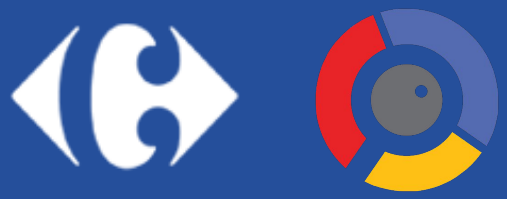


101 hints to improve customer satisfaction on search engines in the retail industry

#MICES2021

Marion HEMERY - CARREFOUR FRANCE x Lucian PRECUP - ADELEAN

About us

Marion HEMERY

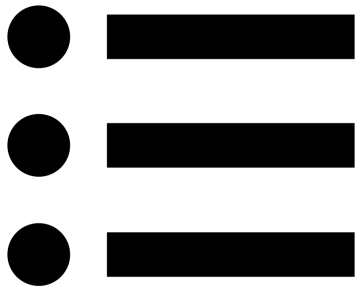
Current :
Product Owner of Search & Merchandising for Carrefour.fr
Past :
Head of Product Search for Carrefour.fr

Lucian PRECUP

CTO @ a//.site - your collaborative search engine

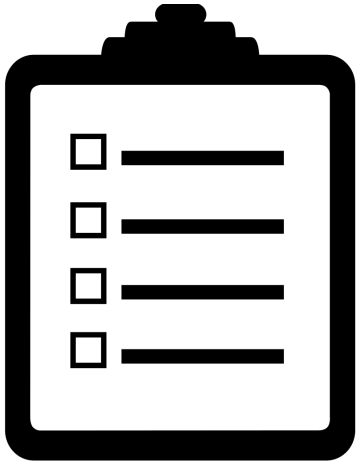
Principal Search Consultant @ Adelean

Agenda



1. Interpreting the signals

- What to measure?
- How to measure?
- How to interpret the feedback?



2. Improving the system

- What to improve?
- What are the priorities?
- On what to capitalize?

Context

Carrefour

- Multinational group
- Operates in +30 countries worldwide
- More than 300, 000 employees

Carrefour France E-commerce

- ~ 1500 drives

- 5 services :
  - Drives
  - Home delivery service
  - Express pick-up
  - Express delivery
  - Catering services

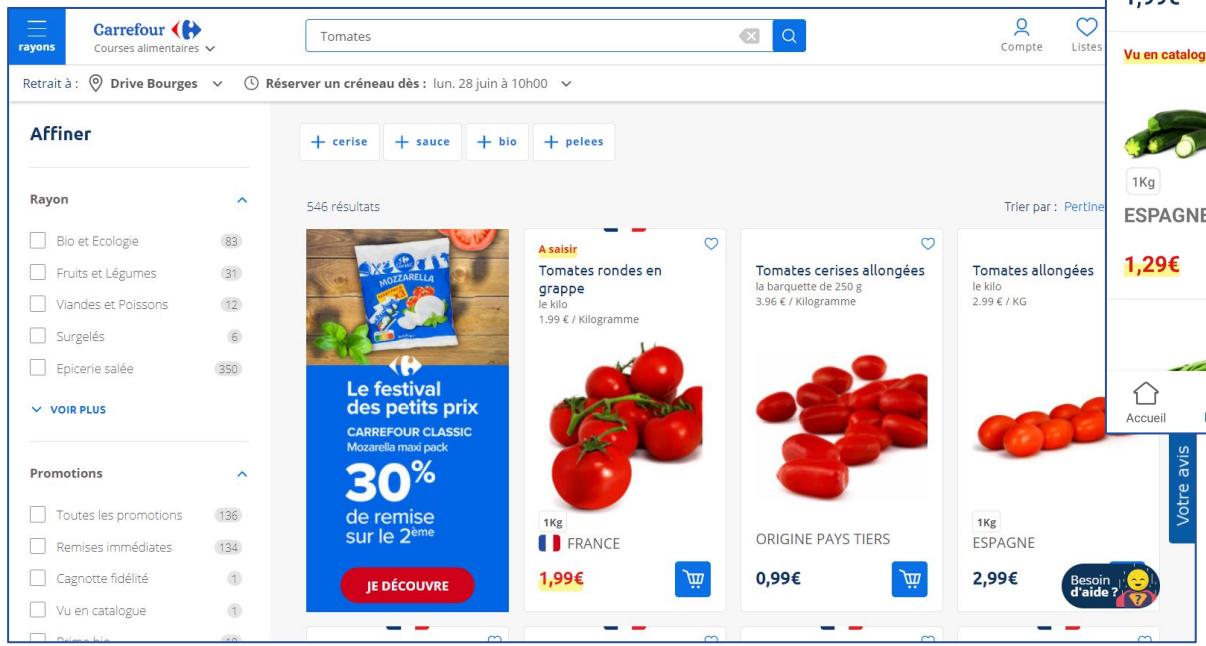
- 4 websites :
  - carrefour.fr
  - shopping.carrefour.fr
  - traiteur.carrefour.fr
  - livraisonexpress.carrefour.fr

- 2 applications :
  - Drives and home delivery service (iOS and Android)
  - Express delivery service (iOS and Android)

Context

Search Engine solution

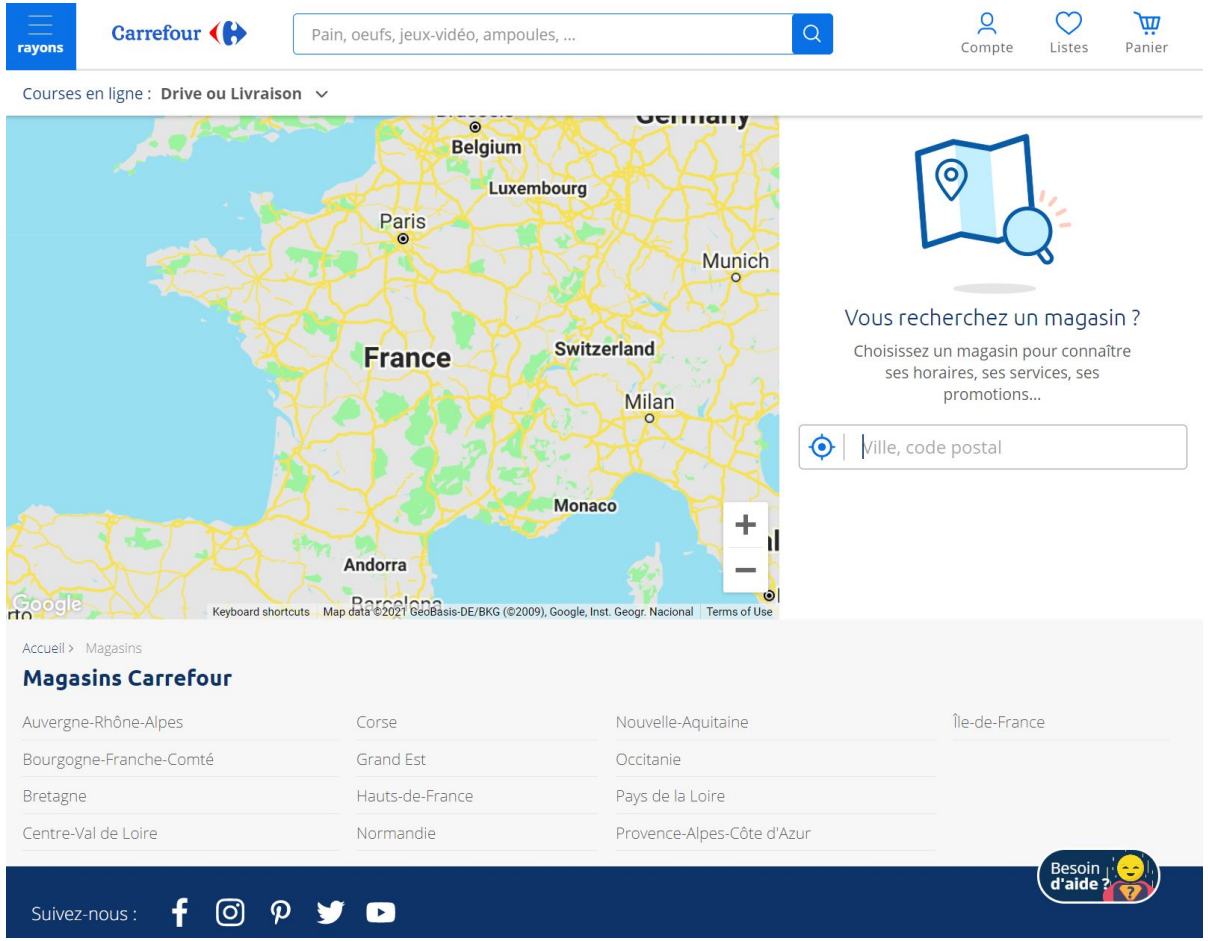
- Elasticsearch x Adelean
- 1 website : carrefour.fr
- 2 mobile applications on iOS and Android : Carrefour
- Used for ~ 1500 stores
- 3 services :
  - Drives
  - Home delivery service
  - Express pick-up
- 1 marketplace
- Different sources of data



Context

Search Engine users

- 2M+ searches / week
- Searching for food and non food products
  - Different information needs:
    products fields,
    informations on product card, ...
  - Different journeys:
    page with add to cart,
    time on navigation's PLP and SRP, ..
- On located store or virtual one :
  different product assortments
- Having chosen the service and/or
  the delivery or pickup timeframe



Customer satisfaction ?

What ? How ?

- Is it measurable ? How to measure it ?
- Are all users the same ? How to categorize them ?
- If it is low, what are the reasons ? How to improve it ?
- If it is high, why ?
- Is the perception related to search,
  to the entire website,
  to the products that are currently available ?

Interpreting the signals

What to measure ?

- NPS (Net Promoter Score)
- Verbatim comments
- Macro KPIs
- Micro KPIs (search scope)

* First impact of the ecosystem on these indicators :

1 query = 1 user query
+ service (3)
+ location (1500)

= **4500 possibilities of differents SRP** on the front-end (in addition of variation of stock and price)

⇒ the first challenge to understand a signal is to be sure to find the same page that your user when he uses/notes your search engine.

Interpreting the signals

KPIs

- Add to cart rate
- Bounce and exit rate
- Number of searches
- Position of the first product clicked or added to cart

And measures on the searches corpus :

- Disparity in queries KPIs for food and non food product

⇒ “Eggs” vs. “Smartphone”

Variation of quantity of each typology impact the global KPIs (ex : COVID Crisis)

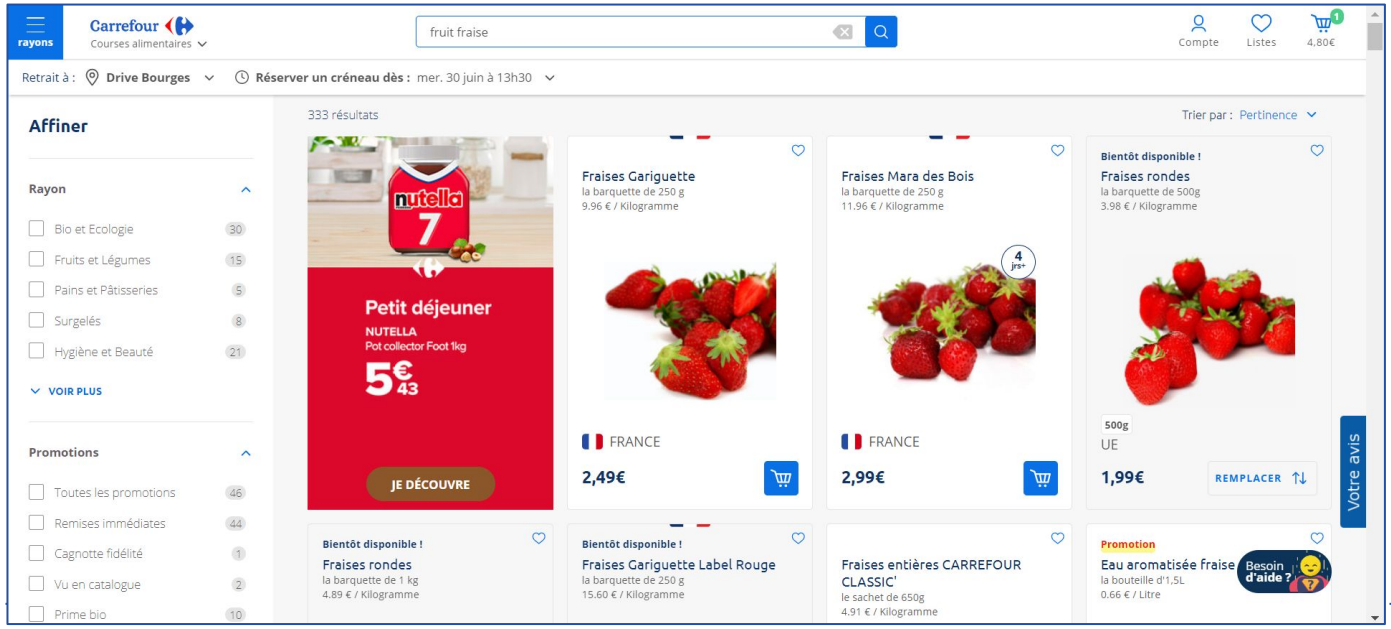
⇒ focus on sales revenues for the business needs (sales revenues added to cart generated by the search engine vs. other PLP)

Interpreting the signals

Verbatim comments

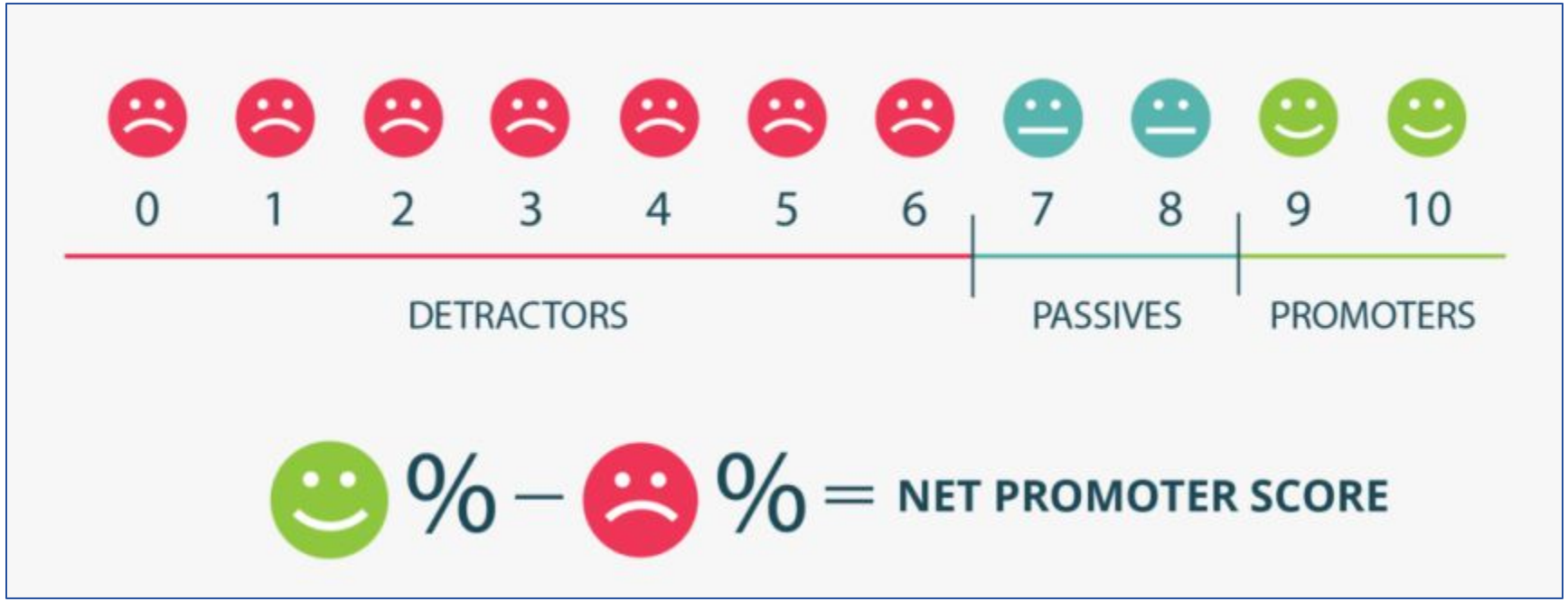
- “The search engine is not right”
- “I don’t find the “Fruits” menu in the search engine”
- “Search engine too greedy with my ram, my computer is burning”
- “If I search for “strawberry”, 80% of the products are not fruits !”

- RELEVANT AND USEFUL :
“ The search engine is complicated to find some products, as “carrefour tissue *in paper* box”.



Interpreting the signals

NPS



Interpreting the signals

How to measure ?

⇒ KPIs :

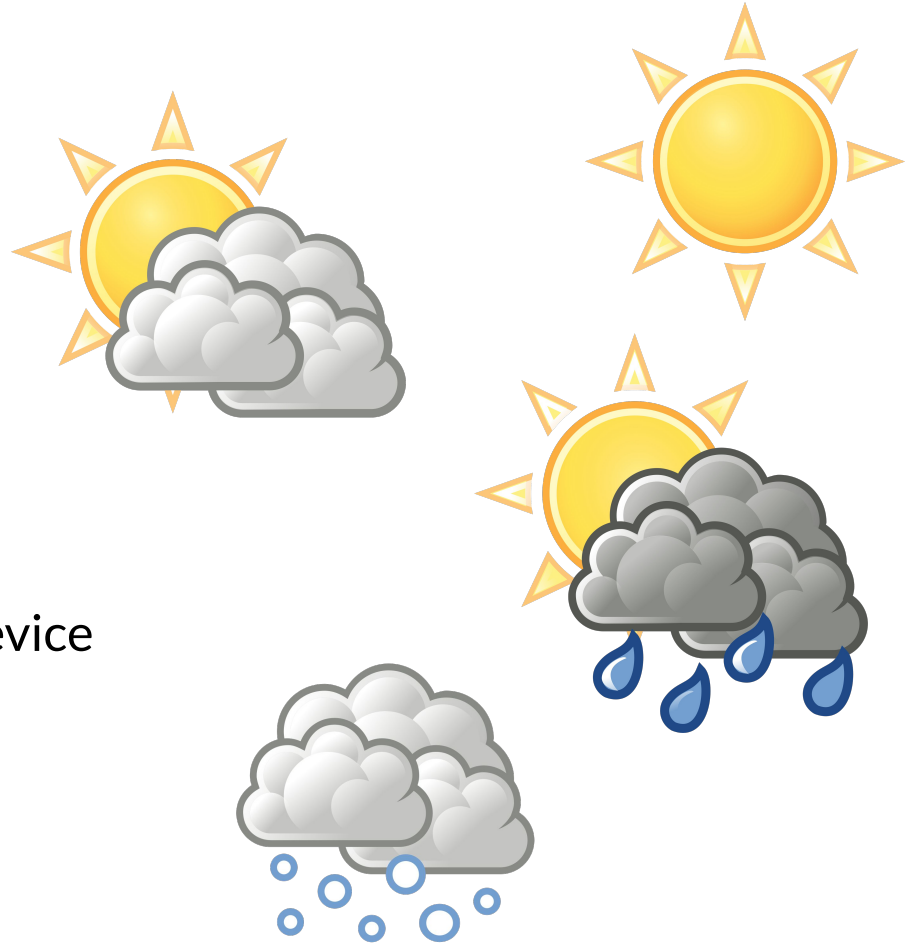
- average on SRP
- details on searches

⇒ NPS for product search

Cross them with every axes impacting your business :

⇒ services, store, type of store, location, hour of navigation, device

“Why are our users more satisfied on monday than thursday ?”



Interpreting the signals

Filter the user requests for improvement

⇒ finding a product which is not in the databases? NO

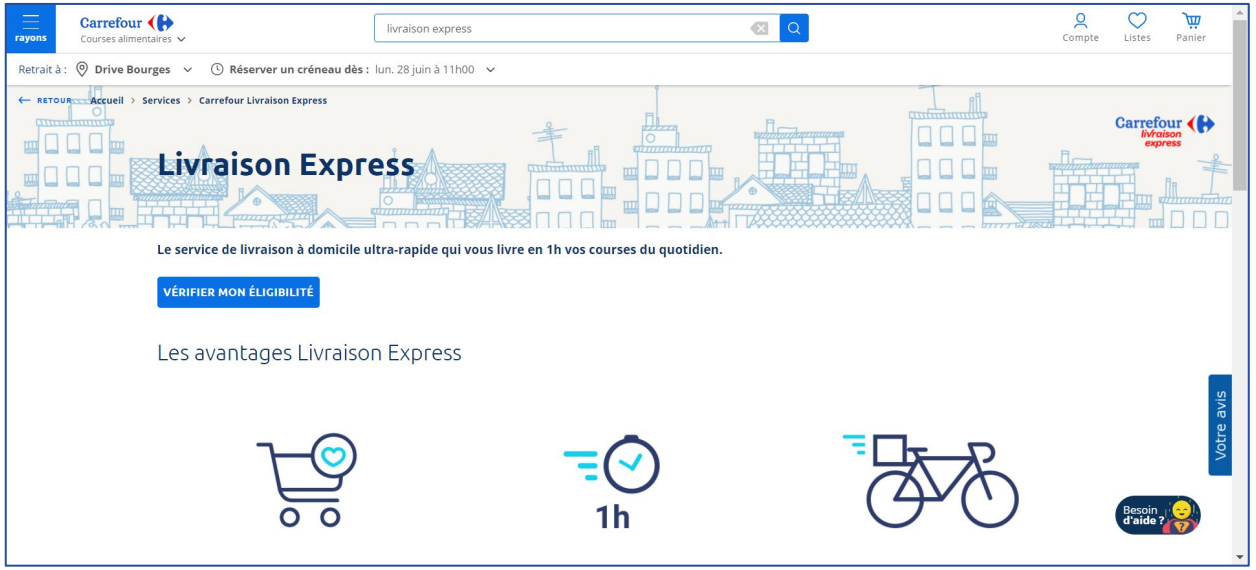
⇒ redirecting to a competitor? NO

⇒ help customer to refined their searches? YES

⇒ be more transparent about how search engine transform the query and why ? YES

⇒ indexing content or redirect searches which are not asking for product ? YES

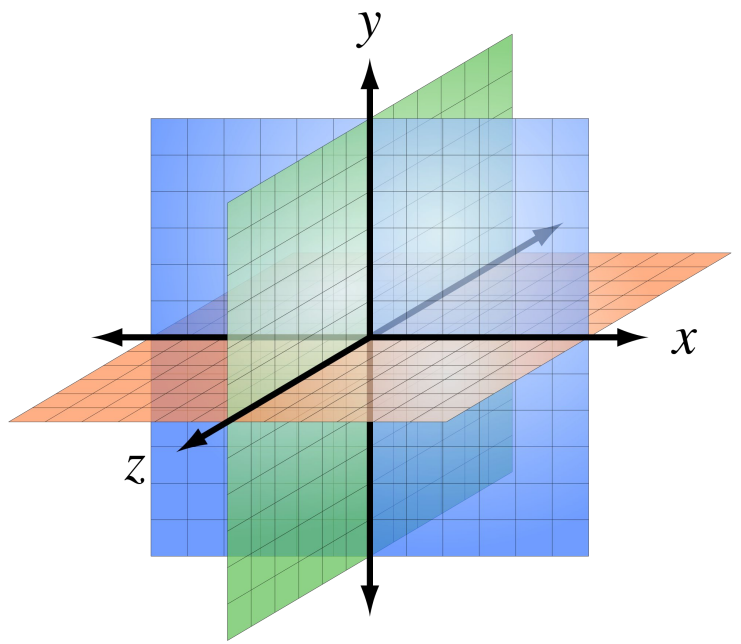
"express delivery" query have its own page :



Interpreting the signals

Measurements and interpretation

- Metrics // research corpus
- Search engine // product assortment
- Multiplication of the axes of analysis



Improving the system

Have the right interpretation of the user request

- Don’t say yes to every request
- Read between the lines
- Search for the root problem
- Keep / put things in context
- Challenge and rephrase

Improving the system

User needs vs. Business needs

Example : some users would like
the sorting always to be
“lowest price first”

- Focus on the root problem
- Find the common denominator between all users suggestions and the business needs

Improving the system

Know your business domain and users




Salad
Lettuce
Arugula
Spinach shoots
...

Improving the system

Know your business domain and users

Organic ?

Cheese ?

Italian products ?

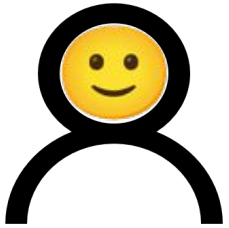
Mozzarella di bufala campana

Improving the system

Give access to all the information

The search engine becomes
the main gateway to information

People search for products
but might also search
for other types of information:
recipes, store locations, events.



Improving the system

Performance

A lot of our customers
do not go to physical store
because it takes too much time.

With 30 products in the basket →
20 searches per session + time in navigation.

Quickly find the product they want is the key !

Improving the system

Transparency

- Communication
  - query relaxing
  - zero results
- Marketing (sponsored product):

Nous avons beau chercher, nous ne trouvons pas de résultat pour **tomtates jaunes**

Cependant, nous avons trouvé des produits pour:
tomates jaunes

Improving the system

Machine learning ?

Fine grained relevance tuning

- Boosts
- Function scores
- Synonyms
- Redirections
- Query rewriting
- User experience

Conclusion :

- Takes into account Business needs (marketing, stock, partnerships, …)
- Easily understandable and maintainable by the Business

VS.

Learning to Rank (automated relevance tuning)

- Ranking model
- Learning algorithm
- Training data

Conclusion :

- Very expensive to implement properly
- Needs a lot of maintenance
- Does worse if not properly trained and maintained
- Black box to the Business

Improving the system

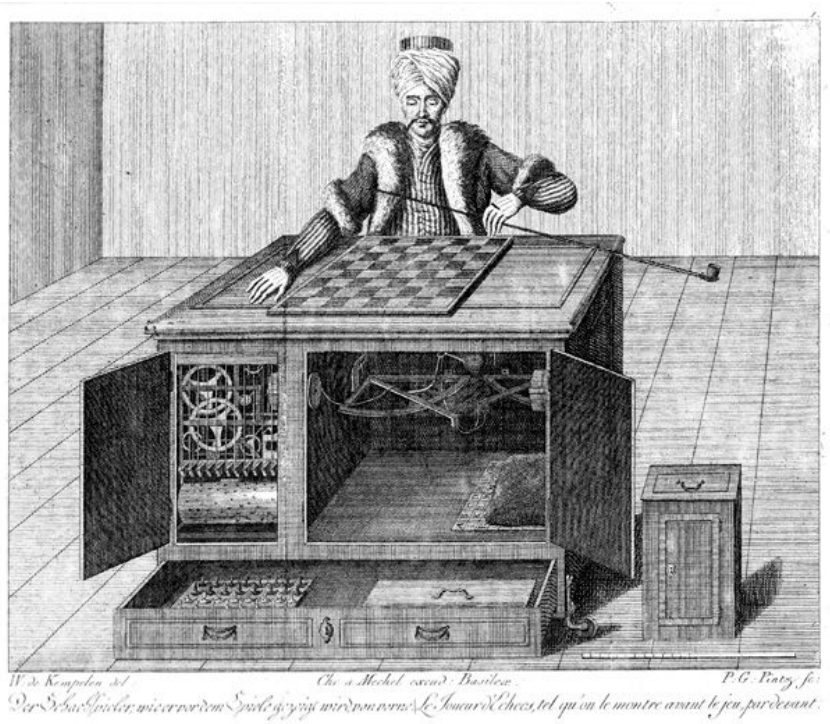
Machine learning ?

Use it for:

- Automatic document classification
- Content clustering
- Dynamic synonym suggestion
- Data cleaning
- Question answering
- Voice search
- Searching for unstructured data
- Understanding user behavior
- Capitalize on historical data
- Suggestions and refinements

But be careful when using for:

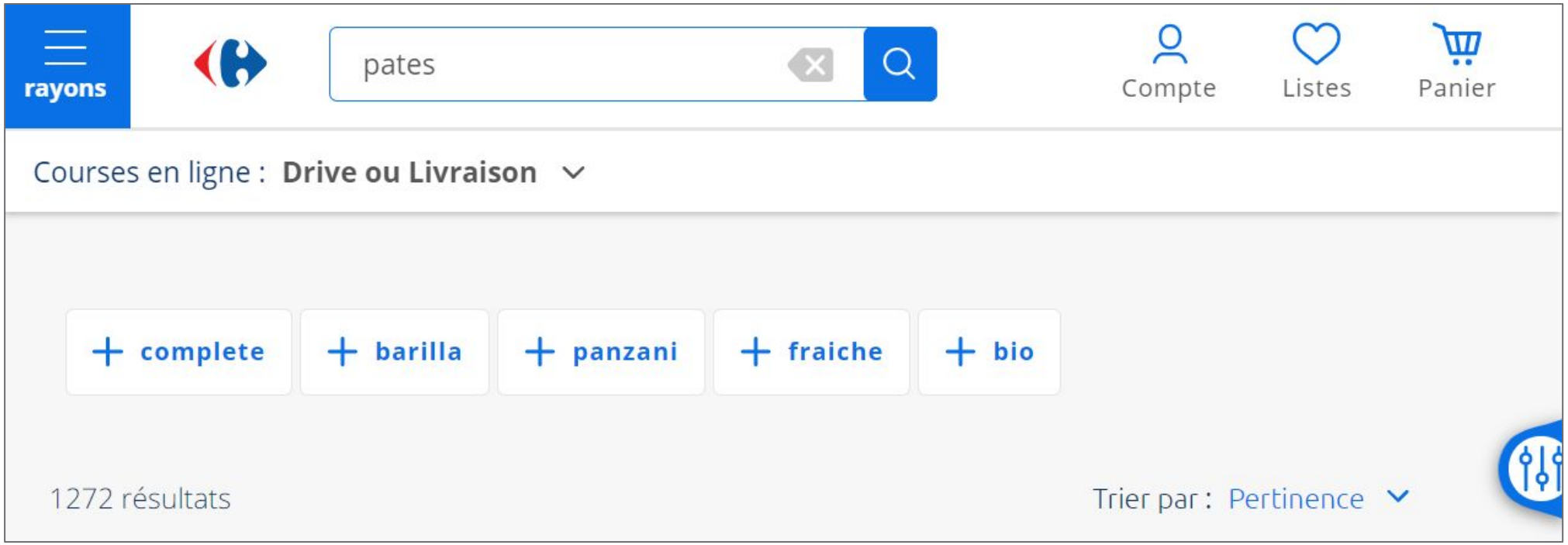
- Ranking



Improving the system

Refined queries

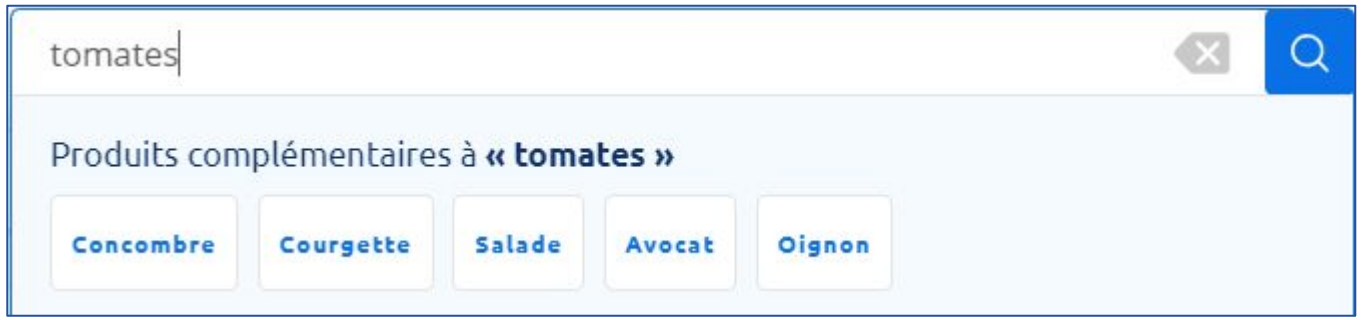
- When most of searches are very general, helping your customer to have easily smaller and smarter list of result could be a plus



Improving the system

Follow up queries

- As block of cross-sell products : cross searches

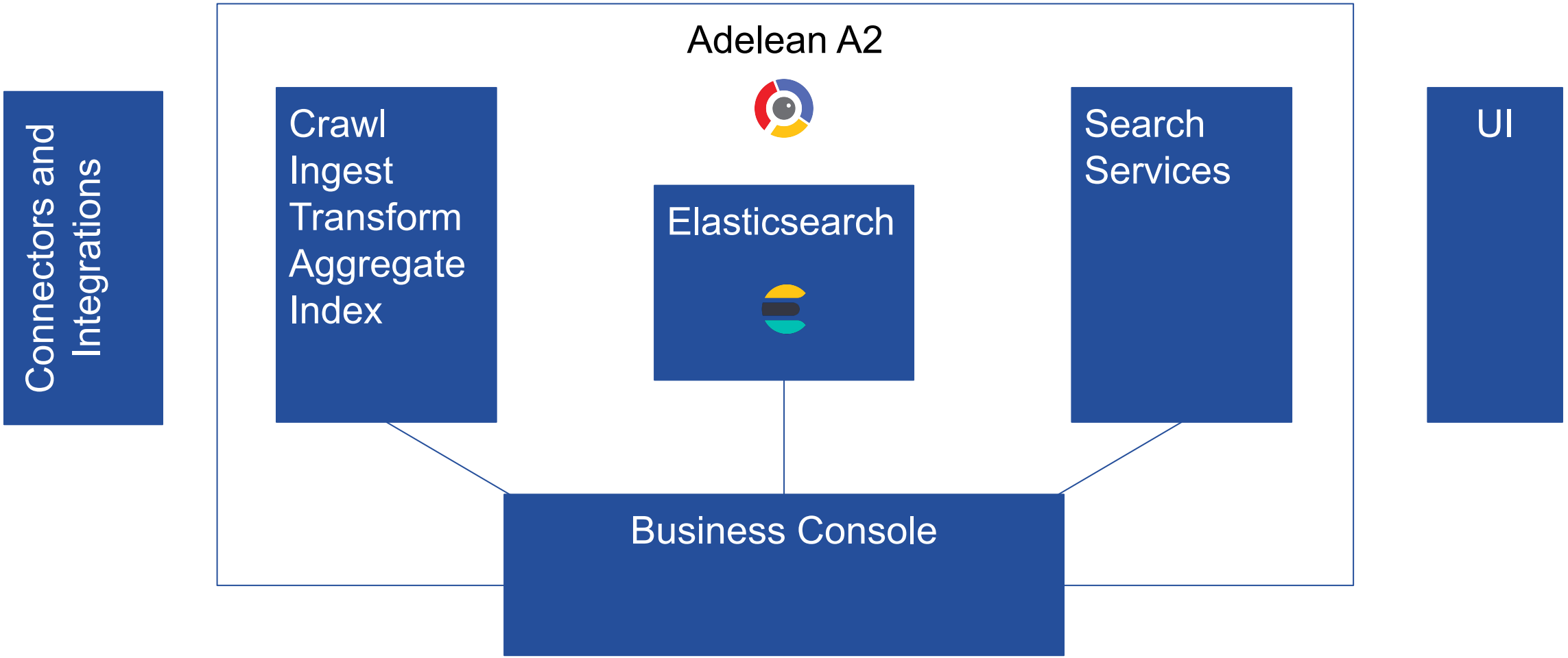


⇒ Adding one more product to the cart perhaps?

⇒ Offering the speed the customer wants

Improving the system

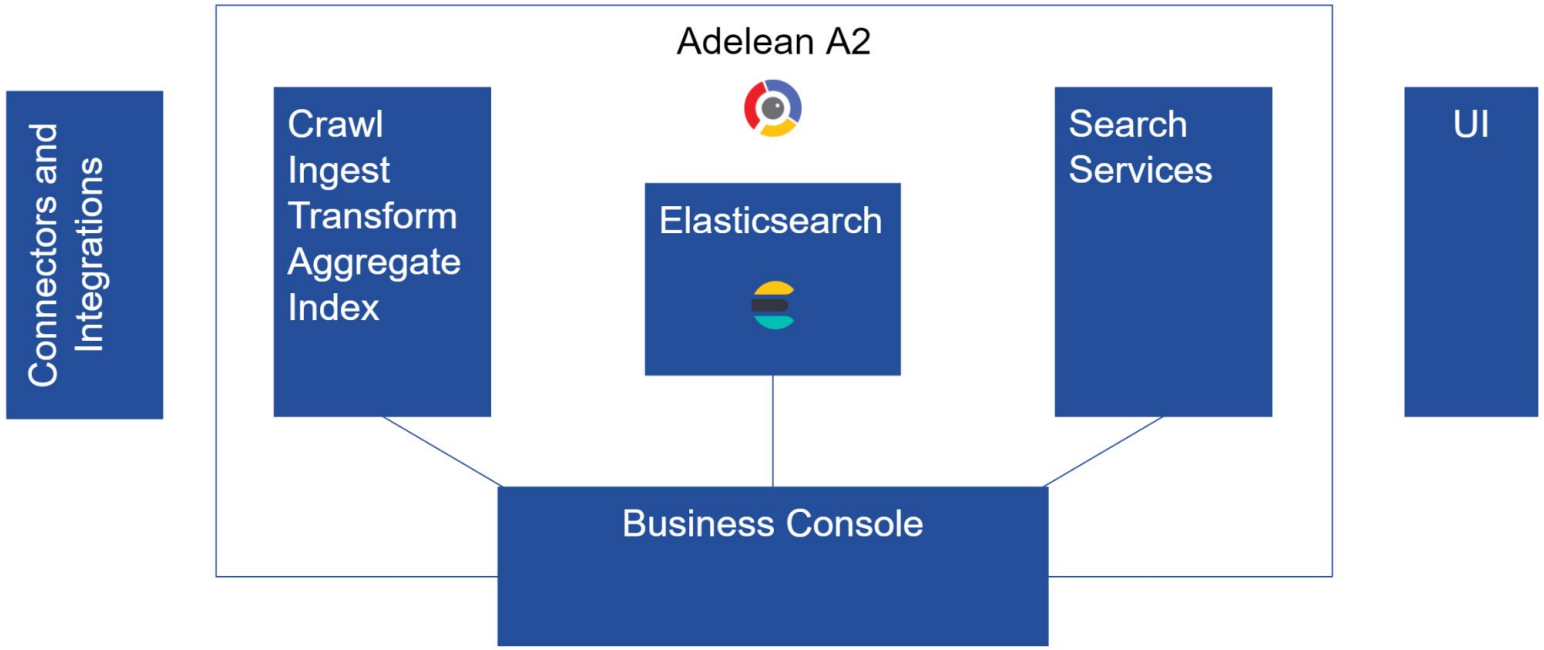
Master your technology stack



Improving the system

Master your technology stack

- A coherent technology stack
- Tight integration of your search engine with the rest of the system
- The Business Team should be autonomous and agile : data and context change quickly in retail



- Think Full Stack : Indexing, Configuration, Search Services and User Experience

Thank you

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