

Structure for Saving Common Documents Within Akelius Sweden

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Introduction

How to store common documents might, at a first grasp, seem like a quite easy task – just make a tree structure and follow it. This has been done several times all over the place. However, a lot of people, including the author, still seem to struggle with the workload of remembering where to store – and where to find desired information.

Why is that? Why do people seem to have such a hard time with this simple task? We need to address that subject before we can begin to discuss a suitable tree-structure. So let us start with maybe the most exiting topic of them all; the human mind.

Part one: The human mind

Our mind uses two different kind of memory storage; short term or working memory and long term memory to store information. Working memory is only good for about 20 to 30 seconds. If you want to remember something longer than that, you have to use the long-term memory. Since we probably want to remember where to find information more than 30 seconds, it is the long-term memory's needs we have to address.

Long-term memory

Long-term memories are created in two ways; rehearsal and meaningful associations. Our long-term memory encodes information semantically as showed by Baddeley (Baddeley, 1966). That means that our mind is stored in small pieces with connections between every related segment. Long term memory are divided upon two main types

1. *Explicit Memory* or *Declarative memory* refers to all memories that are available for the conscious. These are memories that you somehow can express in words. This memory is divided into to sub groups:
 - *Episodic Memory*, memory that store autobiographical events that can explicitly be stated (times, places, associated emotions and other contextual knowledge).
 - *Semantic Memory*, memory that stores knowledge that is unrelated to specific experiences.
2. *Implicit Memory*.
This refers to body movement. How to walk, write and ride a bike and so on. These memories you cannot express in words how you do, try to explain what you are doing when riding a bike.

The basis of this extremely simplified memory description is that the human mind stores information in very complex

manors. The major system for storing information in the brain is the semantic part. In the semantic memory the total memory is split up into tiny fragments of memory parts which are tied together with neural connections, and that is an ongoing process. Neural connections are created and vanish every day. Everybody makes their own individual connections between the fragments, even when presented exactly the same external stimuli. Of course more complex stimuli results in greater discrepancies.

To recall information from this structure our mind use clues. The more clues the narrower the span of resulting information becomes. The most important thing for the memory to work are associations, you have some piece of information that binds everything together. This can be called a multi-dimensional search. How many dimensions is impossible to tell since the human mind is able to recall information in so many ways.

This description is quit different than our basic computerized tree structure. Computers do not use semantic storage at all. Actually, they have a hard time to understand what information you are looking for. If we are comparing a computerized tree structure to the human multidimensional search, this can be called a one dimensional search since computers only sort on the first letter in the file name or when it was last time touched.

Part two: Corporate Memory – Corporate Amnesia

In the same way, we can basically use the same model when describing a company's stored information. If every employee represents different pieces of information in the total memory, the ability to cooperate represents the neural connections between every little bit of information. In the same way we can prolong the model by saying that piece of knowledge is useless on its own, but in cooperation with colleagues the total knowledge is created.

When talking about corporate memory you often diversify it in three levels:

1. Data represents every little piece of information stored in the body of the company, it can be stored in computers or in the mind of a employee. Examples of this can be one single line in a financial report: *Rent costs 100,000 SEK*.
2. The second level is *Information*. Is often described as data in a context. It gives context to every piece of data in it. It can be one document at our servers or a paper in a binder in a shelf behind someone's desk. To recall our example from above *Rent costs 100,000 SEK*. To make this piece of data information instead, we need to know the context. This is the company's total cost for rents

during 2010 pulled out of the annual financial report. Now the single piece of data makes sense.

3. The highest level is *knowledge*. Knowledge is interpretative and predictive, or as Alvin Goldman described it: justified true belief (Goldman, 1999). This is the ability to make decisions based upon the stored information.

The thing with knowledge is that when the knowledge is documented and stored, it reverts down to information - To be used when creating new knowledge. And thus – back to square one, how to store and find information in a company’s long-term memory.

In the same way that we compare the company’s memory to human memory; the absence of a memory can be compared with the human amnesia. It does not matter how much stored information a company have if we can’t find it.

So now we have set some basic conclusions. The human mind stores information very different than computers do, and a company’s memory is similar to the human mind. That brings us to the topic of the article “Structure for saving common documents within Akelius Sweden”.

Part three: Structures at Akelius Sweden

One major issue at Akelius Fastigheter is that we have three different corporate structures:

Legal structure

At Akelius Sweden the ownership of real estate is divided into several subsidiaries in a structure where there can be more than two levels of parent companies.

Organizational structure

Our organizational structure is separated into different departments, some of whom are specialized central functions like: Corporate management, personnel, book keeping, IT, rent administration, marketing, corporate controlling and business development.

The rest of the staff is divided according to regional origin: Regional management, regional controlling, city managers, asset managers and letting personnel.

Project work the involves different departments

Every time we have some kind of time limited task assignment, regardless if we actually name it a project or not we are working in a third kind of structure: Project organization. These projects

can be very small and not as challenging as the refurbishment of one single apartment and huge projects that spans over several years, and which may include all personnel at the company. Unique for this kind of organization is that after the project is done, all resources are removed, hereby there is one major problem to distribute all collected knowledge to the corporate memory.

Conclusions

So we are facing three types of structures, none of them can really be described in terms of the other ones in an effective manor. The pros and cons regarding line work versus project work can probably be discussed in infinity. So that discussion we are saving for later.

Foundations for a companywide shared storage

When handling storage for common documents a couple of fundamentals need to be stated (Wikipedia, 2011). We need to make sure that all personnel working for the company use the same language. Hereby we can establish a shared platform of setting up common documentation:

- Companywide Concepts – terminology.
One foundation is to have the same nomenclature to use when naming folders and files. Nomenclature in this sense meaning type of documents:
 - Business plans
 - Maintenance plans
 - Budget
 - Calculation sheet
 - Type of Calculation
 - Organizational units
 - Project
 - Company/object/real estate/building/apartment.
- Access – security.
Which users should be able to access different files. Are some kinds of documents more sensitive than others?
- Life cycle of records.
Here it is important to classify documents according to where in the life cycle of a document:
 - Working material
 - Draft
 - Waiting for approval/revision
 - Approved/Revised
 - Obsolete
 - Weeding
- What to store

- What kind of documents contribute to the company's total knowledge, what kind of documents is very hard for another employee to use without interpretation from the original author.
- What kind of documents are we obligated by authorities to store and for how long?
- Tracking.
What do we need to be able to track about a document?
 - Who has viewed it?
 - Who created it?
 - Who edited it?
 - When was it created?
 - When was it edited?
- Classification
The formal classification of documents as mentioned in the bullet regarding terminology above.
- Authenticity.
Is this the current document and currently approved version? Can we trust the information in the document?
- Inheritance.
This manages which properties documents should inherit from higher levels in the hierarchy.
- Requirements from authorities
Are there any requirements from authorities how documents are stored. For example say the book keeping and documents upon who rely.

The problems are added up – where is the solution?

Let us summarize what we learned so far. We are facing some difficulties:

1. Humans are not good at remembering strict tree structures.
2. Humans can easier remember things when clues are presented, since the human mind searches multi-dimensionally.
3. Computerized storage works via tree structures in a one dimensional matter.
4. We have a legal structure
5. We have a organizational structure
6. We have a project structure
7. There are foundations that need to be considered.
8. There is a strict regulation that a file name can only consist of 218 signs, including directory path.
(Microsoft, 2005)

The solution

The solution to the question told by the subject is to introduce a new concept: *Meta information*. Meta information is “information about information”. This information gives the clues humans need to be able to understand which document is the desired one. A human often remember thing like: I am looking for the meeting notes for the meeting

Meta information – Information about information

The only usable tool the assist human multidimensional search is to provide a search with desired clues. Every document should at least be provided with the information below. It should not be possible to store documents without the mandatory information:

- Type of document
- Document name
- Project name and number if applicable
- Company in the group if applicable
- Which apartment/building/real estate its concerning
- Which external part it concerns
- Date of creation
- Version number
- Revision number, if revised
- Author
- Reviser
- If it is meeting notes: Who attended the meeting, where was the meeting held. When did it take place.

Example:

- Type: Meeting notes
- Author: Emanuel Bergsten
- Name: follow up meeting
- Project: City Slickers
- Company: -
- Date: 2011-03-01
- Version 1.0
- Revised: -
- Attending: Emanuel Bergsten, Rickard Carlsson, Roger Malmquist
- Place: Small conference room no 1, Akelius Danderyd

With this information anybody who wants to now what happened in project “City Slickers” can find this document. And if I as the author is confused: I can just search for documents concerning: “I remember I was making notes. It was in a meeting at Danderyd, and besides me, Rickard and Roger that were attending. There cannot be too many documents containing al those four facts. I should be able to tell which one from a short list in just a couple of seconds.

At this point the normal objection is:

- "I have too much to do, I do not have the time to fill in all the information about every document I produce"

The answer to that one is:

- You create a document just once, but you probably need to find it at least ten times. Let us say it takes you one minute to fill in the information, but you will save at least one minute every time you or a colleague need to find the document. So if the document is read ten times, we just saved nine minutes! And if no one ever needs to find and read the document, why are you then creating it?

Of course, while learning a new way of performing work, it will take longer. It is as natural as when you learned to ride a bike, you probably are able to ride faster today than what you could during learning?

Standardization and development

There are a lot of theories regarding how all this should be performed in a structured way. The International Standard organization is developing an ISO standard, ISO 15489-1. The standard is concerning how to use standardized methods when storing records and when retrieving them in an efficient and effective way. (International Standard, 2001)

Another structured way to approximate these problems was developed by the Australian government. They have developed a methodology regarding Designing and Implementing Recordkeeping Systems (DIRKS). (Australian Government, 2007). This methodology extends over the whole process organize how an organization works with records. This methodology consists of eight steps:

- Preliminary investigation
- Analysis of business activity
- Identification of record keeping requirements
- Strategies for record keeping
- Design of a record keeping system
- Implementation of a recordkeeping system
- Post-implementation review

This aim by this report is to very briefly touch all this subjects. Interesting though is the fact that designing a system is as late as the fifth bullet point, and the implementation phase is just one bullet point.

References

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