critical success factors), the Ketso maps, the sociograms and the interviews were analysed. The data shows that the library staff at both institutions faced considerable changes.

The following are the most pronounced change issues addressed by the informants at HiB:

- the physical move from five library locations to two, one on a new campus;
- the parallel reorganisation process, defining new roles, units and chains of command;
- the mother institution's goal of offering research degrees and the increasing number of research staff members.

These changes have offered challenges, but also opportunities, for the library as a whole and the staff within it. There is an obvious need to develop new services. The reorganisation has created larger units within the library, and fewer leadership roles, resulting in changed status for several individuals. This has made it easier to effect changes in practice in many cases. Reorganisation has permitted specialisation, but also creates demands for professional development.

The following quotes come from interviews with three HiB staff members:

[core values] have changed but in a positive way. During the reorganisation we have been reflecting, planning, thinking a lot and we have revived things which were not emphasised in the past. We have talked a lot about what new best practices we can integrate into our library, we have learned from other people, consultants leading us in the reorganisation process.

[We have] more perception of changes in academic libraries in total. Before, the library was focused on subjects that it was serving and not so much on the institution as a whole, as something which offers education. Now the whole situation has to be considered. It is a more administrative thing, we are part of a bigger whole and we have to change the way we think about libraries.

Organisationally there have been many changes. We were in small places, there was less information, less going on. With fewer people you knew what you were doing more. Now there are a lot of people, maybe doing the same thing. All the ones teaching, say, are in one group. We have to deal with more colleagues, a lot more information. As a library we now have one management instead of several. The circulation desk has to communicate not just with their own unit but with everyone. I am expected to stretch myself much more, expected to know what is going on in other places much more.

Interviewees claimed that the reorganisation at HiB was successfully run — well enough to have increased the capital of the library elsewhere in the institution — and that it was inclusive and participatory, with all staff retaining a sense of ownership in it, and that their contributions were valued and meaningful. The process as a whole promoted reflection and debate on the library's values, best practices and goals, and the various elements of this project (the Ketso sessions, the project workshops and, to some extent, the interviews) were contributors to this. The role of external consultants, drawn from the HiB Human Resources department and working as facilitators of the reorganisation, was also considered valuable.

The impact of the organisational change which has taken place at HiB is somewhat easier to judge than at UiS, because of the nature of the change they faced. UiS was originally predicted to be a more stable institution. At the time of writing our project proposal, it was envisaged that a period of stability was in store for UiS after its library move and reorganisation had been completed, relative to the building move and comprehensive reorganisation due to be faced by HiB. However, given the unexpected departure of the UiS library director at the start of the project, it seemed as if both libraries would be studied during a process of upheaval.

Nevertheless it is apparent that the change of director has been less impactful on the underlying structures of the UiS library than the reorganisation of HiB. One way this is reflected is in the lower volatility of UiS's information landscapes, as recorded in the Ketso

maps. A total of 64 actions were laid over the first five sessions at HiB (the sixth session constituted our experiment with drawing a fresh map, and no actions were laid), whereas over UiS's six sessions 33 were laid, 16 of which were never removed (including 5 which stayed there throughout, having been laid in session 1). Of HiB's actions, 20 were not removed, but only 3 persisted throughout. The peak time of volatility at HiB was around sessions 4 and 5. In session 4, 28 new actions were laid, and 17 actions removed in session 5. In fact, the peak for UiS was also session 4 (April 2014), the session held three months after the arrival of the new director. UiS staff have had to adjust to a new *management style* (see also below), and changes in *priorities*, but the evidence presented below suggests that the *practices* and *roles* of individuals have changed rather less than at HiB.

Data collected during the project revealed which individuals were the most active agents of change (this being represented by who was named in the Ketso sessions as having undertaken actions that were laid down on the map). At HiB, there was a correlation between those who were identified as core nodes in the social network, and those who were named active agents of change during the Ketso sessions. 'Coreness' is, here, a mathematical property of each node (person) in the social network, expressed as a proportion on a 0-1 scale, where 1 represents the maximum possible coreness (everyone interacts with that person, but not with anyone else) and 0, no one interacts with that person. Data on coreness, correlated with the data on agents of change, give the following result at HiB:

Name	Coreness	Actions
Kirsty	0.444	7
Joanna*	0.422	14
Carol	0.36	5
Iris*	0.343	5
Gillian	0.307	7
Bill*	0.27	17
Henry*	0.264	1
Mary	0.258	7
Dawn	0.222	7
Susan	0.136	3
Fay	0.066	0
Ed	0.038	0
Pearson's Correlation coefficient:	+0.577	

The same data for UiS (see below) show a negative correlation (of -0.468), so the HiB situation may just be a coincidence. But the data at least suggest that throughout the reorganisation process, HiB remained an inclusive and egalitarian decision-making structure. The director and the library middle management (marked with asterisks in the list above) are active agents, but by no means dominate the stewarding role. HiB staff were also optimistic about their ability to enact changes to practice. We asked all participants at the initial interview about this and coded results as one of the following four categories:

Perceived ability to enact change to practice	# of interviewees at HiB	# of interviewees at UiS
Definitely	5	4
In some circumstances	5	4
With difficulty	1	5
Not at all	1	1

In the final interviews we returned to this question, asking participants whether they thought they were more able to change practice than they were at the start of the project, less able, or about the same. At HiB answers were split equally (4:4:4) between these three positions, and those who answered they were less able to do so tended to offer a logical explanation for this, e.g. that the reorganisation had led to them forgoing a managerial role in order that they could in fact focus more on their core job tasks. At UiS, 1 person said more able, 5 about the same, and 5 less able (three interviewees from the first interviews could not participate in the final ones) – though it should be said that being less able to enact change was not necessarily perceived as negative, as in one case an interviewee said that this reflected a greater sense of direction from management. No UiS interviewees suggested they had undergone a change of role, although some responsibilities had changed (particularly through greater use of student assistants to free up staff time). On the other hand, only two HiB interviewees (one being the director) suggested their role remained substantially the same as at the start of the project.

All in all it can be concluded that the change of director at UiS was not a *structural* change in the same way as HiB faced. It was a change in office holder (and resulted in a change of management style) and thus inclusiveness would not apply in the same way as it did in HiB. Nevertheless, though the UiS director was perceived as the most frequent agent of change and activity, despite not participating in the Ketso sessions, and frequent references were made to her in the final interviews, the data on coreness and agency from UiS show that staff outside the core and the middle management (marked with asterisks) were still able to enact change:

Name	Coreness	Actions
Angela	0.693	1
Matthew	0.521	2
Luke*	0.298	3
Jacob*	0.243	3
Nell	0.197	2
David	0.129	4
Bryony	0.1	4
Ellie	0.077	5
Frank	0.06	6
Harriet*	0.037	1
Ingrid*	0.014	2

Significant changes that did take place at UiS over the study period included the greater use of student assistants, as noted above, and a push for the disposal of little-used areas of the collection. These examples reflect how different aspects of the work of both libraries have been affected in different ways over the study period. At HiB, the reorganisation and move were dominant factors, but daily tasks still had to take place around them, and responses made to drivers for change such as the implementation of the ORIA project. The mapping process revealed interesting details about the information landscapes at each location but it is difficult to generalise from this bearing in mind the specific context of each library (though see section 3.2 below regarding the value of these data to participants).

However, one thing to note is the variation in volatility between regions of the map (that is, the degree to which topics evolved over time, the number of tasks, needs, actions, sources and blocks which were placed and then removed) and an apparent disconnection between this level of volatility and the placing of actions and priority markers. Some topics were designated as priority areas throughout, but changes were negligible. For example, the two images below show the ‘Undervisning’ region of one of the UiS maps, on the left at session 3 (February 2014) and on the right at the final session (September 2014).



The region just below the topic oval shows a task and associated information needs which were designated a priority area, but which more than six months later remains unchanged beyond the addition of more needs and sources, despite it continuing to be designated as a priority at each session. This does not necessarily reflect a lack of activity at work: it is important to remember that the maps are representations of the perceptions of participants' views. But it does suggest that there may be persistent blockages to the evolution of the information landscape in this area, and these can become the focus of discussion and attention. Thus, the value of the Ketso mapping is demonstrated.

Some areas had tasks defined, but very few or no other leaves associated with them, implying that no one connected these tasks with information needs, sources or actions or even blockages. On one of the HiB maps, the topic 'External collaborations' appeared from the start, with several tasks, but virtually no other leaves were ever connected to it except, at session 3, an information need. Yet the topic remained through to session 6, even when the HiB map was redrawn afresh. The need for this work is therefore in the consciousness of at least some project participants – yet the associated region of the information landscape may not be being stewarded. The mapping process revealed these neglected areas, and suggested that in certain places, blocks on action might be substantial, including the possibility (as raised by March, Olsen and Christensen (1976) in their study of the ambiguous nature of decision-making in higher education institutions) that there is no intrinsic connection between decision-making in HE and actual change.

To conclude this section, the merger and reorganisation of HiB offered both challenges and opportunities to staff there, which an inclusive and open management style, and the active facilitation of consultants (both those helping with the reorganisation, and the subsidiary role played by the investigators on this project), helped the HiB library make the most of. The change faced by UiS was one less innately open to 'inclusive' solutions, but the evidence shown above nevertheless suggests that the structures of that library are open to ideas and stewarding crossing boundaries between professional groups (and also that institution's three campuses). It may not be a radical conclusion that inclusivity in decision making and information management is a critical success factor in the effective management of change – but nevertheless it is one that is supported by our findings.

3.2. Professional development and distributed information stewarding

In this section we report on what we learned about how effective the project was at facilitating and distributing information stewarding widely among members of the library staff at each location, and what effects this had on the professional development of the staff.

Wenger et al (2009, p. 38) say that: "communities of practice need habitats to learn together. These habitats have to provide the places and support the ways in which members

experience togetherness.” We suggest that the Ketso sessions served as such a “habitat” and supported “togetherness” in this way. In the final interviews, participants noted that the sessions were valuable simply as a space to take time out from everyday work tasks, step back and reflect, both on ongoing operational issues (what tasks needed doing immediately, what were priorities, etc) and on broader or more long-term plans. Insights and perspectives developed in the sessions were not necessarily recorded on the Ketso maps themselves, that is, the discussions that took place in the sessions had value for participants in their own right. In this respect the Ketso sessions served a similar function to strategic away days. They also offered a more free-form arena for planning and discussion than regular team meetings, being less constrained by pre-existing agendas, but still remaining focused on answering questions such as what to focus on over the next few weeks, where to seek needed information, etc.

One interviewee at UiS offered the specific example of where the sessions had helped him plan the introduction of the RFID technology into the library. :

“[the project] was useful for the new ORIA system which it was particularly important to find out about, and learn. People were sitting together and complaining about it. It was helpful to spend time sharing information about this.”

Participants could envisage how their work fitted into the ‘bigger picture’, and also recognise when and how certain perspectives on the work of the library were not wholly aligned with those of colleagues. This was particularly significant at HiB, which had to bring together practices that had, on occasion, developed at the different campuses in divergent ways but then had to be reconciled at the point of merger.

The visual and kinetic aspects of Ketso were considered valuable by many interviewees. The map was a recording of a conversation, but showed relationships between issues, and gaps in knowledge, more effectively than written minutes. Being able to move leaves around, rewrite them if necessary and remove them was also important. Several interviewees reported the sense of satisfaction which emerged when actions or (in the case of HiB’s reorganisation) entire topics could be removed from the map after completion.

The technique revealed interesting aspects of collective information stewarding. This has been an intransigent problem in information science (see Saracevic 2007): how do collectives make judgments about relevance? Or, in Wenger et al’s terms — if stewarding can and should be distributed across a community of practice, what does this actually entail, operationally? How can the benefits of job specialisation be retained while still allowing for the work of a specialist to be checked by others?

Data from both the Ketso maps and the interviews revealed several instances of where regions of the maps had been largely or entirely managed by specific individuals. For example, on one of the HiB groups' map this was quite apparent with each of the research support; digital resources; and teaching themes. The impression was of a particular 'territory' being the responsibility of a particular individual. On more than one occasion where someone could not make one session for whatever reason, other staff members became reluctant to make any changes to 'their' region of the map in their absence. At one level this probably seems self-evident — logically, the research support theme would be expected to be stewarded by the staff member with a responsibility for research support — yet at the same time it stands in potential contradiction with the idea that Ketso is designed to elicit a group perspective, and thus help distribute the stewarding role.

We suggest that, in actuality, the technique allows for the 'best of both worlds'. Expertise and responsibilities are recognised and other team members will, indeed, defer to the 'expert' when it comes to constructing that region of the map (that is, the representation of the area of the library's information landscape which is relevant to tasks that cluster around the theme in question). But that does not mean the *authority* of that staff member cannot be scrutinised, and where deemed appropriate, their depiction of the region reviewed and altered (cf. Whitworth 2014). This insight calls for further research, but is, potentially, an original contribution of the project to the research literature in the area of how communities of practice collectively steward their informational environments and make judgments about relevance.

We note the importance of *facilitation* when it comes to making best use of this technique. Each Ketso session was facilitated by at least one of the researchers (the main researcher and research assistant), and four of the six were facilitated by both. At no point, even after participants had become familiar with the technique, was there a suggestion that team members could simply have been provided with the Ketso kits, and a useful map of the information landscape emerge 90 minutes later without the need for facilitation. Wenger (1998, p. 234) points out that no community can effectively design its own learning without some kind of external perspective coming into play. Facilitators played a valuable role in prompting reflection; helping record observations on the leaves; organising the maps around themes; relating needs, sources, blockages, tasks and actions; resolving disagreements (for example, over what to prioritise); and ensuring the sessions maximised their use of the available time.

Each Ketso session returned to the map created at the previous one and revised it. It is an unresolved question as to how things would have been different had we created a fresh map at each session. There are advantages and disadvantages both ways. Revising the old maps obviously allows the ongoing evolution of the landscape to be recorded, but may also act as

a constraint on new ideas coming in. There was only one occasion (at HiB in session 3) where a whole new topic was introduced onto the Ketso maps, namely professional development. In the final HiB session, post-merger, we experimented with creating a fresh map from scratch, and this provoked more 'brainstorming' than had been observed previously, yet simultaneously made the data less useful in other ways. This may be a situation where the 'dual' aspects of the methodology – generating data for external analysis, and generating data useful for participants – may have produced a certain tension. A compromise might be to review the previous map at the beginning of each session, particularly actions, and remind participants of key themes, tasks, needs etc., but then to start afresh. This is for further investigation.

Another aspect that can be highlighted in terms of professional development is the opportunity granted by the project to exchange experiences and knowledge across libraries. Findings were discussed with project participants at several project stages (at the participant workshops), giving them the opportunity to interact and discuss common issues. At the final workshop, staff from participating institutions and also other academic libraries in Bergen used Ketso as a tool to reflect on strategic issues for the academic library sector in general. The project methodology can thus be used practically to (a) contribute to professional networking and (b) plan strategic work as an inclusive and participatory process.

The project website, conference/seminar presentations and publications further contribute to disseminating the project findings and suggesting guidelines on the management of library change and professional development.

4. Concluding Discussion

Many academic libraries around the world are facing changes, provoked by many factors including reduced budgets, demands for institutional or departmental mergers, digitisation and open access, more demanding student bodies and so on. Significant factors in the current Norwegian academic libraries are the mergers that have been and will keep reshaping the higher education landscape in the years to come, especially in connection with the Norwegian Higher Education structure reform. In the face of such widespread institutional shifts, the project findings are significant for practitioners, managers and researchers with an interest in the organisation of other higher education libraries in Norway and abroad. Although our work took place in academic libraries, the findings can be applicable in other HE units and departments. Thus, we present the BiE project as a methodology that can facilitate the stewarding of information landscapes and allow for the scrutiny and review of information practices within organisations (Wenger, White and Smith 2009; Lloyd 2010; Whitworth 2014).

The project used an innovative and original concept mapping methodology which brought benefits at two levels. First, rich data were generated that, at the end of the project, provided an overview of the whole process of change as it played out over the study period in two academic libraries, one which underwent a merger of four campuses and a complete restructuring of the library organisation; the other which had a change of Director. Secondly, data were continuously generated throughout the project that were immediately useful to participants as they sought to learn about and manage the changes they were facing.

It is very important to note that this kind of work could never form the basis for the *engineering* of a community learning landscape, nor of the management of change. Such a view would be overly positivistic and reductionist — the implication would be that if one could derive all the ‘rules’ underlying a group’s interactions around information stewarding and change management, then one could establish generalisable principles that would apply regardless of the setting. This would neglect the importance of management (as a group responsibility). To understand what is meant here, consider the analogy of a game of chess. The rules of chess are relatively simple to describe, and everyone sitting down to play a game knows what they are. Yet there are important aspects of the game that are not actually in the rules, but emerge from a combination of all the rules together, and the judgments each player makes while the game is in progress. For example, the fact that most pieces are usually stronger if they are in the centre of the board, except the king, which needs protecting. And to be successful at chess one cannot simply refer to the rules, one must respond to the specific moves being made in each game, making ongoing, real-time judgments about where to position one’s pieces. Similarly, successful change management, in a library or elsewhere, depends only partly on an understanding of the generalisable ‘rules of engagement’, and much more on skilled management, on how the pieces are placed in each specific game, and on how they can be moved to maximise their effectiveness, as each game evolves and produces different situations over time.

Thus, the various elements of the project — not just the Ketso sessions, but the two project workshops, and the interviews (which as well as generating data, had a reflective aspect) — established an arena in which participants could monitor their learning processes as a community in an ongoing way, and maximise its effectiveness. The findings of the project can engage the participants in discussing and reflecting on their tasks, actions, obstacles and information sources in order to effect organisational change as a community of practice. They also provide resources which other academic librarians (and others in organisations with a similar size and scope) can draw on if similar issues are faced.

There are a number of issues to raise about the project logistics. Ketso proved to be a very useful tool in this project, but it is important to note that it is just one available tool. We did

not have the resources to experiment with other concept mapping tools to determine whether a different one might have offered more benefits. Based on the data, we suggest that the impact of Ketso on participants was very positive, and it successfully fulfilled requirements. Nevertheless there are some logistical issues which emerged, both with Ketso itself and how we organised the sessions, which could be addressed should we repeat the project. These are discussed in the following paragraphs.

Most participants felt that six sessions were too many: in particular, session two (November 2013) was considered to have come too soon after the first one. The sessions should also have been scheduled in their totality beforehand. Four or five sessions would have been ample — over a 12-month period, five sessions allow for one every three months (e.g. January — April — July — October — January).

Some staff members were apparently dissuaded from becoming participants due to the original invitation email being worded in language that was too technical, and not clearly highlighting the benefits for the participant and the institution.

We could have taken more care with how we divided staff members between the two groups at each location. One of the HiB groups ended up with a preponderance of middle managers and also contained the director. It is possible this unbalanced things somewhat, though there is no evidence that the other HiB group somehow lacked insight.

Rooms booked for the sessions were not always big enough or otherwise suitable. Lighting needs to be good, and effective use of Ketso requires plenty of room for people to move around the tables (otherwise this encourages them to work only on that part of the map nearest them). If more than one map is being created in the same session, there ideally needs to be a clear zone of separation between them.

Handwriting the leaves sometimes caused problems, not just for data analysis, but sometimes, participants were struggling to read leaves created previously. Beyond asking people to write carefully, there seems little that can be done about this.

Though we audio-recorded every session, when it came to data analysis we found gaps in our understanding of the mapping process that would have been filled had we video-recorded the sessions instead.

The method generated a great deal of data, not all of which turned out to be useful. Future projects based around this technique might benefit from a more focused approach. On the other hand, the richness of the data allowed for plenty of cross-referencing and for a flexible approach to analysis. We intend that future work (see section 5) will draw on these unused

data, and focus more on what participants and facilitators do in the sessions rather than what is placed on the maps themselves.

Ketso was being used in this project in a way not fully intended by its initial designers — it was created more as a tool for problem resolution in one-off sessions, rather than as a way of generating data about information landscapes. Thus there were some features which created minor problems. One simple one was that there were only four colours of leaves available, and it would have been helpful to have five (*viz*: tasks, needs, sources, blocks and actions). A possible enhancement to the kit might be to create differently shaped 'leaves', introducing ones that could be fitted together. For example, if needs and sources were written on differently-coloured halves of a circle, one could see more clearly when needs were matched or not matched by sources. It is possible that in further iterations of the technique, such a 'bespoke' version of Ketso might be producible.

5. **Further plans**

In our future work, we will continue disseminating the project results through developing the website as well as writing publications and making conference and seminar presentations in Norway and abroad (see section 6 for a list).

In terms of enhancing the transferability of the methods suggested in the project, it would be interesting to try them out at a larger institution. This would raise obvious issues of project participant selection in order to ensure full experience of variation. Further it would be interesting to see to what extent the methods suggested here could be beneficial for institutions facing up other kinds of change.

In March 2015 we made a bid for an ESRC Impact Accelerator Account. This is a fund administered by the University of Manchester on behalf of the UK Economic and Social Research Council (ESRC). The fund is intended to enhance the impact of research in the social sciences, with a view towards developing techniques into forms suitable for broader application and, possibly, eventual commercialization. In this case we have proposed to investigate how the mapping technique could be honed and 'packaged' in different contexts. IAA projects require non-research partners, and we will be proposing to conduct this next phase of work with the library at the University of Bergen and a cultural institution in Manchester, the Bridgewater Hall, which wishes to use Ketso in planning the development of new digital resources. Results of the bid will be announced in April 2015, and if the bid is successful this work will commence in the 2015-16 academic year.

6. Dissemination

- **Project website**

<http://mappinginformationlandscapes.wordpress.com>

- **Publications**

Whitworth, A., Torras, M.C., Moss, B., Kifle, N.A. and Blåsternes, T. (2014). Changing Libraries: Facilitating Self-Reflection and Action Research on Organizational Change in Academic Libraries, *New Review of Academic Librarianship*, 20:2, 251-274, DOI: [10.1080/13614533.2014.912989](https://doi.org/10.1080/13614533.2014.912989).

Further publications will be written up and submitted by summer 2015. We plan at least the following:

- If invited by Nasjonalbiblioteket to submit one, an article in *Bibliotheca Nova*.
 - an article for *Portal: Libraries and the Academy* focusing on the information management aspects of the findings
 - an article for *Organizational Studies* (or a journal with a similar remit) reporting on the efficacy of Ketso as a generator of data for both researchers and participants [co-authored with Joanne Tippett of Manchester]
 - an article for a journal in the field of Information Science (probably *Information Research*) exact title to be identified later) on the philosophical implications of the project findings vis-à-vis distributed stewarding practices and group judgments of relevance.
- **Conference and seminar presentations**

Whitworth, A., Torras, M.C., Moss, B., Kifle, N.A. and Blåsternes, T. (2014). Mapping proximity in professional learning networks. Short paper presented at the 9th Networked Learning Conference, Edinburgh, 7-9 April 2014.

Whitworth, A., Torras, M.C., Moss, B., Kifle, N.A. and Blåsternes, T. (2014). Mapping Information Landscapes: the methodology of the Bibliotek i Endring (Changing Libraries) project. Poster presentation. ISIC : The Information Behaviour Conference, University of Leeds, 2-5 September 2014. (poster available at <https://mappinginformationlandscapes.wordpress.com/research/>)

Whitworth, A., Torras, M.C., Moss, B., Kifle, N.A. and Blåsternes, T. (2014). Mapping the information landscape as librarians learn about and manage change. Workshop held at the *i2c2 Conference: Using Positive Disruption to Improve Libraries* (Manchester, 6-7 March 2014) and at the *CILIP Academic Libraries Research Group seminar* (Brighton, June 2014).

Whitworth D. (2014). The Bibliotek i Endring Project and its role in managing the move to Kronstad. Presentation at the official Kronstad library opening seminar, Høgskolen i Bergen, 26 September. Available on http://prezi.com/x_7m_vjepeo8/the-bibliotek-i-endring-project/.

The presentation from the final project seminar (19/3/15) is available at <http://www.slideshare.net/DrewWhitworth/final-bibliotek-i-endring-project-seminar19315>

Whitworth, A., Torras, M.C., Moss, B., Kifle, N.A. and Blåsternes, T. (2015). Mapping the information landscape of the academic library. Accepted abstract for *7th Qualitative and Quantitative Methods in Libraries International Conference (QQML 2015)*, IUT-Descartes University, Paris, 26-20 March. (Accepted abstract in appendix)

Whitworth, A., Torras, M.C., Moss, B., Kifle, N.A. and Blåsternes, T. (2015). Mapping the information landscape: studying information management by communities of practice. *I3 conference (Information, Interaction and Impact)*, Aberdeen Business School, 23-26 June (Accepted abstract in appendix).

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Whitworth, A. (2014) *Radical Information Literacy: Reclaiming the political heart of the IL movement*, Oxford: Chandos.

Appendix: Paper abstracts

Abstract accepted for QQML conference, Paris, May 2015:

Mapping the information landscape of the academic library

**Andrew Whitworth¹, Maria-Carme Torras i Calvo², Bodil Moss³, Nazareth Amlesom Kifle⁴
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Abstract: This presentation originates from a project entitled *Bibliotek i Endring*, or “Changing Libraries”, funded by the Norwegian National Library and which ran from June 2013 to March 2015. The project studied two academic libraries in Norway as both underwent significant organisational changes: a merger of four campuses into one in one location, and a change of Director in the other. Over this period of change, a variety of qualitative and quantitative methods were used to create ‘maps’ of the information landscape (Lloyd 2010) in these two libraries. These included social network analysis; concept mapping using the Ketso tool (www.ketso.com); and interviews.

The methodology not only provided summary data on the changing information landscapes for the project team, but ‘on-the-spot’ data for project participants. Group concept mapping sessions, held at regular intervals over the duration of the project, raised awareness in the librarians of issues like information sources, blockages, priorities, and necessary actions. Through giving the librarians a shared conceptual space in which to exchange information on tasks, values and actions, “operational proximity” (Tagliaventi and Mattarelli 2005) came into being and boundaries between operational areas of the library could be crossed. The project illustrated how different groups could come together and make collective judgments about the relevance of informational resources in their landscape, a problem which information science has long struggled with (Saracevic 2007).

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Keywords: information landscape, academic libraries, concept mapping, social network analysis, relevance, operational proximity, communities of practice

Abstract accepted for i3 conference, Aberdeen, June 2015:

Mapping the information landscape: studying information management by communities of practice

**Andrew Whitworth, Maria-Carme Torras i Calvo, Bodil Moss, Nazareth Amlesom Kifle
and Terje Blåsternes**

CONTEXT

This paper describes outcomes from a research project, *Bibliotek i Endring* (hereafter BiE – the phrase means “Changing Libraries” in Norwegian), that ran from June 2013 - Feb 2015, funded by the Norwegian National Library. BiE was a study of information management and organisational learning as a collective, dialogic process (Linell 2009), and of the “social processes that underlie knowledge sharing between the different subunits of a single organisation” (Tagliaventi, Bertolotti and Macrì 2010, 332). Our data ultimately shed light on a complex and intractable problem in library and information science, namely, how group judgments are made regarding the relevance of particular information sources and practices (Saracevic 2007).

Wenger’s work on communities of practice (Wenger 1998; Wenger, White and Smith 2009) implies that over time, if located in a supportive environment that offers opportunities for learning and the building of connections between members and others, a community can learn how to work together more effectively. In doing so members of a community draw on and transform a range of informational, technological and social resources that are located in the community’s “habitat” (Wenger et al 2009); a habitat that, through various brokers and boundary objects, is part of a wider “information landscape” (Lloyd 2010). Decisions are continually made about which resources are relevant to this work and which are not, but these decisions are often not conscious, thus, values, criteria and information practices are not always scrutinised before being applied. Results of previous decisions become reified (Wenger 1998, 55-71), embedded into systems, procedures and routines that are then insulated from scrutiny, or what Argyris and Schön (1999) call “double-loop learning”. Through this, the community risks blocking its future ability to learn, and authority over information practice within the community will no longer be scrutinised and open to review.

METHODOLOGY

The BiE project used an innovative methodology to help reveal these processes, lifting them up into the conscious awareness of project participants and, as a result, generating quantitative, qualitative, relational and longitudinal data on communities’ relationship with their information landscapes. Over a year (Oct 2013 - Sept 2014), staff at two locations participated in six group concept mapping sessions using the tool, Ketso (see www.ketso.com). Each of these locations (two university libraries) was facing significant changes: at one, four campuses were being merged into one with concomitant changes in operational and social proximity (Tagliaventi and Mattarelli 2006), at the other, a new director was being appointed.

At each session, participants, facilitated by the project team, used Ketso to create a map which showed the interactions between the following elements of work:

- * what tasks they were engaged in at that time, as part of their work
- * what information they needed to fulfil these tasks
- * what sources of information were available to meet these needs
- * what blockages and obstacles existed
- * what actions needed taking before the next session
- * what should be prioritised.

Maps were carried over from session to session rather than being created afresh. At the start of each session, the teams reviewed actions that had been placed last time, and who had been the agents of these actions. Then, the maps were revised accordingly. Thus, over the year, the maps became a record of change in the information landscape. The impact of particular individuals, of the setting of priorities, and of specific blockages and obstacles could also be recorded.

The project also gathered data from interviews with participants regarding the impact of the mapping technique on their work and their reaction to the organisational changes they had gone through. The project therefore also tested how mapping, a bottom-up, participatory and dialogic approach, could raise awareness of information management issues and thereby assist members of communities of practice in stewarding their information landscapes and distributing authority over information practice among members of a team (Whitworth 2014).

RESULTS

The data revealed differences between the two locations and also within them. Library B, the one which acquired a new Director during the project, had an information landscape that until her appointment, was almost completely stagnant, showing very few changes. After her arrival she became the most active agent of change. In the final interviews participants drew attention to the Director's "micro-management" style. The data show how this is connected to a lack of distributed authority over information practices within this community.

Library A, on the other hand, exhibited a more distributed approach to the management of information. However, this distribution was not uniform. Data, regarding who placed concepts on the map and who were the agents of actions, showed that certain individuals tended to take responsibility for managing those map regions which were related to their work, even though the Ketso tool was designed to facilitate a fully collective experience (Tippett et al 2007). However, the method also allowed others to scrutinise expertise and review judgments about relevance if necessary.

Conflict also emerged toward the end of the process in library A, as the merger revealed that different practices had developed in the previously distinct campuses. Tagliaventi and Mattarelli (2006) suggest "operational proximity" helps different stakeholder groups share information and develop common perspectives and our data support that idea, but also reveal further layers of complexity.

CONCLUSION

The BiE project demonstrates that facilitated group concept mapping of this kind can generate data about information landscapes that are applicable both to the subsequent learning of members of communities of practice, and to external researchers. Group concept mapping, via a tool that is group-oriented, synchronous and participatory (Wenger et al 2009, 60) constitutes a professional learning environment that allows for the scrutiny and, where necessary, review of information practices by staff, managers and facilitators. But it also reveals the empirical divisions that emerge within communities around information management and judgments of relevance and priority. Nevertheless it suggests that the

study of information practice can assess how groups interact to make judgments about relevance (cf. Saracevic 2007), by moving beyond 'set piece' information searches and exploiting the mapping methodology.

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