

# WHITE PAPER

**MG PROMPT, A SMART ASSISTANT IN SOURCE TO PAY (S2P) PROCUREMENT PROCESSES:**

**THE NEXT NEW THING, ALREADY HERE!**

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## ABSTRACT

In 1999, Johan Åberg and Nahid Shahmehri introduced the concept of *Web Assistant*, human assistants working in an electronic web shop. The closest development from this early concept is today the ChatBot technology, widely implemented not only for B2C purposes.

The core idea was based on human-computer cooperation to provide intelligent and personal services via an integrated communication media. Today we see some wider implementations of this concept in daily used devices like Apple Siri or Microsoft Cortana: The Virtual Web Assistant.

Another powerful concept developed 20 years ago, was the possibility of the assistants to collect knowledge about a customer from their conversations, while the web shop can use explicit or implicit feedback from the customer (e.g. [Nichols, 1997]). All of us have experimented how pervasive are today the automatic suggestions based on personal shopping patterns.

So, if it's widely evident the implementation on a large scale of the above concepts in the current B2C market, what about S2P?

Google, during DTIx conference in London (Jones-Huber, Sep. 2016), presenting its Procurement organization evolution, declared that the Web Assistants are the next new thing in S2P processes.

This paper is focused on the advantages that can be provided by the Web Assistants in S2P procurement processes especially those related to Categorization activities. and the enabler technologies behind.

A PROCUREMENT ORGANIZATION WITHOUT KNOWLEDGE OF NATURE OF THE MATERIALS AND SERVICES PURCHASED IS THEREFORE LIKE A PHYSICIST WITHOUT KNOWLEDGE OF MATHEMATICS

A PARAPHRASE FROM A QUOTE OF  
**CARL LINNAEUS**

THE FIRST STEP IN WISDOM IS TO KNOW THE THINGS THEMSELVES; THIS NOTION CONSISTS IN HAVING A TRUE IDEA OF THE OBJECTS; OBJECTS ARE DISTINGUISHED AND KNOWN BY CATEGORIZING THEM METHODICALLY AND GIVING THEM APPROPRIATE NAMES. THEREFORE, CATEGORIZATION AND NAME-GIVING WILL BE THE FOUNDATION OF OUR SCIENCE. (CAROLUS LINNAEUS – 1751 – FOUNDER OF THE MODERN BOTANIC SCIENCE).

Since the foundation of the Botanic Science, this paradigm has been widely applied to practically all the human activities. Paraphrasing Descartes, we can say: *we categorize; therefore, we understand*. This is the reality also for Business Processes.

As is well known, Purchase Requisitions and Orders, as well as Materials Item Master, Catalogue entries, Suppliers Master Data are ERPs transactions that requires, mandatory, a Categorization (e.g. Material Group is the name used by SAP for grouping of materials and services according to their characteristics, also called Commodity Class in JD Edwards. For the purposes of this paper we will continue to refer to it as MG).

The incorrect assignment, or the usage of too generic MG, is the basis of most of the reliability problems regarding the reports generated by ERPs, or by the BI tools that rely on this information. But is not only about wrong reports, is about all the procurement processes that are affected by the wrong MG assignation. It's a knowledge management problem.

It is worth to mention that all Companies are aware of this problem, regardless of their size and their maturity, even if they have a single ERP client. The attempts to provide a solution are all about "ex-post" error fixing. Spend Analytics tools try to fix the error in an automatic way for the most and with a manual approach for the rest. One time cleansing activities are not the solution. Finally, Data Quality processes for Data Warehouse, based on static mappings, are full of errors and make data analysis un-useful. Obviously, the problem has a geometrical progression with the multiplication of the ERPs, languages and different MG structures.

If for the *Categorization* the problems are that clear, what about the *Names* in the Linnaeus' theory applied to S2P processes?

Purchase Orders, as well as Materials Item Master, Catalogue entries, and BOMs, contain unstructured descriptions that are the *Names* created by the Users to identify the Materials or Services they need to procure. They typically have the following characteristics:

- They are written by different individuals, everyone following their own criteria and rarely strictly following corporate criteria.
- They are composed of sequences of acronyms, abbreviations, codes, jargon, contracted syntax, done to be able to fit in a predefined space; these descriptions are not written in a common and natural Language understandable by everybody, they require a knowledge which is in the mind of the reader to be correctly understood.
- They are highly ambiguous and the real meaning depends on the context (e.g. 80gr. can be a weight if it is associated to copy paper, but as a measure of a sandpaper it is referred to the grain type)
- Even within the same applicative domain, their meaning changes slightly in each specific setting and evolves over the time.
- In multinational companies, they are normally written in different languages.

When you try to get reports from that mess you always get a confirmation of the IT paradigm: garbage in = garbage out.

## TRADITIONAL CURE IS WORSE THAN THE DISEASE

Since all enterprise information systems are based on a structured database, the traditionally recommended actions are:

1. Code as much as possible with a single, complete and compelling methodology. By the way, please do it with a single person in a single language to avoid some of the above problems. For the rest, use multipurpose codes.
2. Implement a granular category system (taxonomy) that allows you to get from the ERPs an adequate quality categorization of the products and services purchased, especially for those using multipurpose codes.

It goes without saying that the Purchase Requisitioner is the person that has the best knowledge about the material or the service he requires. The processes are normally designed to collect this information from the very beginning of the Purchasing process. So, why the process afterward will not go as smooth as you might have hoped, given the possibility to have good information since its start?

There are many reasons, but mainly because ERPs and Supplier Relationship Management systems (SRM) provide a weak support to Requisitioners.

Take into consideration the most common use case: create a Purchase Requisition of a list of Materials.

The Material can be searched inside of the Material Master Data mainly by:

- **Material Code**, then supposedly you **remember** a code among hundreds of thousands that can exist in the Master Data
- **Keywords**, so hopefully you **know** what words are used to describe the item you are looking for, maybe in a language different from your Natural Language
- **Supplier**, since probably you **are aware** of who can supply the item you need to thousands of Suppliers recorded

Unfortunately, this list doesn't coincide with the Requisitioner's knowledge very often. In fact, the other side of the coin is that measured experiences show free-text requisitions hit till 60% of overall Purchase Requisitions.

So, if the Material or Service sought doesn't exist and the User doesn't want to start the process to create a new one that is usually time expensive and complicated, what happens?

There are two possible scenarios depending on Company policy:

- It's possible to create a PR line without using a Material. If this possibility is allowed within the ERP/SRM transaction, it normally requires assigning the MG manually. Once again, ERP / SRM support to look for the right MG will prove to be weaker, as the MG hierarchy is extended. The consequence is PR assignation to a generic MG. Experience shows that "Others..." is by far the most used ones.
- There are ERPs implementations where is not possible to create a PR/PO without a Material. For that reason, in those cases, Master Data contains some "Generic" Materials that can be used by changing their description. This possibility entails categorization errors: (e.g. Generic Material code: XYZ0000 / Short Description: Valves / Material Group Name: Fluidic Component. This generic code can be used to buy an O-ring for a Valve, that means a minor error, or to buy a Screwdriver that must be categorized in a complete different Material Group, and this is a major error).

**CATEGORIZATION SMART ASSISTANT IN S2P PROCUREMENT PROCESS**

Imagine a Web Virtual Assistant capable to suggest the right Categorization based on a description provided by the Requisitioner in his own natural language, where is needed, embedded in the ERP/SRM transaction.

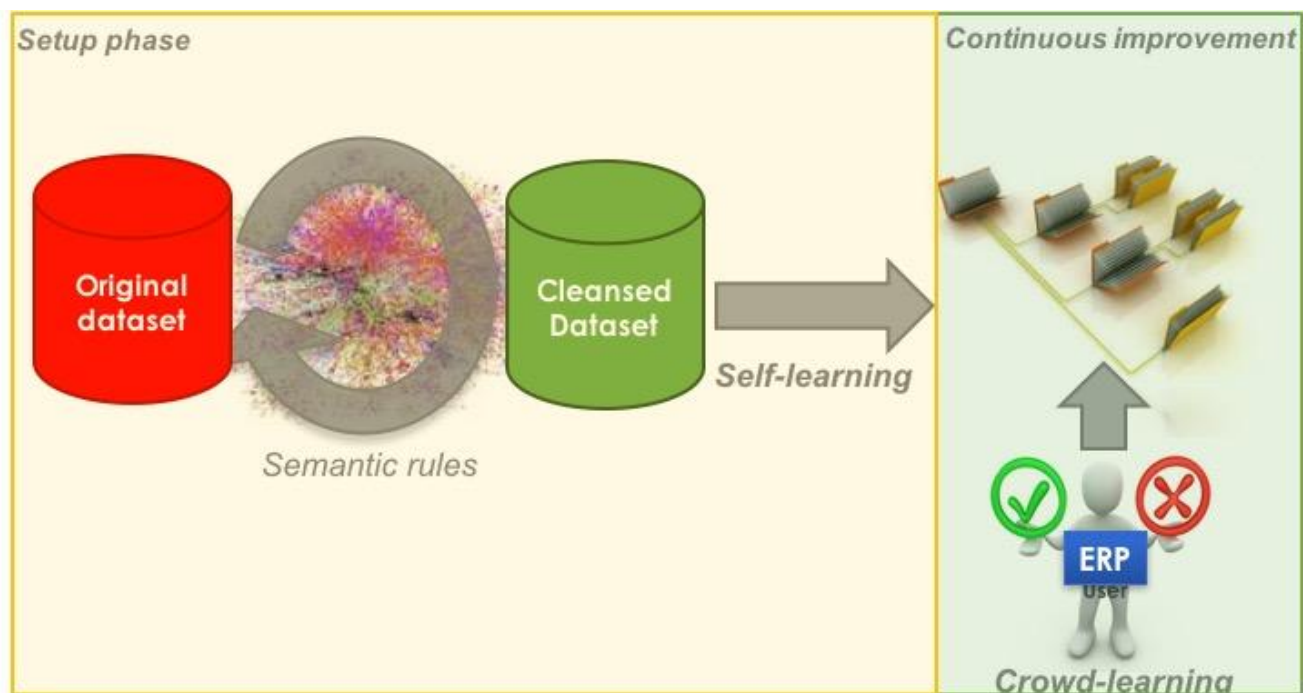
*Until the day, a machine or program is produced that can pass the Turing test successfully [Michie, 1993].*

Even if this quote is close to being a quarter of a century old, humans' role in personal interactive services still cannot be underestimated. This is generally true but is crucial to widely comprehend when it comes to the procurement processes.

In fact, we are speaking about a vast knowledge domain, by far more complicated than to answer the simple questions that Siri or Cortana are trained to do.

The solution comes from a combination of three components:

- State-of-the-art Machine Learning technologies, to learn from historical data
- Semantic rules, to encode domain-specific knowledge not directly inferable from the data
- Contributions from the Crowd of Requisitioners, to keep the system robust over the long-term



With this approach, it's possible to customize the Web Intelligent Assistant to the specific Company categorization requirements making possible:

- Go from local incoherence to worldwide categorization coherence
- Reduce inconsistencies avoiding generic categorizations and supporting specific categorizations

Learn More about MG Prompt the first industrial Smart Assistant! ([MG Prompt video presentation](#))

## ABOUT CREATIVES SPA

Creatives has a recognized leadership position in Data Cleansing, enrichment and Analytics market. The Company is based in Verona – Italy, and has started its activity as a Software Vendor in 2008, with 50% growth from 2014 and more than 50% generated internationally. The Company has developed a prestigious client base in Italy, Spain, Germany, Belgium, France, Portugal and Sweden.

Its breakthrough Semantic Technology ensures very rapid returns for its Clients and enables them to achieve increasingly better results and higher efficiency as they continue to use the Company's products.

After being recognized by Gartner as "Cool Vendor in Advanced Data Management 2012", Creatives has been mentioned in Gartner's "Hype Cycle for Analytic Applications", "Hype cycle for Procurement" and in November 2015 in the "Magic Quadrant for Master Data Management". As a very rare distinction, Gartner has cited again Creatives as "Cool Vendor in Italy" 2016.



## ABOUT THE AUTHORS

ADRIANO GARIBOTTO, Co-founder and Chief Sales & Marketing Officer at Creatives SpA. During the last 20 years, he has accumulated a vast experience in large multinational companies, implementing Creatives' SW products focused on the Sourcing to Procure process and in Master Data Management. In many cases, he was also involved in the project deployment, supporting the data analysis, designing the cost-saving solution, the implementation, and the results monitoring.

MSc in Civil Engineer at the University of Genoa and MBA at Universidad Adolfo Ibáñez of Santiago of Chile.

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