

Body of Knowledge – You Are Probably Using It

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Introduction

What were you doing in 1998? The year 1998 was the halfway point for human knowledge. Since that year human knowledge has doubled. What is knowledge and should we care that it has doubled? My answer to you is yes for both questions. The world is quickly moving from a service-based economy to a knowledge-based economy, making knowledge very valuable. This move will probably be exacerbated by the passing of “baby boomers” and the loss of knowledge they accumulated over a lifetime.

Eighty percent of all scientists that have ever lived are alive today and produce about 2,000,000 pages of information every year. That information will take us five years to read and unfortunately 10,000,000 more pages would have been written. After reading all that we will determine what knowledge is and what information is. In addition to all those scientists we each create knowledge, how much we create no one knows. The good news is that we have found that bodies of knowledge store nicely in electronic format and thank goodness we have the World Wide Web. Even though knowledge is growing exponentially, we do not have to read or learn it all, but storing it could become a problem some time in the near future.

The purpose of this paper is to familiarize the reader with the knowledge that exists within the American Society of Safety Engineers as well as look at a vision of what that knowledge could look like in the future.

Discussion

Knowledge has existed formally since recorded history began. It may have existed before that, but without records it is hard to determine. In ancient times knowledge was important, but often misunderstood. According to Plato, knowledge must meet three criteria to exist. Knowledge must be a statement that is justified, true, and believed. Unfortunately even Plato later disagreed with that definition.

Over time knowledge lost its emphasis and humans were more concerned with learning and developed a passion for information. This passion existed hundreds of years. Information

management is the collection and management of information. Peter Drucker was one of the first to call for a return to knowledge and even opined that the workers of the future would be knowledge workers and would be paid for the knowledge they brought to the job. In the 1990s society moved from information management to knowledge management.

It is best to define a few basic terms so all who hear them can relate. First knowledge management is a range of practices used by organizations to identify, create, represent and distribute knowledge. Knowledge can stand alone, exist in libraries, or be formed into bodies.

A body of knowledge is a list of knowledge, skills and abilities (competencies) organized into an integrated structure (taxonomy), with a specific level of accomplishment specified for each competency (proficiency). It is the sum of knowledge within a profession that includes proven traditional practices that are widely accepted and innovative, emerging practices as well as published and unpublished material. It is a living body of information requiring updating and feeding to remain current (Concept Paper 51, 2008, 1).

A body of knowledge provides and promotes a common lexicon for discussing, writing and applying the profession. It defines the knowledge underlying the profession and describes and points to methods, knowledge and skills. It promotes the advancement, understanding and recognition of the profession among those who interact with it and facilitates professional development for practitioners at any stage in their careers as well as for people who come to the profession from other backgrounds/disciplines. The body of knowledge provides the basis for curriculum development and maintenance and supports professional development and any current and future certification schemes. Lastly, it promotes integration and connections with related disciplines. The environment for knowledge use has changed. To be competitive in the global market, professions must carefully optimize and manage knowledge.

There is a new language that was invented to discuss knowledge management. We have communities of practice that consist of people with a common goal who interact for social learning and shared sociocultural practices. In ASSE we refer to these as Practice Specialties. We have tacit knowledge that is the subconscious, internalized knowledge of which the individual may be unaware. We also have explicit knowledge, which is knowledge that the individual holds explicitly and consciously in mental focus and may communicate to others. We often speak in terms of intellectual capital that is knowledge as a form of capital asset with a value. We also hear of knowledge mapping which is to create a map of the relationship of knowledge assets to core business process. Last but certainly not least is the knowledge of a worker or a person who is paid for the knowledge they bring to the job. Some other terms and definitions important to this topic include:

- **Epistemology** – a branch of philosophy concerned with the nature and scope of knowledge.
- **Information Management** – collection and management of information.
- **Knowledge** – the fact or state of knowing; the perception of fact or truth.
- **Knowledge Management** – a range of practices used by organization to identify, create, represent, and distribute knowledge.
- **Normalization** - is the standard method for streamlining complex groups of data to minimize redundant data elements and awkward many-to-many relationships, and increase stability and flexibility. While there are five levels of normalization, most

organizations do not attempt more than third normal form. For the ASSE competency system to be third normal form, it must:

- contain no duplicative columns;
- have a primary key for each row of data;
- contain no subsets of data that apply to multiple rows; and
- contain no columns that are not fully dependent upon the primary key.

Knowledge in Place and Available Today

ASSE currently boasts a massive amount of knowledge, data, and resources developed in nearly 100 years of existence. The knowledge that has been produced by ASSE over the years is maintained in various formats and in various locations. A table of contents of this knowledge can be found in the site map of the ASSE web page, the table of contents on the left side of the publications page on the web page, and files maintained by ASSE. This knowledge includes:

- Technical and professional publications
- Dictionary of Terms
- Scope of the Profession
- Professional Safety Journals
- Standards
- Journal of SH&E Research
- Proceedings from Professional Development Conferences
- CoPS Update and Practice Specialty Newsletters
- Chapter Newsletters and PDC material
- Symposium material
- Audio transcripts and recordings of audio conferences
- Board and meeting minutes and reports
- Business of Safety Update
- Business of Safety Articles
- President's Speeches and Presentations
- Career Guide to the Profession
- White Papers
- Position papers

ASSE's website has a search button on the upper right hand corner of the home page. For example if we typed in "PPE" and click the "go" button you will get access to 22 pages of search results with 10 results per page. That is 220 results. If you then go to page 12 and click on the "Publications – Technical Publications" you will be forwarded to the store where you can purchase a book with information on PPE. This is just one of the endless examples that can be shown of how to use the ASSE web page as a Body of Knowledge.

If you find you need information on "Fall Protection" you can click on the "Publications" and that will take you to the publications webpage. On the left hand side of the web page there is a table of contents. There you can click on "Fall Protection" and you will be taken to a table that shows there is one book "Introduction to Fall Protection, Third Edition" for sale. If purchased this book can provide you with the information needed on "Fall Protection." If you need the standard to show you how to evaluate scaffolding you can click on "Buy Standards" and that will take you to a table of standards and if you read down the list of titles you get to "ANSI/ASSE A10.8-2001

Safety Requirements for Scaffolding.” You can then purchase this standard and have the standard needed for reviewing scaffolding.

If you want knowledge in specific area you can click on the “Practice Specialties” which will take you to the Council on Practices and Standards. There you can see “Choose a Practice Specialty” with a drop down menu. Click on the check mark and the menu will unfold allowing you to select the specific area you are interested in. If you are interested in managing your safety and occupational health program you should select “Management.” That will take you to the “Management Practice Specialty” website with a lot of information on this very subject. By selecting an article you will be taken to another page where you can select the button “Members Search and Download.” This prevents non-members from having the full benefit paid for by members.

Also on the Council on Practices and Standards (CoPS) you will find two committees and by clicking on one or both you can access information specific to the business of safety or the body of knowledge. On this page you can also access CoPS presentations, interviews. There is also a Nanotechnology Support Site with articles, reports, as well as government and other resources. By clicking on the “CoPS SH&E Report” you will access quarterly compilation of practice specialty and standards update, regulatory announcement and proposed rules. By selecting “Special Issues” you can access special editions of practice specialty newsletters on such topics as:

- By Design Special Issue on Prevention through Design
- By Design Special Issue on Z359 Fall Protection Code
- EnviroMentor Special Issue
- TransActions Special Issue
- World Focus Special Issue
- Z15.1 Special Issue
- Z10 Special Issue

Each of these newsletters provides a great deal of cutting edge information and knowledge in a specific area. There are also copies of the “Best of the Best Newsletter” which consists of the best newsletter article of each practice specialty for a given year compiled into one edition. Two final areas worth mentioning are the “Interviews” and “Articles.” Both of which are filled with knowledge that is easily accessed by an ESH professional.

Selecting the “NewsRoom” let you click onto “Safety Tip Archives” and clicking on that will take you to the archives of safety tips.

- Africanized Honeybee Safety Tips (July 2007)
- Bridge Safety Tips (August 2007)
- Crane Safety Tips (July 2008)
- Farm Safety Tips (August 2008)
- Hurricane Season Preparedness Tips (June 2008)
- ICE System: In Case of Emergency (March 2008)
- Influenza Pandemic Safety Tips (November 2008)

- Mining Safety Tips (August 2007)
- On/Off-Campus Fire Prevention Tips (August 2008)
- Teen Worker Safety Tips (June 2007, April 2008)

By selecting the ASSE Foundation you will be taken to the foundation page. There you can click on “Publications” and there will be a window that opens and allow you to access the “Career Guide to the Safety Profession” and the “Advocate Newsletter.”

The first half of this paper has focused on using the ASSE web page as an SHE Body of Knowledge with nearly 100 years of knowledge gathered in a variety of formats and in a wide variety of topic areas.

The ASSE Body of Knowledge 2011: a-100-Year Gift to the SH&E Profession

ASSE will celebrate its 100th anniversary in 2011. It is the goal of the ASSE Body of Knowledge Committee (BoK) to unveil the new ASSE BoK. The new ASSE BoK will capture the knowledge generated from the first 100 years from our membership and provide a venue to grow our knowledge well into the future. The ASSE BoK will provide a website portal that will allow ASSE members and the public at large to access a whole new level of SH&E knowledge with unheard of speed and accuracy. Here is a quick overview of our vision:

Knowledge management is an exciting topic, and whenever I think about it, my head is filled with questions about where it could go. I would like to share some of those questions. Members should consider how the BoK can potentially benefit their competencies and showcase their knowledge for the betterment of the profession. I would like to share some examples benefits of a growing BoK so we can all begin to think about what could be rather than what is. Let’s start with three questions:

1. What if there were ways the ASSE could get members, academia, governments, organizations, researchers and other professionals to voluntarily contribute their knowledge and competencies to help build and expand ASSE services and products?
2. What if there were ways ASSE’s Body of Knowledge (BoK) could energize and motivate its members and SH&E professionals across the globe and actively engage them in building their competencies through ASSE products and services?
3. What if there were ways to expand ASSE membership by double, triple or even by a factor of ten?

In today’s fast-paced world, safety, health, and environmental (SH&E) professionals need access to vast amounts and varying degrees of knowledge that is easily accessible and searchable, delivered accurately and with speed and that originates from reliable sources. I think ASSE’s BoK can draw upon the best knowledge management and competency modeling practices to organize SH&E skills, knowledge and abilities into an easily customized, user-defined retrieval process and delivery format. The BoK should capture training, education, performance, certification and experience metadata to enhance the SH&E profession by measuring and validating their competency. Building a world-class competency model and ever-expanding BoK can be intimidating, even overwhelming. One advantage that ASSE currently boasts is a massive amount of knowledge, data and resources developed over the course of nearly 100 years. This

existing knowledge can be easily integrated into a new competency model that will deliver high-quality products in a variety of formats for retrieval and use by our current members. This is our core knowledge. We could then compare our core knowledge with a new competency model developed by the BoK to identify gaps that must be filled. We can easily start filling these gaps through new publications, research, symposia, PDC presentations, etc. The knowledge in these existing resources could be captured electronically (audio, video, podcasting, data files) and made available for retrieval through the BoK. Members would then be energized by the BoK vision to engage in knowledge creation and knowledge sharing. Other organizations and outside individuals may also be enticed to participate by contributing to the expansion of our BoK from a global perspective. ASSE Councils, along with ASSE members, outside SH&E organizations and academia can keep our global BoK current and cutting-edge. The BoK can be made to service both internal customers and external customers. Our internal customers include our members, chapters, regions and councils. Our external customers could be colleges/universities, government agencies, countries, SH&E-related organizations and other related professions.

Member Benefits & Value Explored: The BoK and Competencies

Let's start with our internal customers. Our members join ASSE and use its resources to do things for them. We call this the benefits and values, which come from being an ASSE member. The BoK can build upon these existing benefits and values by providing members with many other resources that do even more things for them, including:

1. Raises awareness of competency gaps by defining competencies and methods to measure and verify them. The benefit is members know what they need to know. The value is members can specifically target areas to increase their competency through services provided by ASSE.
2. Generates questions and provides answers and knowledge through a safe-t-pedia, listserves, technical calls, professional development conferences, publications, webinars, symposia and other resources. The benefit is a one-stop shop to seek real-time knowledge and to have multiple verified sources provided in a variety of electronic formats within seconds. The value is members can access this data quickly and inexpensively while providing trusted support of areas where their knowledge is currently weak or lacking by the BoK.
3. Measures and tracks competencies through "scorecarding" members' training, education, experience, licensing and certifications. The benefit is recognizing what competencies you have achieved and what competencies you can focus on now and into the future. The value is others can identify members as being competent in a general or specific SH&E area of practice quickly and accurately through a validated process.
4. Promotes networking through online listserves, chapters/regions, events, and projects. The benefit is ASSE members will have many more options available to communicate and network with BoK users. The value is a true global platform for those in the SH&E profession to exchange knowledge, thoughts, ideas and needs. The synergy will pay dividends by energizing BoK users.

Members Can Easily Share Knowledge

Right now, members can contribute their knowledge of best practices, SH&E skills, abilities and experiences if they take the initiative and dedicate time and effort to do so. The BoK makes this process easier, more efficient and more widescale for retrieving member competencies into our knowledge base. The BoK relies on individual members, chapters, regions and councils to voluntarily release their knowledge and resource because they will directly benefit from the process. However, this requires a paradigm shift. These examples will illustrate this shift in our current knowledge management and competency model.

Showcase Your Credentials & Competencies

All SH&E professionals have a resume. The resume captures and freezes an individual's knowledge and experiences at a given place and time. This resume is also tailored to communicate an individual's ability to serve or fill the need of the prospective consumer/end users. Think about your own resume:

- How does it represent your current knowledge, experiences and competencies?
- How have you grown in these areas since the last time you revised it?
- How do you demonstrate that your resume is accurate and valuable?
- How do you know that your resume achieves and demonstrates a certain level of competency?
- What if you could determine where you had gaps in the required competencies sought after by end users, and ASSE provided services to fill these competency gaps?
- Would you be interested in hearing about this?

Help Members Identify Your Expertise

Now put yourself in the shoes of an end user. How do end users verify the accuracy of your stated credentials? How do they even determine what competencies they seek? Are they using the same set of competencies that you are using to determine if you are qualified? What would be the value to all parties if a service was available that could:

1. Establish standard competencies for the SH&E profession.
2. Measure and verify these competencies.
3. Provide venues to increase competencies by identifying current gaps.
4. Maintain a scorecard to track "real-time" competencies.
5. Allow others to easily find the competent SH&E professionals they seek. Would both parties benefit from a service that accomplishes these tasks? The answer is yes! The BoK could be made to provide this service and fill these needs.

Tapping into the International Competencies

Now visualize yourself as a non-U.S. based organization. You also seek the top SH&E knowledge, resources and a competency scorecard system. You are offered an opportunity to access ASSE's BoK for a fee; however, you would receive a significant discount to the annual fee if you agreed to contribute your knowledge to the BoK.

1. The organization or entity would need to share the SH&E knowledge and resources they had access to in English or in the originating language for placement on the BoK.
2. They would help translate their knowledge and resources into English, including validating and categorizing the quality of the knowledge.
3. They would also help translate the existing BoK knowledge into their country's native language so it is accessible to non-English-speaking BoK users.

Does this sound like a win-win? Does this expand the body of knowledge globally? The answer is Yes!

Research Promoted by the BoK

The BoK can be made to define competencies needed for protecting people, property and the environment. The existing body of knowledge will then be compared to this defined competency model to identify and reveal gaps in the knowledge of the SH&E profession. The gaps in our knowledge base can then be targeted by ASSE and others for new research. Academia members of the BoK will benefit from these research opportunities. Academicians' can become members of ASSE's BoK by paying an access fee. This fee will provide them with a powerful world-class database that will allow their students, researchers and faculty access to state-of-the-art, peer-reviewed data. A discount will be provided to these academic members and partners if they share their knowledge and resources.

1. Academic members can contribute all papers (master thesis, doctoral research projects), publications and other resources to the BoK. They would now have an immense platform to publish their work, which would be retrievable by millions through the global BoK.
2. These resources will then be integrated into the BoK and retrievable for all other users. These contributions will be continuous, providing new knowledge and research into our competency model.
3. ASSE would work with the ASSE Foundation, researchers, corporate partners and government agencies to develop, fund and/or apply for research grants, which support initiatives in providing good knowledge to fill gaps identified in our competency. This research would then be integrated into the BoK for retrieval and access by all users.
4. Academics could donate faculty and students to help review, validate and categorize the level and quality of knowledge contained in our growing BoK resources.
5. Students could team up to send out "freedom of information requests" and obtain free government research and knowledge for placement on the BoK.
6. Academics would also help integrate the ASSE competency model into curricula, which uses resources found in the BoK.

Academic faculty and researchers would have access to a proven competency model sought after by the public and private sector on a global level. Their future course work could be based upon these competencies and supported by the resources found in ASSE's BoK. Their educational programs would fit into our competency platform, making their students immediately competent in general areas of the SH&E profession upon graduation. Finally, academicians would have access to funding and grant writing support, which identifies research necessary to fill the gaps in the competencies of the SH&E profession.

Sharing Knowledge Improves the Profession

Sir Francis Bacon said, “Knowledge is power.” The BoK has the potential to make ASSE more powerful by capturing the global knowledge of the SH&E and related professions, while abolishing ignorance through building competencies. The BoK achieves our Societal vision to be “a global champion of the SH&E professional, a global leader of the profession and a premier resource for those engaged in protecting people, property and the environment.” However, we should never forget that the BoK’s purpose is not to “control” knowledge; its purpose is to release knowledge. We are building an SH&E “field of dreams.” If you build it, they will come.

Will you join us?

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