TagItSmart
Smart tags driven service platform for enabling ecosystems of connected objects

Grant agreement 688061

SO Engine
Dissemination and impact report

Deliverable ID:	**D3.4**
Deliverable Title:	Dissemination and impact report
Project acronym	**SO Engine**
Project title:	**Smart Offers Engine for retail**
Extension acronym:	
Extension title:	
Contractual date of delivery:	**5/1/2018**

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Introduction

Here we assess the impact of the project, from a business and technical point of view. We also describe the dissemination actions planned.

Impact

1.1 Business impact

The Tagitsmart project is at the heart of Keyneosoft's strategy, which aims to propose solutions to make the point of sale smarter.

These 5 months of project allowed Keyneosoft to :

- accelerate its software development and in particular its PCOM platform (smart offers), an intelligent in-store offering engine. This enabled us to develop among others our alerting engine and abstraction layer.
- work on PCOM interoperability with other systems and databases. This was very important because we want our platform to be supplied with external data (product catalogue, context data, customer data, etc.).
- develop some APIs that will allow tomorrow third party applications (mobile applications, electronic labels, screens,...) to interact with PCOM

As such, we have developed a mobile application connected to the APIs that we have developed

From a market and usage point of view, Tagitsmart allowed us to:

- develop new uses around the TAG and corresponding alerts: beyond the uses related to promotions and price changes, we realized the interest that our PCOM platform could have for back office or logistic uses (trigger a reapproval, alert of rupture,...), sanitary (around expiry dates) or customer/sales information
- address other markets than retail, namely health, logistics...

PCOM could serve as an event management and alerting platform to link products/materials/instruments and users.

During the Tagitsmart project period, we met some retailers (Norauto, Boulanger, Intermarché,...) and demonstrated some uses. However, the introduction of Things management with tags rather than products (with generic barcodes) is an important change for a retailer, and time-consuming to implement.

In the coming months, we will therefore make greater use of the work done on interoperability and APIsation, as well as develop scenarios for using PCOM for markets other than retail and stores.

1.2 Technical impact

The most important concept brought by this project with TagItSmart is the notion of **Thing**. This led us to completely redesign the platform, and to introduce the "FOR" part into our

dynamic rules. This led us to develop a sophisticated **abstraction layer**, allowing to automatically link the right data with the right object.

In the upcoming version of SO Engine, we are working on a more complex hierarchy than product/thing (Figure 1).

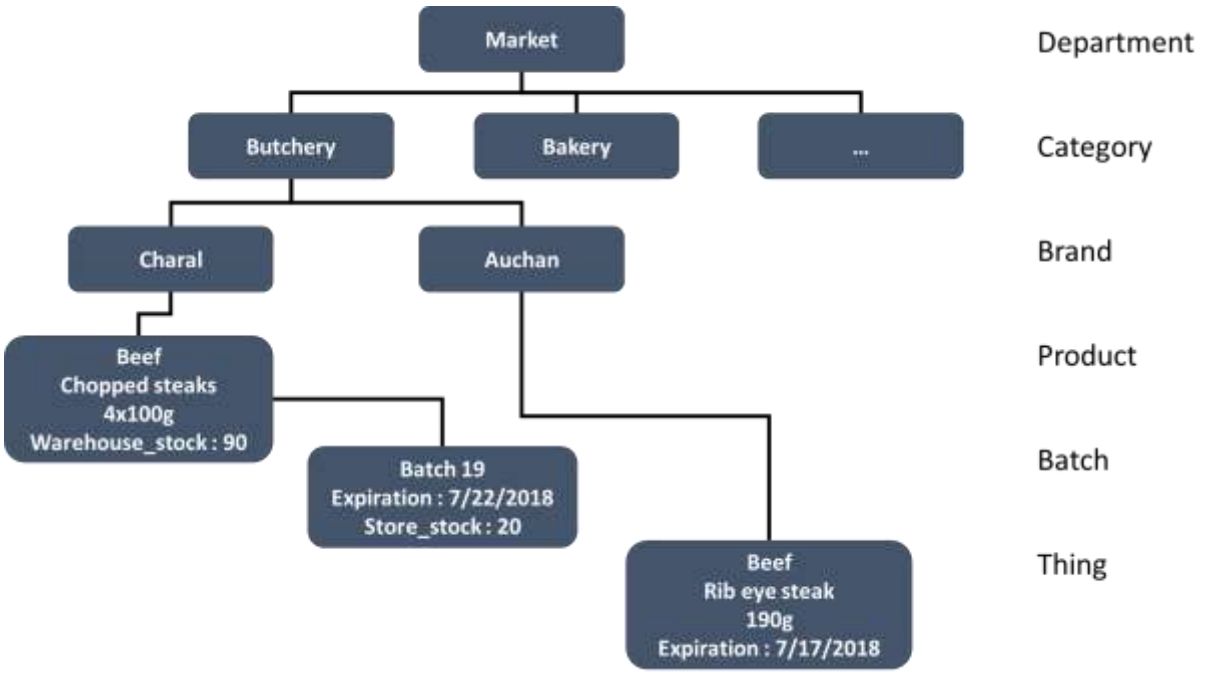


Figure 1 - hierarchy of categories

We use some elements from our **middleware KeyBuild**[1]. The taxonomy Department > Category > Brand > Product > Batch > Thing will help to save the number of rules to write and a more precise consideration of the granularity on promotional offers. The processing of this type of taxonomy can be quite subtle: on the example, we see that Charal brand steaks will rather be treated in batches (standard trays), whereas each Auchan rib eye (retailer's butchery) will be an individual instance, with a different weight for each tray.

In the current prototype, trigger conditions relate to specific objects (warehouse_stock, release_date, ...). In the next version, field names can be used directly. This requires solving some difficulties, especially to avoid ambiguities between fields with the same name in a category hierarchy.

A similar hierarchy for customer and vendor categories will make better targeting possible.

An important concern of SO Engine is the **ease of use**, to allow the retailer to write new rules himself. We work on advanced rules editor, which allows an **autocompletion** of the different parts of a rule.
In particular :

[1] http://www.keyneosoft-en.com/keybuild/

- in the FOR part, a search which displays the various products (categories, things, ...) containing certain key words
- in the WHEN part, an autocompletion of the available fields for the chosen object, and the different possible operators
- in the THEN part, an autocompletion of possible actions

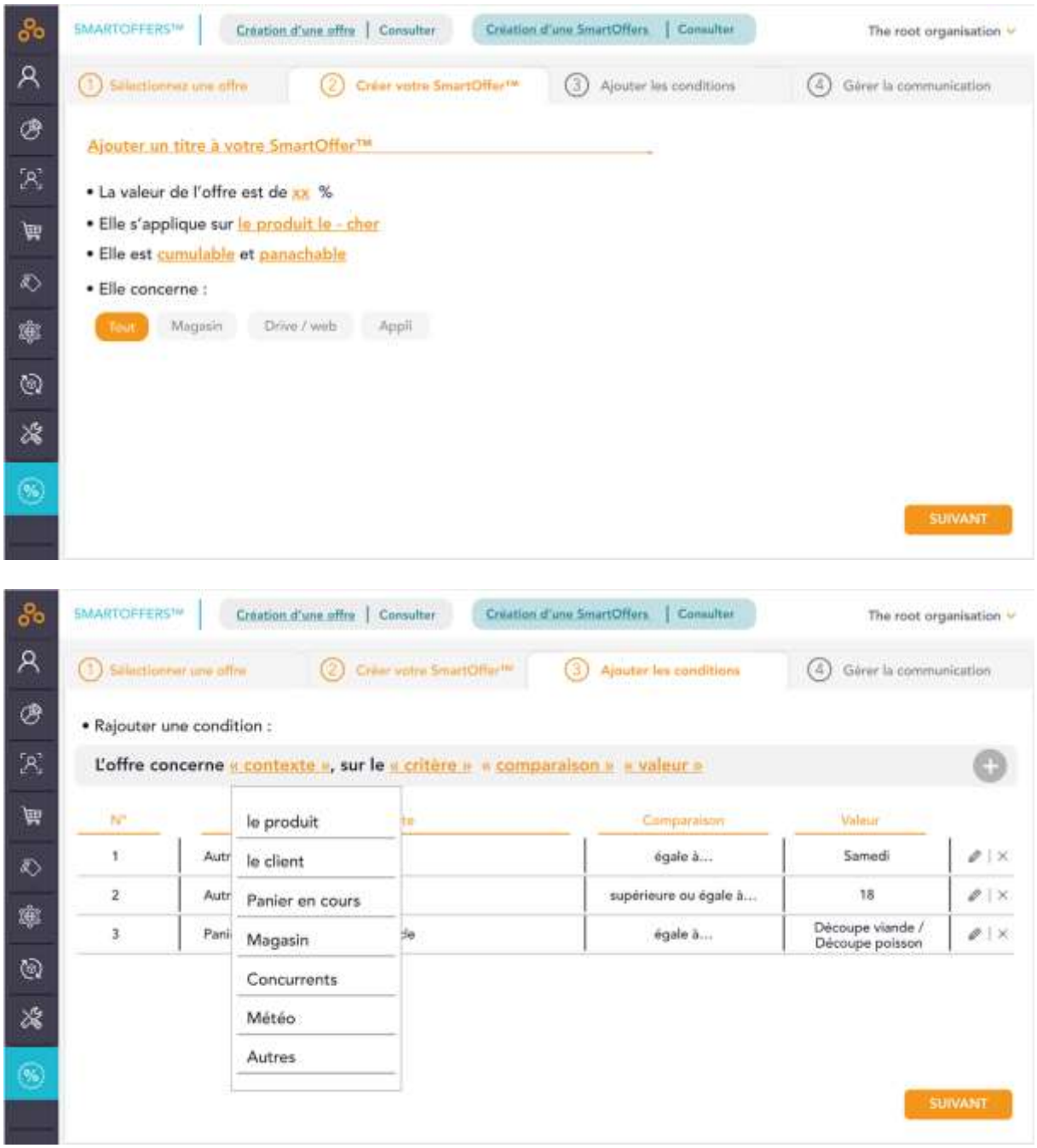


Figure 2 - The new interface for "Smart Offers"

This new version of SO Engine under development is named "Smart Offers".

Dissemination

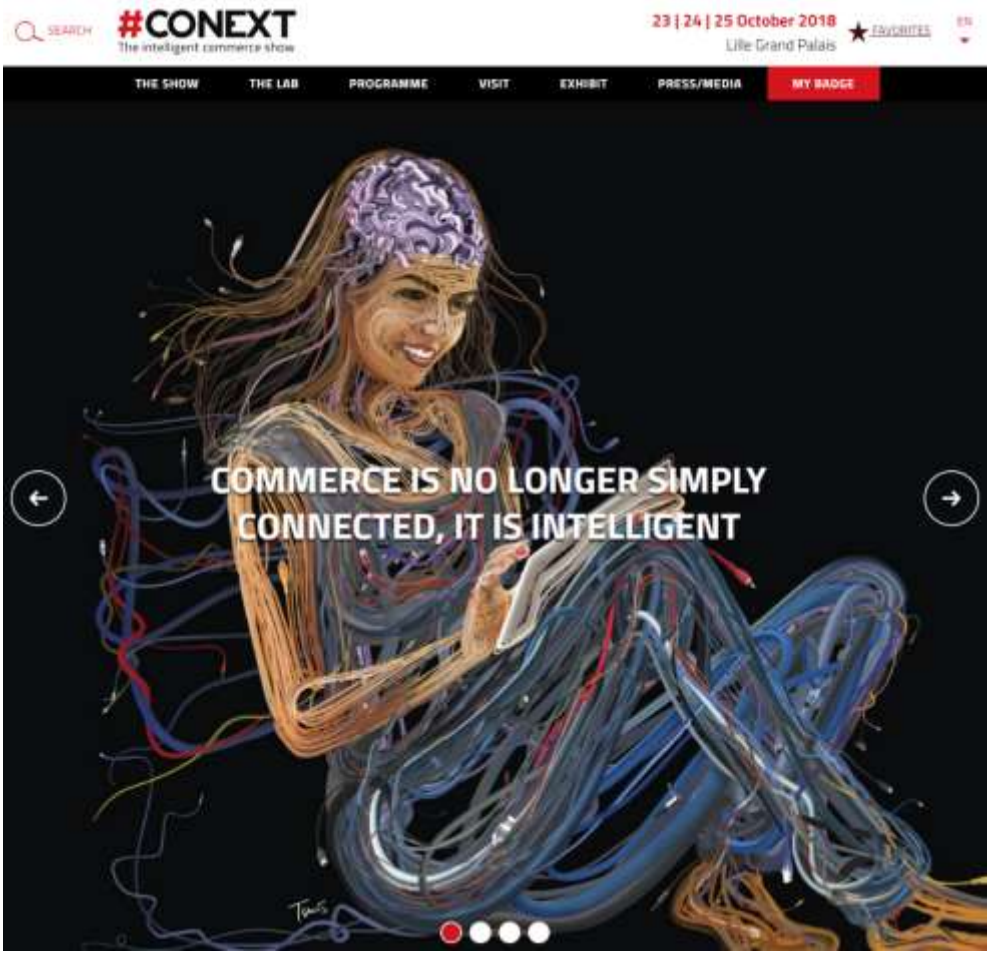
Several **interviews** were conducted with retailers (Norauto, Boulanger, Intermarché,...) and retail experts. Here is a summary of these interviews:

- *There is currently no intelligent in-store offer engine, even though it exists on the web and is a real challenge for stores.*
- *Instead, smart offers should be oriented towards promotions, coupons rather than price changes, which are more complicated to implement*
- *The simplest and most intuitive back office possible, with predefined rules and "smart offers"*
- *Classify smart offers according to whether they affect margin, sales or inventory*
- *Smart offers must really have a local dimension: each store must be able to set up its offers, trigger them according to its own context*
- *The 5 key contexts :*
    - *the product itself (stock in value, date of storage, expiry date for food, price, category, brand)*
    - *Weather*
    - *Time (day, time, date, season,...)*
    - *Client: RFM (recency, frequency, amount)*
    - *Location: geographic, which store*

We plan to compete to **awards** at the following retail conferences, for SO Engine (Smart Offers) and the TIS integration:

- Paris retail week[2] : September 10-12 2018, Paris, European global event for retail professionals
- Connected retail night 2018[3] : October, 18 2018, Paris, presence of major retailers
- #conext 2018[4] : October 23-25 2018, Lille (10,000 visitors, 100 speakers, 200 exhibitors for 2017 edition)
- NRF 2018[5] (under reserves) : January 13-15 2019

[2] https://en.parisretailweek.com/
[3] https://www.nuitducommerceconnecte.fr/
[4] https://www.salon-conext.com/en
[5] https://nrfbigshow.nrf.com/



- **Figure 3 - #CONEXT 2018**

Conclusion

SO Engine is at the heart of Keyneosoft's current strategy to bring intelligence to commerce (and other sectors), and unify its various products (especially KeyBuild) in an elegant and easy-to-use framework.
The contribution of concepts like Things led to redesign in depth the platform.