

# Conversation with Vocal Assistants

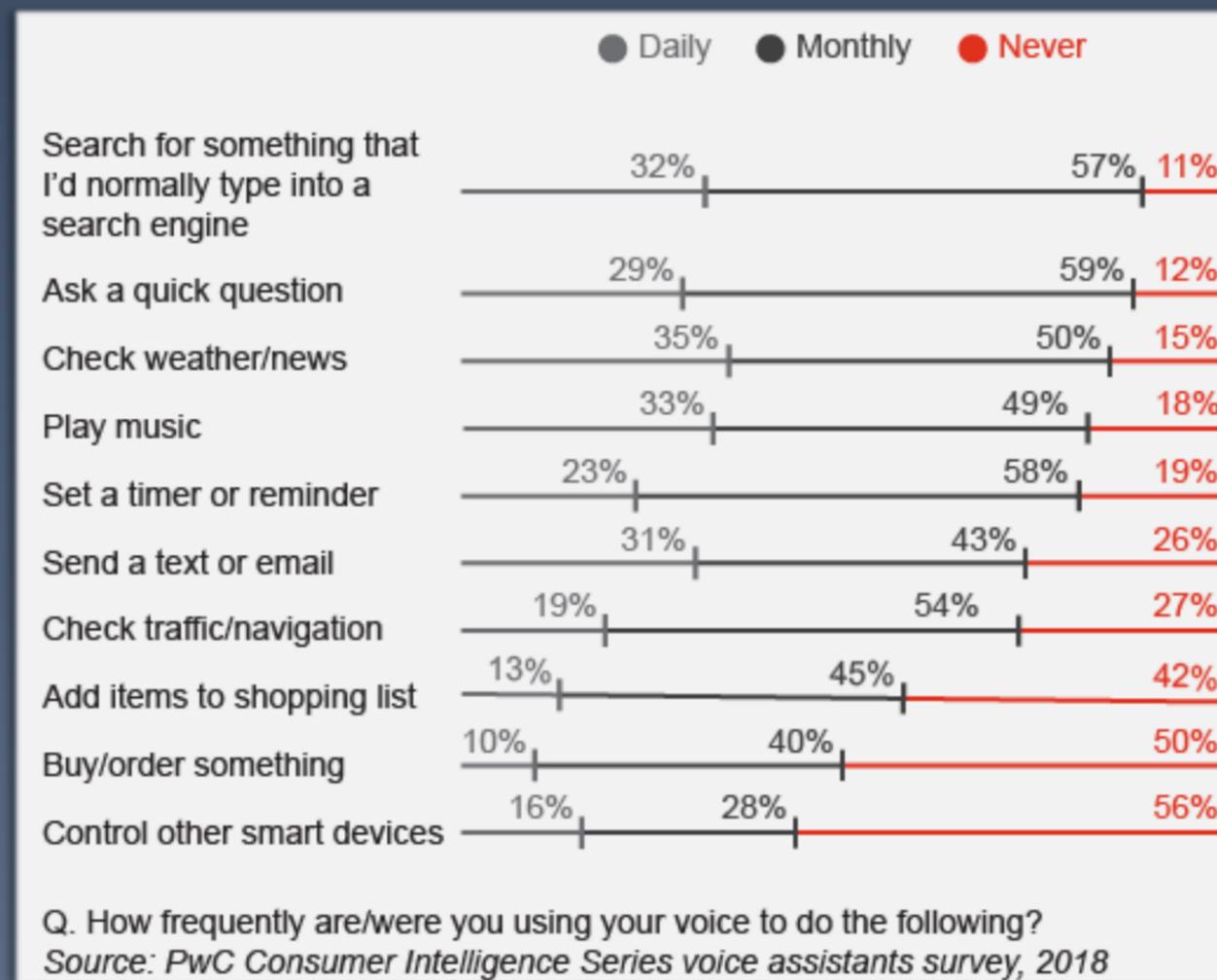


HEC MANAGING INNOVATION AND DESIGN THINKING

Loïc BOYER - FINAL RECAP

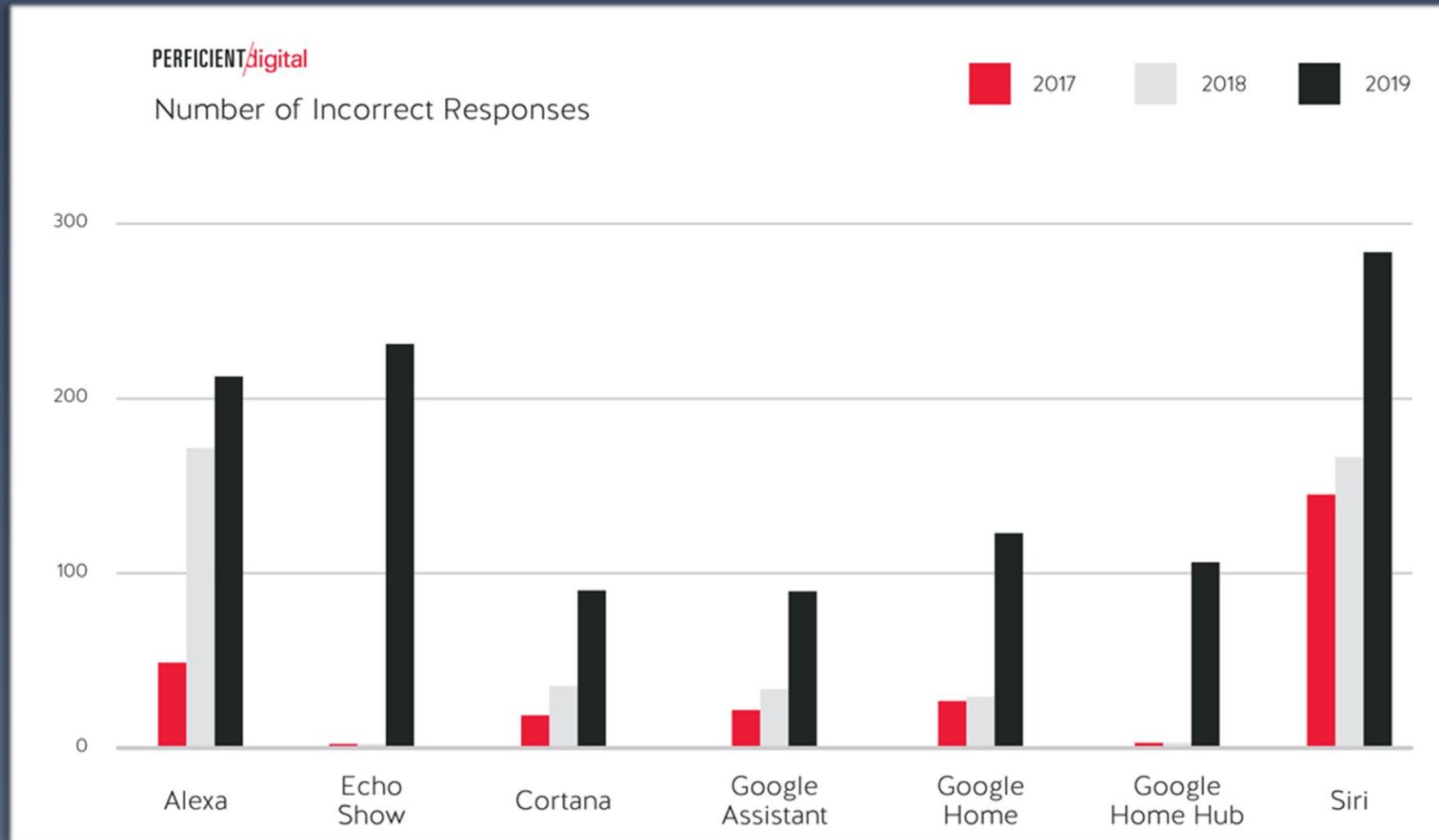
# Problem articulation

*Despite Vocal Assistants growing capabilities, basic tasks remain the norm ...*



# Problem articulation

*...and progress has stalled to some extent.*



# Problem articulation

*“How might we help users to have  
coherent and engaging conversation  
with vocal assistants?”*

# Data analysis

## *Personas storyboards*



Name: Julia  
Age : 26 years old  
Nationality : French  
Lives in Macon  
Work: Student  
Values: Music, U2, Concerts.  
Constraints: Time, access to ticket.  
Pains: Lives in a small city.

*Julia wants to go to the next U2 concert in Paris, and want to buy some tickets online for this event to go with her friends.*

|                 |  |  |
|-----------------|--|--|
|                 |  |  |
| User            | <p>« Find when is the next U2 concert? »</p> <p>↓</p> <p>« Next concert is in Chicago on 03 June »</p> | <p>« When is next U2 concert in France? »</p> <p>↓</p> <p><b>Negative answer</b></p> |
| Vocal Assistant |  |  |

Insights generated: except for simple information, except for a few tasks , the assistants are not able to consistently produce a satisfactory vocal response to queries.

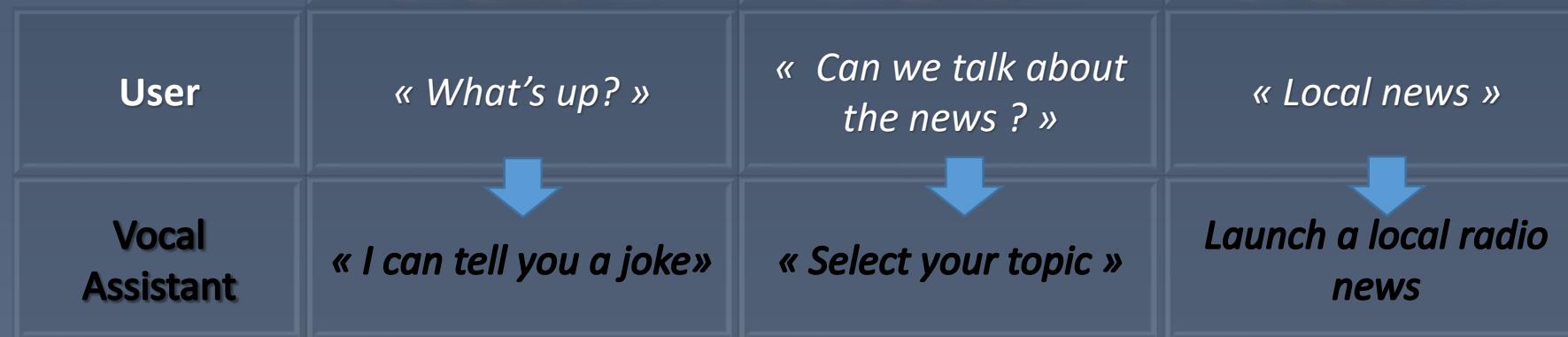
# Data analysis

## *Personas storyboards*



Name: Daniel  
Age : 48 years old  
Nationality : Canadian  
Lives in Greenland  
Work: Lumberjack  
Values: Local News, Weather  
Constraints: Lives in an isolated area.  
Pains: Loneliness, Cold winter.

*Daniel lives in a very isolated area in Greenland, during winter time he tries to have some conversations with its vocal assistant to compensate the lack of human relations.*



Insights generated: Daniel needs to access coherent information when questioning the vocal assistant because he wants to learn and discover about local new.

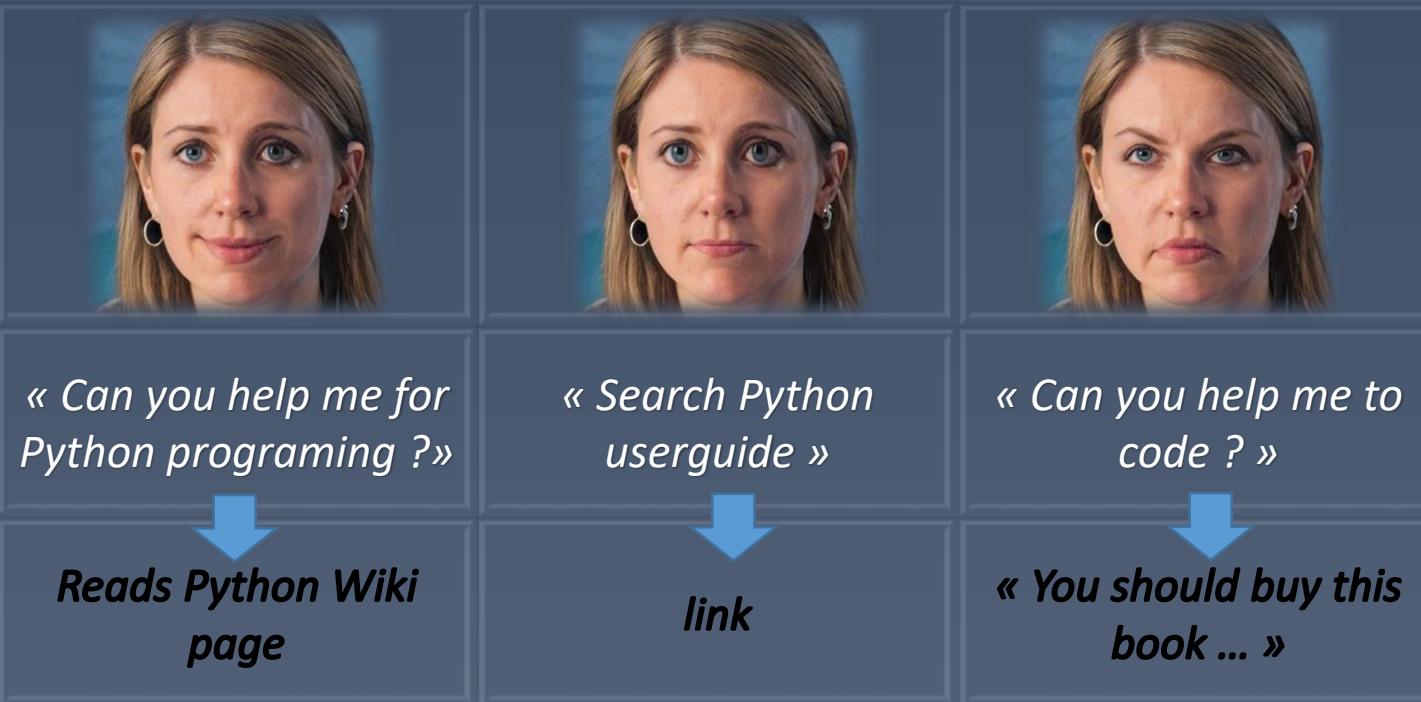
# Data analysis

## Personas storyboards



Name: Barbara  
Age : 38 years old  
Nationality : English  
Lives in New York  
Work: Engineering  
Values: Code, MOOC  
Constraints: Time, Complex Topics  
Pains: Needs course on Python code

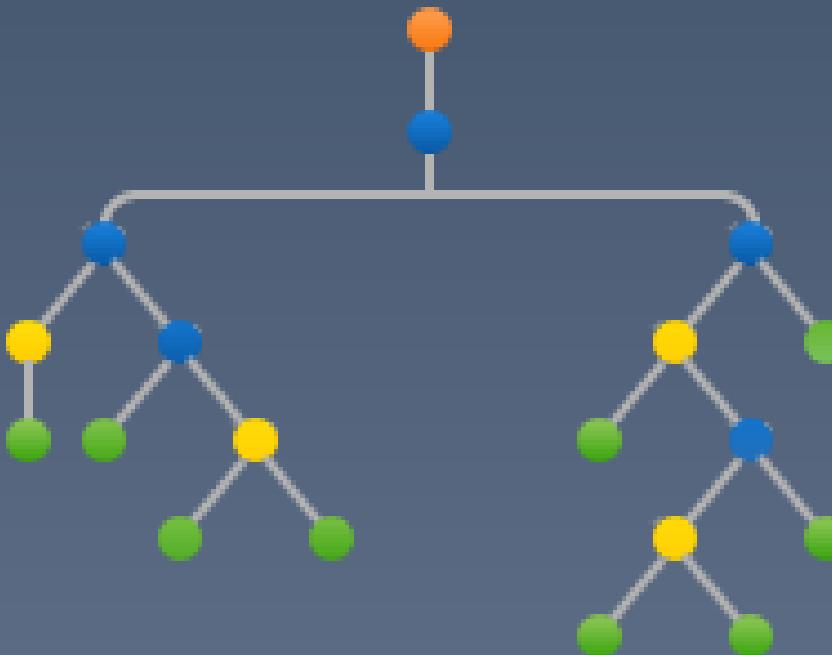
*Barbara lives in New York, she has to pass some test about Python programming and would like to refresh her memory using her vocal assistant: "The biggest hurdle for me has been awareness, like understanding what I'm able to do with these devices."*



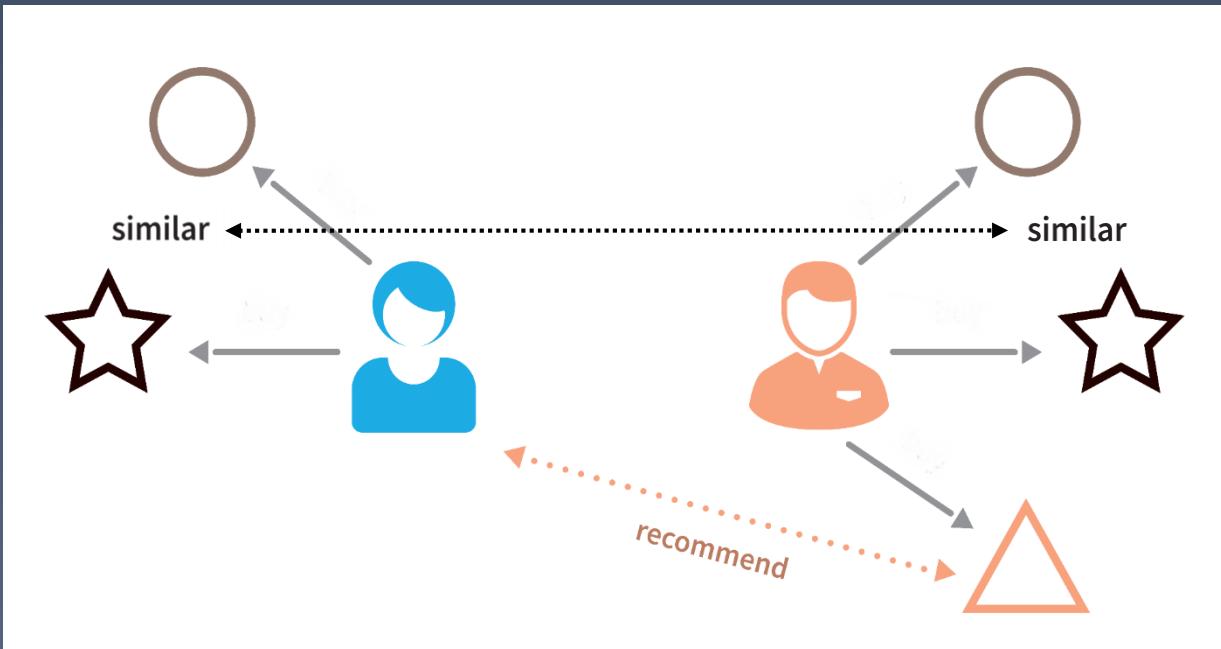
Insights generated: Integration of vocal assistant is rated “Terrible” Limited knowledge of the full breadth of capabilities.

# Final articulation of the problem

*“How might we use Machine Learning Algorithms  
in order to create coherent and engaging Vocal  
Assistant communications with the user.”*



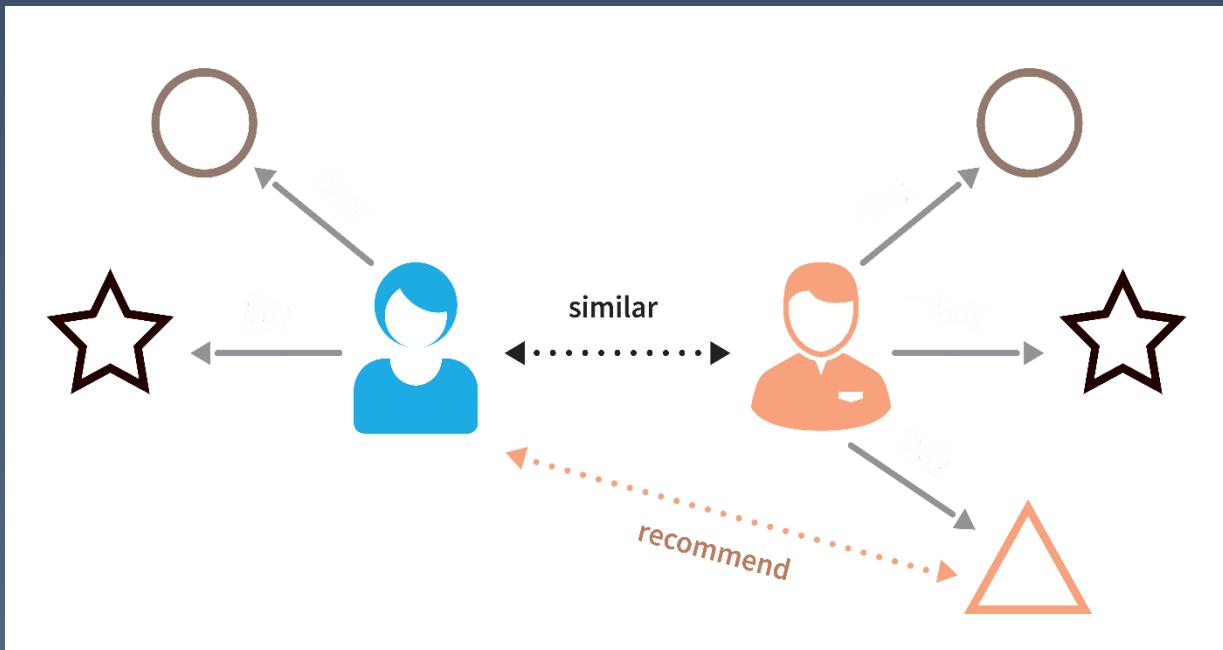
# User Association Strategy



Otherwise known as “Users who looked at X also looked at Y.” This strategy primarily makes recommendations based on inputs or actions from other people.

Useful for capturing recommendations related to sequences, or groups, and showing similar content.

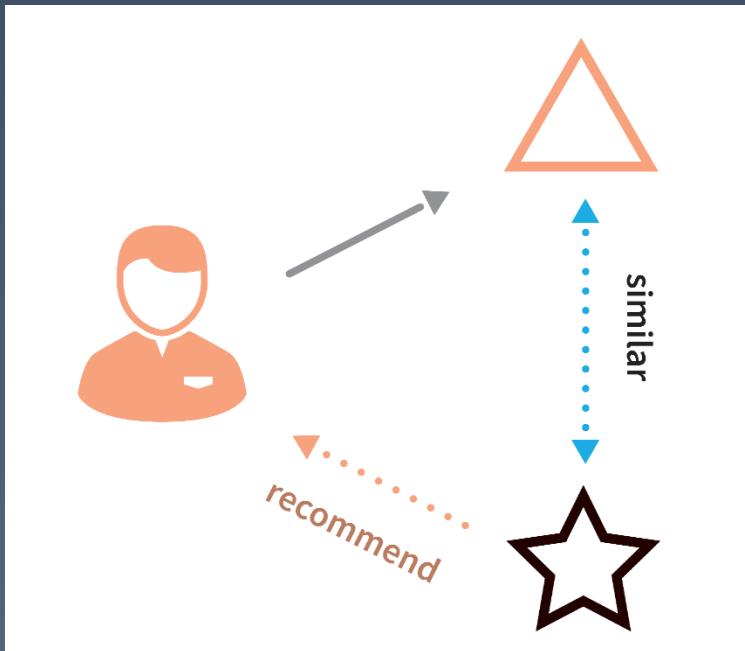
# User Similarity Strategy



This strategy involves creating user groups by comparing users' activities.

Useful to quickly provide recommendations that are popular among other members of the group.

# Content Similarity Strategy



This strategy is content-based and make recommendations based on the user's content-history.

Useful to recommend content close based on user metadata and it becomes more accurate the more actions (inputs) the user takes.

# Experiments to find next U2 concert in Paris

User

« Find when is the next U2 concert? »



Vocal Assistant with User Association Strategy

« Next concert is in Chicago on 03 June »

User

« Find when is the next U2 concert? »



Vocal Assistant with User Similarity Strategy

« No U2 concert planned in Paris, but Bono will give a show tomorrow night»

User

« Find when is the next U2 concert? »



Vocal Assistant with Content Similarity Strategy

« No concert planned in Paris, their next concert is in Chicago on 03 June »

« When is next U2 concert in France?»



« The date is unknown yet, but Bono will give a show tomorrow night. »

« When is next U2 concert in France?»



« The date is unknown yet, but Bono will give a show in Paris tomorrow night. »

# Experiments to discuss local news



# Experiments to support Python Courses

User

« Help me for Python programing Course »



Validate suggestions

« I will search into Python, Panda, Maptplotlib and Folium userguides.»



«Can you help me show a dark map with folium? »



Vocal Assistant with User Association Strategy

« I can search into Python, Panda, Maptplotlib and Folium userguides.»

User

« Help me for Python programing Course »



Validate suggestions



«Can you help me show a dark map with folium? »



Vocal Assistant with User Similarity Strategy

« I can search into Python userguide, FAQ and Forums in English»

« I will search into Python userguide, FAQ and Forums in English. »

« Your search did not match any documents »

User

« Help me for Python programing Course »



Adjust suggestions: « only Python userguide »



«Can you help me show a dark map with folium? »



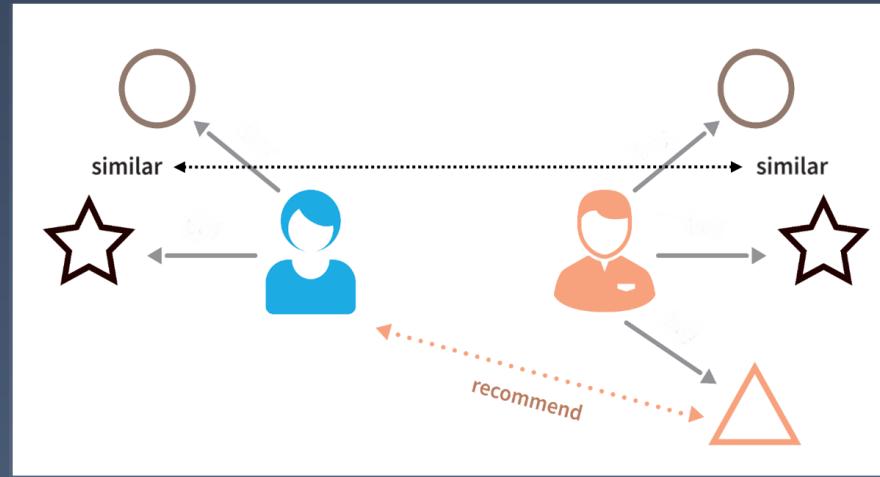
Vocal Assistant with Content Similarity Strategy

Similar content can be searched into Python, Panda, R and Java userguides. »

« I will search into Python userguide. »

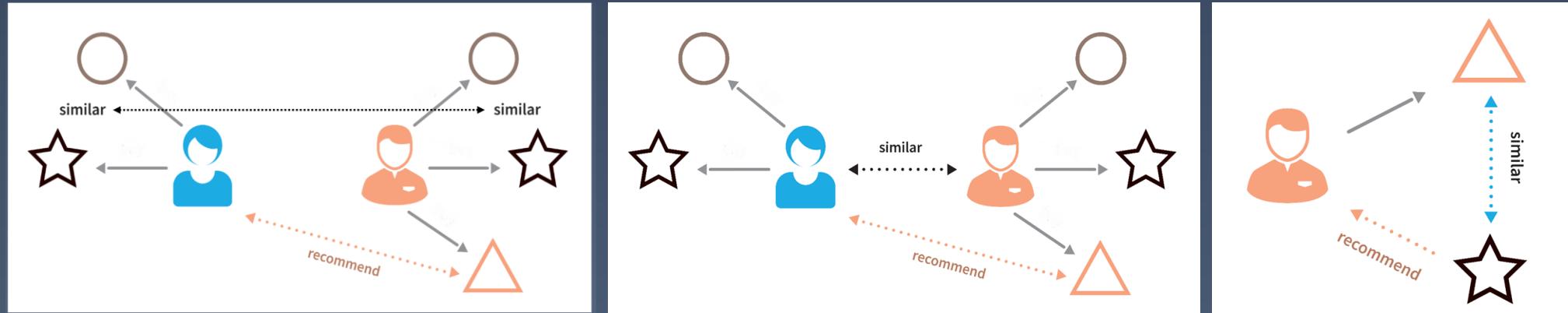
« Your search did not match any documents »

# Final concept: User Association Strategy



User Association Strategy makes accurate and fast recommendations based on inputs or actions from other people.

Depending on goals, audience, the platform, and content, these different approaches can be employed individually, though generally the best results come from using them in combination.



**Design Thinking is an iterative process, during the next Sprint actions are:**

- To refine prototypes and solutions.
- Test next iterations of prototypes.
- To learn more about user for unexpected insights.
- To reframe the problem.

# Sources:

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