



White Paper: Manage Your Critical Knowledge!

Executive Summary

Most companies are failing to take advantage of over **\$100 billion** in idle assets in the form of un-leveraged knowledge, and the losses due to uncaptured knowledge from a departing employee can approach a **full year's salary**.

AEBIS Inc contributes to superior **organizational performance** by leveraging **crucial knowledge** held tacitly by too few, thereby improving team productivity, cutting avoidable losses, and mitigating **key-person dependency risks**.

Introduction:

Why Manage Knowledge?

The mistakes that can happen as a result of misunderstandings and miscommunication are estimated to cost **\$37 billion a year**¹: this includes incorrect actions taken by employees who do not fully understand their assignments, company policies or business processes; risks incurred for compliance, public safety and legal issues; regulatory penalties; and damage to brand reputation and customer satisfaction.

It has been estimated that US companies are failing to take advantage of over **\$100 billion** in idle assets in the form of un-leveraged knowledge, that is, knowledge that the staff **already possesses** and is not being applied.²

The losses due to knowledge lost when a key highly-skilled employee leaves can approach a **full year's salary or even double for a key executive**.³

On the bright side, companies that practice Knowledge Management obtain a competitive edge. As KPMG has reported⁴:

- 71% of those with a Knowledge Management program in place said they had achieved better decision making,
- 68% said they had achieved faster response to key business issues,
- 64% said they had delivered better customer service.

What is Knowledge Management?

Too often, companies see knowledge management as a purely technological solution⁵. Knowledge Management, however, is not about automation: it is first and foremost **Management, Human Management**, with a clear-cut separation from Information Technologies.

There is no free access to knowledge:

- Knowledge is "in the mind" of human beings, usually experts or professionals:

¹ Source: Phone interviews with 400 HR, finance and operations staff in UK and US companies with over 5000 employees: <http://www.marketwired.com/press-release/37-billion-us-and-uk-businesses-count-the-cost-of-employee-misunderstanding-870000.htm>

² Source: *The Business Case for Knowledge Management*, Eugene F. Yelden, Synrad, Inc., James A. Albers, Pacific Lutheran University. <http://www.tlinc.com/articl69.htm>

³ Source: <https://www.zanebenefits.com/blog/bid/312123/employee-retention-the-real-cost-of-losing-an-employee>

⁴ Source: KPMG Knowledge Management Research Report 2000: http://www.providersedge.com/docs/km_articles/kpmg_km_research_report_2000.pdf

⁵ Ibid.

White Paper: Manage Your Critical Knowledge!

- They don't (or can't) explain "How they reason";
- They don't always want to reveal their data: "Information is power"

Cognitive science tells us that knowledge is processed by our brains as Natural Language⁶; our approach to Knowledge Management (see below) is thus based on **controlling** the professional Natural Language inherent in each business field.

The problem is that experts and professionals take shortcuts and other liberties with language:

- They use expressions that are not formally correct as a way to simplify their communication:
 - In the best case, this does not introduce errors or cause confusion for another expert;
 - but often even the experts are not aware of their differences in interpretation!⁷
- All these are usually barriers for newcomers

It may be tempting to impose a documentation-based solution with increased reporting, highly-detailed process modeling, or rule-based management as ways to deal with these problems. However, these are not suitable solutions for managing knowledge for the reason that ***Experts don't always follow rules!***⁸

Experts base their reasoning on implicit **Distinctions**:

- Distinction-Making is an ongoing and natural process, which reveals what is valuable in any living activity.
- We identify & leverage Distinctions as critical Knowledge **unit**, thus separating the "wheat from the chaff", in any business area.

Therefore, a question arises: How to model an expert's Distinction-Making and Reasoning?

Our innovation in Knowledge Management:

For modeling Distinction-Making, we reuse the idea of distinction theorized by **George Spencer Brown** in its mathematic theory, "Laws of Form" – **LoF**:

- We have created **@L-is** - *@rtificial Living information systems*, a patented knowledge modeling method & tools.

@L-is is the result of 10+ years R&D in Europe and North America with the aim of **engineering the meaning** of Natural Language **words**.

What is Meaning Engineering?

Meaning Engineering with @L-is consists of:

1. Stating definitions, based on clear-cut distinctions, of a limited number of specialized words;
2. Assigning formal properties to symbols and specialized words expressing these definitions;
3. Inserting these symbols and keywords into language writings to strengthen their meaning.

Meaning Engineering results in deriving synthetic meanings from natural meanings:

⁶ See <http://www.sicotests.com/psyarticle.asp?id=234> for an introduction to this topic.

⁷ For example, we once witnessed a heated argument between two experts who did not realize they had made unspoken – but contradictory – assumptions about the topic at hand. Once this was pointed out, they quickly reached agreement!

⁸ Source: *Deep Smarts*, Dorothy Leonard and Walter Swap, Harvard Business Review: <https://hbr.org/2004/09/deep-smarts>



White Paper: Manage Your Critical Knowledge!

- Specialized words and symbols are formally and precisely defined in formal glossaries that are computable by a machine, constituting a Semantic System of Intelligent Glossaries (SSIG).

@L-is enables us to manage **formal glossaries** for verifying consistency and completeness of a business terminology:

- @L-is is a truly cognitive technology for enabling human beings to enhance understanding of natural language by reducing inherent ambiguity;
- @L-is is **not** a machine-based simulation of human understanding, nor a “machine learning” system.

The models, algorithms and computer implemented methods from our innovation are the subject of US patents (7,945,527 & 8,229,878 (Continuing Application), and 9,043,265).

Where to use @L-is?

@L-is address management problems such as:

- **Key-person dependency** risks;
- **Misunderstandings** & miscommunications between professionals;
- **Performance loss** due to key executive transition (line managers, product managers, sales managers, etc.);
- **Financial liabilities** stemming from knowledge & skills loss in banking, insurance & finance;
- Failure to achieve or maintain peak performance, due to **incompletely shared** knowledge transfer among team members.

@L-is services enable in-depth understanding of basic business concepts by new comers, **in any business domain**, in order to:

1. Very quickly identify tacit **business-critical knowledge** held solely within the minds of a small number of experts (who are often not the most highly placed in the organization);
2. Model this knowledge;
3. Present it back in an easily assimilable form which can then be transferred to other team members.

How do we operate?

A standardized process

With @L-is services, we are able to help transfer critical knowledge & skills within our customer’s operational teams, namely:

- Facilitate in-depth understanding of a person’s knowledge;
- Federate communities of experts via a transactional web app;
- Leverage glossaries and “distinctions reasoning” methods.

This is a **step-by-step process** throughout the entire Knowledge Management cycle that clarifies critical knowledge to be transferred. The process begins by identifying its context which we call “professional domain”: a specific job role within a specific business.

White Paper: Manage Your Critical Knowledge!



Main business situations:

We help companies retain and maximize their personnel's skills during key transitions, such as:

- Personnel turnover, promotion, internal mobility, retirement;
- Training of new recruits;
- Merged & acquired teams;
- Reorganization;
- Outsourcing & subcontracting;
- Process re-engineering;
- Automation projects;
- Change management.

Relationship to other approaches:

Many approaches exist to identify and manage knowledge; whatever approach may already be implemented, our solution is **complementary** and provides the following additional benefits:

- **Continuing Education:**
 - We identify the critical skills that are necessary to appropriately apply the business-critical knowledge.
- **Transition management:**
 - We help manage departures, replacements & new arrivals.
- **Learning Organizations & Talent Management:**
 - We identify the most critical knowledge that needs to be shared, acquired and/or grown, with the tools and techniques to facilitate this transfer.
- **Instructional Design:**
 - We identify the most critical knowledge in order to create compelling content.
- **Performance management:**
 - We facilitate clear and effective task assignments;
 - We optimize communication, interaction and collaboration.
- **“Deep Smarts”⁹:**
 - We uncover the hidden business-critical knowledge.

⁹ Dorothy Leonard and Walter Swap, Harvard Business Review: <https://hbr.org/2004/09/deep-smarts>



White Paper: Manage Your Critical Knowledge!

Our Differentiation:

We focus on individual knowledge transferred from person to person, or between very small groups of people with a great deal of tacit knowledge, where the creation of a large-scale training program is not a cost-effective option:

- Situations where investments in job analysis, competency mapping, curriculum development, training content and format development, are too expensive and long relative to the size of the team and relatively low frequency of use.
- Within this small-team or one-on-one transfer, we focus on tacit knowledge based on **years of internal hyper-specific expertise** which is not available via outside third-party training programs or via existing internal training programs targeting large-scale or generic staff.

We bring methods & tools for in-depth understanding of business concepts to **improve the whole performance** of complex Human-Machine Systems, by enhancing human capacity and promoting the human side of cognitive technologies, instead of simply replacing humans with machines.

Who we are

Aebis Inc is dedicated to enhancing human work performance through the use of proprietary cognitive technologies to enable rapid and accurate human-to-human and human-to-machine knowledge transfer. We have developed a set of patented technologies & approaches that quickly identify “tacit” business-critical knowledge held solely within the minds of a small number of experts (who are often not the highest-placed in the organization), model this knowledge, and present it back in an easily assimilable form which can then be transferred to other team members or can inform the development of digital assistants. Aebis, Inc. is a NYC-based spin-off of Paris-based BFD, which has assisted major financial institutions with systems architecture, process improvement, advanced business information systems, knowledge management services, and expert-systems for nearly 30 years.

Some of our customers:*



(*) Customers based in France served by Aebis' parent company BFD Group

Contact Us
Bruce Epstein: bepstein@aebis.com
Philippe Michelin: pmichelin@aebis.com
+1 845 337 1638