



How chatGPT plugins might disrupt the retail industry

June 2023

Agenda

- **How to analyze ChatGPT disruptive power**
- **ChatGPT and LLM : very brief introduction**
- **ChatGPT vs. plugins : 0-1**
- **2 use cases and demos**
 - Online recommendations
 - Recipes
- 5 **Final thoughts and conclusion**



How to analyse ChatGPT disruptive power

4C's of online retailing



Online consumers' behaviors can be analyzed along 4 C's :

- Convenience
- Consumption
- Cost
- Control

ChatGPT plugins might disrupt 2 C's (at least)

4C's of online retailing

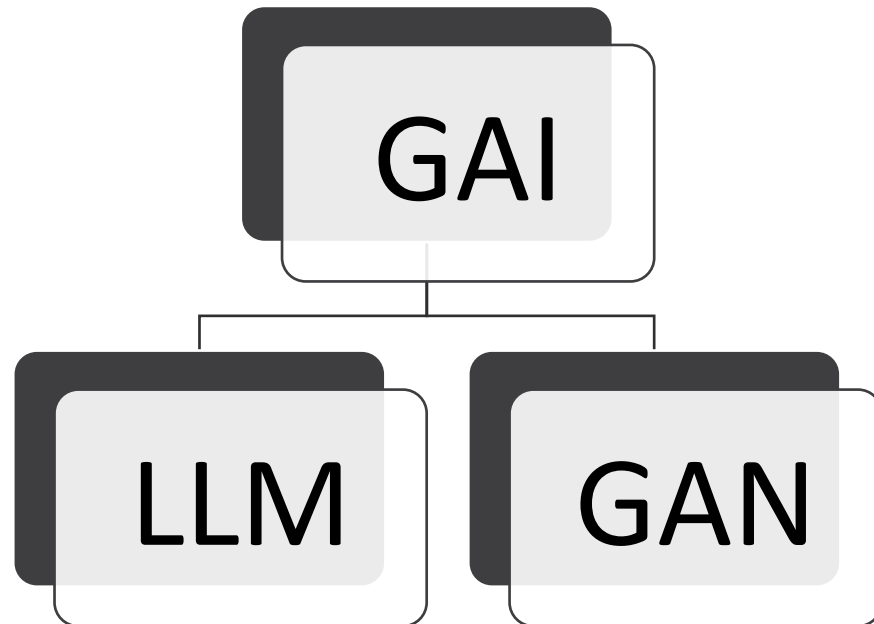
Disruptive power

CONVENIENCE • Ordered from home • Delivered at home • Need to be at home • Large order from websites • Service lower ?	CONSUMPTION • Broader selection / variety ? • Less impulse buying • Forgotten items / stockouts • Cart fills up unnoticed • Minimum order size
CONTROL • Option to return products • Decision making (reviews) • No physical inspection • Fake reviews, fake sites	COST • Easy price comparison • Better prices (less overheads) ? • Unfamiliar price cues • Additional charges



Brief introduction on LLM's and ChatGPT

GAI, LLM and GAN



- Generative AI (GAI) : early 2000's
- Generative Adversarial Network (GAN) : 2014
- Large Language Models (LLM) > 2015

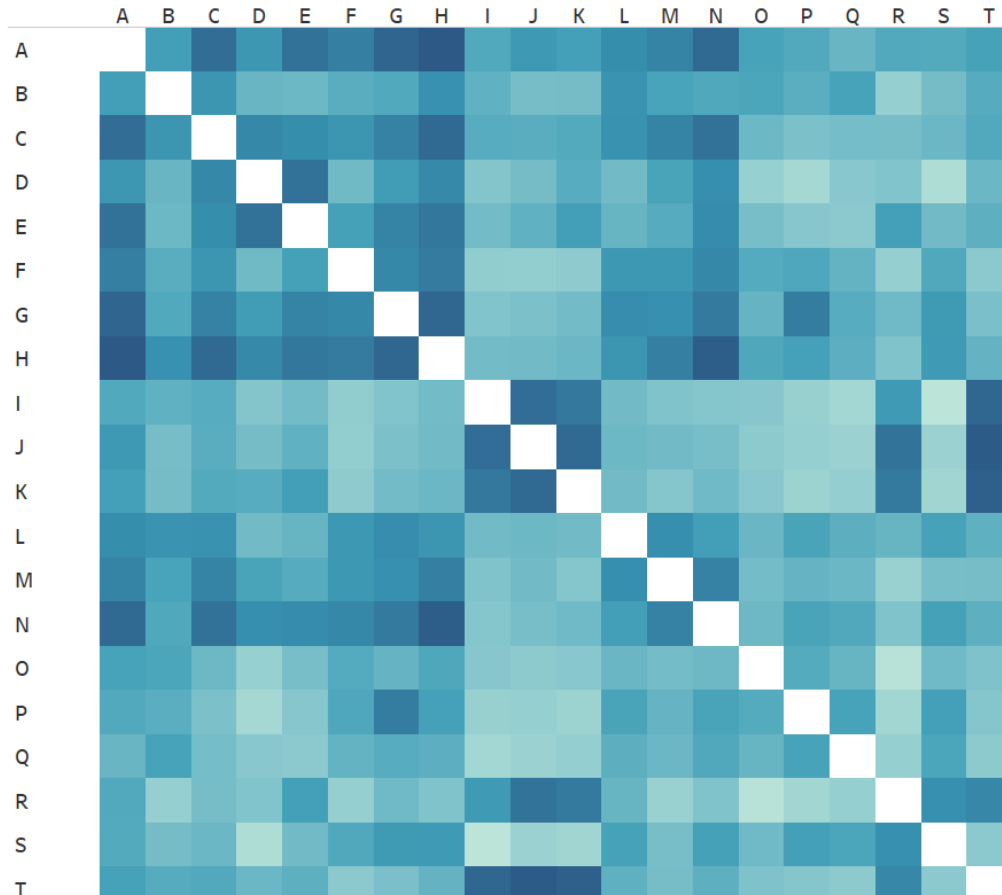


- GAN are designed to hallucinate
- Useful for retailers to get new product ideas
→ see experiment Louis Vuitton on my blog

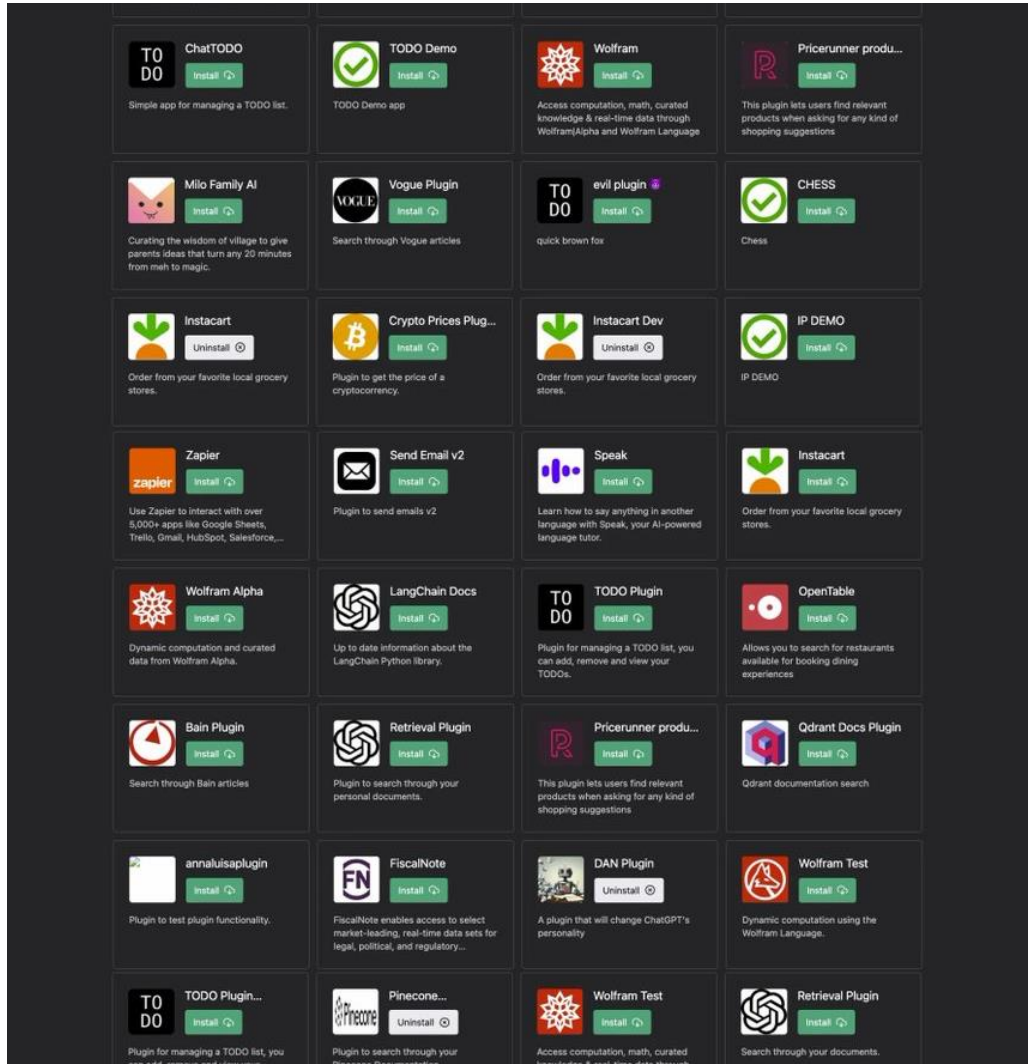
GAI, LLM and GAN

We asked ChatGPT to write 20 sets of texts (A, B, T) on different topics. For each set, we generated the response 50 times. We compared the average similarity between each set. The average similarity is 65.44%. The minimum is 59.92% and the maximum is 72.26%.

Similarity
0,5992 0,7226



- LLM's designed to **predict the next word**
- Problem: content can be very similar (see my empirical results : **up to 72% similarity**)
- LLM's can hallucinate but not designed to
- Caution : autoregressive LLM's may be doomed (Y. LeCun talk, 25 May '23, Northwestern University) → errors increase exponentially
- How particular LLM's work largely unknown → **explainability issue** common to all DL models

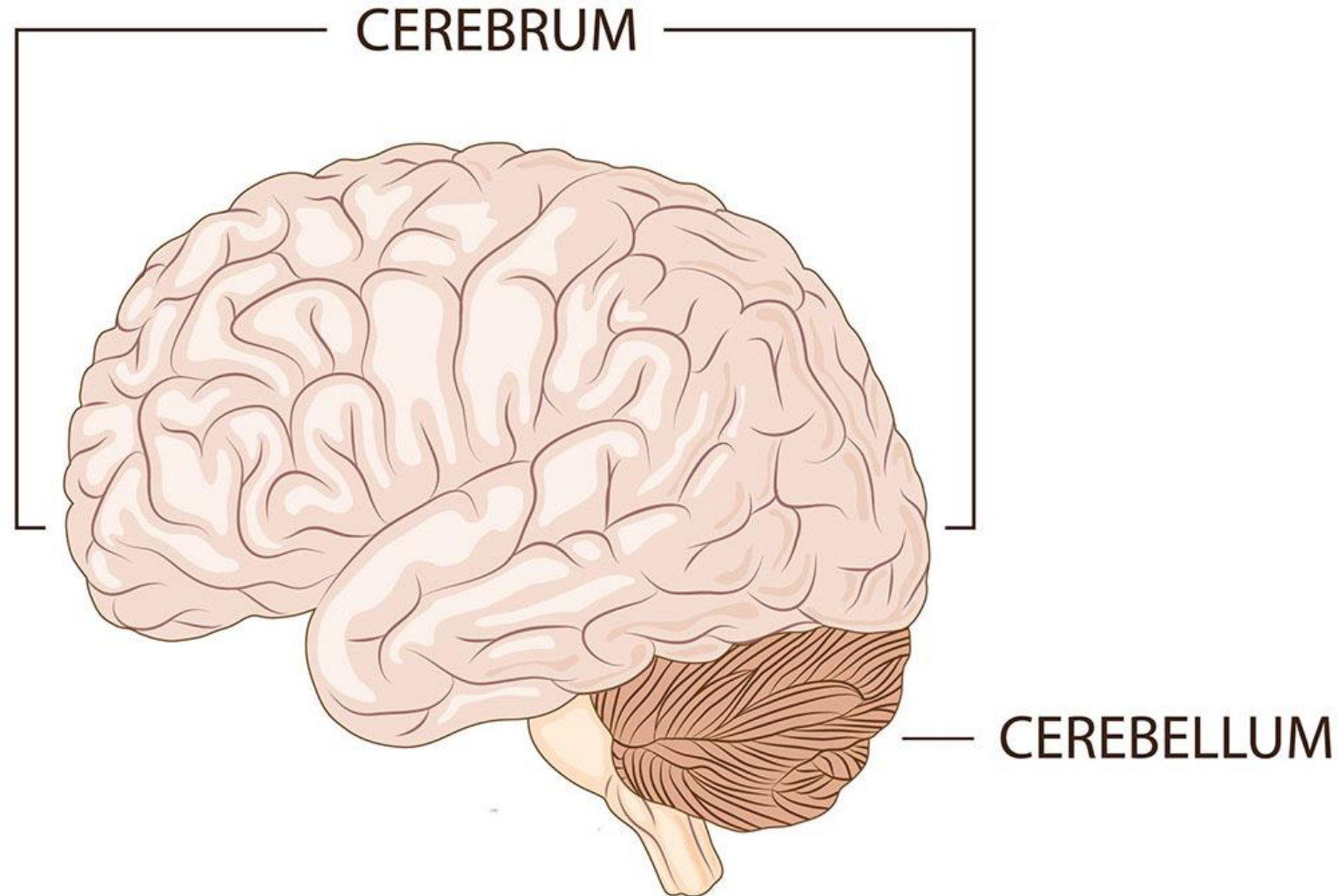


- ChatGPT = most famous interface to a LLM
- Training data until Sept '21
- Plugins released in May '23 → very new and still in discovery phase (don't jump to conclusions !)
- Plugins can interface GPT4.0 (newest model) with specific fresh data
- I think some plugins show disruptive pattern (most plugins have low added value)



ChatGPT vs. Plugins : 0-1

We are ChatGPT biggest problem



We are ChatGPT biggest problem



Dr. Milan Milanović ✓

@milan_milanovic

To replace programmers with AI, clients will need to accurately describe what they want.

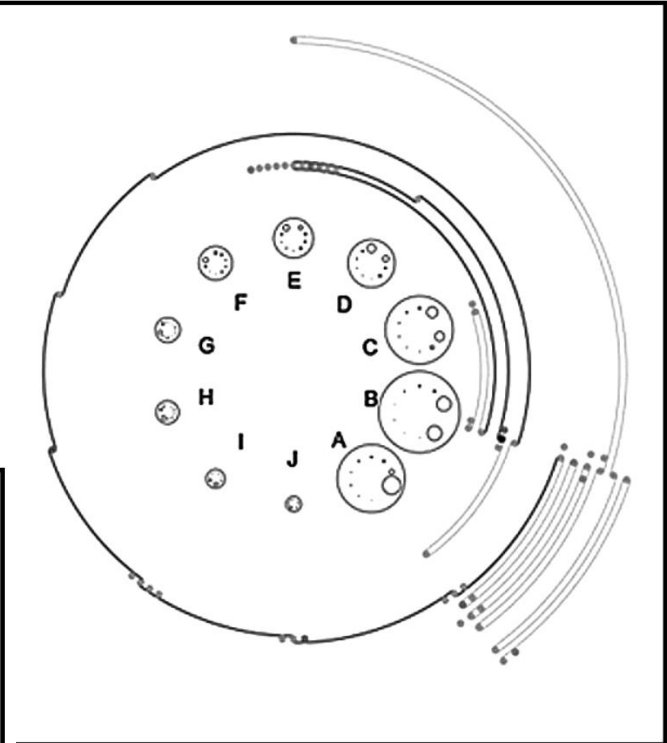
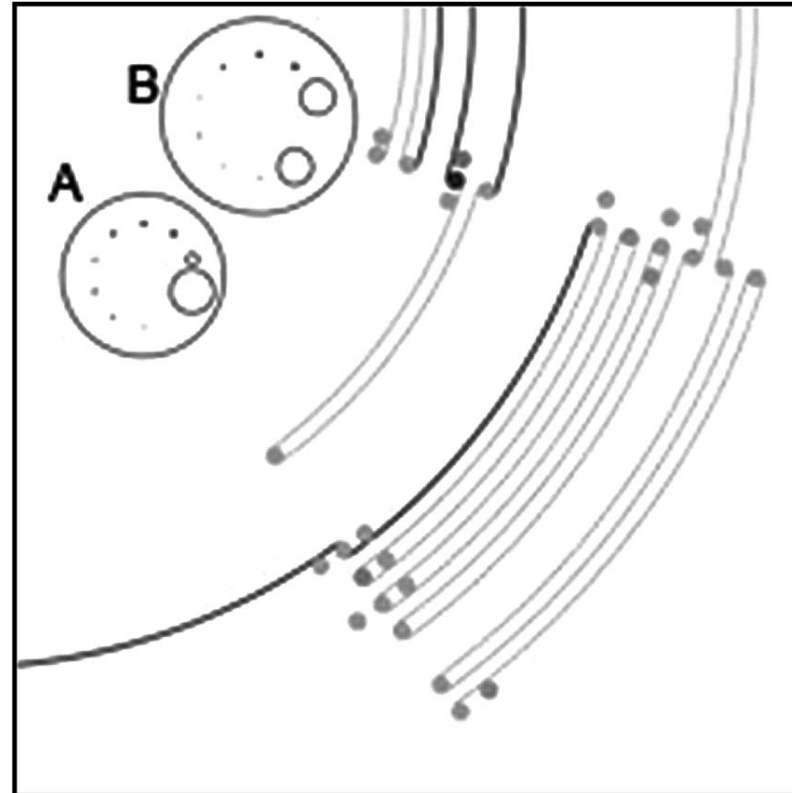
We're safe.

ChatGPT is not a revolution. Plugins may be.



- ChatGPT is an interface → requires efforts (natural language = 10,58% of online requests and 1,73% of volume)
- Humans are not good at efforts
- Quality of results depends largely on quality of query (“prompt”) → several iterations necessary
- Plugins enable a **switch from explicit feedback to hybrid feedback** (explicit + implicit = observed behavior)

How we search





Use Case 1 Recommendations

Online recommendations

Produits à la une

Fruits et légumes frais



Delhaize
Haricots verts

500 gr

5.70 €/kg

€2,85



Delhaize
Pommes de Terre
Farineuses | Primeur

2 kg

1.68 €/kg

€3,35

- Very efficient tool to increase online sales
- ML models (e.g. collaborative filtering)
- May contain business rules
- Expensive IT infrastructure + skills
- Famous reco engines : Amazon, Netflix, Spotify, ...

LLM's can produce recommendations



Xavier (Xavi) Amatriain • 1st



Leading Generative AI Engineering and Product Initiatives at Lin...

6d • A circular icon with a hand pointing outwards, indicating a public post.

Netflix algorithms vs. GPT4. I know I am shooting myself in the foot here a bit, but I am getting much better Netflix recommendations from GPT4 than from Netflix. As a bonus, I can ask any question I want about the shows before watching them. Yeah, I know the catalog is not updated, but that is very easy to solve of course.

Demo time

 GPT-3.5

 GPT-4

Use Case 1

ChatGPT PLUS

Send a message. 

ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT May 24 Version](#)



LLM's can produce recommendations

Use Case 1



voici la liste des produits qui sont le plus souvent dans ma liste de courses. Que pourrais-tu me recommander comme produit additionnel :

- boisson au soja Alpro
- pick up au chocolat noir
- pesto rouge Bertoli
- tomates concassées bio en boîte
- double concentré de tomates Elvea
- soya crène light Alpro cuisine
- beurre de baratte bio
- lait demi-écrémé bio
- ricotta galbani
- chocolat en poudre bio
- eau plate en bouteille de 5 litres
- eau déminéralisée en bouteille d'1 litre
- bananes fairtrade bio
- tomates cerises bio
- roquette bio en sachet de 100 grammes
- pistaches grillées en sachet de 250 grammes
- myrtilles en barquette de 600 grammes
- riz façon méditerranéenne Uncle Ben's
- lait de coco
- pâte de curry rouge
- nouilles soba

↻ Regenerate response



Voici quelques recommandations de produits additionnels qui pourraient compléter votre liste de courses :

1. Pain complet bio : Idéal pour accompagner votre pesto rouge Bertoli et votre boisson au soja Alpro.
2. Avocats : Ajoutez une touche crémeuse à vos salades ou préparez des guacamoles savoureux.
3. Fromage de chèvre : Parfait pour agrémenter vos salades, pâtes ou tartines.
4. Yaourt grec : Un en-cas sain et riche en protéines.
5. Quinoa : Un substitut nutritif et polyvalent au riz.
6. Huile d'olive extra vierge : Ajoutez une saveur méditerranéenne à vos plats.
7. Ciboulette fraîche : Une herbe aromatique qui se marie bien avec de nombreux plats.
8. Jus d'orange pressé frais : Une boisson rafraîchissante et pleine de vitamine C.
9. Saumon fumé : Un ajout délicieux à vos salades ou comme garniture pour vos toasts.
10. Miel bio : Utilisez-le comme édulcorant naturel ou pour sucrer vos boissons chaudes.

J'espère que ces suggestions vous seront utiles lors de votre prochaine liste de courses !

Where is the disruption?

CONVENIENCE • Consumer can verbalize wishes	CONSUMPTION • Recommendation system not trained to maximize retailer's goals → threat
CONTROL • Consumer can finetune recos (« I'd like more of ... and less ... ») • Dream of individualized reco's (clusters of N=1) becomes possible	COST • Price-based recos accross multiple websites possible → extreme threat for retailers



Use Case 2

Recipes x retail



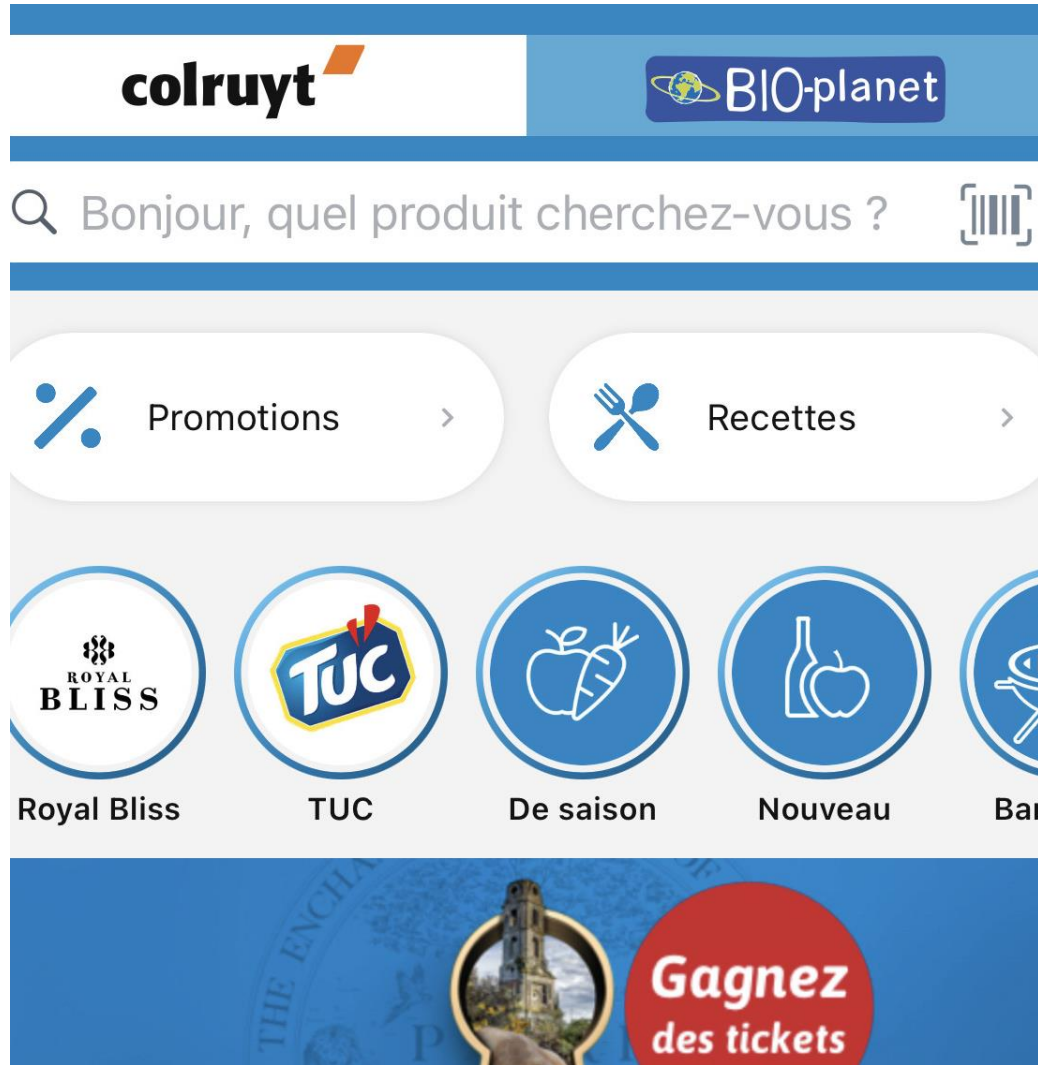
- Recipes are a good solution to
 - lack of ideas
 - Increase sales (cross-selling)

But

- Overconsumption (personal inventory not taken into account, no portioning → Hello Fresh)
- Not personalized (retailer decides for me)

Convenient but lack of control

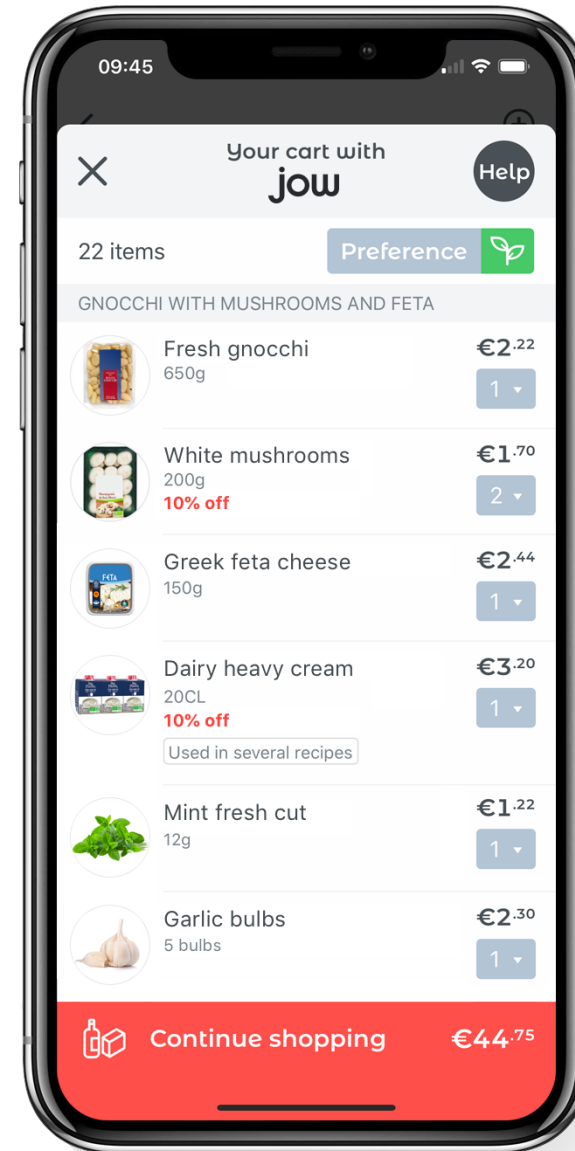
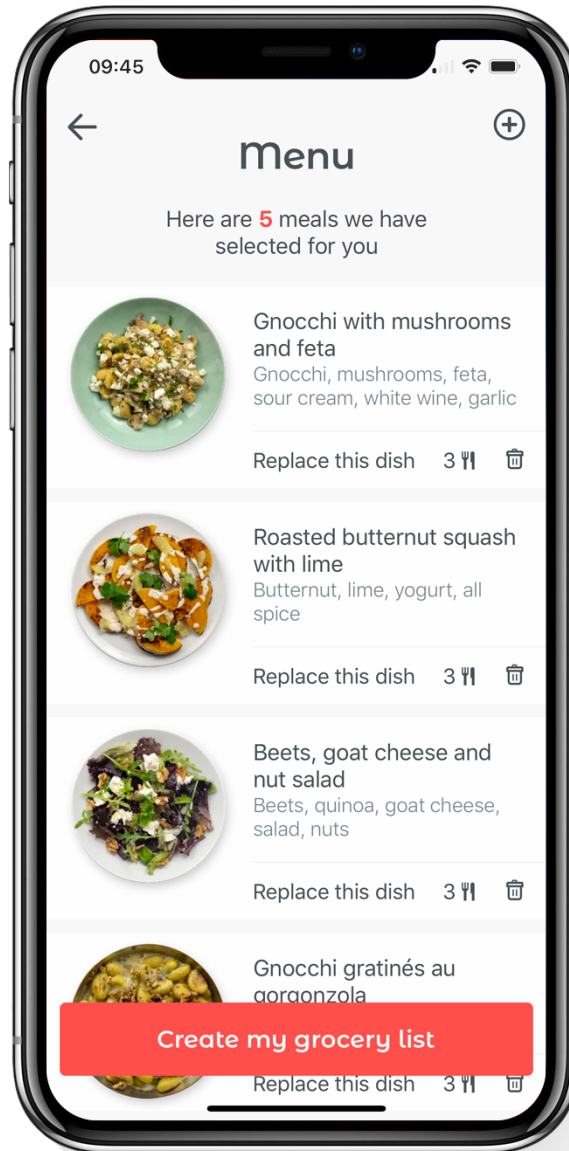
Recipes : a complex market



Different stages:

- No recipes
- In-retailer-app (Colruyt, Delhaize, ...)
- out-of-retailer-app (Jow)

Alternative models : Hello Fresh



←

Foyer

Pour combien de personnes faites-vous les courses ?

Adultes

8 ans

Enfants

8 ans

Animaux

Suivant

←

Votre régime

Avez-vous un régime particulier ?

Sans produit laitier

Sans gluten

Sans porc

Végétalien (vegan)

Végétarien

Pesco-végétarien

Suivant

←



Ingrédients à exclure

En plus des régimes, y a-t-il des ingrédients que vous n'aimez pas ?

Fruits de mer + Poisson +

Coriandre + Brocoli +

Fruits à coque + Œuf + **Aleel** X

Rechercher un ingrédient

Suivant

←

Votre cuisine

Quels sont vos équipements de cuisine ?

Robot cuiseur

☐ Baby Cook

☐ Cookeo

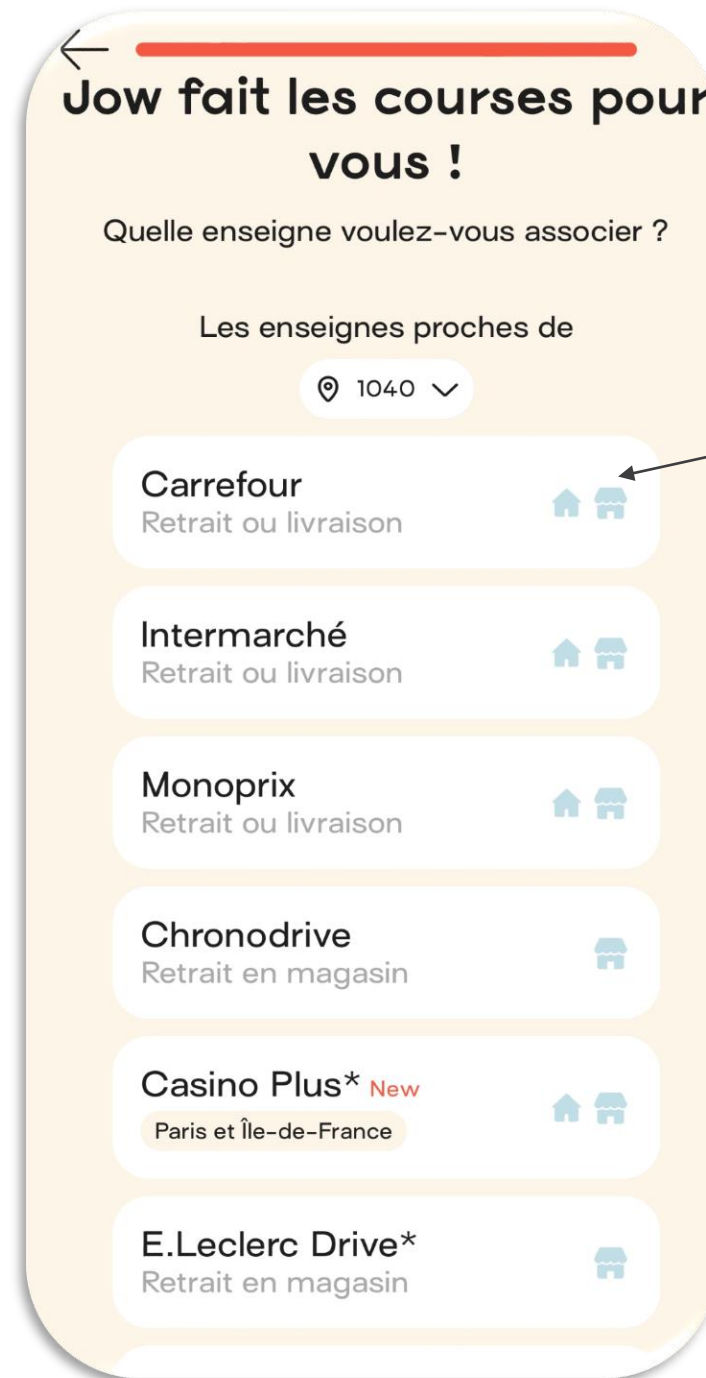
☐ Companion

☐ M. Cuisine

☐ Digicook

Annuler OK

Suivant



So clever !
Jow owns the
relationship and
the data (retailer
bypassed)

Recipes with ChatGPT



ChatGPT has brought some improvements

- Consumer back in control
- Variations possible (less of this, more of that, "I already have ...")
- But where to order ?

Demo time

⚡ GPT-3.5

⚡ GPT-4

Use Case 2

ChatGPT **PLUS**

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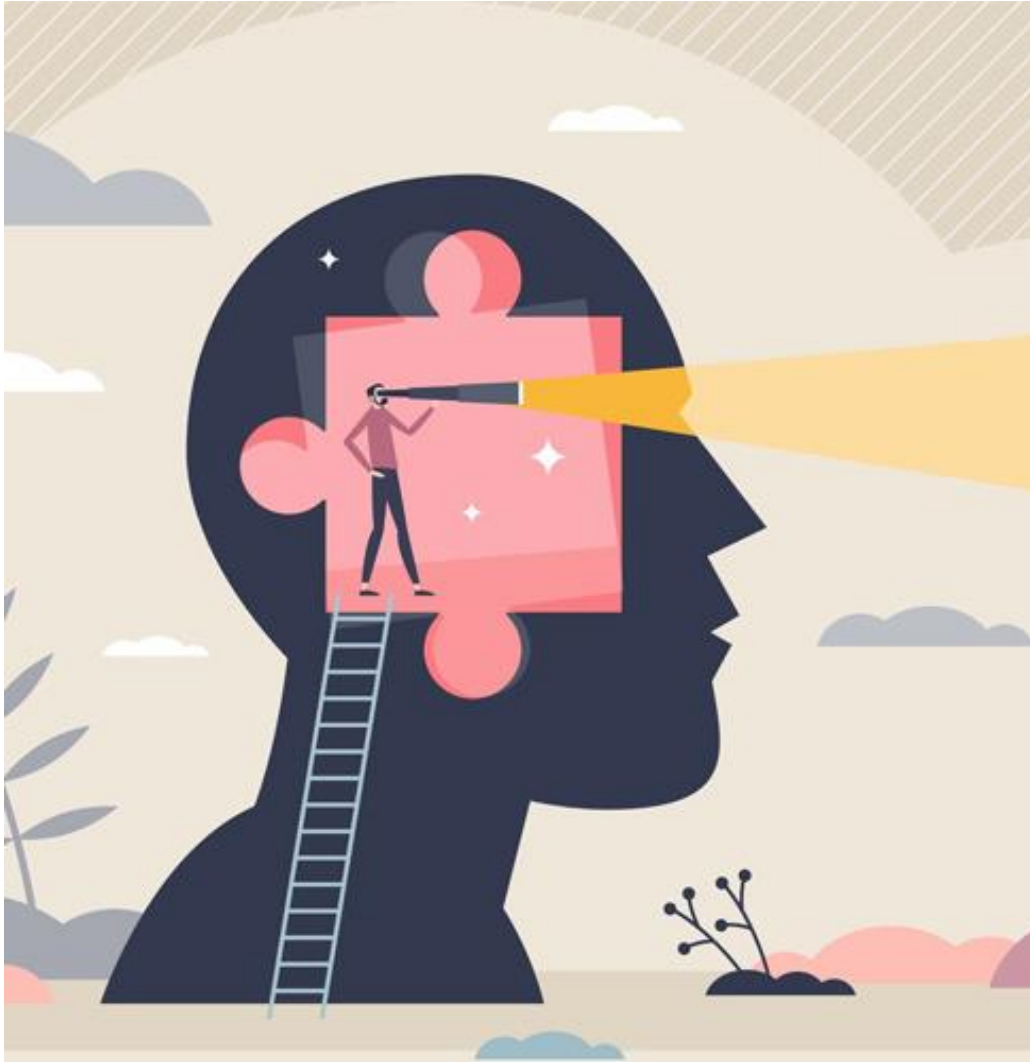
Where is the disruption?

CONVENIENCE • From recipe to shopping cart effortless 🧐	CONSUMPTION • Huge opportunity for cross selling • Opportunity to reduce waste
CONTROL • Consumer back in control : retailers don't impose recipes • Retailers loose control	COST • Low business model can be extended to minimize shopping cart price (→ threat)



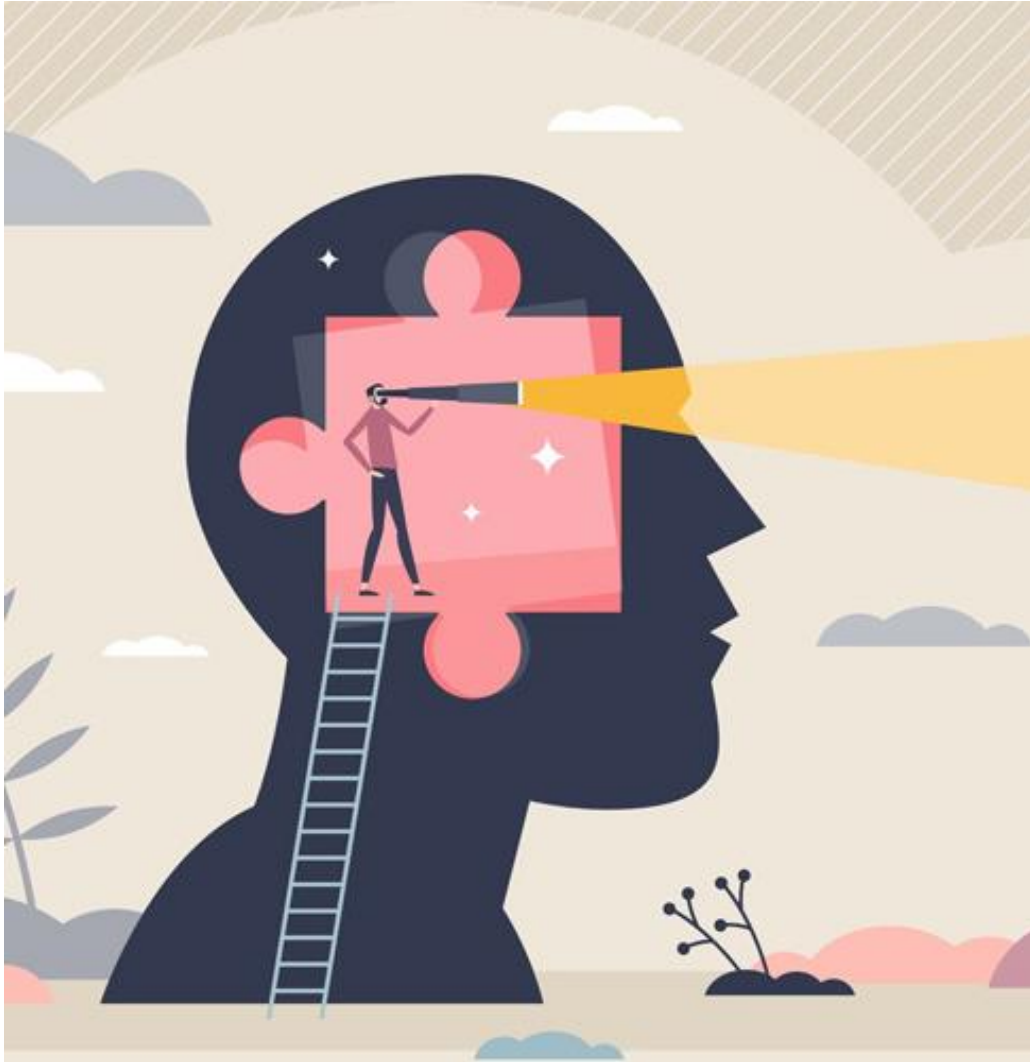
Final thoughts and conclusions

Conclusions and final thoughts



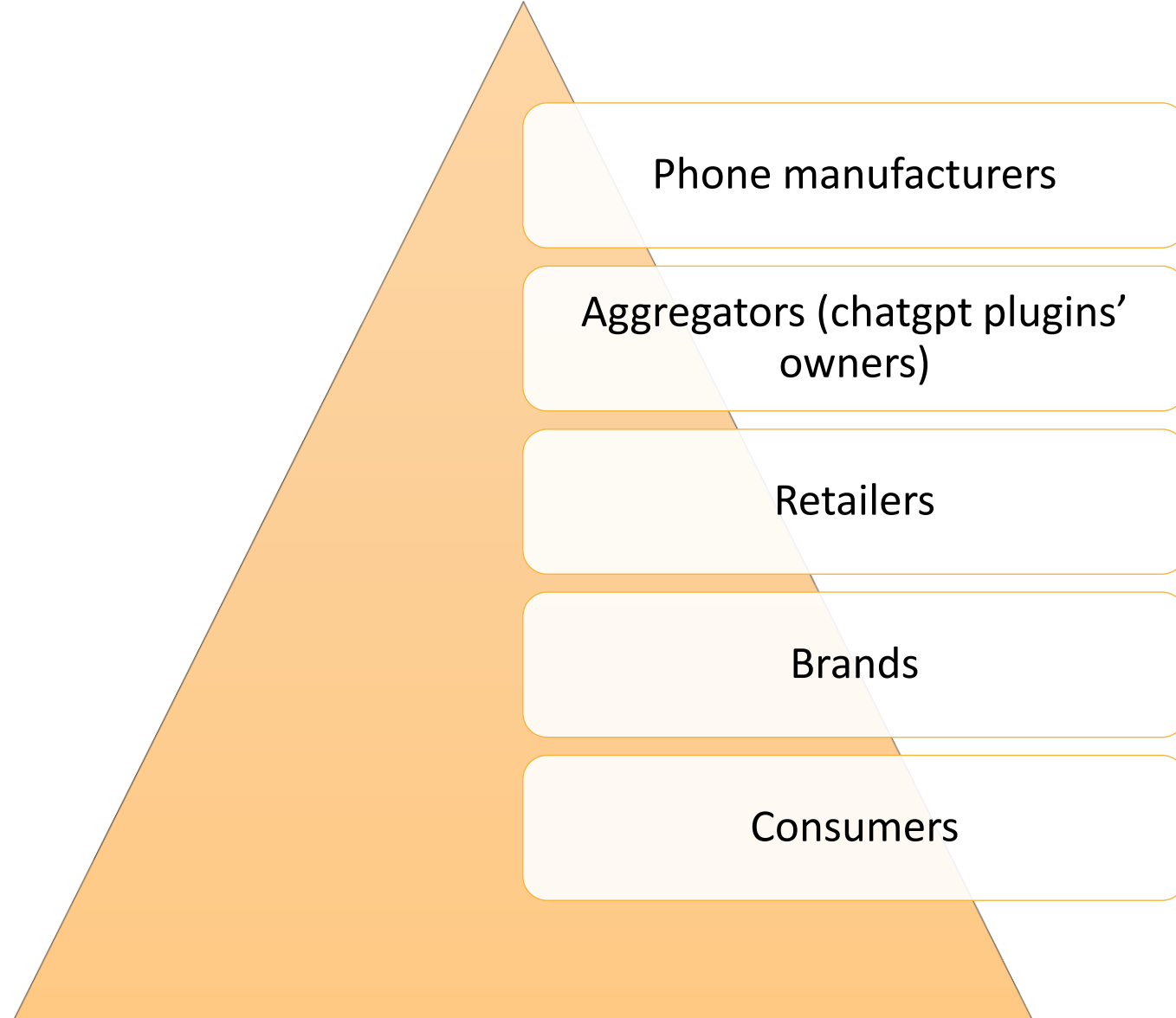
- Barriers to entry in GPT low (chatbot) but still too high for most users → plugins will change the game
- Plugins in operating systems = next disruption
- Smart technology : adoption depends on perceived threats (TAM) : plugins are very pervasive → consumer's consciousness of GAI (5th C ?)

Conclusions and final thoughts

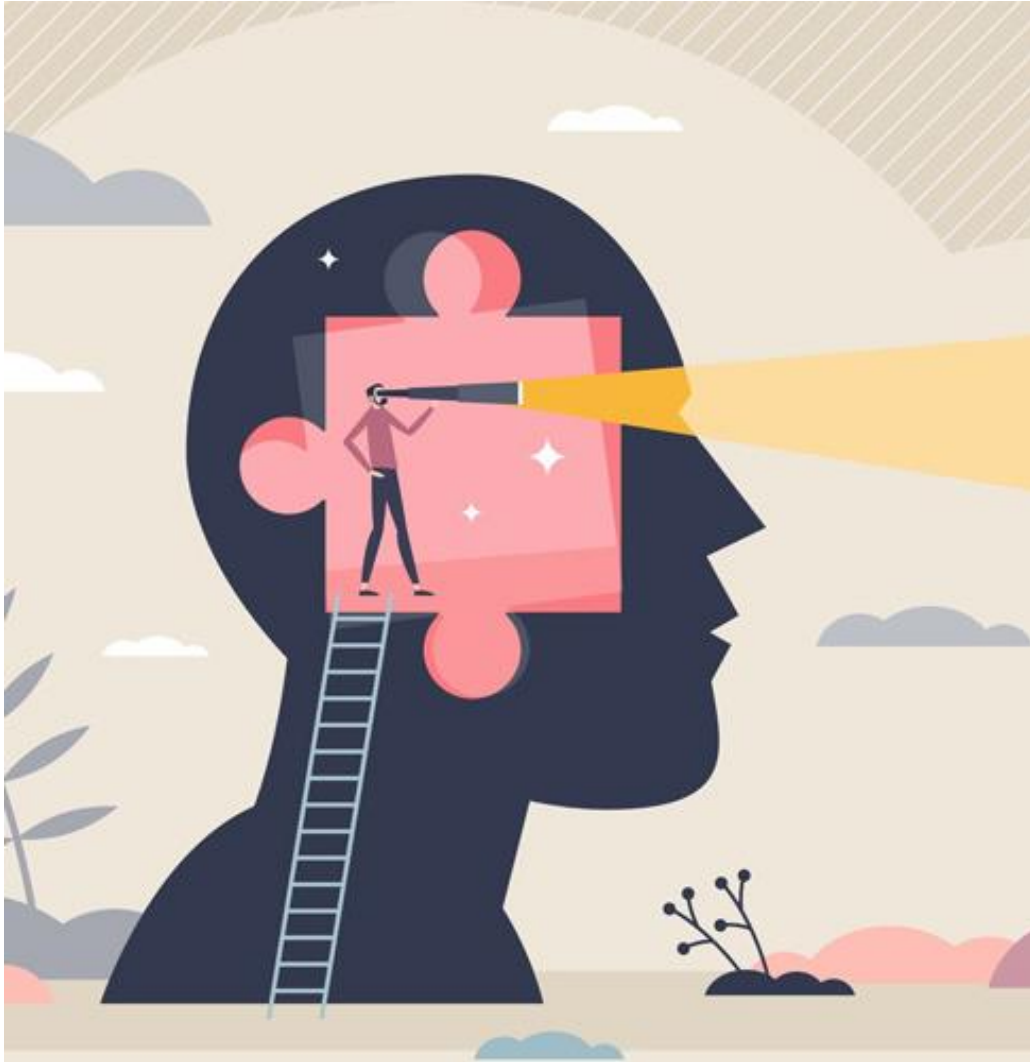


- Who owns the relationship ?
- Aggregation services may become the norm
→ extreme threat for retailers (imagine JOW-based business model + ability to minimize costs for the consumer)

Who will own the data ?



Conclusions and final thoughts



- The consumer will increasingly delegate decisions while having the impression to remain in control
- What does it mean for loyalty?
- What are future customer satisfaction measures in such a context?



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