KN⬢WLEDGE IN ACTION

WHAT DOES A KNOWLEDGE PROJECT LOOK LIKE?

BY ROSA REISSMANN OF CAMBRICA CORP.

Our previous articles have shown different applications of knowledge technologies to evolve the technical aspect of operations and data reporting enrichment to support Industry 4.0, the digital transformation in our manufacturing industries.

In this article, we want to talk about how a knowledge project looks. Let us start by understanding how information and knowledge play together. What is knowledge: "i n f ? r m a t ? o n ." If you correctly read "information," it's because you have applied your knowledge to "complete" the missing characters. Knowledge connects pieces of information to make sense of what we know and handles the uncertainty of what we do not know. At the core of any knowledge project there is information, and there are relations – information to explore, which comes from many different sources and formats, and relations, some we know, and others need to be discovered. The gain of knowledge is understanding. Understanding controls uncertainty and helps to make the right moves because it reveals an explicit context.

In this example, I would like to show how knowledge strategies support a transformation process. With this approach, the objective will be to monitor the achievement of "Has our company become a more disciplined one?"

1. Define the business case
The transformation process in an organization starts with the identification of a vital objective. Let's say that after a careful business analysis, a company determines that increasing *discipline* in the company will transform the competitivity and success by increasing efficiency.

2. Identify key company concepts
Because *discipline* is a value, the conceptual map will include actions, actors, resources, sentiments, and values.

3. Group Expertise
Identify people within your organization and outsiders who can create the strategy of change.
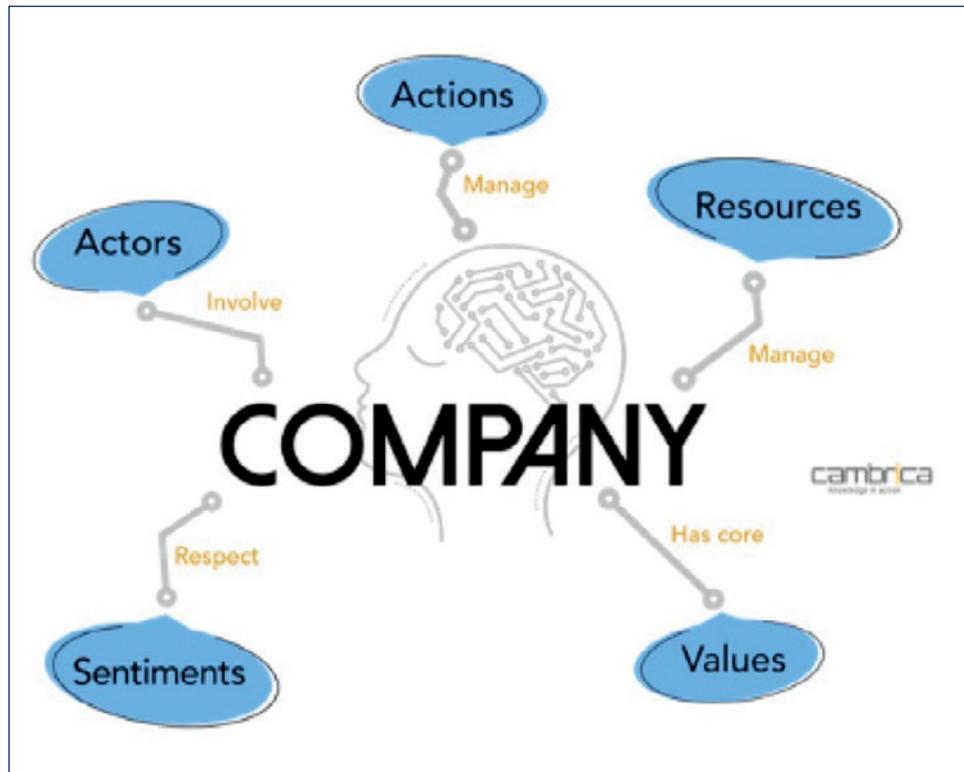
4. Continue enriching the conceptual model

Based on definitions and professional approaches, open the business model. A list of essential concepts for *discipline* can be:

5. Group the identified concepts with key company concepts

If a concept links to two or multiple different key concepts, it is okay. In fact, by placing such cases,

the model gets enriched. This grouping establishes the first relations between concepts.

**6. Weight the relations between your concepts**

By defining how significant the relationship between concepts is, you can balance the strategy, revealing change implementation. For example, *discipline* can be institutionalized by *Instruction* or *Punishment*. For some companies, instruction will be the norm and punishment an exception. For these companies, the strategy will be to help the transformation by defining and controlling metrics on the processes and the instructions. For others, punishment will be more aligned with the culture, so transgression rules and consequences will weight higher in the model.
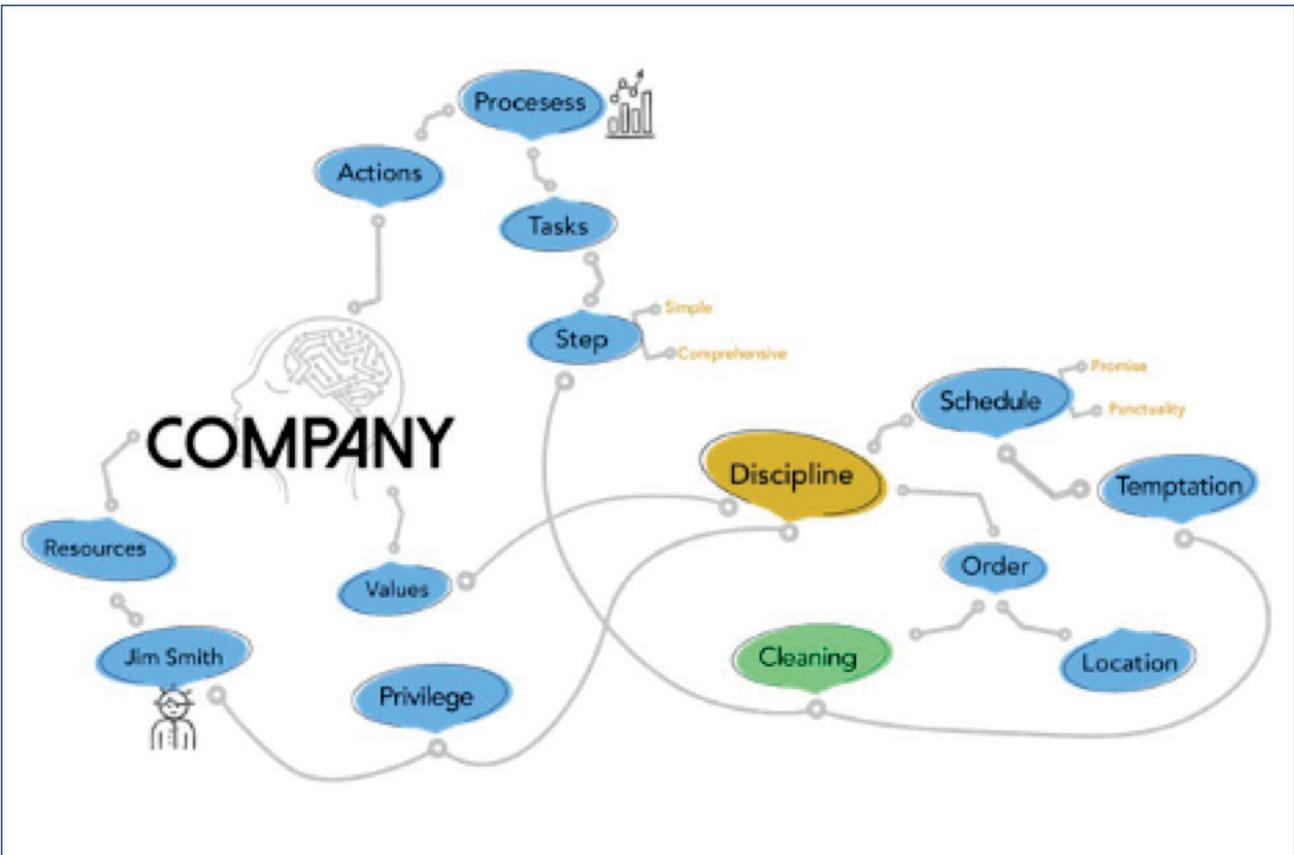
7. Define the target objectives so that you can be specific on related concepts

The key is to start small. For example, a box plant needs to improve cleaning to handle "food grade" boxes and protect expensive equipment electronics.

The model of concepts is your Knowledge Model It will be the backbone of your strategy. Please review it and check for natural associations.
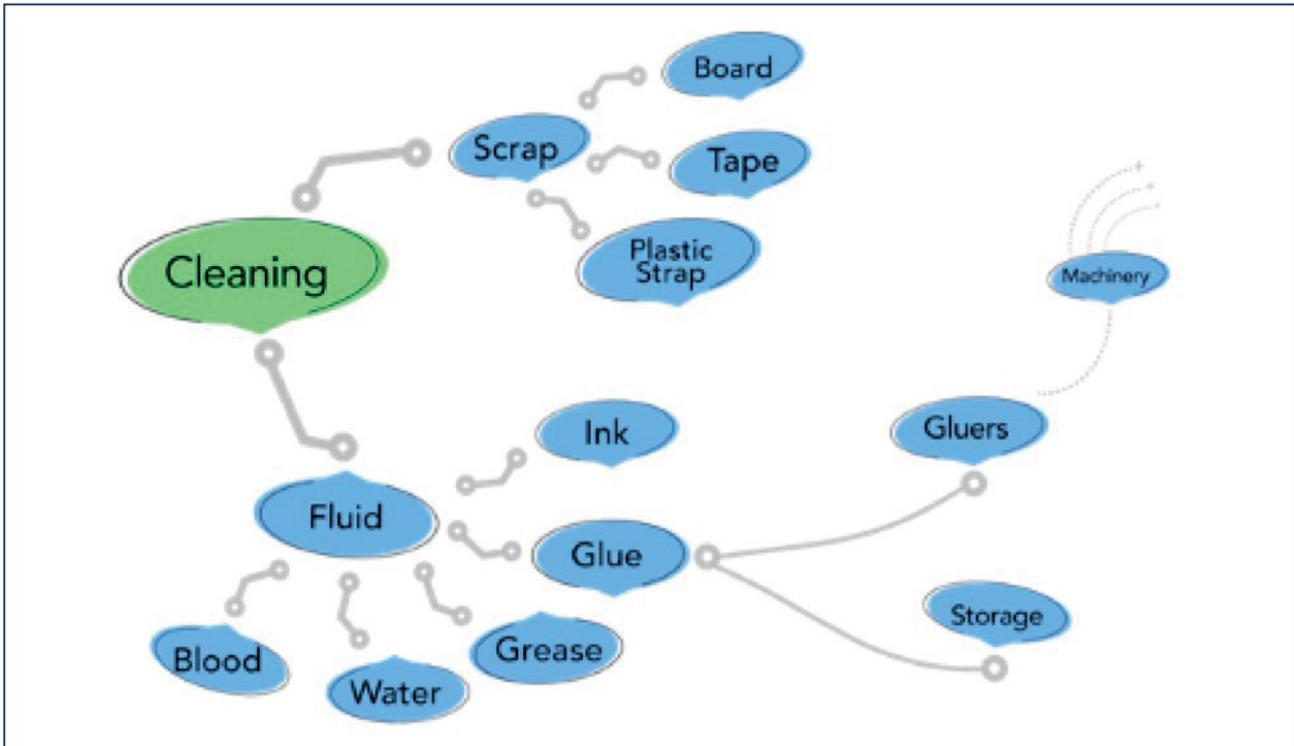
8. The model of concepts is your Knowledge Model

It will be the backbone of your strategy. Please review it and check for natural associations. Remember, this is a live model; that is why it uses "graph" technologies to be easily adapted across the company when discoveries are made, either by your people or by Artificial Intelligences.

9. List the essential questions to which answers will lead the transformation process

The list will provide a call for action and help you to decide the style of response. Will this be a KPI, a report, or a change in a business process or a change in a company's rule or a decision-making parameter?

Question	Answer format
Do we have cleaning tasks for every work center?	Report
Are they sufficient?	360 degree view
What are the top 5 excuses for not cleaning?	Search
How effective are the new contra-excuses?	Analytics
Who do we praise for leadership?	Recommendation
How much has the production schedule of gluers improved with proper cleaning?	KPI
Major offenders?	360 degree view

Our approach will take you through the critical and fun journey of enriching your critical initiatives.

10. List your data sources

Databases? Spreadsheets? Conservatories such as emails, texting, or group meetings? Presentations? Contracts? Customer compliance? Forms? Business process documentation?

11. Time to use your knowledge model

The process to enrich your data with your conceptual model is called "annotation." It will connect your data to the backbone in a federated model (information stays where it is). The result is linked data through a knowledge graph. A simple example:

Task	will be enriched with:			
Last performed: 10-08; Jim Smith; WC 1234	Gluer	Operator	B-200	
1. Remove all scrap	Clean	Strapping	Board	Tape
2. Wipe fluid residue	Clean	Fluid	Grease	Glue

12. Use your knowledge graph

The structure of your knowledge is there; the data is there. You will use it to complement your current applications (at the back-end of your dashboards, reports, files, SharePoint list, email, website, or ERP menus) or new applications (tagging, analyzer, recommender, across company search). In our example, all your data is under the *discipline* context.

• 13. Act

Does having answers to your questions lead you to refine a business process, add tasks, improve scheduling, and maybe adjust your current policies? Is this the time to start working on the next concept?

Cambrica Corp. provides knowledge models pre-defined for your industry and the development of your applications (front end) or the enrichment of your current applications (back end). Our company also specializes in business process review, automation, and knowledge awareness design.

Our approach will take you through the critical and fun journey of enriching your critical initiatives with a knowledge backbone, a one that is as unique as you are. ∎

Rosa Reissmann is COO at Cambrica Corp. She is a Professional Engineer (PE) and a Certified Semantic Integration Expert.