Challenges in Knowledge Sharing in Higher Education

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Abstract: In a knowledge economy, knowledge, the way it is shared and created and the way these actions are managed could lead to either a competitive advantage and the organisation can flourish or be the demise of the organisation irrespective whether it is predominantly knowledge driven or manufacturing driven (Baumard, 1999; Malone, 2003; Nonaka, 1994). Since knowledge (tacit and explicit) resides in the minds of the people and some of it can be subsequently codified and become 'common to all knowledge', then managing people's knowledge becomes a challenge to the organisation (Geisler, 2008; Roberts, 1998; Walczak, 2005). The situation at a University is not very much different but creation of new knowledge is not a voluntary act, nor is transferring of knowledge which is one of its main tasks. However, when it comes to sharing of knowledge among the academics the degree of sharing may vary and it can be voluntary or imposed on if necessary; for example when a group of academics collaborate on a task. If it is true that voluntary sharing of knowledge (mostly tacit) can lead to a competitive advantage, here being the creation of a world class University then an investigation into the knowledge sharing is imperative. This study is an attempt to determine the degree of knowledge sharing in a formal (or informal) Community of Practice (CoP) at a university as well as identification of factors that promote or impede knowledge sharing among the academics.

Keywords: Knowledge sharing, higher education, communities of practice, tacit kowledge, explicit knowledge

1. Introduction

As the world moved from the industrial economy to a knowledge economy (Walczak, 2005), organisations had to adjust accordingly. Acquisition, dissemination, capturing and creating knowledge replaced acquisition and maintenance of tools and machines. Harnessing the potential of knowledge rather than material production is becoming that differentiating factor which separates the developing from the developed (Renzl, 2007). Knowledge is dynamic; "it must for ever change otherwise it withers" (Van De Lagemaat, 2005:21). With the explosion of information the phrase "knowledge is power" begun to be replaced by "knowledge sharing is power" (Skyrme, 2001).

When it was realised that all human beings possess knowledge that is common to many (explicit, hard) and individualistic or subjective knowledge (tacit, soft implicit), it brought about a radical change to knowledge management (Geisler, 2008). Polanyi (1966) and Nonaka & Takeuchi (1995) explored the nature of tacit knowledge and both concluded that this type of knowledge possessed by individuals in an organisation is the most important one as it can not be 'copied'. When we speak of implicit (tacit) knowledge we refer to the knowledge that is possessed by someone who has "ownership" over it and it is up to him or her to share it.

In a university situation where its core business is to transmit and create knowledge, the academics are the agents of the successful transfer and creation of such knowledge. They too possess explicit and tacit knowledge. In certain situations it is imperative that they share such knowledge with others (e.g. in a research project) while in other situations they voluntarily share their knowledge and concerns about various problems. In a conscious or subconscious way then they become members of an informal community of practice (CoP). Alternatively they can choose not to share such knowledge if they believe that "knowledge is power."

This paper explores the existence or non existence of CoPs in a university set up and subsequent the sharing or non sharing of knowledge among the academics.

2. Problem statement

Many authors (Baumard, 1999; Malone, 2003; Nonaka, 1994; Polanyi, 1961) agree that knowledge can be divided into explicit (hard or formal) and implicit (soft) or tacit knowledge though it is questioned if such dichotomy exists (Polanyi, 1961; Amidon, 2000). Explicit knowledge is normally a product of implicit knowledge. It can be coded, stored, reproduced, articulated in language and transmitted. Tacit knowledge is difficult to define because it is of individualistic nature. According to the autopetic epistemology school (Varela & Maturana, 1992), knowledge is a private, personal thing, and as such an organisation cannot possess it. Therefore, knowledge cannot be explicit, only tacit:

explicit knowledge is actually data and/or information which enable other people to create their own knowledge through what is known as 'structural coupling' (Joia, 2000; Geisler, 2008).

If tacit knowledge is the most important type of knowledge as suggested by Polanyi (1961) and Nonaka (1994) then the question arises as to whether such knowledge can be transferred from one person to the next or be shared among persons. It appears that there is no consensus among a number of authors. For example Howells (1996) and Tsoukas (2003:410) argue that tacit knowledge can not be transferred. Geisler (2008), Chetley and Vincent (2003), Roberts (1998), Polanyi (1961) and Nonaka (1994) say it is transferable. For Geisler (2008:15) even if one accepts the existence of tacit knowledge, unless it is useful and measurable and can be accessed and shared, it is meaningless. Others (Baumard 1999; Howells, 1996; Polanyi, 1961; Roberts, 1998; Wong & Radcliffe 2000) emphasise the importance of direct contact and socialisation for sharing of tacit knowledge.

For knowledge to be transferred it must be converted into "common sense" knowledge. All four combinations are possible: implicit to implicit, implicit to explicit, explicit to explicit and explicit to implicit (Nonaka & Takeuchi, 1995). The authors called these processes as socialisation, externalisation, combination and internalisation. Sun (2002) though argues that implicit and explicit knowledge may develop independently under certain circumstances.

For the purpose of this study tacit knowledge is defined as that body of knowledge that is "hidden in the mind" of the individual and "reveals" itself when activated by an external stimulus. At times it surprises even the individual who had thought that he/she "did not know". Explicit knowledge is defined as knowledge that can be possessed by everyone; it is "common knowledge", objective, transferable. This study makes the assumption that tacit knowledge can be made explicit and therefore it is transferable. The study attempts to answer the research question as to whether knowledge sharing among the academics is taking place at a university in a formal way as well as informal way and that is using CoPs.

3. Theoretical framework

It has been said that knowledge is the product of learning (King & Baxter-Magolda, 1996; Malone, 2003; Renzl, 2007). Chetley and Vincent (2003) though claim that learning is not just about knowledge. It is also about skills, insights, beliefs, values, attitudes, habits, feelings, wisdom, shared understandings and self-awareness. Questioning, listening, challenging, enquiring and taking action are crucial to effective learning. There is no one right way to learn for everybody and for every situation.

Knowledge is often seen as a stock or resource, whereas learning is an ongoing activity (Sandelands, 1999). The interaction of these two is important. Knowledge only becomes powerful when it is being used (Geisler, 2008:15), when people are working with it, when they are engaged with it, when they are learning from and with it, and when they are adapting, reviewing, growing and transforming the knowledge.

In an organisation, learning can happen in different ways and settings: at individual, teams and systems or organisational level (Malone, 2003; Huber, 1991). At individual level, the employee can decide to improve his/her qualifications (gain formal knowledge) and/or through socialisation with other more knowledgeable employees in an informal way as well as in a formal way i.e. in teams. At organisational level, the organisation can set up rules and procedures to capture existing knowledge in repositories and make it available to its employees. It can also create a conducive atmosphere to promote knowledge sharing among its employees, for example encouraging CoPs.

A learning organisation is an organisation that values learning and makes learning part of its mission and culture (Malone, 2003). For Senge (1993) it is one that is 'continually expanding its capacity to create its future' – does contain the seeds for such a distant possibility to perhaps evolve. In a learning organisation experience is made explicit and is transformed to knowledge. It takes the development of its employees seriously and invests in their education and upgrading their skills. Learning is an ongoing activity rather than once off event. Individuals experience better job satisfaction, customers get the best services. 'An organisation's unique learning base is now the most important sustainable competitive advantage that it has' (Malone, 2003:167).

Vygotsky (1978) was one of the first psychologists to see the connection between learning and society when he saw learning as a social activity and not an isolated act that takes place in the individual's mind. Thus social interaction plays an important role in the development of cognition.

Learning can take place by social interaction or in a collective manner. De Laat and Simons (2002) argue that there is a difference between learning in social interaction – where there are individual learning outcomes – and learning collectively – where the members consciously strive for common and shared learning and/or working outcomes. Collective learning with collective processes and collective outcomes is the most ideal situation for an organisation, but it requires more than just learning from others. Collective learning outcomes require that learners develop a shared understanding and meaning about the learning process and the new knowledge that is developed as a result of this.

According to Wenger (1996), collective interactive learning results in practices that reflect both the pursuit of our own enterprises and attendant social relations in communities of learning. 'Because learning transforms who we are and what we can do, it is an experience of identity. It is not just an accumulation of skills and information, but a process of becoming – to become a certain person or conversely, to avoid becoming a certain person.'

Furthermore, learning is socially situated and it becomes clear that the 'key factors in supporting learning are those which make a community open to its newcomers, allowing them to participate in its practices and move from peripheral to central status as rapidly and smoothly as possible' (Wenger, 1996).

A key characteristic of a 'learning organisation' for Chetley and Vincent (2003) and Malone (2003) is that it facilitates the learning of all its members and transforms itself in order to meet its strategic goals. Transformation is key since one cannot learn without changing nor change without learning. Thus, to be a learning organisation one must be continuously transformed. That also means that effective learning organisations share knowledge and contain systems and processes for sharing knowledge and information.

Learning is at the heart of an organisation's ability to adapt to a rapidly changing environment. Recent data show that learning in the workplace is the single most important contribution to improving productivity. Adaptation can occur through transfer of knowledge from one (individual or group) to another (individual or group). Dixon (2000) identifies five types of knowledge and learning sharing. She describes these as:

- Serial transfer – transferring of knowledge from experience gained in a situation to a new similar situation.
- Near transfer – transferring of explicit knowledge from a more knowledgeable of a task to another that perform the same task.
- Far transfer – involves the transfer from one team to another of tacit knowledge about specific non-routine tasks
- Strategic transfer – involves transferring very complex knowledge – handling a merger, for example
- Expert transfer – involves transferring expert knowledge about a specific task that might be done infrequently – answering the 'how do I do this?' question.

New managerial concepts such as the learning organisation, the intelligent organisation, the knowledge-creating company and knowledge management reflect the search for ways to improve organisational capacity for learning (Tjepkema, ter Horst & Mulder, 2002:7). Tjepkema et al., (2002:9) state the ability of an organisation to learn is embodied in its employees. Employee learning thus is necessary prerequisite for organisational learning. Employees embody an organisation's capacity for learning, since they embody the capacity to:

- Acquire or create new knowledge for the organisation
- Disseminate this knowledge to others within the organisation
- Apply the new knowledge in improved or renewed work practices, products and services (Tjepkema et al., 2002:9)

Assimilation of an organisation's existing knowledge and creation of new knowledge requires a systematic management of such knowledge in a knowledge organisation.

In an organisation like a university, acquisition of knowledge by the students transferred by academics (in all four types of conversion as described by (Nonaka & Takeuchi, 1995), and its application and sharing of knowledge among the academics, forms one of the core business of the university. Creation of new knowledge forms the other. In order to achieve these two goals the academics will have to cooperate and collaborate in a voluntary manner and share their knowledge, especially their tacit knowledge, if the university is to remain an ever learning, ever changing, ever progressing organisation. Research (Wenger, 1998; Baumard, 1999; Denning, 2004; Vestal, 2006; Chetley & Vincent, 2003) has shown that this can be achieved through CoPs.

4. Research methodology

The design used for this study was a mixed methods study, a mixture of qualitative and quantitative methods (Creswell, 1994; Johnson & Onwuegbuzie, 2004). However, it has been stated by a number of authors that when studying complex world phenomena there are no pure quantitative or qualitative approaches. One can say it is more of the one than the other (Greene, Caracelli & Graham, 1989). The qualitative method will be used establish the perceptions and experiences of the academics towards the sharing of knowledge among themselves (Byers & Wilcox, 1991:71). The qualitative approach will also provide a deeper understanding of respondent's interactions (Silverman, 2000:8). The quantitative method will be used in collecting and analysing statistical data and make inferences and draw conclusions with respect to a number of criteria that constitute a CoP.

This study is a case study design and took place at the University of Johannesburg (UJ). Berg (2007:283) and Cresswell (2007:73) define a case study as 'a detailed examination of one setting, or a single subject, a single depository of documents or one particular event. Case study methods are found in the literature associated with grounded theory building rather than theory testing and generating (Berg, 2007:284-285).

The university employs academics in four locations in and around Johannesburg, Bunting campus (APB), Kingsway campus (APK), Doornfontein campus (DFC) and Soweto campus (SWC). The university's competitive advantage depends heavily on the utilization of the professional knowledge (tacit and explicit) of its employees for the continuity, dissemination, and creation of knowledge.

4.1 Data gathering methods

A survey was used for this study and data was collected from the Faculty of Management at UJ. A survey enables a researcher to study a population sample in order to infer characteristics of a population (generalise findings) (Page, 2003:114). The researcher often uses a sample of a smaller group of selected people (e.g. 150) but generalises results to a larger group (e.g. 5,000) from which the smaller group was chosen. The strengths of surveys include their accuracy, generalisability, and convenience (Marshall & Rossman, 2006:126). However, this particular survey has a limitation because the chosen sample is not random and only included one Faculty in the university.

Permission was granted by the Dean of the Faculty to conduct the survey and emails were sent to all academics in the faculty informing them about what the survey was about. A convenience sample (Ritchie & Lewis, 2003; Page, 2003; Johnson & Christensen, 2000) consisting of 54 (out of a possible 149) academics, was used for this study. Convenience samples are probably the most common form of non-probability sample (Page, 2003:100).

The questionnaire

The questionnaire comprised of two sections, that is background information (Section A, 10 questions) and Section B, respondents who did not know what a CoP was (16 questions) to establish whether those that are willing to participate, satisfy the criteria of a CoP. Questions were designed to establish whether the criteria of a CoP as suggested by Wenger, McDermott and Snyder (2002) were satisfied.

4.2 Data analysis

Out of 149 possible responses only 36% (n = 54) were received. Although a small sample and therefore statistically speaking might not be acceptable (one of the limitations of the study), the researchers are of the opinion that the results can still be used as indicators as to what the situation is with respect to CoPs at UJ and design various strategies to promote the flourishing of existing CoPs by removing identified barriers and the formation of new ones.

Statistical analysis

The results from section A were as follows. The biographical information showed that 53.7% were females and 46.2% were males. The ages of the respondents varied between 26 years and 73 years. 6 were between the ages of 20 and 30, 18 between 30 and 40, 17 between 40, 6 between 50, 4 between 60 and 1 over 70 and 2 no age given. The majority of respondents were Whites (69.1%) while the rest were Coloured, Asian and Black academics.

The positions occupied by the respondents were: Lecturers 43.6%, Senior Lecturers 36.4%, Professors 9.2%, Associate Professor and Junior Lecturer at 3.6% respectively and 3.6% did not indicate. 65.5% of the respondents have been working at UJ between five and 10 years, 23.6% over 10 years, 9.1% less than four years and 1.8% did not respond. 76.4% were permanently employed, 7.3% other (contract or part-time) and 9.1% did not indicate. The majority of respondents reside at APB campus (63.6%), 27.3% at APK and the rest were from SWC.

54.5% of the respondents knew what a CoP is, 41.8% did not know and 3.6% did not respond. Only 18.2% were members of a CoP but 49.1% did not indicate if they were or not. 62.5% indicated they prefer a blend of face-to-face and online communication.

Qualitative analysis

Analysing qualitative data requires also an approach that could make interpretation easier for others too, for example codifying, categorising and depicting data in forms that are easy to interpret. Furthermore depicting data in different types of charts e.g. pie chart, frequency distribution or polygon, a histogram, or an ogive (Goddard & Melville, 2001:54-56) gives the reader a clear idea about distribution of results.

Berelson (1971), Miles and Huberman (1994), and Marshall and Rossman (2006) provide useful methods for analysing qualitative data. Content analysis was used as discussed by the authors. The authors refer to a qualitative content analysis as a pre-quantitative method. Raw data are collected and grouped into categories rather than categories being created and the data being fitted into them. These created categories are generalised and used in the next cycle of the research. For Page (2003:129) content analysis involves analysing text with respect to its content, with the factors of interest most often relating to meaning, or how many times (the frequency with which) particular phrases/terms appear.

Selective coding was used as defined by Strauss and Corbin (1990:116) and that is the process of selecting the core category, systematically relating it to other categories; validating those relationships and filling in categories that need further refinement; and development to establish a theoretical framework on how CoPs can be created and managed among academics in a Higher Education Institution.

Section B was analysed (see Figure 1 and Figure 2) and the following 12 themes (see Table 1) were identified which form the criteria of CoPs as defined by Wenger, McDermott and Snyder (2002).

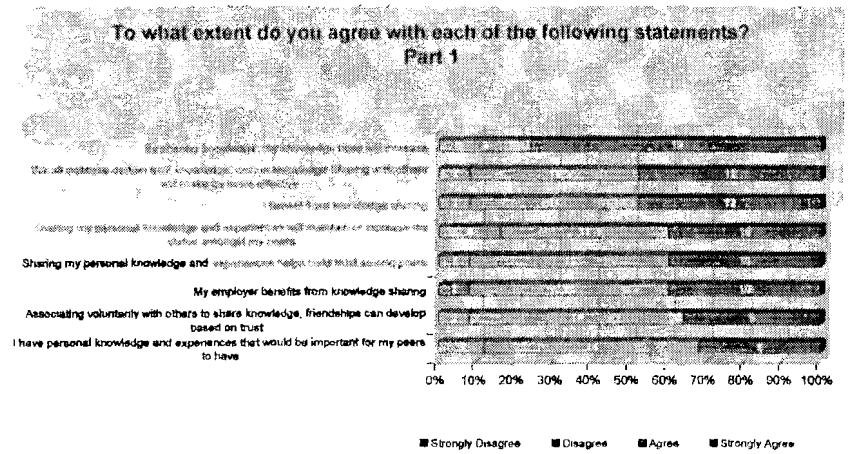

Figure 1: Informing participants about a CoP - Part 1

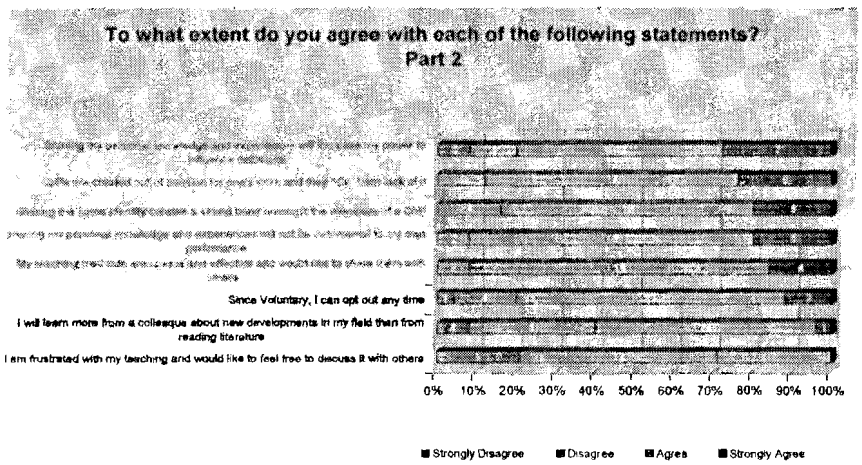

Figure 2: Informing participants about a CoP - Part 2

Table1: Categories identified from the survey

1. time	5. domain	9. personal development
2. build relationships	6. professional identity	10. management participation
3. knowledge sharing	7. practice	11. trust
4. communication (online and face-to-face)	8. attitudes	12. voluntary participation

These were then further categorised into the following 3 themes, see Table 2.

Table 2: Final categories of themes in the survey

Domain	3, 5
Practice	1, 6, 7, 9, 10, 12
Community	2, 4, 8, 11

Based on the responses even academics that did not know what a CoP is they accept the principles of a CoP and they would like to participate in one.

Factor analysis was carried out by the Statistical Consultation Service at UJ on the survey to confirm the validity and reliability of the findings. Factor analysis is used to identify underlying constructs or factors that explain the correlations among a set of items. They are often used to summarise a large number of items with a smaller number of derived items called factors. The purpose of the factor analysis was to determine if the 16 items can be organised or grouped into a smaller set of underlying factors. Four factors were generated and presented in Table 3 from 16 items. For this paper, 0.700

was used as the benchmark against which to measure the Cronbach Alpha values. Cronbach's Alpha measures how well a set of items measures a single unidimensional latent construct. Cronbach's Alpha is a coefficient of reliability (or consistency). The scale employed is 0% to 100% with the higher percentage indicating a higher credibility rating. The four factors that were generated were namely: Personal development (Factor 1), Mutual beneficiation (Factor 2), Self esteem (Factor 3) and Self recognition (Factor 4).

Table 3: Factor analysis

	Factors generated	Cronbach alpha
Section B	Personal development	.740
	Mutual beneficiation	.729
	Self esteem	.704
	Self recognition	.652

There was no significant difference between the gender of the respondents for the four factors used (see Table 4). If the p value was <0.05, then there would have been a significant difference between the gender. It could also be that the respondents that participated in the survey, meet some of the criteria of a CoP.

Table 4: T-test based on gender

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		Lower	Upper	Lower	Upper	Lower Upper	Lower	Upper	Lower	Upper
Fac1	Equal variances assumed	.470	.494	.383	176	.702	.02437	.06364	-.10122	.14996
	Equal variances not assumed			.384	161.764	.701	.02437	.06340	-.10082	.14956
Fac2	Equal variances assumed	.466	.496	.136	176	.892	.00912	.06712	-.12335	.14158
	Equal variances not assumed			.133	146.004	.894	.00912	.06860	-.12646	.14469
Fac3	Equal variances assumed	.469	.494	.188	176	.851	.01282	.06824	-.12187	.14750
	Equal variances not assumed			.191	168.071	.849	.01282	.06714	-.11974	.14537
Fac4	Equal variances assumed	.171	.680	.155	175	.877	.01161	.07509	-.13659	15982
	Equal variances not assumed			.156	163.774	.876	.01161	.07420	-.13490	.15813

Reliability was tested using Cronbach's Alpha and revealed the following, see Table 5.

Table 5: Cronbach's Alpha - gender

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.842	.849	16

There was no significant difference between the ages of the respondents for the four factors used. If the p value was <0.05, then there would have been a significant difference in the ages of the respondents, see Table 6.

Table 6: T-test - ages

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		Lower	Upper	Lower	Upper	Lower Upper	Lower	Upper	Lower	Upper
Fac1	Equal variances assumed	1.496	.223	-.505	171	.614	-.03266	.06469	-.16035	.09503
	Equal variances not assumed			-.512	168.486	.609	-.03266	.06372	-.15846	.09314
Fac2	Equal variances assumed	.123	.726	-.352	171	.725	-.02383	.06761	-.15729	.10964
	Equal variances not assumed			-.356	166.495	.722	-.02383	.06695	-.15600	.10834
Fac3	Equal variances assumed	.447	.505	-.570	171	.570	-.03913	.06871	-.17476	.09650
	Equal variances not assumed			-.577	167.610	.565	-.03913	.06785	-.17308	.09482
Fac4	Equal variances assumed	.065	.799	-1.727	170	.086	-.13003	.07531	-.27870	.01864
	Equal variances not assumed			-1.731	160.794	.085	-.13003	.07512	-.27838	.01831
		.001	.972	-.941	171	.348	-.04877	.05182	-.15106	.05352
				-.947	164.819	.345	-.04877	.05149	-.15043	.05289

5. Discussion of results

The results of this survey highlighted a great number of issues about CoPs at UJ. Firstly just more than half (54.5%) of the respondents knew what a CoP is. This can become a challenge for the university to promote CoPs and even more so when only an 18.2% are members of a CoP though about half of the respondents did not indicate if they are or not. 62.5% indicated they prefer a blend of face-to-face and online communication.

The results indicated a number of encouraging aspects: Existing CoPs satisfied all criteria of a CoP. There is a willingness by the majority of respondents (83.3%) in sharing their knowledge with other colleagues (see Figure 1 and Figure 2). Equally a high percentage (70%) agreed that the character of the other members will play a role in a CoP. Another interesting and important factor was that 76.7% agreed that they are team players and this was confirmed by the fact that only 36.7% liked to work alone. Almost all respondents (92%) agreed that sharing of knowledge helps build up trust and the employer also benefits. Furthermore, all respondents agreed that sharing knowledge contributes to the increase in their knowledge base. There was also agreement (92%) that we all possess tacit knowledge and by sharing it we become more effective and sharing of knowledge leads to mutual benefits. The various statistical tests conducted indicated that with the four factors identified, there was no significance difference either due to age or gender of the respondents.

On the one hand where CoPs exist the members make full use of its advantages and not only are they benefiting but the institution too. It appears from the responses that the existing CoPs do satisfy the main criteria of a CoP such as, sharing a concern, information, insights, deepen their knowledge and are bound by value. Through their interactions they do gain a sense of identity and whenever the situation arises they do combine the personal/social and instrumental/business concerns of members. They do feel more productive and more innovative.

6. Recommendations and future research

The fact that the sample was not random it can be one of the limitations of the study from a quantitative approach way. However, from a qualitative perspective non random samples are acceptable (Ritchie & Lewis, 2003; Page, 2003; Johnson & Christensen, 2000). Although the survey's sample was small (one limitation of this study) however, it did shed some light about existing CoPs, possibility for the formation of more CoPs by removing certain barriers, and promoting their formation by enlightening academics that do not know about them. Management can play an important role here by publicly announcing their support for CoPs. Members of existing CoPs can become the drivers of such a move. By identifying the barriers and the enablers for the existence of CoPs at the university it could in the end create a conducive atmosphere for CoPs to flourish. The data confirm a great number of studies done on CoPs and this makes this study valid. Since the main role players are the academics and management, then to create CoPs or make existing ones flourish both parties have to become active in the process.

Furthermore the size of the sample makes it difficult to make inferences about the rest of the university (another limitation of the study) the survey can be used as a pilot study. The collected data can be used for future surveys that will make use of the whole university whereby a correlation between the two samples can be made. Then a national survey can also be conducted. This study can form the basis of future action research. The collected data will assist the researchers to develop a theory about CoPs at a university, grounded on the collected data. Through action research it will be possible to keep improving academic practice and encourage knowledge sharing by the formation of CoPs in a formal as well as informal way.

Another finding that was encouraging is that the results indicate that the majority of the academics are prepared to share their knowledge with others in a voluntary manner and they are also team players. And this could be used as a starting point for management to promote and support CoPs. In a place where dissemination and creation of knowledge takes place it can be assumed that academics at a university are more for "knowledge is power", rather than "knowledge sharing is power". This study proved that the latter is true. These findings can be used in future research as a number of research questions can be derived from them. For example: To what extent do academics share their knowledge in a voluntary manner? What is the role of management at a university in the formation of CoPs? What are the barriers at a university that inhibit the formation of CoPs? And many more research questions can arise.

7. Conclusion

In a knowledge economy, knowledge, the way it is shared and created and the way these actions are managed could lead to either a competitive advantage and the organisation can flourish or to the demise of the organisation irrespective whether it is predominantly knowledge driven or manufacturing driven. Since knowledge (tacit and explicit) resides in the minds of the people and some of it can be subsequently codified and become 'common to all knowledge', then managing people's knowledge becomes a challenge to the organisation.

In a university situation where transmission and creation of knowledge form its core business, all academics are knowledge workers. The results indicated that provided barriers for formation of CoPs are removed, they are prepared to form CoPs and share their knowledge. The collective knowledge will be more than the sum of the knowledge each possess. This leads to a sustainability and competitive advantage.

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