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BUILDING KNOWLEDGE CAPABILITIES: AN ORGANISATIONAL LEARNING APPROACH

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Abstract

The communal nature of knowledge production predicts the importance of creating learning organisations where knowledge arises out of processes that are personal, social, situated and active. It follows that workplaces must provide both formal and informal learning opportunities for interaction with ideas and among individuals.

This grounded theory for developing contemporary learning organisations harvests insights from the knowledge management, systems sciences, and educational learning literatures. The resultant hybrid theoretical framework informs practical application, as reported in a case study that harnesses the accelerated information exchange possibilities enabled through web 2.0 social networking and peer production technologies. Through complementary organisational processes, “meaning making” is negotiated in formal face-to-face meetings supplemented by informal “boundary spanning” dialogue.

The organisational capacity building potential of this participatory and inclusive approach is illustrated through the example of the Dr. Martin Luther King, Jr. Library in San José, California, USA. As an outcome of the strategic planning process at this joint city-university library, communication, decision-making, and planning structures, processes, and systems were re-invented. An enterprise-level redesign is presented, which fosters contextualising information interactions for knowledge sharing and community building.

Knowledge management within this context envisions organisations as communities where knowledge, identity, and learning are situated. This framework acknowledges the social context of learning - i.e., that knowledge is acquired and understood through action, interaction, and sharing with others. It follows that social networks provide peer-to-peer enculturation through intentional exchange of tacit information made explicit. This, in turn, enables a dynamic process experienced as a continuous spiral that perpetually elevates collective understanding and enables knowledge creation.

Key Words: organisational learning; knowledge management; knowledge creation

1. Introduction

In our knowledge driven economy, organisational capacity for knowledge creation is paramount to remain competitive in today’s global markets. Building knowledge production capability within an organisation relies on development and implementation of appropriate, flexible organisational environments that foster robust exchange relationships and effective collaborations [1]. This organisational design concept recognises the need for cultivating both formal and informal
interactions among individuals and with information to enable knowledge creation and advance workplace learning.

This paper proposes an organisational learning framework founded within Wenger’s notions of communities of practice, Nonaka’s theories on knowledge creation, and Bruce’s framework of workplace information fluency. As the Dr. Martin Luther King, Jr. Library case study illustrates, organisational capacity is fuelled by information experienced within ever expanding workplace contexts. In this instance, it is supported by Web 2.0 social networking and peer production technologies which provide accelerated communication. Sustainable outcomes depend on boundary crossing relationships fortified by formal and informal information exchanges aimed at advancing collective learning.

This organisational learning environment is illustrated through a case study conducted at the largest co-managed library organisation in the United States. King Library staff provide integrated academic and public library services to San José State University and City of San José constituencies. Within the context of a comprehensive strategic planning initiative conducted in 2007 for this five year old joint city-university library, task force members surveyed, 400+ employees’ perceptions of organisational communication, decision making, and planning structures, processes, and systems. Results informed an enterprise level systems redesign concept that purposefully fosters contextualising information interactions to advance knowledge sharing and further community building. As the case study illustrates, implementation success acknowledges the fundamental importance of harnessing knowledge management essentials to build learning communities and foster knowledge capabilities.

2. Literature review
In the knowledge economy, the primary source of value creation lies in social, often informal processes [2] which, when embedded in intentional social learning systems, activate and perpetuate organisational learning and, thereby, knowledge creation. As a consequence, the field of knowledge management has recently shifted its focus to investigate social networks within communities of practice [3]. Researchers now aim to understand and exploit the potential of advancing knowledge creation through human interactions [4, 5]. This shift evolved from the growing realisation that knowledge is socially constructed through formal and informal relationships among people over time [6].

A knowledge-enabling environment refers to the organisational structures that create opportunities for learning through providing conditions for knowledge creation. This requires developing an organisational knowledge vision that recognises the critical importance of enabling appropriately contextualised formal and informal interactions with ideas and among individuals. The resulting dialogues depend upon a deep and broad appreciation for and engagement with tacit knowledge made explicit. Often, these efforts benefit from mobilising ‘knowledge activists’ who serve as ‘thought leaders’ and ‘culture shapers’. As ‘boundary spanners,’ they further globalisation - throughout the organisation - of local knowledge. Additionally, because organisational learning benefits from a workplace that is appropriately flexible, future oriented, and intrinsically fulfilling
Notions about community building for knowledge creation and organisational learning provide the fundamental underpinnings for such a knowledge-enabling environment. As explained by Nonaka’s [7] four phase spiral process, knowledge creation is activated and sustained by the continuous social interaction of tacit and explicit knowledge. The sequential modes of catalytic knowledge conversion involve socialisation, externalisation, combination and internalisation, before returning once more – in an iterative fashion - to socialisation [8]. Nonaka’s [7] notion of *Ba*, a shared space for developing collegial relationships and creating knowledge, conceptualises the ideal, persistent workplace learning environment. Within this space – which may be physical, virtual, mental, or a combination - a collective ‘transcendental perspective can emerge which integrates information into knowledge, within a context that harbors meaning’ [9]. This ‘meaning making’ is necessarily social in nature, animated by dynamic, iterative ‘perspective taking’ and ‘perspective making’ processes [10].

Therefore, when Nonaka’s notions of the elements and forces within a knowledge enabling environment are coupled with insights from Wenger and Snyder’s [3] social learning systems research on communities of practice, a powerful and practical framework emerges for advancing organisational learning and developing knowledge capabilities. Within this context, an organisation is conceptualised as a purposeful social interaction system [11] in which collective capabilities develop through workplace socialisation processes [12]. An organisation’s knowledge vision, then, must recognise the importance of establishing sustainable organisational structures and communication systems that encourage and enable the social interactions which promote investigation and negotiation of the interests, judgments, and decisions through which people learn interdependently [13]. In this context, ‘culture’ serves as a shared basis of appreciation and action developed through communication within an organisational system [14,15].

It naturally follows that through ever expanding boundaries of influence and concern, a workplace learning environment (*Ba*) serves as the arena in which knowledge develops through ‘meaningful’ encounters that activate prior understanding within individuals and among groups. In furthering essential relational context [16], information resources animate the learning potential of information encounters [17], as demonstrated by the reflective evidence based practice process [18] in figure (i). This model illustrates the process of creating and integrating collective organisational understanding through continuous interactions between explicit and tacit knowledge. Iterative in nature the cyclical process naturally heightens both depth and breadth of knowledge among individuals and groups when situated within a purposeful organisational learning environment. Thus contextualized, workplace information encounters - in a spiralling fashion – ensure that learning emerges out of a growing knowledge base. This process naturally leads to the creation and integration of new knowledge, even as it guarantees perpetual (and multi-perspectival) knowledge flow – which ultimately leads to evidence-based knowledge creation.
Figure (i): Reflective evidence based practice process [18, adapted from 19]

The essence of this catalytic process – whereby information instigates learning – depends on Bruce’s theoretical model [16] which recognises that organisational learning involves experiential relationships with topics and relational thinking [20]. Such a ‘constellation of skills, practices and processes’ [21] serves to connect information sources in the workplace with the transferable learning practices required to access them, thereby facilitating the conversion from individual to collective views of practices and competencies, as well as integration within situated inquiry-based contexts [12].

This line of thinking applies a social constructivist learning approach to describe the workings of a community of practice, in keeping with a growing body of organisational knowledge management literature [22]. It follows, then, that a community of practice refers to a group of people who are ‘informally bound together by shared expertise and passion for joint enterprise’ [3], whereby knowledge and experiences are openly shared to foster new ideas and approaches to problems. A community of practice exists, therefore, because it produces shared practices as members engage in the collective process of learning through interacting within a social context [23]. As stated by Jakubik, ‘knowledge is embedded in human relations and it is created in a heuristic process when individuals interact in a social context’ [6]. In this way, communities of practice are self-organising and self-perpetuating: as they generate knowledge, they reinforce and renew themselves [3].

Communities of practice, therefore, fulfil a number of functions with respect to the creation, accumulation, and diffusion of knowledge in an organisation. They operate as culture shapers when they continue to exchange, interpret and build information to create knowledge. They serve as boundary bridgers when they share knowledge beyond the constructs of particular communities of practice. They also fulfil thought leadership roles as they retain and enhance knowledge through dynamic, living ways that also steward workplace competencies to keep the organisation at the cutting edge [23]. In addition, communities of practice provide individuals with an identity within the workplace, which ensures a professional and/or disciplinary lens through which to perceive and inquire and thereby advance multi-perspectival organisational learning.

In identifying essential components, Wenger [23] identifies the need to build organisational and technological infrastructures that recognise, support and leverage the capacity for communities of practice to create, retain, and harness
organisational knowledge. This framework includes designing organisational structures and processes to give primacy to informal learning processes; placing emphasis on meaningful organisational participation and community membership; and organising the complexity of workplace communities to enable the globalisation of local knowledge [2]. In building upon the foundational theories espoused by Wenger, Checkland, Bruce and Nonaka, the authors aim to create a grounded model for creating a knowledge-enabling environment that harnesses communities and utilises technologies to build a sustainable knowledge creation infrastructure. Throughout, information exchange and interpretation remain paramount workplace environment activities.

3. Research methodology
In 2007, emerging out of recognition that the World Wide Web and Internet usage was transforming scholarly communication patterns and democratising knowledge creation, the joint library task force of the Dr. Martin Luther King, Jr. Library initiated two strategic learning projects to improve organisational effectiveness, advance workplace learning, and develop knowledge capabilities. The initial organisational learning initiative involved virtual services task force members in an online workplace education program. The Learning 2.0 course program, originally developed by Helen Blowers [24] and customised for the purposes of this organisation [25], introduced staff to 23 Web 2.0 tools across a 15 week period. Over 100 staff completed the online course, creating a critical mass that enabled the wide spread adoption of these interactive and collaborative tools throughout the organisation. The course outcomes intended to support workplace repurposing, retooling, and rethinking, even as it prepared participants to exercise 21st century information and communication technology competencies in collaboratively designing the requisite planning, decision making, and communication systems, structures, and processes [26].

Online evaluation responses about the King Library’s customised Learning 2.0 initiative were gathered from participants at program completion. All reported that the process of completing the 23 modules enabled conversance with the tools and technologies that are changing the way people around the globe are accessing and communicating information. The evaluation also confirmed employees interested in continuing to use the Web 2.0 tools for improved organisational effectiveness [27].

In preparation, participants began to conduct Web 2.0 enabled pilot projects. Several library groups initiated departmental blogs to maintain current awareness rather than wait for mediated Intranet postings of meeting minutes and other unit communications. Wikis were developed to share information, clarify goals and consider actions recognising that this technology enables easy access and ready editing. Early success of the projects suggested the potential for using Web 2.0 tools to share information, cultivate understanding and create knowledge. Therefore, a joint library task force comprised of representative staff across all horizontal and vertical levels of the organisation was charged with investigating how to apply these technologies to improve merged decision making, problem solving, and strategic planning activities.

The task was threefold:
• Summarise current structures and practices for planning, decision-making and communication,
• Identify challenges and opportunities in the current set of structures and practices, and
• Assess software applications and communication tools that would improve or enhance communication across the two library organisations.

The Six Sigma Problem Solving Process [28] was chosen as the project methodology, which involved an iterative process of defining, measuring, analysing, improving, and evaluating. The initial investigatory tool was an Affinity Diagram [28]. The Six Sigma investigation process advanced better understanding of the current situation through inclusive information gathering, robust idea generation, and rigorous critical issues identification. The process was guided by the question: ‘what are the issues and roadblocks between where we are now and where we need to be in our collective ability to make effective decisions?’[28]. Employees from throughout the joint library organisation individually brainstormed issues and ideas related to the question and communicated comments on over 150 ‘post it’ notes. When analysed, these notes were organised into 15 critical issues.

Next an Interrelationship Digraph was used to identify and analyse the cause and effect relationships that existed between the critical issues [28]. In addition five root drivers of the issues were distinguished. Lastly, countermeasures were discovered for the five primary drivers which, when addressed, would mitigate the resulting causal issues. The method to identify countermeasures mirrored the process for developing the Affinity Diagram.

The group process for the joint library task force reflected application of the collaborative knowledge creation approach embodied within a social learning system. Through dialogue, discussion and ‘perspective taking’, the team conducted analysis and drew meaning from organisational complexities. Through this collaborative ‘perspective making’ process, decisions and recommended actions for organisational improvement were developed. The team served as culture shapers, boundary bridgers and thought leaders as they advanced strategies for furthering community building and inclusivity across the organisation through improved information accessibility and knowledge sharing.

4. Results and discussion
This approach to advancing organisational effectiveness recognises that while technology allows participants in communities of practice to share, converse and create across time and space, it does not replace the need for face-to-face social learning interactions. Rather, a hybrid/blended approach is required. As Sarabia states: ‘An organisation learns when the knowledge of each individual who is part of the group is shared beyond temporal, spatial or structural limits’ [29]. Through the opportunities forged by Web 2.0 social tools, accelerated communication, discussion and information sharing allow the local experience of the individual or team to be shared globally, across the whole organisation. This increased inclusivity results in a more informed workforce as well as increased engagement both with work tasks and the workplace.
The joint library task force members unanimously agreed on the project results, including the critical issues, drivers, and recommendations. Analysis by this team produced recommendations that informed both structural and process improvements for communication, decision-making and planning. For instance, current structures and practices were identified as inconsistent and overly complex, resulting in poor communication and insufficient transparency (due primarily to poor documentation and information accessibility). This structural complexity, in turn, impeded collaboration and community and limited opportunities for information exchange and knowledge creation. Of primary importance, the joint library task force members recognised the need to surface both tacit and explicit organisational knowledge and to enable its consideration through dialogue and reflection.

As a consequence, building on the earlier Web 2.0 online training, a prototype planning, decision-making, and communication system was designed to harness the potential of these emerging social networking and knowledge creation technologies. In so doing, this project mirrored circumstances in both the global knowledge economy and international popular culture, in which individuals have moved beyond being mere consumers to become active creators. In addition, the efficacy of these knowledge management enabling technologies were demonstrated through connecting people and accelerating information sharing across time and space [30]. At the same time, King Library staff members developed a sustainable infrastructure to increase organisational performance outcomes.

As one example, growing conversance with a variety of Web 2.0 technologies has incrementally aided librarians in fulfilling their expanded responsibilities as collaborative architects of digital information and knowledge enabling spaces. They have learned to approach their new responsibilities with confidence, grounded in collaborative practices and enabling systems for decision making and action taking [20].

Results to date suggest that heightened workplace capacity continues to advance simultaneously with professional enrichment as, fortified by accessible information and exchange opportunities, staff members reconsider organisational purposes, reinvent constituency relationships, and re-imagine workplace roles as they learn their way to change [31]. This is ensured by regular face-to-face meetings within and across functional units that purposively advance reliance on dialogue-based social exchange to promote new workplace insights.

At the enterprise level, this information rich discourse is furthered through a reconstituted committee structure designed by King Library middle managers. The revised committee structure, refreshed with new charge and scope statements including clarification of decision making authority and consultation processes, now furthers learning community. These physical gatherings, which enable ‘sense making’ to frame workplace dialogue, are complemented by technology-enabled virtual experiences of togetherness which extend across time and space and beyond the boundaries of the few members to the whole [32].
This is achieved through the development of an online learning network based on an inclusive and intentional design system. A master blog system was created for all groups, units and branches, ensuring a single point of access for all organisational information. See figure (ii). Content providers post in specific categories. Posts are tagged with the group name as well as content categories. Participants may choose to subscribe to the entire blog or to specific tags, with alerts or updates provided via email or RSS. This organisational innovation requires both provision of technology infrastructure and adoption of the behavioural changes necessary to transform information exchange to knowledge creation. This Web 2.0 enabled communications system promises to ensure an ever growing variety of information sources for subsequent sense making experiences at both unit and enterprise levels. Throughout, workplace learners anticipate engaging with and drawing meaning from an ever-growing variety of information sources. Concurrently, they anticipate furthering transferable learning proficiencies, fortified by information enhanced dialogue in new workplace physical places and virtual spaces.

Figure (ii): Master blog communication system

Further outcomes developed from the project include the creation of strategic continuous improvement teams for web site redesign, special collections digitisation, and learning commons planning. Team participants share a common language and tools for discussing and analysing complexities and interdependencies within the knowledge-enabling environment. This informs their community of practice processes of initiating dialogue, creating meaning, forming intentions, and taking action. Such rich context additionally guides iterative processes for evaluating meaningful data, comparing and contrasting multiple interpretations, infusing reflective insights, and unsolved curiosities, into a continuous learning process that challenges existing ways of seeing and doing, even as it informs the knowledge creation process [20].
5. Conclusions
The two task force projects emerged out of a deep and abiding desire for a transferable workplace design concept that enabled knowledge while it increased community, collaboration, communication, and leadership. This ‘bottom up’ approach to organisational revitalisation demonstrates the efficacy of cultivating authority and ownership at all organisational levels. Now staff members across horizontal and vertical levels enjoy renewed engagement within the workplace, including their shared leadership responsibilities. The growth of community culture across unit boundaries predicts continued communication and collaboration.

The project outcomes support Wenger’s and Nonaka’s theories of organisational learning, knowledge creation and social learning systems. As the second implementation year concludes, there are significant indications, evidenced through organisational and individual performance outcomes, of substantial and sustainable organisational learning. The learning organisation is fuelled by information within context and supported by accelerated communication through Web 2.0 social networking and peer production technologies. Organisational capacity is sustained through new relationships with ideas and among individuals.

Although the King Library’s mission is unique, its complex organisational problems are common worldwide. As a result, although the ‘solutions’ will vary according to circumstances particular to those environments, the structure and process improvements fortified by Web 2.0 communication tools, hold significant promise for other organisations which intend to further the depth and breadth of information exchange, enriched by face-to-face dialogue, reflection and deliberation. These workplace enhancements aim to harness the potential of communities of practice to advance knowledge management outcomes, while simultaneously building collective knowledge creation capabilities and organisational learning capacities of significant transferability potential.

References


