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Making Sense Out of Information Chaos

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ABSTRACT

Support centers have been overrun by information. Categorization and cataloging have failed to help us keep up. A new method is required. As we have entered the age of data we need a more human aspect to our training, knowledge management and day to day assessing of knowledge.

This paper discusses practical learning ideas and key ideas such as the Pie Principle, socialization of knowledge and information bubbles.

Keywords

Searchability; information models; pie principle; information bubbles; knowledge management

1. INTRODUCTION

Society is drowning in information and this information overload is growing exponentially year by year. With so much data, we struggle to make sense of it all, resulting in misunderstandings, missing what is important, and slowing down our ability to react. We struggle to differentiate between what is irreplaceable information and what is disposable.

Information problems are not unique to our age. Every society and age has had to cope with various problems of knowledge management. At its core, education is about how a society manages knowledge and passes it along to the next generation. In that way, knowledge management drives our economies and directly affects our lives. As we look to history we can better understand solutions for our current information problems.

2. THE AGES OF INFORMATION

Dr. Bill Rankin, director of educational innovation at Abilene Christian University, has researched heavily the impact of technology on information throughout the ages. His premise is that each age has its own information problem and that technology is used to solve that problem. He goes on to express that technologies created to solve one information problem create the problem of the next age. (Rankin, 2011)

He breaks information history into 3 distinct ages:
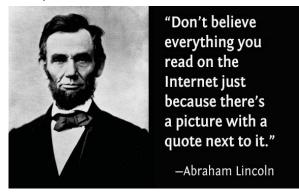The Age of Hands
The Age of Books
The Age of Data

According to Rankin, for most of the history of the earth, we were in the Age of Hands. We learned things through word of mouth and used a system of apprenticeship. Knowledge was in the hands of a master and through relationships with this master, it was passed down to apprentices. People had to travel to the information to learn, thus the information problem of the age was access.

Guttenberg created the solution with the printing press. While books existed in the age of hands, they were expensive, hard to duplicate and considered very precious. Small libraries were prized possessions. The technology of the printing press allowed libraries to grow and to be shared. Information now could travel to the people.

What Rankin calls the Age of Books could be more aptly described as the age of machines. Everything in society, including learning, became mechanical and repeatable. Teaching methods changed from apprenticeship to memorization. People were now required to read books, commit the facts to memory and recall them for a test. This was a coping mechanism to the information problem of the day - searchability. Now that people could access information, they had a hard time searching and finding the right bits of information.

Teachers in this age were considered a fountain of knowledge; it was easier to ask someone that had memorized the facts than to search them out yourself. Technologies started to change as well. Society started to classify and categorize information. This can be seen in the Dewey Decimal system, book indexes and early databases. Just as books existed in the Age of Hands, computers existed in the Age of Books. As computers and search engines solved the information problem of searchability, it created the problem of today - assessment.

"Don't believe everything you read on the Internet just because there's a picture with a quote next to it."

—Abraham Lincoln

An internet search engine will yield millions of documents in seconds. As consumers of this information, we need assessment skills and technologies to help us know what to trust and what to apply to our unique situation. An internet meme attributed a quote from Abraham Lincoln which sums this challenge up nicely: "Don't believe everything you read on the internet just because there is a picture with a quote next to it." Assessment skills depend on us learning and teaching models of information rather than memorizing facts and relying on personal experiences.

3. INFORMATION MODELS

Information models teach us the semantics of situations and allow us to search more precisely in order to find credible and applicable information. It was not long ago that an IT support organizations would request one of every type of device they were expected to support. As the number of devices grew making it difficult if not impossible to obtain one of every type, there was a call for standardization, categorization and classification. Despite the call, devices became ever more numerous and fragmented.

A quick poll in my office yielded interesting, yet not surprising results. I went around cubicle to cubicle holding out my phone asking, "What was I holding." Answers ranged from an Android, to "Not an iPhone", to a Nexus, to "a cell", to "a brick." No one said I was holding a smartphone. But what term would most IT support systems use to describe this piece of equipment? Hence, searching for knowledge and the use of correct terminology proves the difficulty in finding common language when searching for knowledge.

Support organizations had to find other ways to keep up with the expectation to support these devices. People learned patterns of how devices worked. Models were built on how to support cell phones in general rather than specific phones. The models taught us how to use common languages to search for features and issues and how to apply them to the unique devices you were dealing with. Finding common language has proved to be difficult.

The Pie Principle (1+1 = 12)

Does 1 pie + 1 pie = 2 pies or 12 slices. Depending on how you see the world 1+1 can equal 12. You could have 2 people argue about the answer of 1+1, but the truth of the matter is that they would both be right--when discussing the pies, 1+1 can equal 2 pies, or 12 slices. When we take time to gather information and understand another person's point of view, you may find that you are both saying the same thing. Even if you aren't saying the same thing, if you understand how they see their pie, as a whole or as parts, or even how many parts they see, communication becomes much clearer.
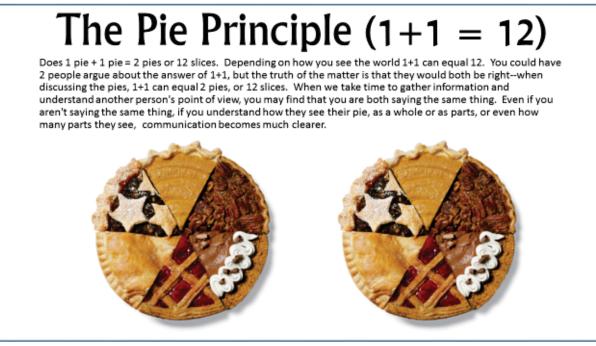
Figure 1©Brian Fitzgerald

Proof that categorization fails with fragmentation can be seen in the Android cell phone market. In July 2013, Open Signal reported that they had seen 11,868 distinct types of devices running Android each with their own distinct software versions, hardware features and performance issues. There are potentially more options for categorization than the support organization user base (Open Signal, 2013).

4. POINT OF VIEW

The Pie Principle, by Brian Fitzgerald, also illustrates the breakdown of categorization and classification. The Pie Principle asks does 1 pie + 1 pie = 2 pies or 12 slices? Depending on how you see the world, 1+1 can equal 12. You could have 2 people argue about the answer of 1+1, but the truth of the matter is that they would both be right--when discussing the pies, 1+1 can equal 2 pies, or 12 slices. The point is that it is completely dependent on your point of view (Fitzgerald, 2013).

With massive amounts of information, point of view completely reveals or obscures the data you are looking for. Information models aid by shaping points of view into a common vocabulary. Some would term this the semantic web. This is the concept of using defined libraries of information to limit or scope searching (Wikipedia, 2014).

Leaders in the IT industry need to better understand the concepts of information models and work to teach them to knowledge workers. Information is highly fragmented and very individualized, but as we mature our organizations often increase the amount of time spent working with collaborative teams. Helping individuals select models and use them in the proper context will lead teams to be more efficient and work together better.

5. RELATIONSHIPS WITH INFORMATION

Even with information models, we struggle to keep up. It is human nature to begin to compartmentalize information. Eli Pariser in his 2011 book coined the phrase "filter bubble." He explains that by personalizing our searching we are narrowing our world view (Pariser, 2012). We begin to search for information only from people we trust and agree with. If there is one thing that becomes clear, it is that credibility comes from relationships.

One can view this filtering as a good or a bad thing, but these filters are based on an element of trust. Those around us influence us positively or negatively. Family, friends, managers, subordinates, civic groups and the media all shape our opinions. We begin to trust those we have had positive experience with and distrust those with negative experiences. In the future we are presented information from those sources, we judge the value of the information based on that trust.

Search and information providers are using that personal relation to project confidence in the data being provided. Look to a Google search for examples. You will see the name of the author and perhaps a picture in the search return. It will associate the author with other works or bodies of knowledge they may be associated with. Based on social media, it will return searches more relevant to your personal circles (Raphael, 2013).

In absence of a personal connection, voting systems have been used. This can be seen with stars, reviews, likes or view counts. The theory behind this is that if no one you associate with has experience with the information you seek, at least you can trust the masses. This works with opinions, such as the quality of a restaurant. It can also work with facts that can be publicly verified. It breaks down when it is the assessment of research.

For example the American Library Association (ALA) has been quoted many times on the Internet as saying that "By 2020 information on the internet will double every 15 minutes." While I believe this concept to be true, I would like to understand the premise better. Is this a reference to file size, the amount of articles or number of users of the internet? In searching for this quote, I have yet to find the original source. I have not found this quote anywhere on the ALA's website nor in any bibliography. I am left asking, what research did they use to draw this conclusion, who really said it, was is actually the ALA or another source and what problems am I creating by perpetuating this quote?

By knowing original sources we can find out more about their credibility. By expanding our own relationships we can discuss and understand how people have come to conclusions and how they have assessed the data. Personal relationships bring us trust and common understanding because we understand the characteristics of an individual, word choice and past background.

6. CHANGING THE KNOWLEDGE BASE

There are direct correlations to be learned when one applies this to knowledge management. Managers that implement knowledge bases need to evaluate how social their tools are. These small visual cues can lead to much higher and greater confidence in the data.

- Does the tool you use display the author of the article and their picture?
- Can the end user turn around and rate the data and provide comments?
- Is it open to the entire organization to produce knowledge?
- Are the most used articles floating to the top of the search?

- Is information being searched by common organizations being analyzed and used in the search algorithms?

Knowing how to use a computer is not limited to IT employees and there are many benefits in building a knowledge support structure throughout your organization. Comments and contributions from the organization helps IT produce better data but also gives other consumers information to relate and helps to build a knowledge base that is closer aligned to the needs of the business.

7. CONCLUSION

When contemplating information chaos there is far more to think about than just knowledge bases. After all, these are just stores of information. Returning to Bill Rankin, his contention is that a teacher simply providing information rather than teaching someone to assess information may be causing more harm than good. Part of teaching people the skills of how to assess, is teaching them to think for themselves. We need to be constantly learning, searching and growing as we teach those around us to do the same.

When sharing information, our most basic measures of categorization more often than not hide information. We need to learn how use to use information models to document and share. Like a key unlocking access to a building, using the right model will fully unlock and explain our information in a manner much quicker and deeper than simple classification and categorization.

Many only trust in the masses to assess data and with certain types of information this can easily lead them to be fooled or miss important explanatory details. Relationships help us find and trust information quickly but are limited to the scope of experience of our peer groups. To combat this we need to expand our relationships, seek for understanding of more information models and libraries.

Assessment truly is the information problem of our day. What are you doing to help your organization overcome this problem?

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