Welcome to the first issue of the second volume of the *International Journal of Knowledge Management*. This issue is a special issue presenting papers from the Australian Conference for Knowledge Management and Intelligent Decision Support. Five papers and an introduction to the issue are presented. My special thanks to Frada Burstein, Henry Linger, and Jill Owen, all of Monash University, for their hard work in reviewing and selecting articles and in helping to put together this issue.

Previous editorials discussed what Knowledge Management (KM) is, what Knowledge Management Systems (KMS) are, if KM is a discipline, and a call for research in Knowledge Transfer. In this editorial, I am addressing the need for KM. The inspiration for this editorial comes from a road trip my eldest son and I took around the western and midwestern United States. During this trip we stopped at the International Space Hall of Fame and Museum in Alamogordo, New Mexico. While there we talked to a retiree from the space program. During this conversation, it came out that we were both engineers (he had served as a member of the capsule recovery team and a backup astronaut and my previous career before joining academia was as an engineer, manager, and project manager for a large nuclear utility). We got to talking engineering and he made the comment that it was too bad we couldn’t get back to the moon. I of course agreed and expressed the desire for our government to allocate funds for it. He surprised me by saying it wasn’t money that was the issue (although it would be if not for the following issue). What really prevents us from getting back to the moon is that we didn’t remember how to build Saturn V rockets, Apollo capsules, and Lunar Modules. It seems after the end of the Apollo program management ordered all the plans put on microfiche and the paper copies destroyed. This was done, however, when there was talk of going back to the moon and engineers went to retrieve the plans, the microfiche had decayed into unusable form, no paper copies could be found, and everyone who knew how to build the rockets, capsules, and modules were either dead or retired. Additionally, when the younger engineers began to reverse engineer these components they were stymied because they didn’t understand the technology from that time, technology had advanced so much that the engineers hadn’t been taught some of the fundamental issues faced by engineers of that time. In other words, we had forgotten the knowledge from the experience of solving the problems that prevented moon flights. (Note: the above is the opinion of the interviewee, I have not validated these facts so cannot say they are absolutely correct).

If you recall, in my last editorial I defined KM as the practice of selectively applying knowledge from previous experiences of decision making to current and future decision making activities with the express purpose of improving organizational effectiveness (Jennex, 2005). The space program is an example of failed KM. They attempted to store relevant knowledge but when it came time to retrieve it, it couldn’t be retrieved.
and applied to the current decision making activity.

We discussed this for awhile and it occurred to me that we are facing similar issues in other industries. The Information Technology industry is an example of where we have forgotten fundamental issues and their solutions. I was trained to program using the IBM PC and XT. Those of you who remember these machines recall that we were restricted to approximately 1 Megahertz CPU speeds, 64 Kilobytes of usable memory, and hard drive storage of 10 Megabytes. The techniques I learned for memory management and performance optimization were incorporated into newer generations of computers making it unnecessary to train current students in these techniques. Additionally, with today’s larger fixed drives (60 Gigabytes or more) there is no pressure on users to save only that which is necessary, the drives can hold it all, and if you need to move a lot of files we have Gigabyte sized flash drives. This is probably okay but what happens if we need to retrieve something critical? If we save everything it becomes difficult to find specific files. I know I’m guilty of this, I save all iterations of my papers and presentations and it is becoming difficult to organize my storage due to the thousands of files I am keeping (and often times gets me asking myself if I really need all these files). Several years ago I would have used risk management techniques to determine what file versions I truly could not afford to lose with the result that I would have had a fraction of the files to search through. Additionally, what if we have to use an older machine or operating system or file management system to retrieve files? I recall my windows operating system corrupted a couple of years ago. I called the manufacturer’s help desk to see if there was a way I could recover and was told I had to reformat using the recovery CD. This would cause me to lose my files and I asked about copying them. The help desk didn’t know how to do this but while I was talking to them I was fiddling with the computer and started it in DOS. I remembered how we used to move files using DOS commands and asked if that was an option. The help desk said they did not know DOS commands. To make a long story short I spent the next several minutes using basic DOS commands to backup my files on floppy disks while at the same time teaching the help desk how it could be done.

Another example is the commercial nuclear industry. The current generation of nuclear plants were designed and built by engineers who are now retiring or dead. This is a wealth of operational and design knowledge on using analog control and instrument systems, older material specifications, and older corrosion control systems that is no longer being taught to new engineers. Newer approaches rely on digital controls and displays, and newer materials with different corrosion control needs. Additionally, we have computerized processes that used to require manual calculations. As a young nuclear propulsion officer in the United States Navy I was taught to manually calculate estimated critical rod positions and reactor restart times (to name a few). These calculations are now done automatically and require little operator knowledge or input. This progress is good and is resulting in safer nuclear power plants, but I wonder what could happen if terrorists were able to successfully attack these new digital systems requiring operators to return to the old manual processes and analog systems. Would our operators know how it used to be done? Would we have the requisite knowledge and data to do it the old way? As a Year 2000 (Y2K) project manager for contingency planning for a large utility I learned that in many cases we no longer have the ability to backup our processes or systems using manual methods and that if we lost these components or systems we will not have the ability to maintain normal operations.

We are also approaching the time when the baby boom generation in the United States will be retiring. This is a large and successful generation with a wealth of knowledge and experience. Will companies and organizations make the effort to capture this knowledge and experience? Some surely will. Others will not. Will this make a difference in competitive position? I believe it will.

Is capturing knowledge enough? Hansen, Nohria, and Tierney (1999) discuss the importance of a representation and storage strategy. The above space program situation is an example of having a strategy that identifies critical knowledge and stores it, but failed to identify a successful storage strategy. I don’t believe this case is unique. Over the last 20 years I have seen a series of storage solutions, from microfiche to 8 inch floppies, 5 ¼ inch floppies, 3 ½ inch floppies, flash drives, storage networks, hard drive
clusters, and so on. Also, formats have changed from Wordstar in DOS to Word in Windows with a variety of software in-between (Word Perfect, various versions of Word, etc.). This also applies to database management systems (Dbase, Paradox, etc.) and spreadsheet systems (Visicalc, Lotus 123, etc.). What does this mean? Every time a standard changed I saw the most commonly used stored knowledge converted to the new standard, but the less used knowledge was left as is with the expectation that it would be converted later. Did later ever come? In many cases, no or at least not yet. So what is the issue? Potentially critical knowledge is now stored in a variety of formats and standards that organizations may not be able to read or retrieve from. Is there concern? I think there is but the concern is mild. Jennex (2005) found that use of knowledge had no correlation to its importance; in fact, it could almost be argued that knowledge that is seldom used is more valuable that that used frequently or even daily. Many don’t understand what this means until they try to retrieve something from an old format and others possibly look at this as a good thing. After all, sales of music and videos tend to increase every time we change format and/or media. Video has gone from Beta to Laserdisc to VHS and now to DVD, where will it go next? Music has moved from 78s to 45s to 8 tracks to cassettes to CDs to MP3s, and is still changing. Books are moving from paper to audio to electronic books. Each of these changes ultimately causes owners to re-purchase their favorite titles when their old machines no longer work. I think content producers and distributors see this as a good thing. But is it? I don’t think so; I think it only serves to keep us from facing the problem of lost data and knowledge. Bergeron (2002) has a fascinating book exploring this issue and discussing how society will cope when the digital knowledge fails. He is not very optimistic. Can anything be done? I propose a couple of actions. First, recognize consumer rights and require content producers and distributors when they change media and/or format to update products previously bought by consumers for the cost of the material. Consumers should not be forced to re-purchase their favorite titles when they already own them. I think this will force more organizations and individuals to consider the true costs of media and/or format changes and will raise awareness of how we are losing cultural treasures as after all, only those titles that are in consumer demand are re-mastered in the new media and/or format. As I get older I find this frustrating as it gets harder and harder to find playable versions of the music, videos, and books I grew up with and want to enjoy again (as an example, my favorite band, the Ozark Mountain Daredevils, had to buy back the rights to their music and reissue their albums on CD themselves just to get it out to their fans).

The second recommendation is that organizations and individuals use risk management techniques to select knowledge to be saved and continuously upgraded should media and/or formats change. As stated earlier, Jennex (2005) found that there is no correlation between the importance of knowledge and its importance. Organizations should not use frequency of use as a guide to what knowledge should be converted. Organizations should apply risk management to determine the impact to the organization should that knowledge be lost. Organizations should establish an acceptable risk threshold and monitor how much risk they are assuming by not updating knowledge storage media/formats. Additionally, organizations should include aggregation assessments as much knowledge, when looked at alone, may seem to have minimal impact to the organization should it be lost. However, this same knowledge, when assessed as an aggregated whole with other related knowledge or all knowledge stored on the same media/format, may now have an unacceptable impact to the organization should it be lost.

Finally, new technology and growing capacity is making it possible to capture everything. Is this a good thing? Again, I don’t think so as we are overwhelming ourselves with data and knowledge of little value and making it harder for us to find those true golden nuggets of knowledge that provide innovative solutions to key problems. Shenk (1997) discusses this trend that he calls “Data Smog.” His concern, and one I agree with, is that ultimately we will paralyze our decision making ability with an over abundance of information and knowledge. Managers and knowledge workers are afraid to make decisions on what to capture and what not to. The result is we capture so much because we can, not because there is a need. The problem is it makes retrieving critical
knowledge harder as we have to search through these massive amounts of knowledge to find that which we need. Can we do anything about this? Again, yes we can. I am a strong proponent of the use of risk management techniques to identify critical knowledge for capture and retention. I strongly dislike the idea of capturing everything. Will we miss something at some point? Probably, but again, if we do our jobs right, it won’t be impossible to recover from this.

In conclusion, why do we need Knowledge Management? We need KM because we need a formal process to help organizations identify, capture, store, and retrieve critical knowledge. We need KM processes to help organizations deal with changing storage strategies. We need KM to help us deal with the transience of knowledge workers. We need KM processes to help organizations manage a glut of knowledge. Ultimately, we need KM to help organizations make sense of what they know, to know what they know, and to effectively use what they know.

REFERENCES

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