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HANDOUTS

INNOVATION IN THE DATA ECONOMY

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This handout is written by students with no intention of replacing university materials.

It is a useful tool for studying the subject, but does not guarantee preparation as exhaustive and complete as the material recommended by the University.



INNOVATION IN THE DATA ECONOMY

INNOVATION CHALLENGES AND FIRM RESPONSES

Innovation is the **building engine** of any company -> in the past we used to think about innovation just for technological companies, but nowadays most companies work daily on new projects and need to innovate, otherwise they cannot sustain their competitive advantage.

What is changed?

In the past, innovation was mostly seen in companies as a **one-off project**, and most of the employees time was spent into managing current offering, and current products/services, while only a limited part of the time was devoted to innovation; nowadays it is exactly the opposite, so most companies work everyday on new projects and most of their time is linked and focus on innovation and the rest on managing current offering.

Why it is so important, and why innovation become the engine of any company?

It is fundamental to keep high the **competitive advantage**, meaning by this that being innovative is no more optional, and to keep it high we need to:

- a. Innovate first, meaning by this making high noise -> we need to stay relevant, and so, we need to say something that sets out.
- b. Being **tech** -> the rise of technology has an impact almost on everything, just think about AI as a lever for increasing and enhancing consumer experience.
- c. The **speed of change**, which is connected to technology -> when we introduce something new in the market it last, as new, just for a little amount of time, then other novelty starts to enter the market, because consumers are willing to change more than in the past and they are always asking for new things.
- d. Finally, another important element to consider is the fact that now, more than before and always because of technology, we have a lot of **new companies** that are emerging in the markets, while in the past there were just a few giants for each industry -> already existing companies need to change to adapt themselves with the changes of the market.

Innovation has the potential to **destroy industries**.

EX: Netflix, which emerged as a streaming company, has changed not only the distribution part of movies, but it has changed completely the way in which we consume movies, but also the type of movies that we like -> they have not just become the major distributors of movies and TV series, but they have become an important content creator that somehow has also changed the preferences of consumers.

EX: Nvidia with their GPUs. At the beginning the companies mainly impacted by them were chip processor, such as IBM, Intel. Before AI GPUs were used for gaming industry, since these graphical units were not so used in many other situations; then thanks to machine learning, algorithms and neural networks, GPUs became super interesting, and Nvidia boomed because they were the ones who had invested in that technology before the others, and so they could actually exploit the knowledge that they had been developed.

EX: in the travel industry Uber, Airbnb disrupt businesses which lasted for years.

EX: Amazon versus book and retail industries

EX: Google

EX: Tesla versus car industries

The important thing to highlights, beyond the fact that they have destroyed industries, it the fact that they have changed the way incumbents were approaching innovation. Even established companies needed to keep up with this kind of revolution, and so, they needed to change completely their approach to innovation, their culture of innovation, and the tools that they were using for innovation without the fear of ruin their reputation if a project failed -> as a consequence data came, and as we know, data are the most important source of insight for innovation.

How companies leverage on current opportunities to sustain innovation over time and thus their competitive advantage?

We need to think as brand entrepreneur, within existing companies.

Innovating with data and Artificial Intelligence

The course is divided in three parts:

1. Innovating in the data economy

- Innovation challenges and firm responses -> how to keep and sustain your advantage in the data economy
- Overcoming innovation roadblocks (that generally start-ups do not have): the case of Gucci in fashion
- Innovating in the data economy -> change the mindset of innovation

2. Opportunity identification & new ideas generation

- White space and behavioral analysis with social media data
- How to be creative: the process
 - Design thinking methodology
 - Design thinking application

3. Innovating testing and launch

- Concept testing with GenAI and silicon consumers
- Positioning map with social media data
- Brand audience analysis with social media data

Innovation funnel

- Opportunity identification + idea generation
- Selection + tools
- Market

The idea is that we start from many ideas, and we try along the way to make a selection that allows us to arrive and identify the most prominent ideas, that we want to actually launch into the market.

COMMON ASSUMPTIONS ABOUT INNOVATION

This is a list of things that we usually associate with innovation:

- Tech
- Process innovation (McDonalds & AI)
- Design (Create)
- Customer experience (Self-checkouts, Amazon)

1. Innovation is **risky**

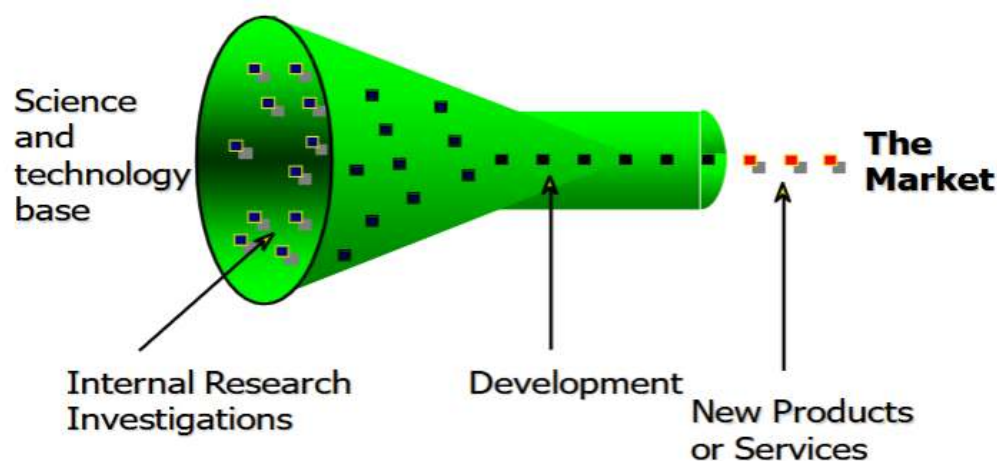
- 95% of new products fail in the first 5 years
- 90% of new products launches attract 1% of the market share
- New products fail at a rate between 40% and 90% and this figure hasn't changed much in the

2. Innovation is **technology driven**

3. Innovation responds to **widespread need** of the existent market – i.e. big market, big rewards

4. Innovation has to be **developed internally and protected** by patents

- Closed innovation system

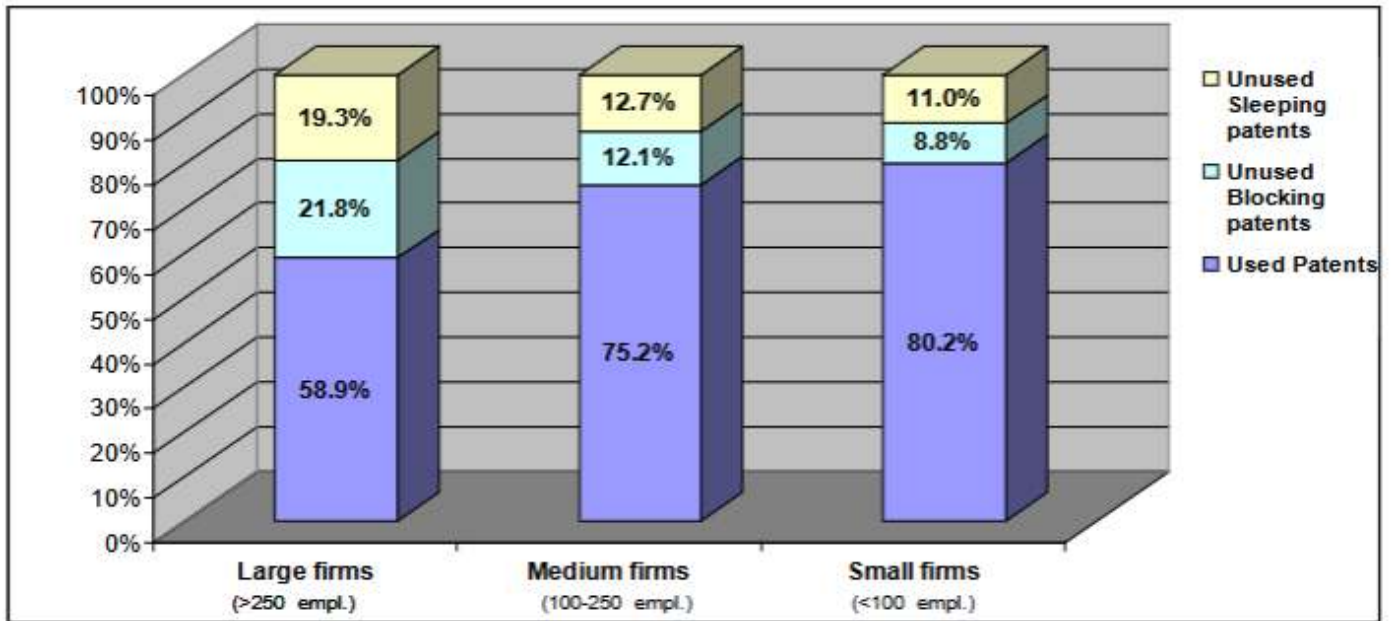


Source: Chesbrough, 2006

The reality is that there are a lot of opportunities for companies to actually exploiting their own patents -> roughly 40% of the patents that companies register, are not used; they are either blocking patents or sleeping patents.

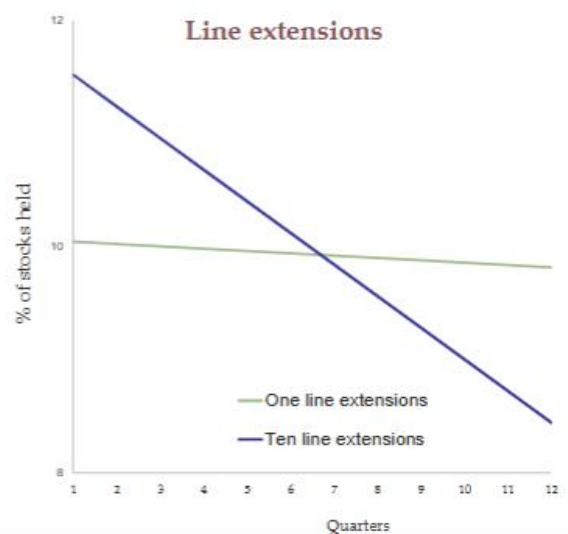
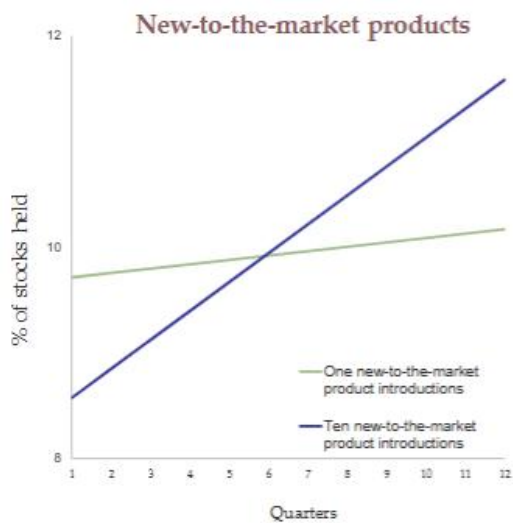
Sleeping patents: are the patents that have been filed by large corporations, but that are not used.

⇒ There are a lot of opportunities if we open up to boundaries of our organization to actually develop something.



Firm responses to innovation challenges

1. Innovation is risky, but it is **necessary**
 - a. 30% of corporate profits come from new products launched in the past 5 years
 - b. some 70% of corporate leaders say innovation is among their top three priorities for driving growth (McKinsey Global Survey, 2019)
 - c. investors react to innovation



The green line shows how the percentage of stock in the hands of investors, which changes when the companies introduce just one radical innovation. The blue line shows what is the reaction of investors when the companies introduce 10 or more radical innovation.

The companies that introduce just one radical innovation in all of those quarters, do not attract investors' investments; while those companies that attract investor investments, are those that are really radical because they invest on the future.

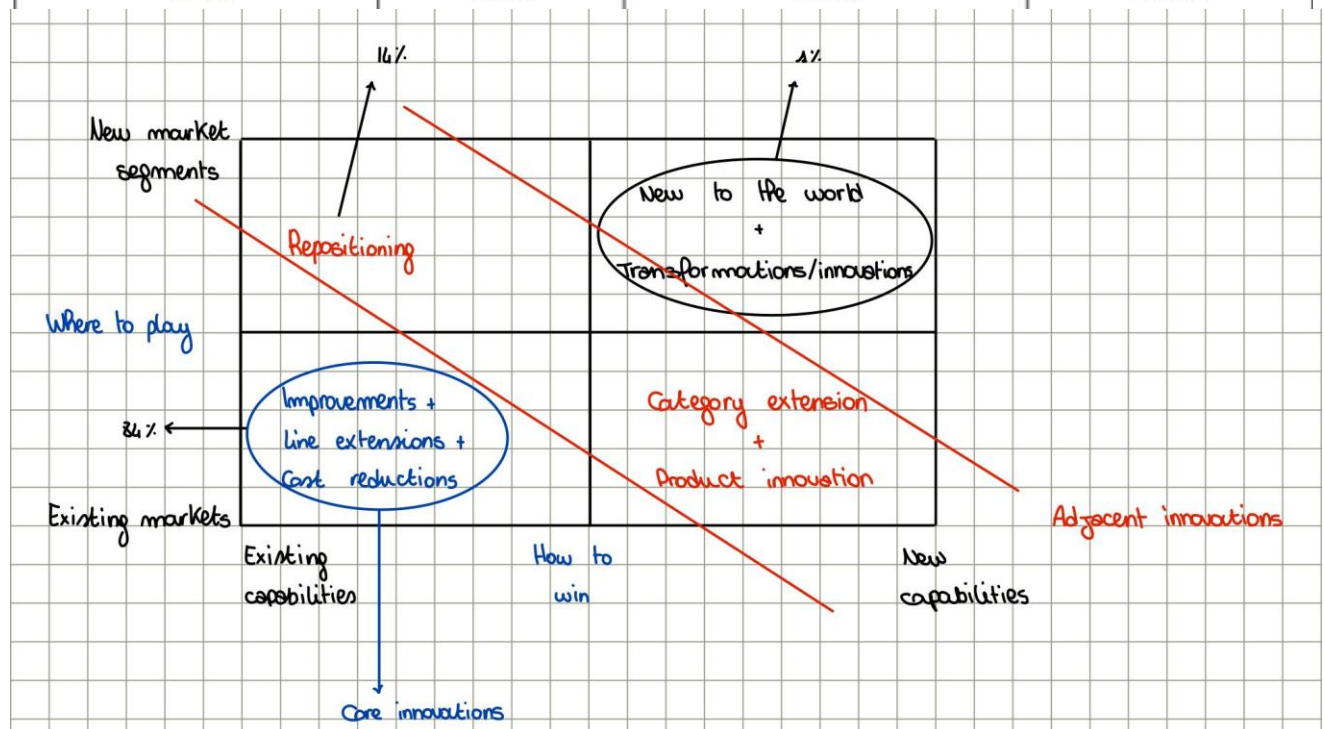
On the other side, for the line extension, we can see that those companies that introduce just the line extension lose the investments on the market of investors, meaning by this that companies that are willing to sustain their capitalization of the markets, need to invest in radical innovation.

- d. investors stick to those companies that introduce more new-to-the-market products than line extensions
2. **The dreams on innovation:** "When senior managers think of product development, they all dream of the same thing: a steady stream of breakthrough products – the kind that will enable their companies to

grow rapidly and maintain high margins. And managers set ambitious goals to that end, demanding, for example, that a high percentage of sales come from products that did not exist a few years ago....”

...reality about innovation: “... Unfortunately, the development groups at many companies don’t deliver the goods. Instead of breakthroughs, they produce mainly line extensions and incremental improvements to existing products and services. And as the pace of change accelerates in today’s markets, that’s a recipe for decline, not growth” (von Hippel, Thomke, and Sonnack, 1999 – HBR).

Studies	Booz Allen & Hamilton	Cooper e Kleinschmidt	Nielsen
Year	1982	1991	2020
Context	USA	Global industries “moderate to high tech”	EU
New to the world	10%	20%	1%
Category extension	20%	38%	1%
Line extension	26%	20%	6%
Re positioning	7%	1%	14%
Improvements	26%	20%	76% (imitations)
Cost reductions	11%	2%	2% (substitutions)
Total	100%	100%	100%



This matrix shows the dimension that matters when we want to classify the innovation.

First of all, the first dimension is **where to play**, so whether companies want to play into existent markets or segments or new markets or new segments, and the second dimension is **how to win**, so what are the capabilities that are necessary to introduce an innovation, that can either exist with existing capabilities or can be new capabilities.

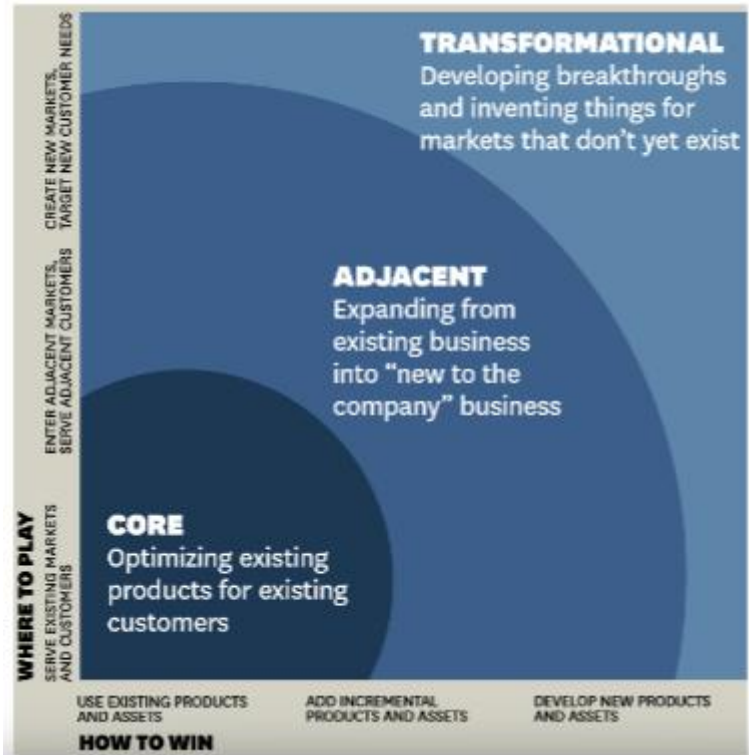
Looking at the last column, we can say that the new to the world products account just for 1% of all the new product launches. On the contrary, in the left-hand side we have improvements, line extension and cost reductions; this part, which is called **core innovation**, insists on existing markets and capabilities, but above all accounts 84% of all the innovations.

- ⇒ it's cheaper to work on something that has already been established, but above all with the “New-to-the-world”, we have a higher level of **volatility**, a higher risk. Moreover, in the “New-to-the-world” everything is done for the first time, meaning by this that it can be very successful, but also a big failure -> it's more a disruptive approach. While when we deal with existing markets and capabilities, we are just mixing

something that already exists, so it's more a step-by-step approach that allows us to understand what to improve or what to change -> in the “New-to-the-world” there is **no expertise**

Repositioning means a safer investment, which is also good from an economic viewpoint, since it is just a matter of adjusting a little bit what already exists.

As well as for category extension, reposition is also an **adjacent innovation**, since allow us to understand what are the options that companies have.



⇒ Most of the innovation fall into the transformational innovation, but we need the investment into these kinds of companies and the adjacent transformation to be able to finance and to leverage the money that comes from core innovations and to invest into radical innovations.

3. Big market, big rewards

Companies tend to address the mainstream markets to be successful, so clearly the problem of the incumbents is the fact that they think big, meaning by this that when they introduce something new, they are thinking about covering all the segments into the market. But companies such as Deezer and Spotify weren't able to reach a very big market at the beginning. In today's market, we work with a segment, and we work by starting with a very small niche segment try to address and to satisfy the need of a niche market which is not covered by the existing products -> this is what we call **disruptive innovation**

- Innovative and cheaper
- Initially low performing and less profitable – need to find correct business model
- Starting from a niche – low end
- Leading consumers rejection (temporary)

Implications

- Disruptive technologies attack an established business, but provide **enormous opportunities** for new net growth
- Focusing on your core market can lead to organizational rigidity – Trying Harder Can Be Part of the Problem!
- Identifying these opportunities requires different lenses:
 - Reconsidering technologies** viewed as “inferior” in your core market
 - Targeting “overshot”** where the primary alternative is non-consumption
- Developing these opportunities requires different tools:
 - A **different development**, review, and funding process than the core business
 - A **venture process** that is patient for growth, not for proof of concept

- c. A **willingness to look outside** of core business—venture autonomy, talent, partnerships, and acquisitions
- 4. **Open innovation system**: is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively” (Chesbrough, 2003).

This is because companies do not have anymore the resources to actually keep up with their innovation in a systematic way, so they basically tend to develop this innovation together with other companies or even with consumers -> they are buying the products, buying the license to specific patents from other organizations

To sum up:

- a. Innovation is risky, but necessary
- b. Technology is important, but what is critical to success is the ability to incorporate technology into an appealing value proposition -> follow a **portfolio approach**
- c. Niche markets might be, in the long run, more interesting than large markets
- d. Data today offer incredible opportunities to generate new solutions or to envision innovation opportunities into new territories.

INNOVATION IN STRATEGIC POSITIONING: THE CASE OF GUCCI IN FASHION

The importance of symbolic innovation in addressing new customers

EX: Nintendo, launched more than 20 years ago, an innovation in gaming console: the Wii -> the technology was reading automatically the movements and players do not need to push any buttons, meaning by this that the Wii is more use-friendly, also for people that were not gamers, allowing to use body to interact with the game. The technology itself was already installed into most of the other gaming consoles, but it was not used in this way.

The objectives of Nintendo when launching Wii were:

- a. First of all, they pushed towards a more inclusive game -> it was not only for gamers, but was expanded also to the families
- b. Shift from an individual and traditional gaming, where each individual was in front of the game console, to a group gaming as a social gaming
- c. The third one, which was the reason why they set the first two, as well as the major strategic goal, was to expand the gaming market and the gamers market -> there is an opportunity for people that have never played to enjoy gaming.

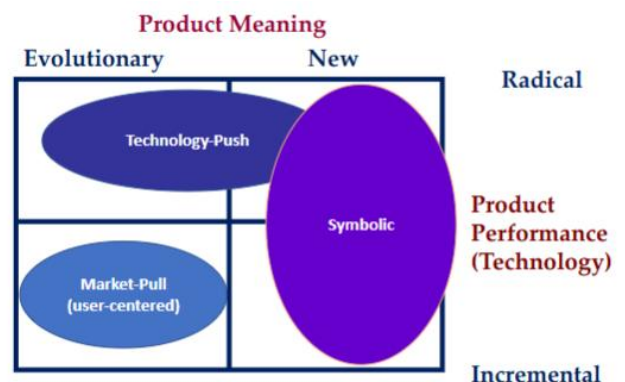
The most successful game that they introduced was Wii, where people were doing some sort of sport, having an active gaming versus the traditional one, and also they were going beyond the traditional gamers, since they attract also older people

⇒ What they did with this approach was changing the meaning of the console, which is no longer as a techy product for people that were used to play alone, but was now perceived as something that even people in their 50s or 60s could use and was an active activity, rather than a passive one as before.

Symbolic VS. Technical innovation

Technical innovations “are those that spring from the addition or alteration of tangible features in a product that serve to distinguish it from prior models”

Symbolic innovations “are those which result from the reassignment of social meaning to an existing product, generating a secondary diffusion for it among those identifying with the relevant reference group



Source: Adapted from Verganti 2008

The matrix shows us that we can have two main drivers of change of a product or a brand:

1. The first one is related to the product performance that has to be the tangible aspect of this product that is basically sometimes driven by the technology
2. The second one is the product itself

Within this two dimensions we can have an incremental or evolutionary change in the product meaning or we can have a radical or incremental change in the technology of the product performance -> if we have an incremental change in both the technology and the product meaning we are doing nothing new, but as we said last time the incremental innovations are still relevant since they allow us to change step-by-step and learning by doing.

We can also decide to change just the technology and in this case, we have a product that is positioned dramatically new from a technological point of view -> EX: the electric vehicles or the hybrid vehicles

Finally, we have the change in the product meaning, which is what we call symbolic innovation

The content of an innovation

1. Innovation may or may not affect the tangible elements of the product -> innovation can be also connected to the meaning that the product has, and the associations that consumer might have with the product, which has a lot to do with marketing
2. The change in the meaning of an existing product or of a slightly changed one is not always defined a priori
3. The meaning of an innovation is not the same for different cultures and different social groups – this implies that the signalling value of a new product is not the same but depends on who is judging it

GUCCI CASE

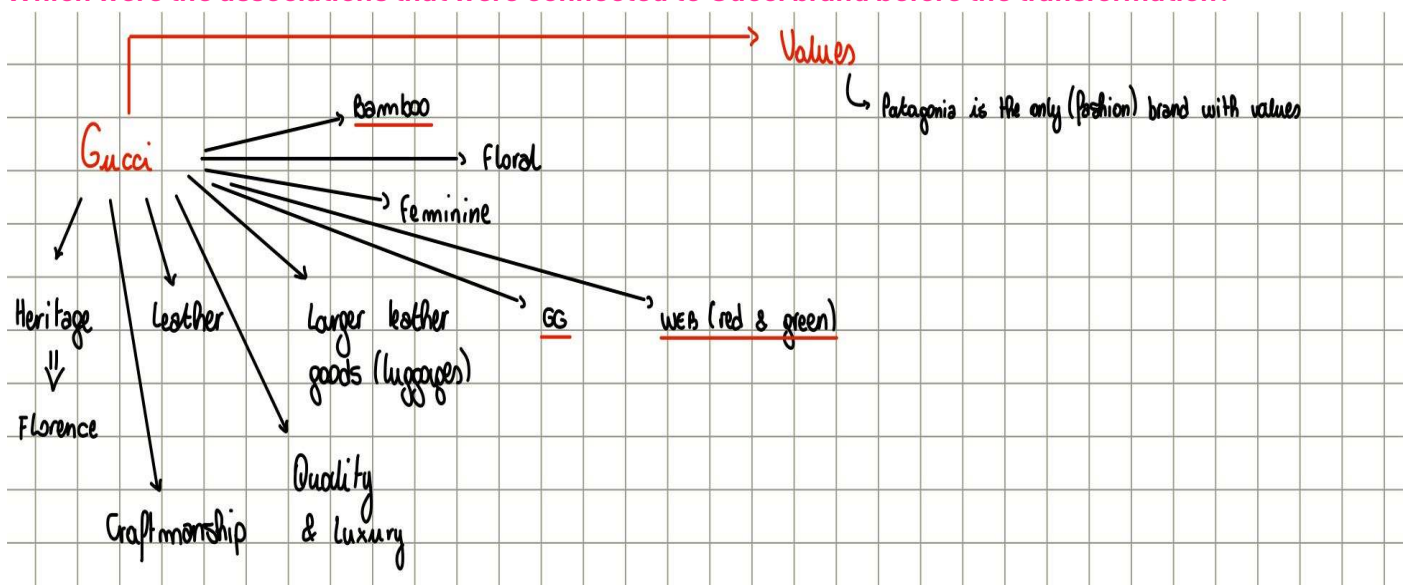
The new Gucci

Mr. Bizzarri is appointed CEO of Gucci in January 2015

The Gucci Manifesto where he envisions the transformation of Gucci aims at one goal: “Making Gucci a definitive 21st century statement of contemporary coolness” -> Gucci has a lot of heritage, a lot of elements that can be inspiring, but they need to become relevant again in a context in which the company operates.

An authentic combo -> Mr. Bizzarri and Mr. Michele **authentically and independently**, believe in the same set of values.

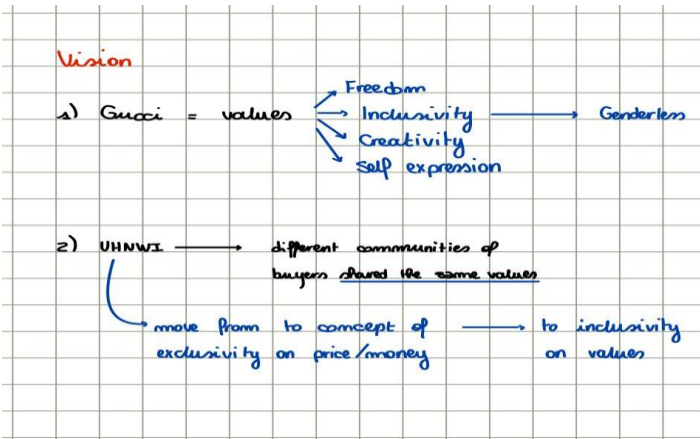
Which were the associations that were connected to Gucci brand before the transformation?



From these associations it is possible to understand the position of the brand in the mind of people.

What is really different from the other brands, the reason why should the consumers buy from Gucci are the **brand values**, which is something really distinctive, especially in the fashion industry.

Gucci's vision



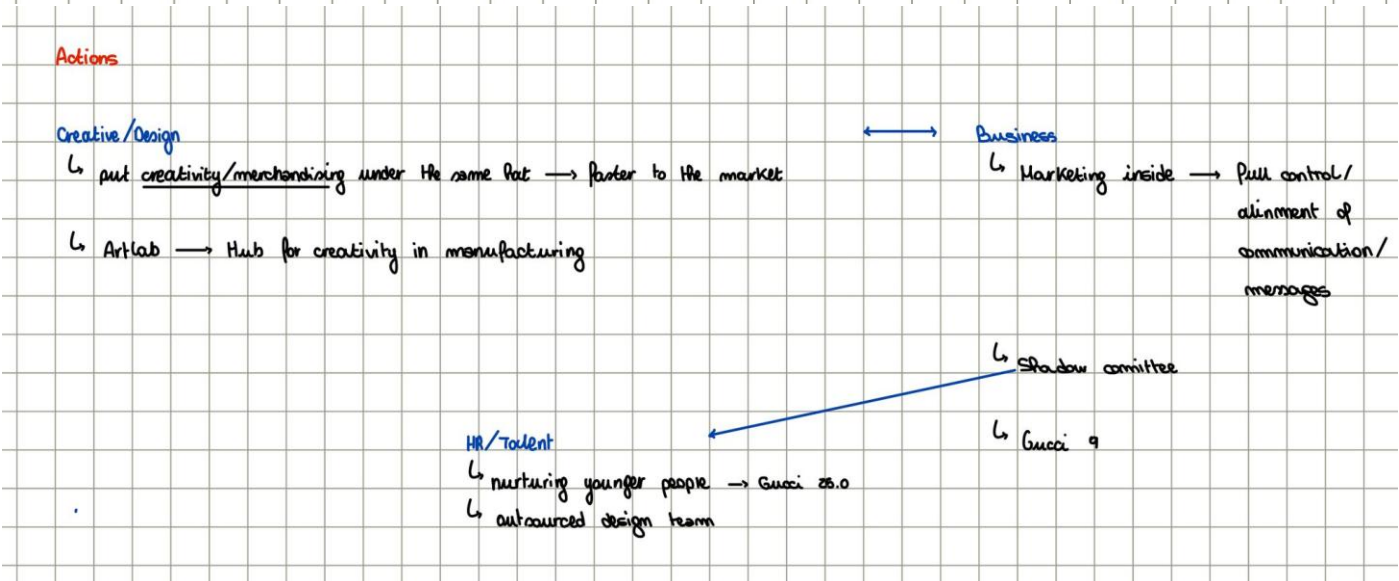
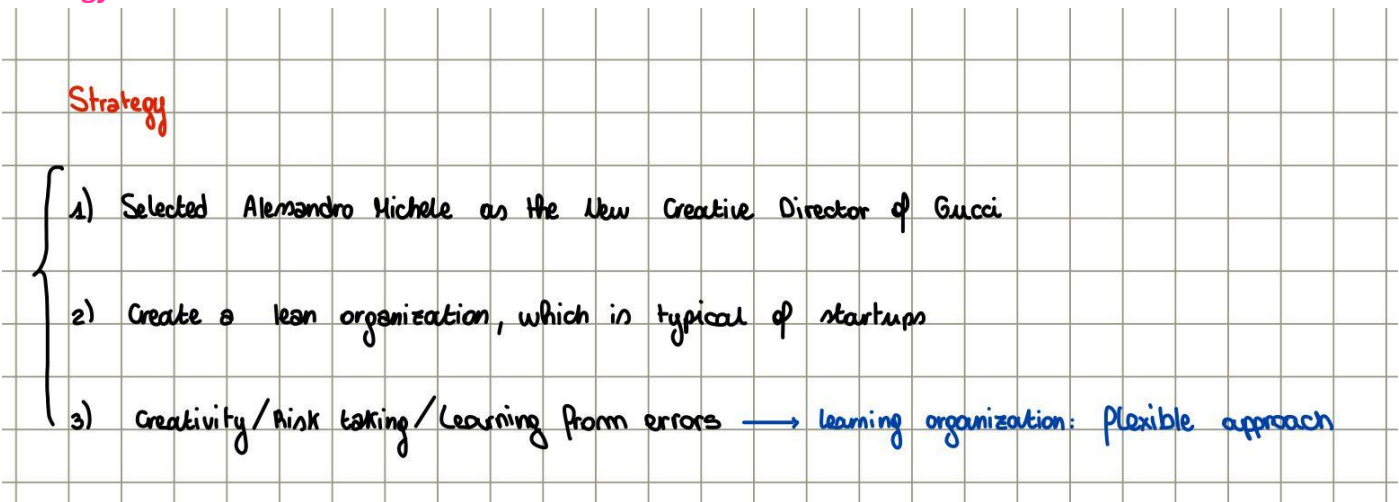
Gucci aims to be a platform for people to express who they are -> the brand must be a statement of contemporary coolness, meaning by this that the brand should stand for or something.

The association with the values is very important for Gucci, since it was a tool to communicate its transformation -> moving towards a new positioning and a new symbolic innovation.

Moreover, Gucci started serving other market segments: males and genderless

Gucci shouldn't be targeting anymore only the ultra high net world individuals (UHNWI) that means the people that can afford the products, but they move their focus from this top of the pyramid of buyers towards different communities which shared the same values -> the idea was again to build a platform where everyone could use the brand Gucci to express her or his own way of being.

Strategy and actions



The shadow committee is Gucci's way to reach in a more impactful, effective is fast way the target audience: younger generations -> this shadow committee that was made by young people discussed exactly the same point in the agenda of the board executive committee, in order to generated insights about the target audience and verify that the alignment with their interest was took into account.

The Gucci 9 is a sort of call-center; it's a very efficient service that provides a luxury customer experience to all consumers that are online.

Finally there is the program Gucci 25.0, which is a plan to make sure that the people's talent could be nurtured within the organization

The pieces of the puzzle

1. THE BIG BANG: Mr. Bizarri Appoints Michele
2. The Market First, then the Organization
3. Evangelism and Conversion
4. From Religion to Faith

**1. The Big Bang
Envisioning Gucci**

Sometimes the past works as a prison that ends up freezing the identity of a brand as opposed to make it evolve to remain modern and relevant in the world of today, still within its framework, the brand DNA. I think that identity is an **evolving and adaptive process** (...)

What is crucial is to recognize those key values that characterize Gucci and translate them in the language of today.

The biggest challenge today is to create a new image of Gucci able to project its past into the future through the definition of a **more appealing and contemporary imagery**. The historical brand codes need to be reinterpreted (...) by the noises of the world... The reinterpretation of these codes is necessary to create a new story that is able to fulfil contemporary desires, expectations and dreams, still rooted in the unique DNA of the brand.

The brand DNA



GG Logo

Web





KAFIANO FLORA TUNIC
1969

WOMEN'S F/W
2015: EXIT 26

WOMEN'S CRUISE
2016: EXIT 23

WOMEN'S CRUISE
2017: EXIT 42

WOMEN'S F/W
2017: LOOK 88

Floral

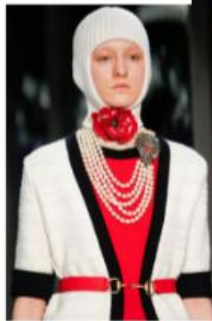
Horsebit



WOMEN'S HANDBAG
1957



MEN'S F/W
2015: EXIT 64



WOMEN'S F/W
2017: EXIT 1



2018 ADV



2018 ADV

Our campaign should be able to (...) portray a woman in the world of today, but always with a certain edge, that sense of herself and security that is the jet-set of today. We need visual stories that are able to transform Gucci products in objects of desire.

In order to achieve these objectives, we also need a courageous rethinking of the typology and quantity of products we are currently selling. The current offer is too wide and too spread in terms of products and price points.

Gucci 25.0 - values

- a. Inclusiveness
- b. Self-expression
- c. Authenticity
- d. Joyfulness
- e. Creativity & Innovation
- f. Human touch

2. *First the market, then the organization*

Changing a brand: Gucci's journey

The plan:

1. **Win the market** -> the market is much more ready, so let's show our employee that we are right
 - a. Involving peripheral gatekeepers
 - b. Double heading
 - c. Transform the vision into commercial products
2. **Use positive financial results to buy time**
3. **Change the organization**



when I started in January '15, the mantra was no democracy, in the sense that if I wanted to be quick, we couldn't look for consensus because we would have waited too long.

This change was possible because the market was ready for it, even more than the people inside the company -> a lot of people decided to leave the company.

What happened is that the leadership team pushed the new values from the inside, while, at the same time, the market was doing the same thing but from the outside of the company.

From the market to the organization -An Act of Faith

It is very likely that many employees did not embrace, or even understand, the new values.

Miraculous financial results were the proof for skeptical Gucci employees that the new values worked and they'd better embrace them.

Moreover, at the very beginning Bizarri admitted that he was not really democratic, because the company, and so decision-making, must be quick to be successful.

3. *Envangelism and conversion*

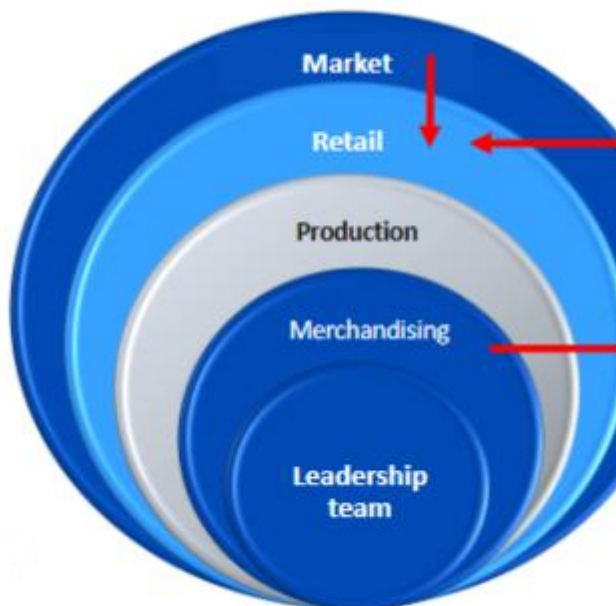
A nice business problem

2017: how to maintain sales growth that had hit the 43% market in the past year?

At this point the company itself was ready to change, and so the transformation of the organizational structure began.

Pressure on the stores

Gucci announces new organizational structure



They created peculiar and unique stores into the different geographical location: the booster store in Soho, the Gucci Garden in Florence and so on and so forth, each one of them with their uniqueness and specificities they created their creativity in operations allowing them to convince even the more skeptical ones that the company was on the right side -> at that point creativity could really flourish from any part of the organization not just from the creativity directors.

Fostering creativity in production

Marco Bizarri, CEO of Gucci, commented "Gucci ArtLab is the perfect expression of the corporate culture that we have been building and nurturing within the company. It is the tangible expression of a place to learn skill and techniques, a workshop to generate ideas, and ideas are the lifeblood of culture."

4. *From religion to faith*

One organization, one heart

Creativity will come from any part of the organization, not just from its creative director.

Any idea will be consistent with the vision that Michele and Mr. Bizarri sowed 4 years ago

⇒ "We have to empower talents, we cannot always tell people what to do there's no limits to growth if you are exposed to innovation."

Nudge after nudge: toward Gucci 25.0

Gucci has a "shadow committee" of millennial advisor

Key learnings: the formula behind Gucci's success

When organizations are under time pressure to radically change their positioning in the market:

- a. Start with a **core leadership** team of people who, authentically and independently, **share the same values**
 - b. **Invert the order of change:**
 1. First the market
 2. Then the organization
 - c. How to fast conquer the market?
 1. **Involve peripheral gatekeepers**
 - d. How to conquer the organization?
 1. **Nudge strategy** that supports the structural changes
 2. **Double-headed strategy**
-

INNOVATING IN THE DATA ECONOMY

Data economy: data is the new oil of the digital economy -> data economy is a system where data are a commodity. Data, per se, are raw material that we are going to create and then exchange

Sources of competitive advantage

1. Collect the data -> we collect a great variety of data
2. Analyze the data -> we can do it through the help of machine learning and artificial intelligence
3. Innovate with data

Collect the data

Big data: generally speaking, when we talk about big data referring to a big amount of data, that are able to explain a lot about something, in this case about consumers.

⇒ it is a matter of **size**, and we can gain insight about consumers

- a. Data of a very large size, typically to the extent that its manipulation and management present significant logistical challenges – OED
 - b. Datasets whose size is beyond the ability of typical database software tool to capture, store, manage, and analyze – McKinsey, 2011
 - c. Data sets are generally quite large, taxing the capacities of main memory, local disk, and even remote disk. We call this the problem of big data – Cox & Ellsworth, 1997 – NASA
- According to this definition, we can easily understand that big data are a **size** and **technological issue**

EX: Fitbit create and record data about the physical activity: number of steps per day, the heartbeat, kilometers done per day, calories intake, sleep time and so on.

As Fitbit, we can use these data to better personalize the experience, we can create communities, we can create an informative page on the app where to post a lot of health articles -> we can serve one single consumer but, at the same time, we can also create a community, where people can make new friends. Another important thing that we can do, is track data to understand people's routine and then keep our attention high every time that there is a deviation from the routine, to leverage on these changes.

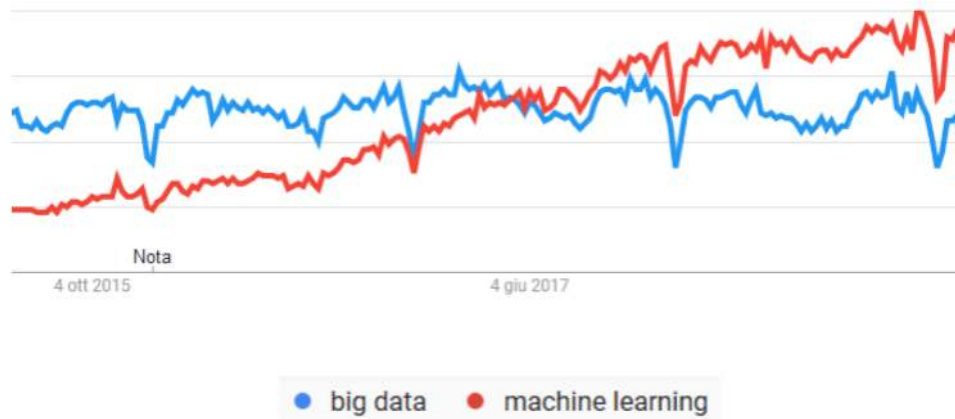
Different types of data:

- a. Numbers
- b. Text
- c. Pictures
- d. Audio

Big data allowing us to see second after second what people are **doing**, what they are **saying**, what they are **watching** and also what they are **listening to**.

It is important to remember that usually these data are separated, and what we have to do is find a way to put all of them together to improve our understanding of the individual, with the aim of creating value for the brand, meaning by this that we have to create value either for our target/consumers, or create value try to reach out new ones.

Analyze data



From June 2017 in the business world there was a shift from "I understand what big data is, I understand that I need to have it" to "now tell me how I can transform this data."

Innovate with the data

EX: Spotify has a lot of, such as the amount of time a person spends listening to song, music preferences, they can infer the emotional state in which a person is in, even though it is not always a reliable piece of information, they can track habits. Through the data collected, Spotify is able to:

1. Create value for customers
2. Find new customers

New products from data:

1. The specific playlist
2. The sponsored playlist -> usually there is affinity between Spotify and the sponsored brand (ex: Coca-Cola)
3. Ad retargeting -> this is possible through digital geo-localization, which is also important for global ranking.

Playlists are created with the same logic, auction, used by Google when we ask for something on the search engine.

EX: LinkedIn pass from owing data about millions of people to realizing that most of the information was related to job to create new services for two different groups of clients:

- Suggest potential jobs and How a perspective employees compare to previous applicants
- Find job candidates with similar profiles and Directly contact them

Data unbundling and sales

- a. DHL Geovista sell air quality data it collects from sensors on its delivery vans.
- b. ADP sell reports about the state of the economy, based on the HR-data collected from its payroll services

It's the end of the world as we know it (and I feel fine)

It is the usual innovation game

- a. Create unique value propositions
- b. Sell information that only your company owns

Educate yourself: we do not need to know the ins and outs of how Computer Science algorithms work, but we must know what is possible and know the language

Deep dive into machine learning and predictive AI

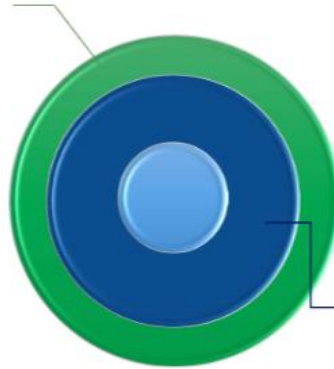
Artificial intelligence is the ability of a computer, or a robot controlled by a computer to basically complete tasks in which the human intelligence and discernment are needed, and the machine learning is the ability to

the machine to understand and identify patterns and infer rules about that.

Artificial intelligence is a technology that enables us to transform data into knowledge

General AI

Machines with all human senses and functions



Predictive AI

- Machines that can perform a specific task like, or better, than humans

Generative AI

- Machines that can create new content

AI conquering human sense:

1. NPL
2. Computer vision
3. Audio analytics
4. Embodiment

⇒ **MULTIMODAL LEARNING**

There are two separate phases in the machine learning process:

1. **Training:** machines learn to perform a certain task. The outcome is a model with parameters optimized to perform this task with the highest accuracy possible. The model develops its capabilities. This phase ends when we think that the machine learned enough about a certain topic.

2. **Inference phase:**

- a. AI applies the learned patterns to new data
- b. The model applies the learned capabilities
- c. Predictive AI to make predictions
- d. Generative AI to generate new content

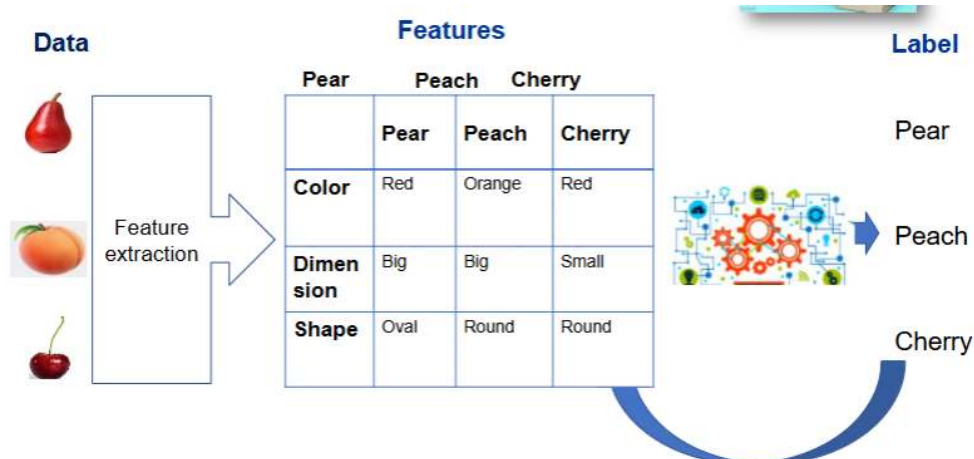
Predictive AI

Three main types of learning paradigms during training:

1. Unsupervised
2. Supervised
3. Reinforcement

Goal of the inference phase: **make predictions**

Supervised machine learning



Through the supervised learning, we feed the machine with the information, and it will be able to create the algorithms.

During the training phase we provide the machine two types of information:

1. The **data** -> in the example the data are represented under the form of images of fruits
2. The answer, which are the **labels** -> in the example color, dimension, and shape can well describe the data available.

The reason why we gave the machine the features, is linked to the fact that is the easiest way to allow the machine to understand the distinctive features of our data, in order to recognize them.

We assign a number to each feature, since the machines are not able to read words, but just numbers -> this procedure is called **vectorization**.

This is how the machine learns, and then through repetition, the machine starts improving its learning, through a learning by doing approach, which implement information each time that the machine makes a mistake.

N.B. If we train a machine with a sufficiently big amount of data and for a sufficiently long amount of time the difference with the human brain is going to decrease and at the certain point

EX: Machine learning to predict a new song's success -> when we talk about prediction in marketing, we need to keep always in mind that we are not able to actually predict the future, it is more a matter of inference

Hitwizard takes into account the various sound parameters of a song (like BPM, valence, tempo, consumers' tastes, the length) -> vectorization

Compares them against airplay data sourced from Dutch radio stations and Spotify

After the comparison the assign a label to each song: 0= unsuccessful or 1=successful.

Good at predicting which songs will flop with an accuracy of 93 percent. Bad at predicting success (66%)

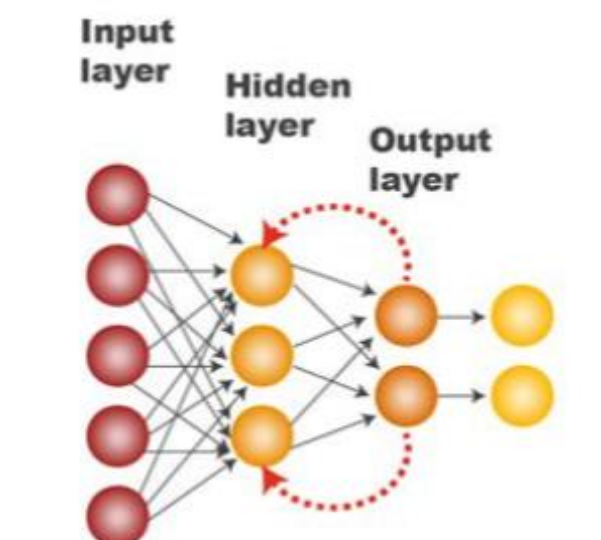
-> that can be link to a vectorization problem, that need to be optimized; but in this case, since the vectorization seems really good, due to the fact that is the same used by Spotify, the problem can be caused by the high volatility of consumers' tastes in the music industry, meaning by this that the model should be trained more than just one year to work properly

Deep learning with neural networks

Reproduce the structure of neurons and synapses in the human brain

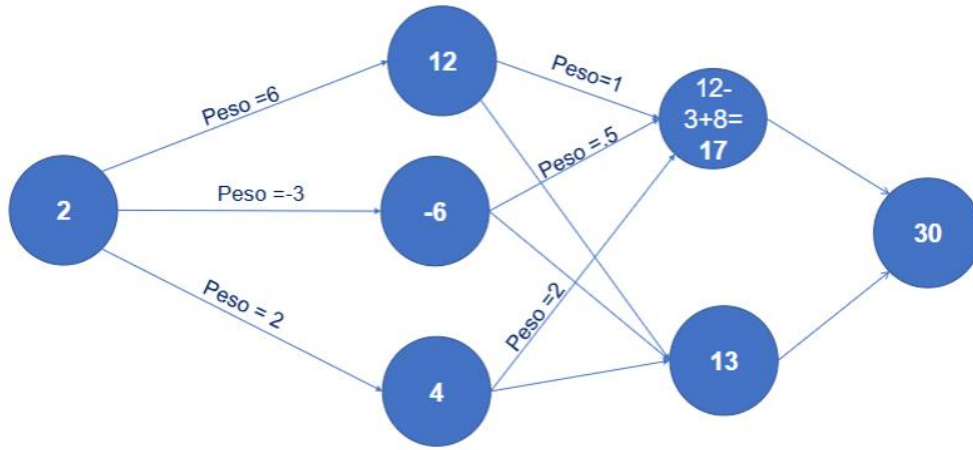
Neurons are organized in layers

- Neurons on the input layer receive signals from the inputs (i.e., vectors)
- Neurons in the top layers have their outlets connected to the "answer" (e.g., [0, 1] if the image is a peach)

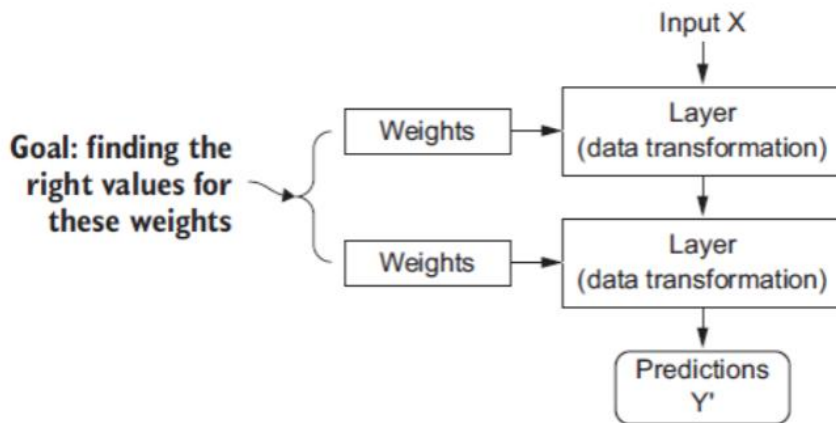


How does a neural network work?

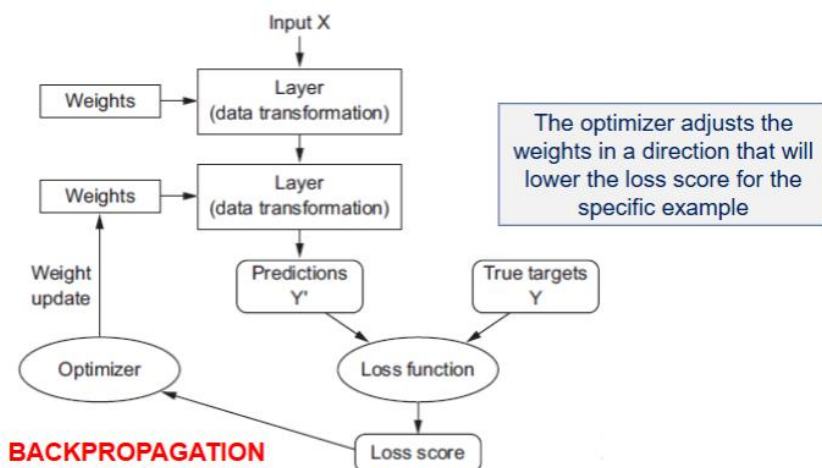
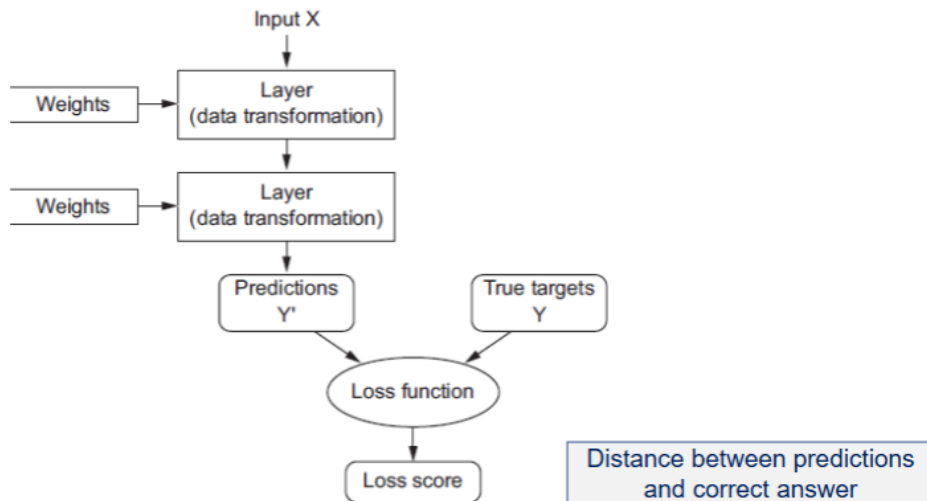
1. The neuron in the input layer passes the input to the neurons in the second layer
 - a. The input is multiplied by a certain weight
2. Each neuron in "layer 2" passes its input to the neurons in "layer 3"
 - a. Each input is multiplied by a weight
3. Neurons in "layer 3" pass their inputs to the final neuron "output"



A more formal presentation



Source: Deep Learning with Python, Chollet



What does it mean to train a deep learning model?

1. Determine the weights of the model
2. Determine the architecture of the model
 - a. How many layers?
 - b. How many neurons in each layer?

1) Training the weights

Layer (type)	Output Shape	Param #
conv2d_5 (Conv2D)	(None, 148, 148, 32)	896
max_pooling2d_5 (MaxPooling2D)	(None, 74, 74, 32)	0
conv2d_6 (Conv2D)	(None, 72, 72, 64)	18496
max_pooling2d_6 (MaxPooling2D)	(None, 36, 36, 64)	0
conv2d_7 (Conv2D)	(None, 34, 34, 128)	73856
max_pooling2d_7 (MaxPooling2D)	(None, 17, 17, 128)	0
conv2d_8 (Conv2D)	(None, 15, 15, 128)	147584
max_pooling2d_8 (MaxPooling2D)	(None, 7, 7, 128)	0
flatten_2 (Flatten)	(None, 6272)	0
dropout_1 (Dropout)	(None, 6272)	0
dense_3 (Dense)	(None, 512)	3211776
dense_4 (Dense)	(None, 1)	513
Total params: 3,453,121		
Trainable params: 3,453,121		
Non-trainable params: 0		

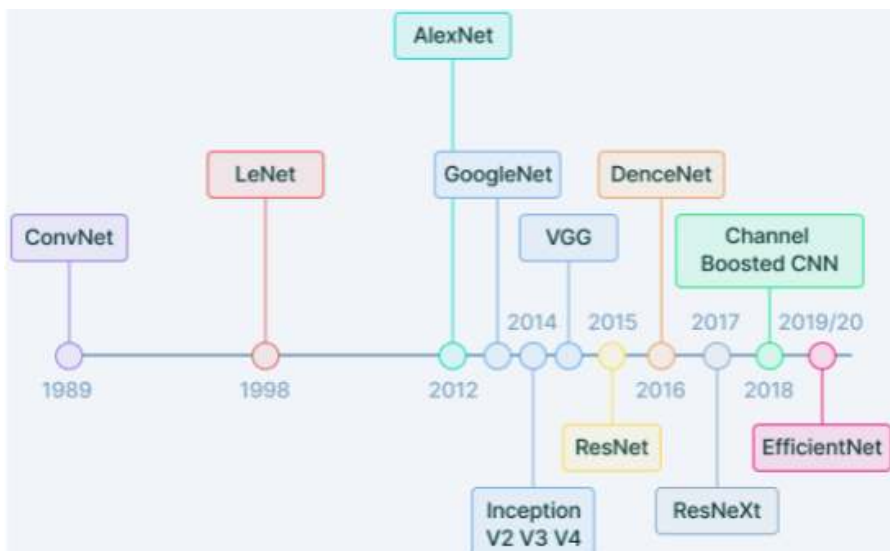
This is a very simple model with just 6 layers analyzing 3,000 images

```

100/100 [=====] - 80s 803ms/step -
Epoch 22/30
100/100 [=====] - 68s 682ms/step -
Epoch 23/30
100/100 [=====] - 71s 706ms/step -
Epoch 24/30
100/100 [=====] - 65s 648ms/step -
Epoch 25/30
100/100 [=====] - 71s 706ms/step -
Epoch 26/30
100/100 [=====] - 64s 645ms/step -
Epoch 27/30
100/100 [=====] - 63s 633ms/step -
Epoch 28/30
100/100 [=====] - 66s 658ms/step -
Epoch 29/30
100/100 [=====] - 70s 702ms/step -
Epoch 30/30
100/100 [=====] - 68s 685ms/step -
  
```

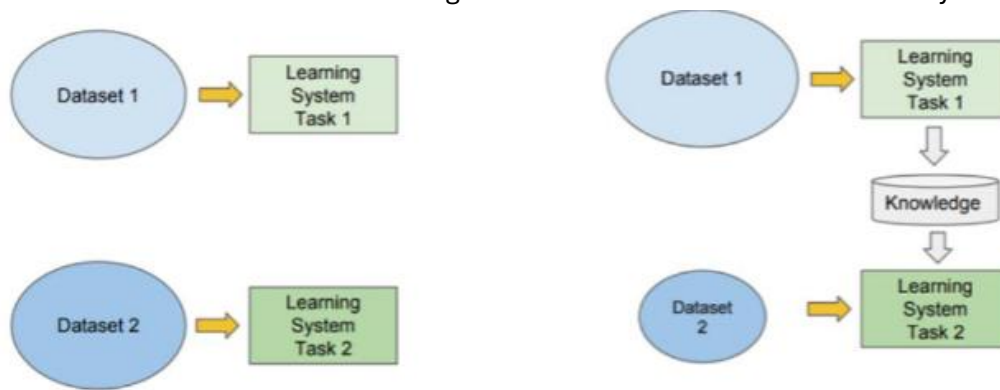
30 iterations take
34 minutes
(on my local machine)

Different architectures

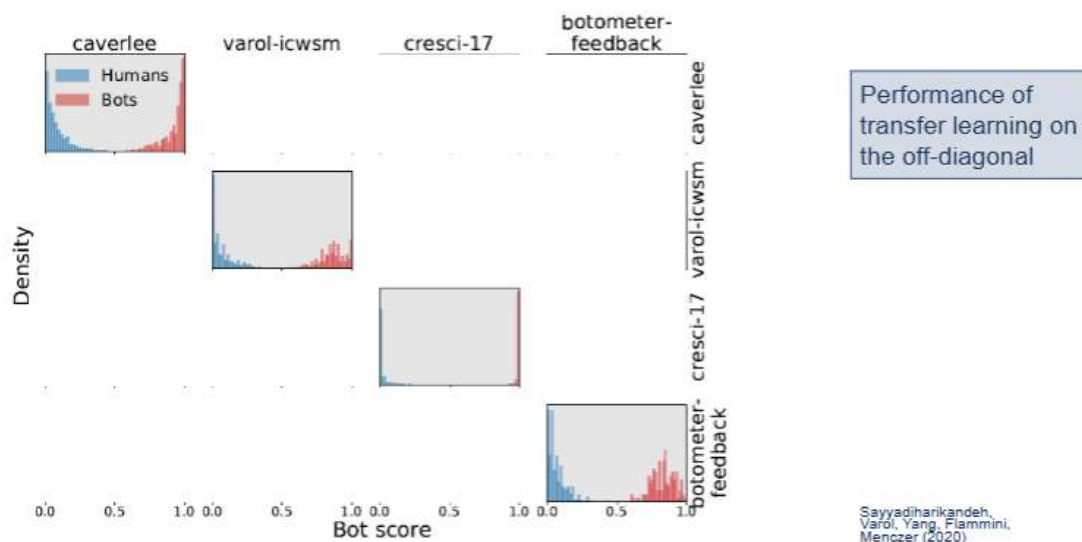


Transfer learning

Take a model that has been trained on a large-scale data and use it as it is to solve your problem



The limit of transfers learnign



WHITE SPACE ANALYSIS AND BEHAVIORAL ANALYSIS

1. Download new data

Apify

Apify is a platform with a simple interface that allow s you to download data from TikTok starting with keywords.

Below are the steps to use the platform and take advantage of the \$5 free monthly credit to add data to those already distributed for group work.

1. Account creation

Open the page: <https://apify.com/> and click on "Get Started" on top rig ht.

- Create an account** using an email address (you can create a new account for each email address - they allow you to create about 4 with similar names/same IP before asking for phone number verification).

You cannot use disposable emails (you risk having your pc blocked by the platform). The platform does not require you to enter any card to get access to free credit. With each \$ 5 credit you are able to approximately download data for 4 to 7 keywords (depending on how many hashtags are linked to each).

The best way to create an account is to use your Gmail account (log in directly with Google).

NB: the platform has alert systems for IPs from which many requests come, it is recommended not to create many accounts from same network at the same time (i.e ., many studbocconi accounts with Bocconi network).

- Confirm the email address** following the link in your mailbox.

- c. Enter a name of your choice (even a fantasy one). The username suggested by the platform does not need to be changed.
- d. In the second step, answer “**Not sure yet**” and proceed by clicking “Continue”.

2. Using the TikTok Hashtag Scraper

- a. On the Store’s search bar, look for “**TikTok hashtag scraper**”
Select the first solution (clockworks/tiktok-hashtag-scraper)
- b. In the text box, write the keyword to be used as the hashtag (it is not necessary to add the # symbol)
 - Example in the screenshot: “**sustainability**”.
 - Set the limit of number of posts per searched hashtag to 799 (to comply with the limits imposed by the TikTok API).
 - No other settings need to be changed.
 - Click on “**Save & Start**” to start the process.

3. Monitoring data export

- a. It takes **few minutes** to visualize the output
- b. The process is complete when the red button “**Abort**” becomes a green “**Export**”
- c. Click on “**Export**” to save data in a JSON format.
 - The files will be automatically saved in **Download** folder, unless it has been specified differently

4. File organization

- a. Rename the exported file using the reference keyword
In the example: *sustainability.json*
 - **NB:** Beware to not remove the (.json) extension
 - JSON files will be opened via Jupyter Notebook/Lab.
 - Files can be inspected with any app from your pc with which you would open a .txt file.
For the use and analysis of this data, the code shared in class will be used.
- b. Move the file to a dedicated folder to collect all files related to different keywords or brands .

How to organize files on you PC?

To maintain orderly and efficient file management, you can use the shared structure on blackboard:
It contains two different folders:

- 1) One for brands (as early as the “White Space Analysis” session).
- 2) One for target interests
- 3) One for attribute contributing keywords (Will be used in the “Positioning Map and Brand Audience Analysis” session)

2. White space analysis

The New Product Development (NPD) process

1. Opportunity identification

- a. White space analysis
- b. Behavioral analysis

2. New idea generation

- 3. **Concept testing** -> we go to the market to understand what our target consumers think about us, and we get feedback from these customers to select the idea the we want to develop

4. Product development

5. Launch of the new product

- a. Positioning map
- b. Brand audience analysis

In the first two steps, the idea is avoiding any kind of judgment, we just want to brainstorm and develop as many ideas as possible -> these two steps are the finding, the variation phases of the NPD, with the goal of generating as many ideas as possible => we need to order a **selection process**. The opportunity identification is a **variation** process, meaning by this that generation several ideas is needed, even though they are not going to be the final choice.

The last point is linked to brand audience analysis in order to introduce the new product developed into the market.

Each part of this process is associated with a type of analysis and a type of data that needed to be collected or used:

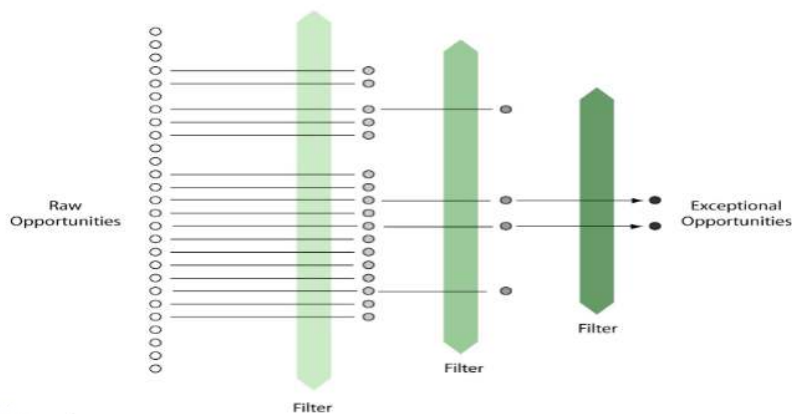
PHASE	DATA E ANALYSIS
1. Opportunity Identification <ul style="list-style-type: none"> White Space analysis Behavioral analysis 	1. Secondary data
2. New idea generation	2. Design Thinking
3. Concept Testing	3. Questionnaires with ChatGPT
4. Product development	
5. Launch of the new product <ul style="list-style-type: none"> Positioning Map Brand audience analysis 	5. Secondary data

The secondary data that we are going to use are mainly from social networks, above all TikTok.

In the phase 2, “New idea generation”, since creativity becomes relevant, we are going to use primary data, as well as when dealing with concept testing.

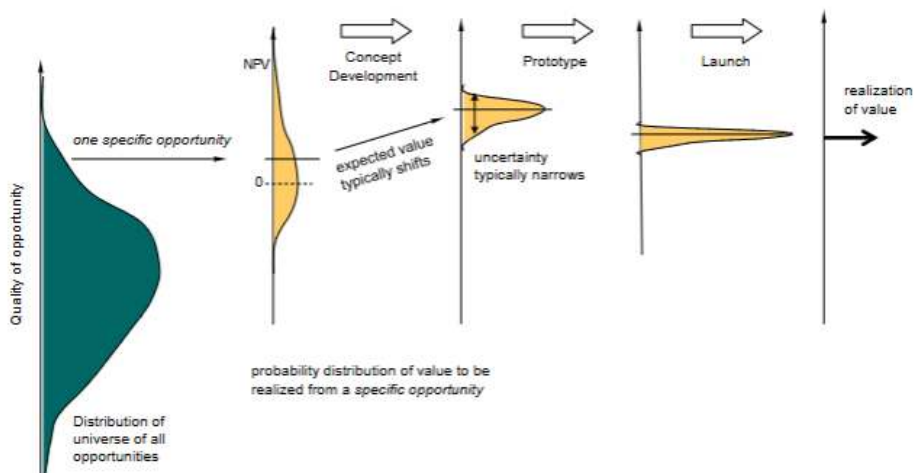
We will use ChatGPT for our questionnaire, since it represents the new frontier of market research, and if done properly, is even better than questionnaire launched on Facebook in terms of results.

For the last phase we turn back to secondary data.



At the very beginning it is important to come up with as many ideas as possible, without discarding any opportunity, since we need to test these opportunities to understand first of the feasibility of each idea, but we also need to understand whether the target audience is ready to accept our idea and so receive good responses. Finally, we need to check the cost of develop the idea, that cannot be too expensive -> this means do two evaluations: technological feasibility and market feasibility, and it is very statistically unlikely that we meet both these goals with the first idea. It is more likely to have an evolution of idea quality.

The evolution of idea quality



The data are going to be distributed along the normal curve; some ideas will be exceptionally good, some ideas will be exceptionally bad, but most of the ideas will be average quality. What we are going to do throughout the process is testing and trying to figure out, and eventually select, the best ideas.

In order to reach this goal, we need to do the **white space analysis**, which follow a logic pretty similar to the one used in the blue ocean strategy.

Blue ocean strategy: is a business framework that encourages companies to create **new market spaces** (called "**blue oceans**") rather than competing in existing, saturated markets (known as "**red oceans**").

Key Principles:

1. **Create uncontested market space:** instead of fighting for market share in existing industries, companies should seek to create new demand by offering innovative products or services.
2. **Make the competition irrelevant:** by focusing on value innovation, companies can make competitors less of a threat because they operate in a different playing field.
3. **Break the value-cost trade-off:** blue Ocean Strategy seeks to deliver greater value at a lower cost, rather than choosing between differentiation or low cost.
4. **Pursue differentiation and low cost simultaneously:** instead of competing on price or product features alone, successful strategies combine both elements.

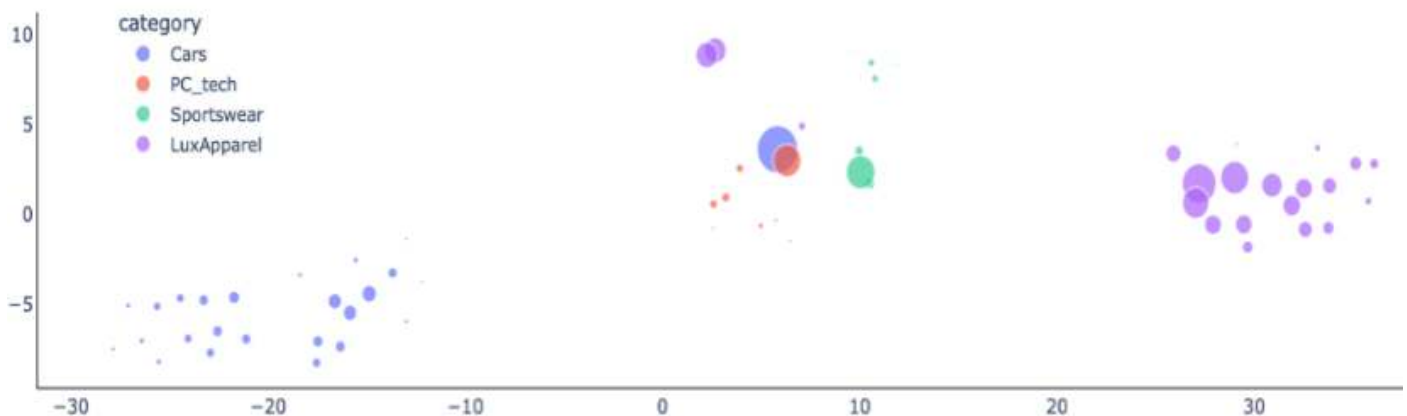
White space analysis

The process firms use to evaluate their existing products and markets to **address unmet customer needs** -> the idea is to use secondary data to understand what the unmet customer needs are.

The opportunities can be searched:

1. Within the main category -> the category in which the firm competes
2. Across categories -> opportunities in other product categories.

WHITE SPACE ANALYSIS WITH BIG DATA: OUTPUT



Each bubble is a brand, and the size of the bubble represents the popularity of the brand; the axis are meaningless, but they are just a visual way for us to understand the positions of the brands compared to each other. Finally, the colours represent the industry, the category to which the brand belongs.

One thing that we have to pay attention to is how the brands are clustered together, meaning by this that we are not interested in the absolute position of the brand on the map, but what we care about is the relative position -> what we see in the map is how consumers perceive brands, included brands that are perceived as similar by consumers.

The white space analysis is an important tool because we are going to use it to define our integration or growth. EX: we are Tesla (the blue dots in the middle of the map) and we want to use the map to highlight growth opportunities in the direction of the big red dots (suppose it is a representation of Apple), meaning by this introduce more tech features in the Tesla's cars.

What market opportunities can a white space analysis reveal?

1. Upselling (premiutization)
2. Cross-selling
3. Target a new audience
4. Co-branding

Upselling at crunchbase

UPSELLING AT CRUNCHBASE

Free	Starter	Pro
<p>Try Crunchbase for free</p> <p>Includes:</p> <ul style="list-style-type: none"> Gain access to data like name, location, industry, and description See key highlights, recent news and activity, and firmographic information on company profiles View company profiles or search for companies in the Quick Search bar 	<p>\$29</p> <p>Everything in Basic, plus:</p> <ul style="list-style-type: none"> See all company, investor, and funding data See 1,000 results per search Monitor up to 1,000 companies Import company lists to find prospect accounts automatically 	<p>\$49</p> <p>Everything in Starter, plus:</p> <ul style="list-style-type: none"> Access verified contact data Email decision-makers with intelligent email templates Push company information from Crunchbase to your CRM Push contacts from Crunchbase to Outreach Get account recommendations tailored to your interests See companies that are similar to the accounts you care about Monitor up to 100,000 companies Export results (5k rows/month)

Cross-selling

Customers who viewed this item also viewed

Accessories for your iMac.

YOUR NEXT BOX

TOSS MORE IN?

White space analysis with big data: Input

Brand A

#BrandA #Streetwear
#FashionTrend #SneakerCulture
#UrbanStyle #HypeBeast

#BrandA #Athleisure
#GymWear #PerformanceGear
#ActiveLife #SneakerCulture

#BrandA #CasualOutfit
#WeekendVibes #MinimalStyle
#EverydayWear #ComfortFirst

Brand B

#BrandB #LuxuryFashion
#SneakerCulture #DesignerWear
#FashionTrend #HighEndStyle

#BrandB #SustainableFashion
#EcoFriendly #EthicalWear
#PerformanceGear #ActiveLife

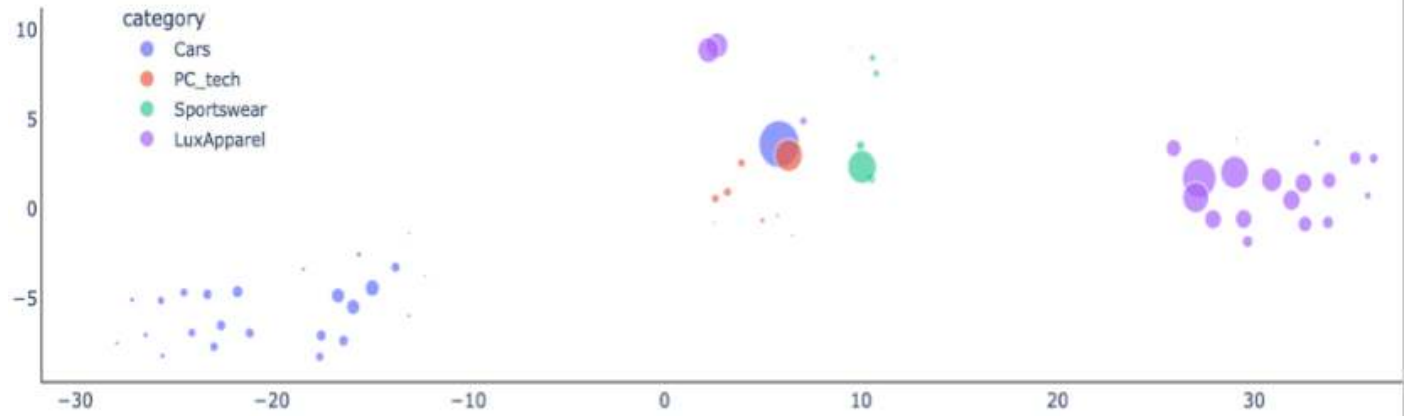
#BrandB #MinimalStyle
#TimelessFashion #ChicEssentials
#IconicLook

The hashtags associated with the brand represent our units of analysis -> when consumers mention a brand, the hashtags that they use are an indication of the brand associations made by them.

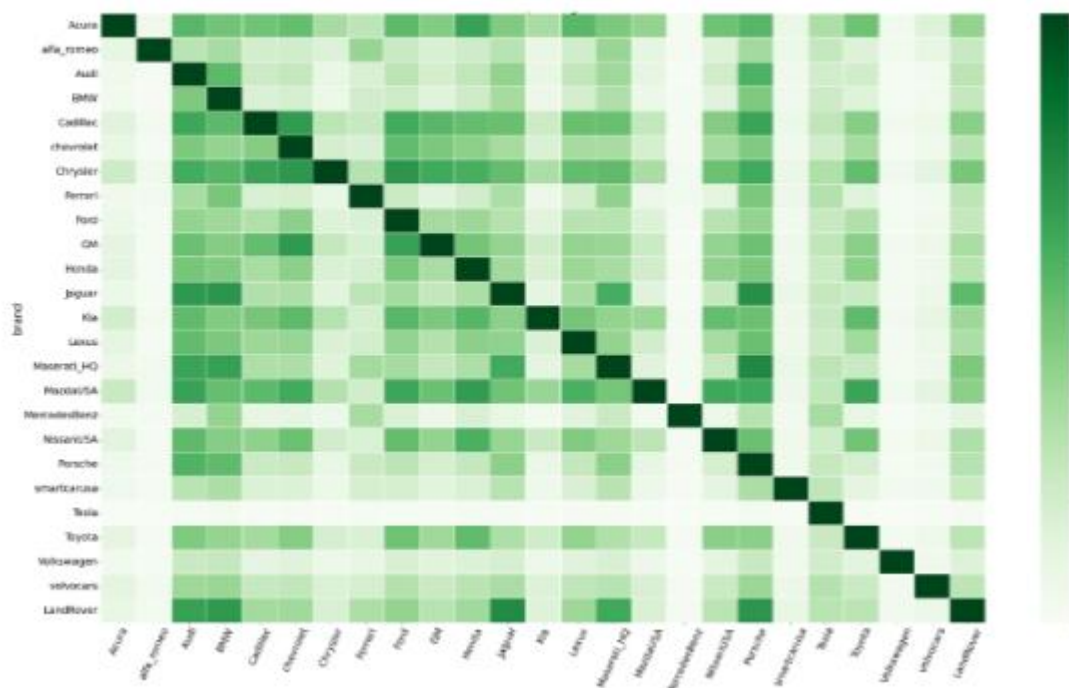
White space analysis with big data: Output

We are going to produce two outputs:

1. Market Structure across categories



2. Within-category competition



In this case the heat map is a sort of correlation matrix, where we have the representation of the level of competition between pairs of brands. Each level is linked with a color, where the lighter color means that there is a very negative association/correlation, while as the color becomes darker, there is a stronger positive correlation.

Market structure

The classification of brands into submarkets that consumers perceive to be more similar than the market taken as a whole.

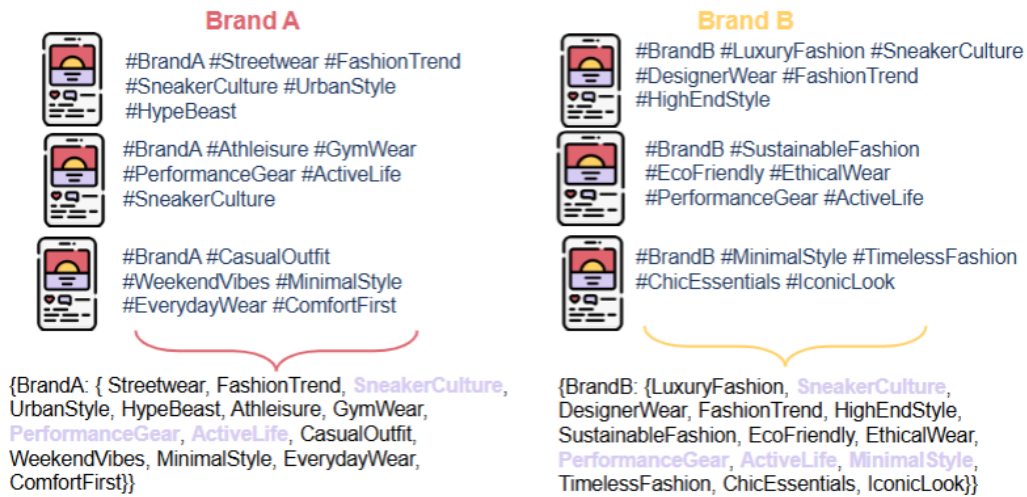
How can we retrieve these perceptions from social data?

Hashtag co-occurrence on social networks

The composition of hashtags associated with a brand represents the associations of that brand in consumer mind.

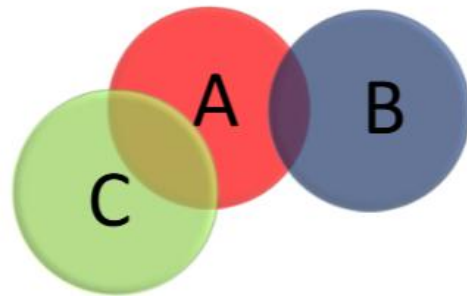
Brands that share a high number of hashtags have similar **brand associations**

EX: the partnership between GoPro and Red Bull, which leveraged the shared affinities of their common followers: action, adventure, and fearlessness.



Brand perceptions based on co-occurrence

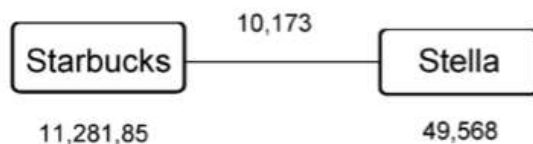
Brand similarity: if a hashtag appears in both posts that mention brand A and those that mention brand B, then it is likely that A and B are perceived as similar. So, the more hashtags A and B have in common, the greater the perception of similarity between the two brands by consumer.



Larger brands (e.g. Coca-Cola, Starbucks) generate a higher volume of conversations on social media -> higher number of associated hashtags. Well-known brands tend to have more hashtags in common with other brands, simply because they are mentioned more frequently. Hence, we need to normalize the number hashtags in common by the size of each brand.



If we just focus on the absolute number, we are going to conclude that brand A is perceived to be similar to brand B, and brand B is perceived as similar to brand C. The statistical problem is that C is bigger, it receives many more hashtags, meaning by this that it is easier to find associations with other brands. To manage this problem we need to avoid boundary conclusions, by normalizing for the size.



$$P(\text{Starbucks} \cap \text{Stella}) = 10,173 / 11,281,855 \sim .0009$$

$$P(\text{Stella} \cap \text{Starbucks}) = 10,173 / 49,568 \sim .20$$

Measuring relationships between brands

Let us suppose that we have two brands: A and B, which are the two sets that contains the hashtags of brands A and B, respectively

Relationship A -> B = $A \cap B / A$

Relationship B -> A = $A \cap B / B$

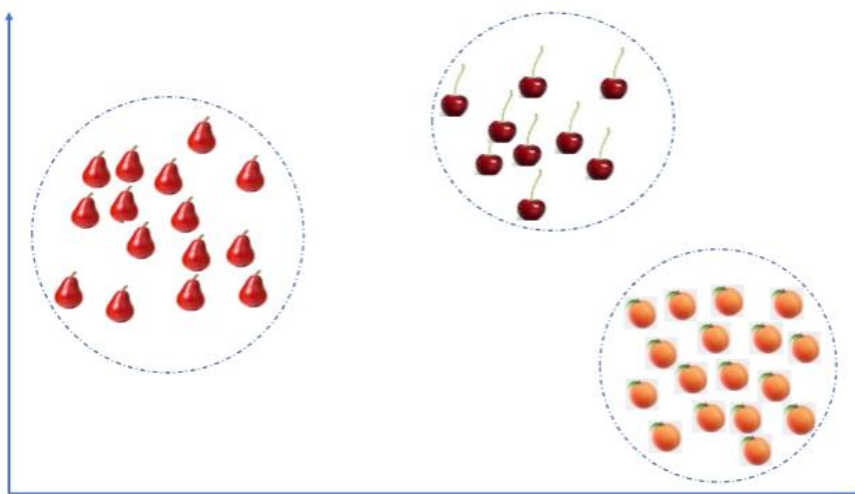
Where: $A \cap B$ = Intersection between A and B; A = Number of hashtags of A; B = Number of hashtags of B

brand	nike	bluebottlecoffee	starbucks	petescoffee	colombecoffee	illycoffee
nike	1.000000	0.068323	0.068323	0.068323	0.074534	0.055901
bluebottlecoffee	0.035676	1.000000	0.086486	0.165405	0.077838	0.109189
starbucks	0.069182	0.167715	1.000000	0.132075	0.125786	0.123690
petescoffee	0.035408	0.164163	0.067597	1.000000	0.082618	0.105150
colombecoffee	0.052632	0.105263	0.087719	0.112573	1.000000	0.086257
illycoffee	0.041925	0.156832	0.091615	0.152174	0.091615	1.000000

Numbers represent the **relationship of the brand in the column toward the brand in the row**.

For example, only 0.086 of the hashtags used in connection with Blue Bottle coffee were also used for Starbucks. However, 0.167 of the hashtags used in connection with Starbucks were also used for Blue Bottle coffee.

Unsupervised machine learning



To define the white space map we basically run an unsupervised machine learning algorithm, that is going to cluster our brands.

When we deal with unsupervised learning we basically do not add any additional information to the machine, but we just rely on its ability to find similarities across two different members -> it is a very good approach for clustering.

Visualizing the market structure

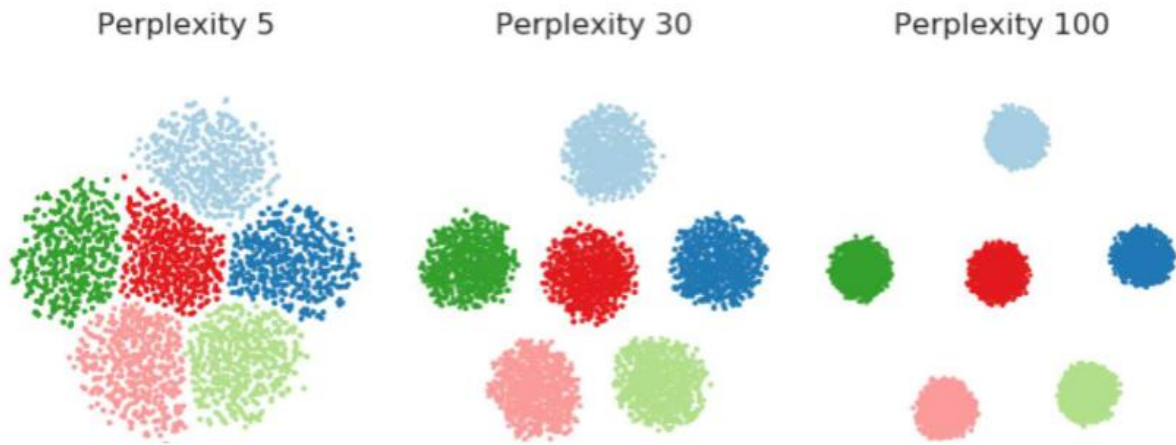
t-SNE Algorithm (t-distributed Stochastic Neighbor Embedding), which is a specific type of unsupervised algorithm

- A dimensionality reduction algorithm like PCA
- Relevant as we can separate data that cannot be separated by any straight line

t-SNE perplexity

It sets the effective number of neighbors that each point is attracted to

⇒ The larger your dataset, the higher the perplexity



3. Behavioral analysis

Behavioral analysis with social media data

Social media provides a wide range of information about people's interests and beliefs. Shared content can reveal cultural trends, consumption preferences, and social attitudes. Hashtags effectively summarize the content of more complex texts (Nam, Joshi, and Kannan, 2017)

Behavioral analysis and your project

This analysis aims to facilitate and focus the first two phases of Design Thinking (Understanding the needs of users and defining the problem)

This analysis helps us to:

- a. Identify key themes in online conversation.
- b. Gain insights about latent needs and desires of target consumers.
- c. Understand **inspirations** and **beliefs** that influence consumer choices.

Logical steps

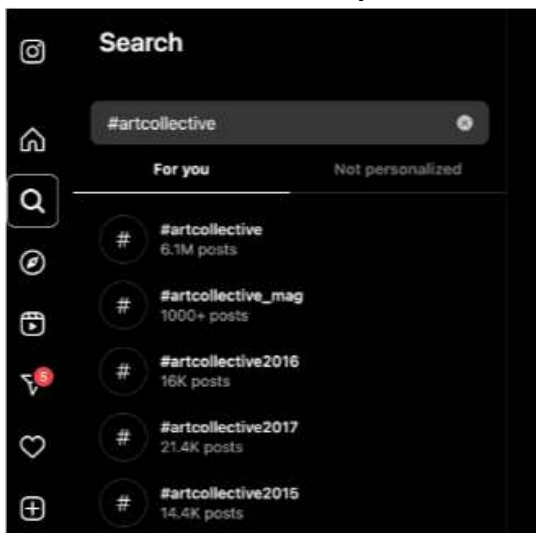
1. We start with the description of a target of consumers to identify keywords. Let us suppose that we want to target “art lovers”. What keywords do they use on social media? You can ask ChatGPT or you can check on Instagram

What keywords are most associated with art lovers consumers on social media?

These keywords signal an active art-loving community on social platforms:

- **Art Communities:** artcommunity, artistsoftiktok, arttok, artdiscord, artloversunite
- **Trends & Social Media:** fyp, foryou, foryoupage, viral, trending, artistsupport
- **Collaboration & Sharing:** meettheartist, collabart, artchallenge, artfriends

2. Check how relevant each keyword is. You can use Instagram



- Get all the other keywords that appear in the posts containing the selected keywords (e.g., #artscollective, #artcommunity, #artgallery)



#artcommunity
 #CreativeExpression #ModernArt
 #Inspiration,#AI #PaintingLover #digitalArt

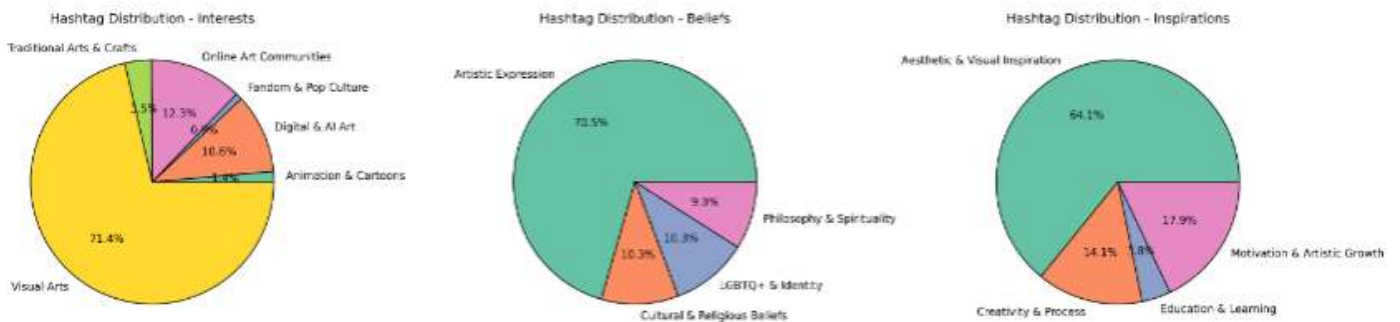
#ArtCollective
 #CreativeExpression #DIY
 #artANDcraft
 #handmade#sketch

#artgallery #digitalArt #AI
 #Aartist #3d #fashionDesign

{Art_lovers: [#artcommunity, #CreativeExpression, #ModernArt, #Inspiration,#AI, #PaintingLover, #digitalArt, #ArtCollective, #CreativeExpression, #DIY, #artANDcraft, #handmade, #sketch,#artgallery, #digitalArt, #AI, #Aartist, #3d, #fashionDesign]}

- Use ChatGPT to understand the interests, beliefs, and inspirations of the target consumers. ChatGPT-4 excels at grouping semantically similar themes together. Thanks to its ability to interpret the language of social media, it can identify connections between concepts in different languages, cultures, and contexts. We will use it to group consumers into:
 - Interests
 - Beliefs
 - Inspirations

Visual output



Target description

using this categorized analysis, please provide a brief description of the art lovers consumers.

Art Lovers Consumer Profile

Art lovers are a diverse and passionate community driven by creativity, self-expression, and cultural appreciation. They engage with art through multiple forms—digital, traditional, and experimental—while staying connected to artistic trends, fandoms, and online creative spaces.

NEW IDEAS GENERATION: DESIGN THINKING METHODOLOGY

The second phase of the NPD is design thinking or human-centred design approach, meaning by this that we move the focus on users, consumers and social ideation.

The main idea is that, in this methodology, we put people at the center of any design process, where design is not just the creation of a prototype, but it is about building a new value proposition to offer, that can be a product, a service, a solution and so on.

These people can be highly like a user, either actual users or potential users, but can be also someone that interacts with the user and with the product or someone that somehow intervenes in the customer experience.

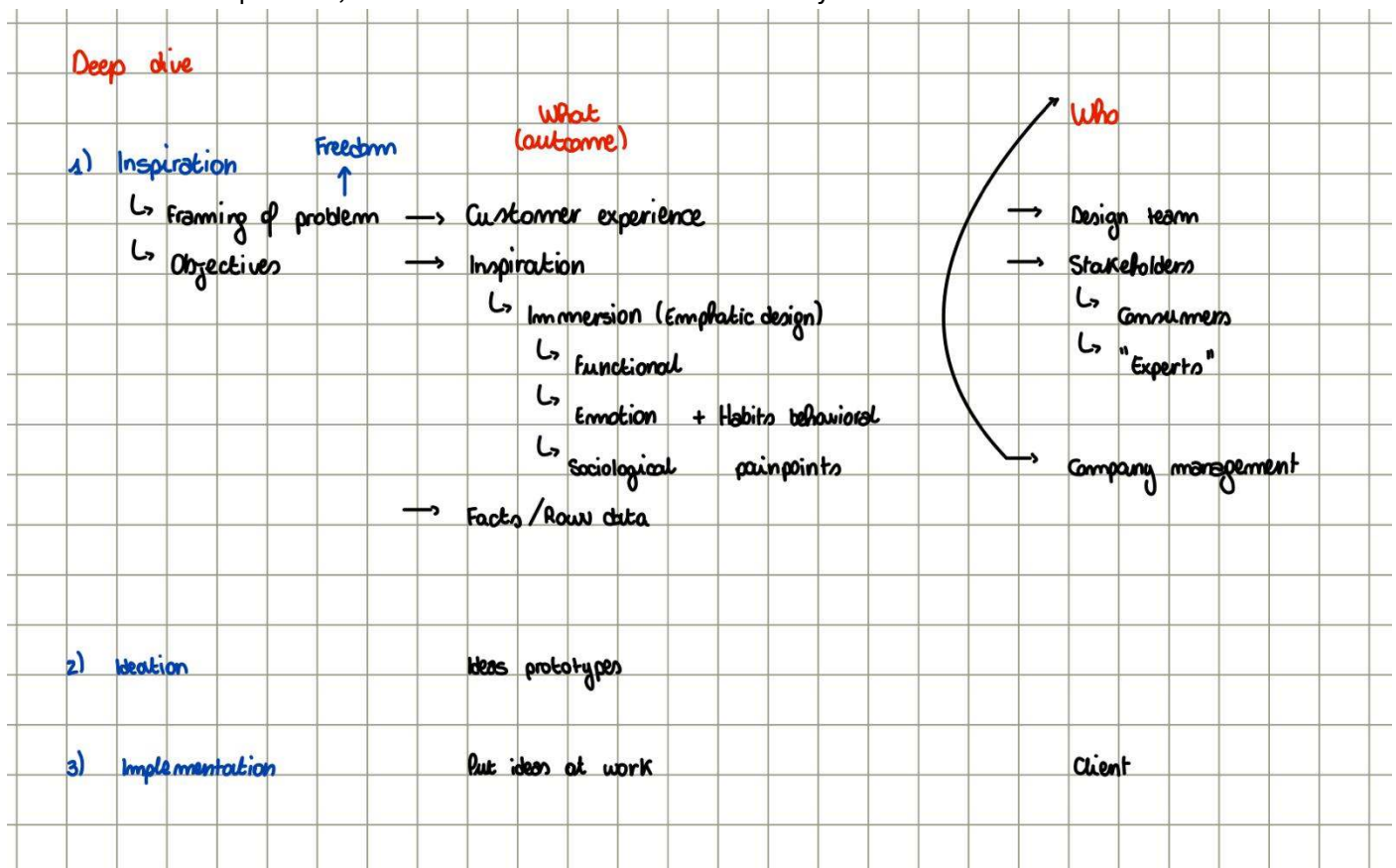
OpenIDEO Case discussion

IDEO is a Silicon Valley based design company firm, expert not for a specific technology, a specific industry or a specific solution, but they are expert in the process of creating solutions -> they have designed their own methodology, which is called **deep dive**

The deep dive: a three-step immersion process

The methodology adopted by IDEO to generate new ideas is a process in three steps:

1. Inspiration -> companies don't come with existing problems, they come with symptoms
 2. Ideation -> this all phase starts from insights and hypotheses derived from the inspiration phase, then used to come up with potential ideas and potential solutions.
 3. Implementation.
- ⇒ This idea of the deep dive is like a sort of immersion of the people that are involved into design process, into the innovation process, immersion into the context where they want to innovate.



Inspiration

Inspiration is the first phase of IDEO's deep dive process that is centered on consumers. The objective of this phase is to develop a deep sense of the users' problems and the possibility that exist in creating solutions.

This phase is articulated into different moments:

- a. **Data collection:** Data are collected through observation, interviews to consumers and people interacting with consumers along the value chain, videos representing the customer journey, pictures, and so on. At the end of the process data are collapsed into post-its and organized by themes
- b. **Brainstorming:** different iterations of brainstorming involving IDEO's people and the client help shape the idea, modify it, and start a rough prototyping.

Ideation

During the ideation phase ideas are conceptualized and prototyped.

- a. **Conceptualization:** This step implied moving from an idea to something more refined, that is a concept. The concept usually integrates the insights coming from the inspiration phase with commercial, competitive, and regulatory issues that need to be taken into account while developing the final solution.
- b. **Prototyping:** This phase is very important in the deep dive by IDEO; it enables visualize the solution and to narrow down the potential options. Prototyping has to be rough, rapid, and right and is a powerful way to visualize the solution not just for IDEO's people and for the customers, but also to share the idea and its form with consumers.

Prototypes are an important step into the deep dive methodology.

Implementation

The implementation phase is when the concept/prototype is transformed into a product.

This part of the process is mostly carried out by the client but even in this phase IDEO's support is central to make sure the concept that has been developed is respected in the phase of implementation.

Nature of IDEO deep dive process

The main characteristics of IDEO process for the generation and implementation of a new concept are:

- a. Importance of a user-centered approach to designing, which relies on empathy as a value and a deep understanding of the context
- b. Importance of collaboration
- c. Need for diversity of perspectives
- d. Notion of creating the future more than being tied to the past
- e. Importance of prototyping
- f. Working collaboratively with the client to ensure a deep understanding of their capabilities and vision
- g. A process that allows many ideas to emerge uncensored (divergence) before evaluating and combining ideas (convergence)
- h. Value of visual media in creating innovative designs.

More specifically, the process off-line ensures:

1. Quantity versus quality
2. Flexibility
3. Unique tools
4. Trial and error
5. Insights from different markets
6. Changing teams
7. Microcontributions
8. User-centered solutions

Characteristics of IDEO process online

IDEO PROCESS OFF-LINE

Quantity versus quality

Flexibility

Unique tools

Trial and error

Insights from different markets

Changing teams

Microcontributions

User-centered solutions

IDEO PROCESS ONLINE

Diverse people;

Incremental ideas

Collaborative approach

User-centered approach

Multi-phased approach (divergence/convergence)

Challenge of IDEO process online

The challenges of moving IDEO process online are related to the following problems:

1. Transferring the know how and understanding of the client value chain and competences from offline to online
2. The biggest challenge is of not cannibalizing IDEO's consulting activity with the OpenIDEO's platform;
3. There is no guarantee of the implementation of the identified solution
4. How to use the prototyping phase when transferring the model online?

Opportunities/challenges of the platform for clients

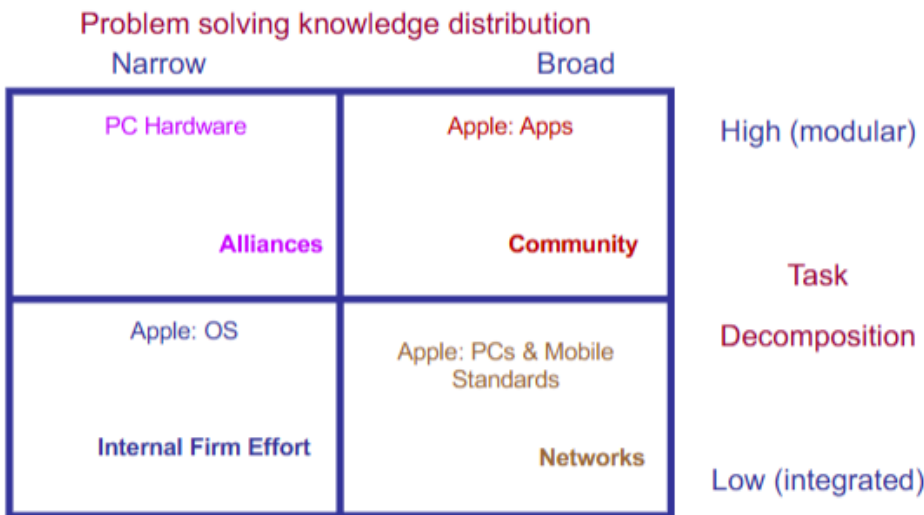
OPPORTUNITIES

Access to IDEO consulting services at an affordable price
 Access to a very different competences and experience through the community
 No problems of Intellectual Property Rights (IPRs)
 Opportunity to go online without committing to a self-developed community

CHALLENGES

Public disclosure of their projects
 Transfer of background knowledge and company's culture to the community
 Engage the community on a specific problem
 Identify the right project that can be of interest for the community
 Devote time, feedback, and effort to the community

When is fruitful to crowdsource ideas?



Opportunities/challenges of the platform for community

OPPORTUNITIES

Opportunity to show her competences to IDEO and become eligible for a position within the consulting company
 Learn from others
 Face new and different problems
 Social recognition through the DQ

CHALLENGES

Accept the no financial reward policy of IDEO
 Keep up the motivation and interest in the community over time
 Maintain a sustained effort over time
 Show commitment to projects even with the risk of not seeing them implemented.

Opportunities/challenges of the platform for IDEO

OPPORTUNITIES

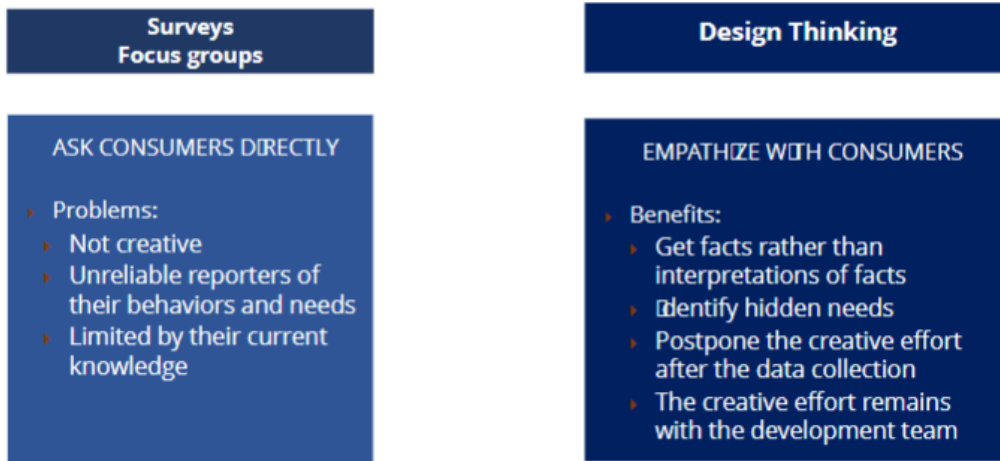
Opportunity to catch up with competitors emerging online like Quirky
 Access to a vast array of expertise and competences
 Enter the online world without affecting its core business.

CHALLENGES

Keep the community alive and engaged into different projects
 Animate the different discussions
 Make sure there is a follow up from the client in the implementation of the solution ideated from the community
 Maintain a balance between competition and collaboration.

Involving consumers in new products ideation

What kind of research to use?



In this phase, most of the methodologies that we are going to use to understand the user and the context are methodologies related to explorative research.

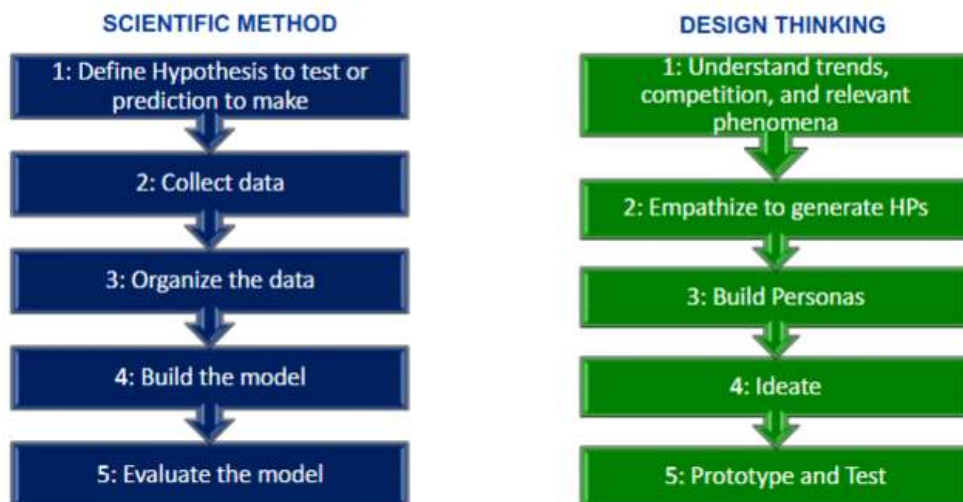
A new product from a survey

‘We did a survey where we asked girls if Barbie should get a new boyfriend or stick with Ken,’ explained Lisa McKendall, Mattel’s manager of marketing and communications. ‘They wanted her to stay with Ken but wanted him to look. . . cooler.’

NB: when we ask the consumers directly, we need to remember that they have a number of issues:

1. they are not creative
2. they are unreliable reporters of their behaviors -> the observation provides us with better insights
3. they are limited by their current knowledge.

Scientific method and design thinking



The design thinking approach allows us to empathise with consumers, but above all it is an approach really similar to the scientific method, in the generation of hypotheses and ideas that address specific hypotheses. It is a very recursive process that is based on the interpretation of facts and data done by the development team.

1. Understand trends and phenomena
2. Empathize

How do you empathize?

- a. Observation (IDEO) -> we mainly use social media
- b. Put yourself in other’s shoes (Nissan and MIT AGNES Lab)
- c. Observation in the social media age (Ditto Labs)

Observation

Empathic design technique

It involves all the information you may gain by observing people in their own physical environment. It enables company to gain additional information (compared to those gained by observing people in usability labs) with respect to the following aspects:

1. Triggers of Use -> what prompts a consumer to use a product? Not always consumers use the product for the purpose of its creation; most of the time consumers adapt the product to their needs -> this can provide insights to the brand and to the company
2. Interactions with the User's Environment
3. User Customization
4. Intangible Attributes of the Product
5. Unarticulated User Needs (people may be not consciously aware of their problems, or they may experience difficulties in articulating their needs)

EX: Haagen Dazs Cream Crisp

Their main aim was to innovate the snack category, focusing in particular on handheld segment, which was growing strongly and which is dominated by Magnum.

Strong positive affect in retail

Stick Bar HD perceived of a higher quality but still a "me too"

Premium HD strong barrier for trial (up to 120% vs. Magnum)

Need to find a way to be stronger in the handheld segment

Consumer insight process

They started with observation -> ethnography with HD target and Magnum users

Primary need for HD consumers: little treat for myself, indulgence

Magnum users: more focused on the amount

Magnum "Crack" key characteristic of the mix

Idea generation session: mix of employees and consumers

30 ideas generated around Stick-bar

Identified 5 "feasible" ideas particularly appreciated by non users of Magnum

Screened down to 2 to be tested in PreVu

Positive PreVu on 1 idea, first prototypes created

Negative Evaluator... -> they need to start again

Step back and all process analysed: low uniqueness and price key barriers

Generate a stick enough different from Magnum to justify a premium price was not easy...

Decision to simply follow consumers' needs

- a. Smaller size vs. Magnum
- b. Less messy
- c. Extreme high quality
- d. Have a "WOW!" effect (focus till now was mainly shape and ingredients)
- e. In line with the brand promise "Voyages pour vos senses"

Final mix

Stick not present anymore even if still a handheld product

Contrast among wafer, thin caramel coating and ice cream

Extremely basic flavours: vanilla, chocolate and caramel

Extremely easy to eat: not messy, coating does not crumble, slightly smaller than Magnum (80ml vs. 120ml)

High quality ingredients: Loacker wafer, HD ice cream

Results

Volumes 30% higher than expected

Mostly incremental volumes thanks to the new occasion for the brand

Able to drive distribution in both impulse and retail

Premium price justified

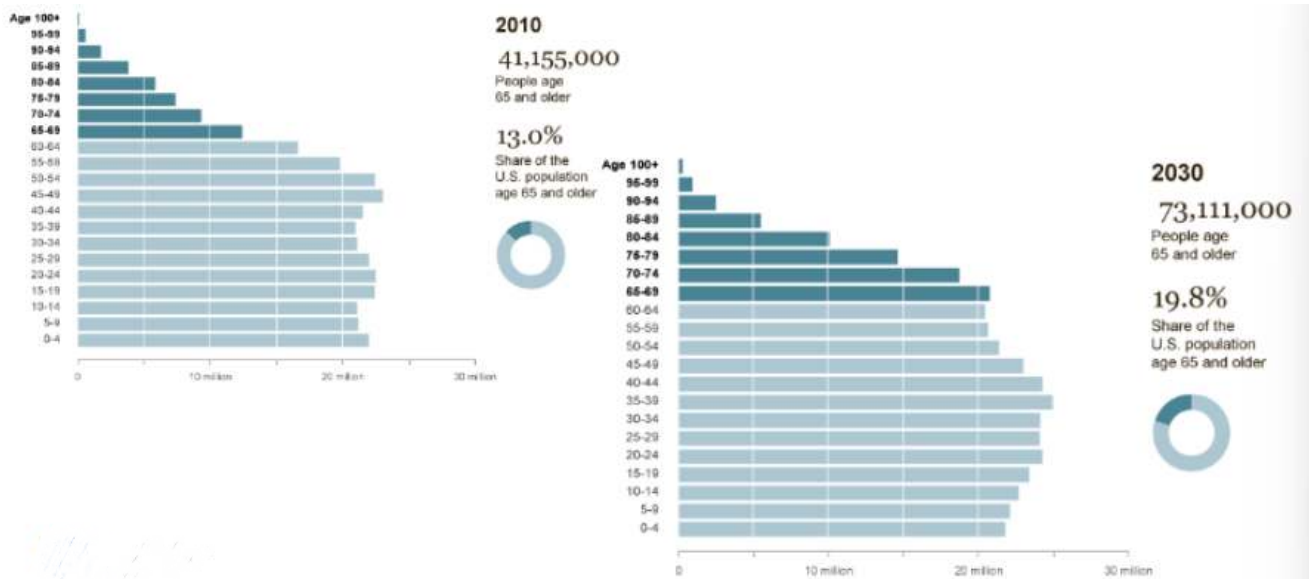
Mix globally exported

EX: AFOL

Adult Fan of LEGO – AFOL User’s Group
Self-formed (organic) brand community
Exists online/offline
Specialized according to themes and interests
53 known LUG’s (33 in NA, 14 in EU, AU and Asia, 6 in Canada)
AFOL’s are men
LEGO purists!
Mostly in their 20-40s
Many AFOL’s spend >2,000\$ per year buying LEGO

Putting yourself in others’ shoes

Graying population, the aging of America: a business opportunity



Age Lab: calibrated to make the wearer experience old age, the Agnes – short for the Age Gain Now Empathy System - has harnesses and bands that restrict joint and limb movements. This is a useful technology that allows young people to understand what the impediments of older generations are, allowing them to be able to design products for older people

Observation on social media
Surfing images to generate insights

Ditto Labs scans public social photos on Twitter, Instagram, and Tumblr to glean insights for marketers.

FACES
Human faces can give context. If a logo appears above a face - such as Smith ski goggles in this picture - it can indicate the person is wearing apparel. Smiles help advertisers.

LOGOS
Ditto detects thousands of logos, such as the Patrol Blue Station can and Marmot jacket here. An advertiser may search for photos featuring rival brands to try to steal customers.

PRODUCTS
Users who post images of things

SCENES
Whether a photo was shot in a bar or on a snowy mountain can give advertisers clues about where and how customers use their products.

TRIGGER OF USE: “We used to Ditto to look at actual photos. We found that Gatorade wasn’t just consumed during exercise, but by teens during meals”

INTERACTION WITH USER’S ENVIRONMENT: “We used Ditto to land a new client, because our agency had data about the brand the others didn’t have.”

From observation to insight

Design thinking and apps: the Rise case

Rise: A data platform for college and professional athletes to track their sleep and adjust their behavior so that they played at peak performance.

Rise expected athletes to look at data-driven charts and graphs to determine what decisions to make next. But **players struggled** to find those insights

Atheletes receive daily schedule from the coach

- Athletes are not in charge of their own schedule and they are not used to decide about it

Tennis players and football players receive advice during games

- They have no time or experience in making decisions, not even about their own plays

Coaches are the people athletes trust the most when it comes to make decisions about their life (also personal life, according to Bolt)

- Athletes need coaches to tell them what to do

The new Rise app

1. Athletes do not care about statistics and data
2. Transform the app into a coach

The novel chat section

The chat section is partially fueled by an algorithm.

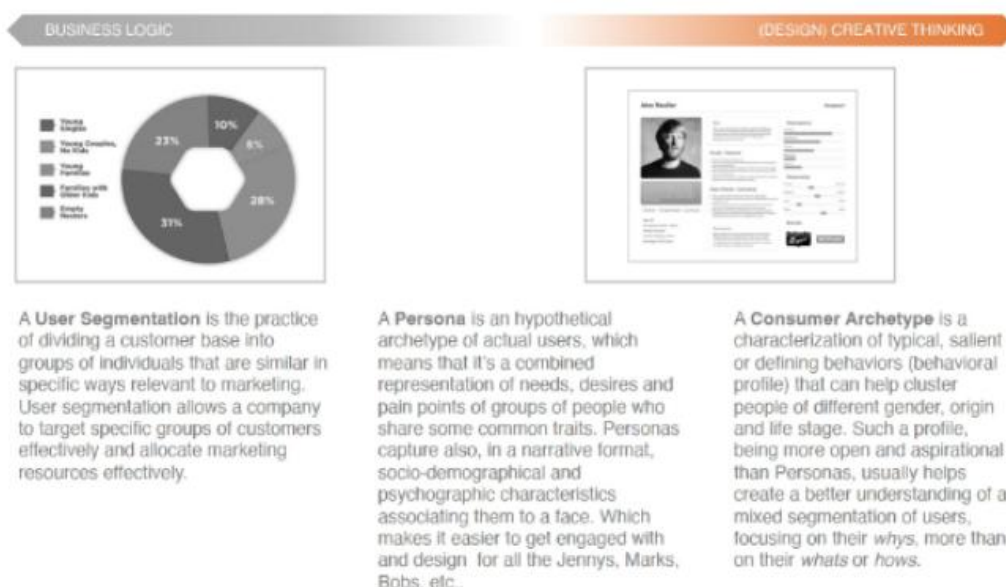
If it sees an irregular pattern, it asks the player if something is going on.

Then, the player can get personalized advice from a person.

A human coach can intervene.

Build personas

Personas and consumer archetypes



Aspect	Consumer Persona	Consumer Archetype
Definition	A detailed, semi-fictional representation of a specific customer, based on real data and insights.	A broader, symbolic representation of customer motivations, often rooted in psychology and storytelling.
Focus	Demographics, behaviors, goals, challenges, preferences.	Motivations, desires, fears, and emotional drivers.
Usage	Tactical—used in marketing, product design, UX.	Strategic—used to inform branding, storytelling, positioning.
Specificity	Highly specific and individualized.	Abstract and generalized.
Based On	Market research, user data, surveys.	Jungian psychology, narrative theory, emotional appeal.

Personas

Personas are fictional representations of segments of buyers based on real data reflecting their behaviors. Their purpose is to put the people in charge of company decision-making in the shoes of the customer.

Customer personas can be as basic or complicated as you like. They can take various forms, but at the end of the day, their value lies in how clearly they reveal what drives different types of buyers.

The process of creating buyer personas relies on using data and insights to identify, understand, and uncover **the values, behaviors, affinities, attitudes, conversations**, and **patterns** of your ideal customer. The analysis can extract data from **primary research, web analytics, social media**, or all three.

Ideate

More specifically, the process off-line ensures:

- a. Quantity versus quality
- b. Do not be scared of crazy ideas
- c. Flexibility
- d. Unique tools
- e. Trial and error
- f. Insights from different markets
- g. Changing teams
- h. Microcontributions
- i. User-centered solutions.

Prototype and test

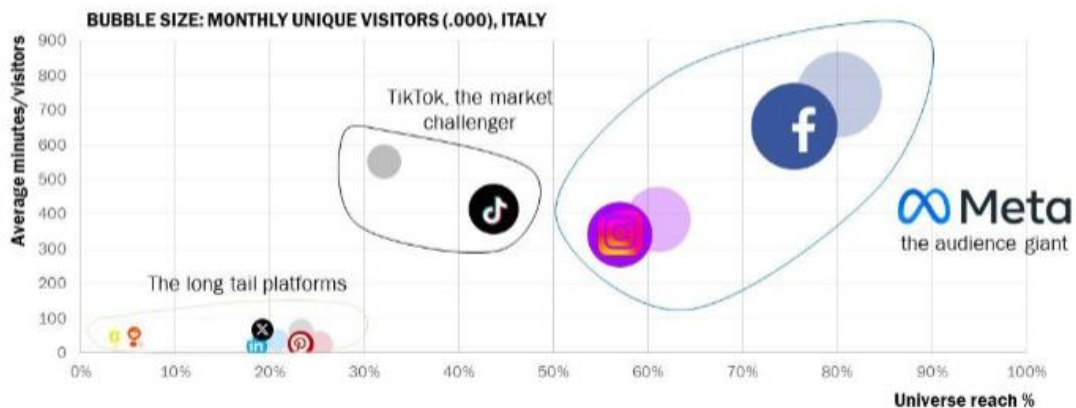
GUEST SPEAKER: SOCIAL ANALYTICS FOR INNOVATION

The aim of the lesson is trying to leverage social analytics and digital in general to make smart decisions. Through social we are able to evaluate feedback of our content, we can evaluate how many followers we're getting, we can evaluate how many likes, how we get to have a lot of content, how many videos views, and so on. At the same time there are several other things that we can unlock with social data and also very big co-authority. Corporations are not aware of the full power that they can unlock when they move deeply into social data. In order to do so, we have to take a step back, and we have to start by asking a very popular question: **is social media really dead?**

If we look at the numbers of users joining social media, this is not really true.

As we can see from the social media time line is that there is a steady and constant growth in terms of users and entities joining social media platforms -> we close 2024 with more than 5 billion social media entities all over the world, meaning by this that the majority of the world population has an entity on one social media.

META ATTRACTS MOST OF THE SOCIAL USERS, TIKTOK KEEPS ENLARGING ITS BASE, X TURMOILS AFTER ELON MUSK'S ACQUISITION

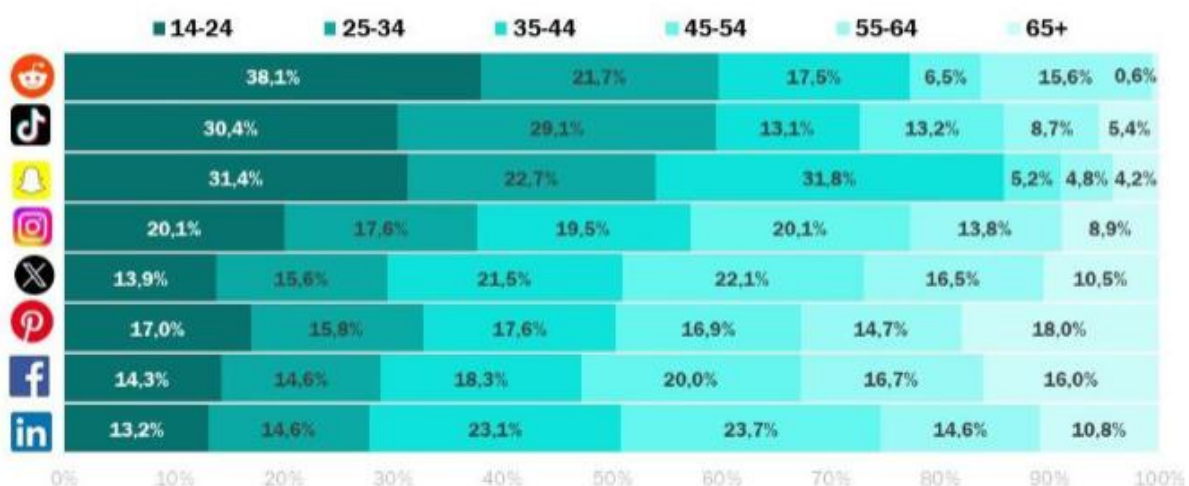


The more time we spend on social media platforms, of course the better for social media platforms because we are consuming more content, we are exposed to more ads, and this means that we spend more time on those platforms.

Looking at the table we can see three blocks:

1. Long tail platforms: platforms which are not performing bad in terms of people joining, but that stay more or less the same in terms of minutes per visitors and in terms of population of the platforms, such as LinkedIn, X, Pinterest, Reddit and so on. Basically all platforms that are very specific in terms of need or very specific in terms of markets.
2. Tiktok, the market challenger
3. Meta, which includes Instagram, Facebook, Whatsapp

REDDIT, TIKTOK AND SNAPCHAT ARE THE "YOUNGEST" PLATFORMS, WHILE FB AND LINKEDIN ARE SKEWED TOWARDS A MORE MATURE AUDIENCE



Another important things to keep in mind is that we use social media for answering to different needs. Most of the time different needs are also associated with different periods of our life.

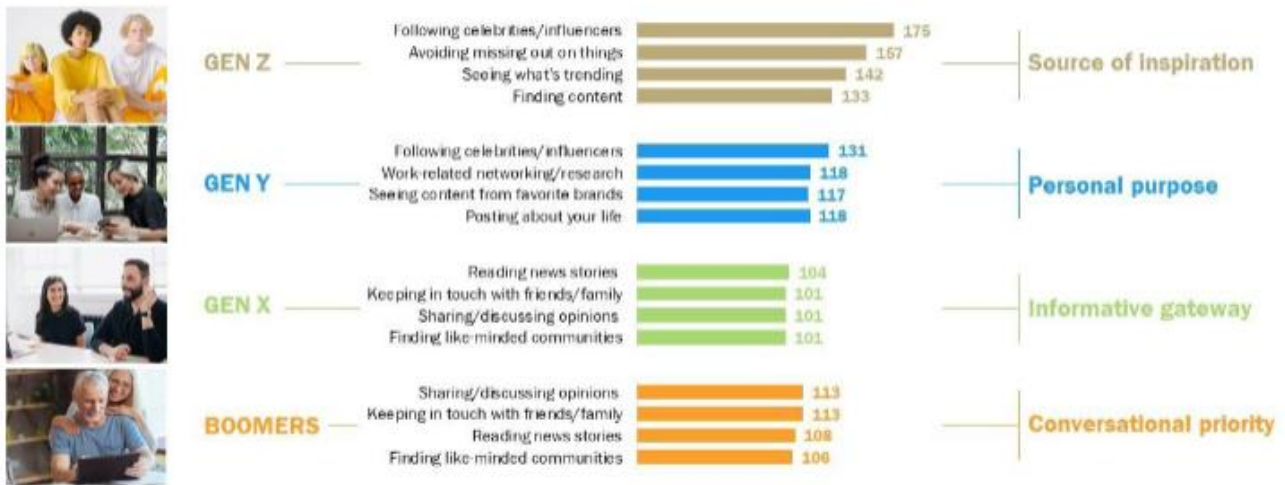
For Gen Z, and for very young users in general, it is a way to explore, to find these contents and new creators, to see new celebrities, new artists, new sports, new entertainment formats.

For Gen Y, so when becoming a little older, we start to have more clarity in what we like. We start posting about ourselves, we start seeing ccontents from brands, we are more focused on the work-related network and research and our area of interest becomes a little bit more narrow.

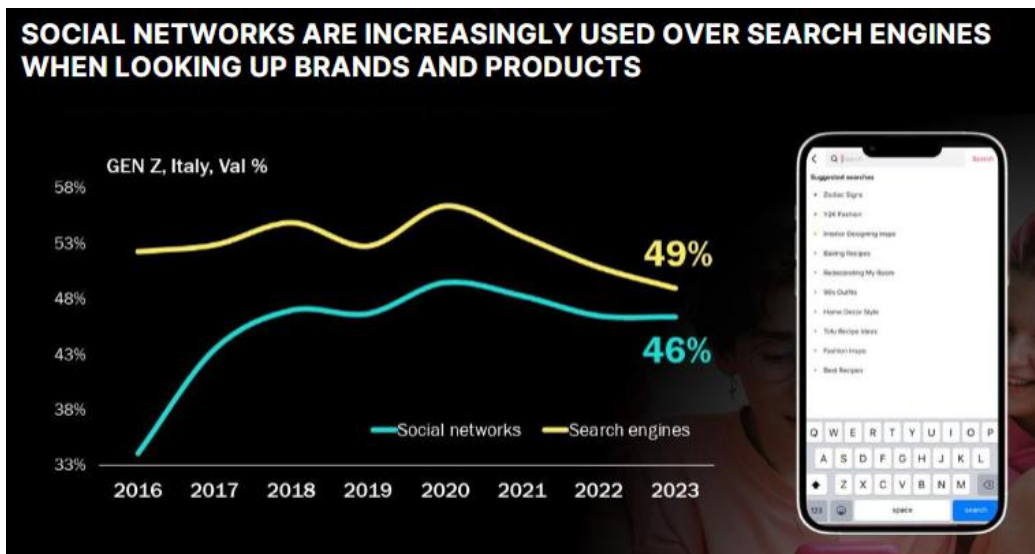
As we get older, these things becom stronger and stronger and the informative function of social media becomes stronger again -> this is why we say that now Facebook is a very strong among older people

⇒ We don't have to make a mistake to think about social media platforms as silos for different generations

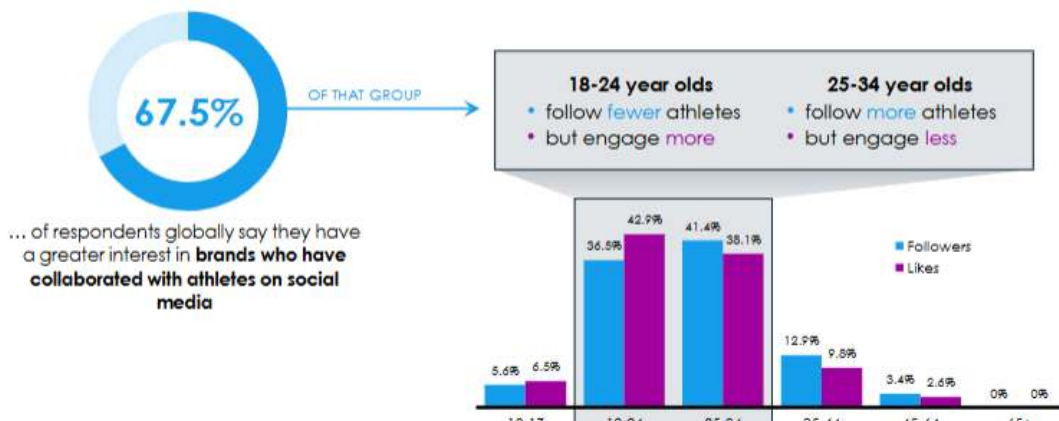
REASONS FOR USING SOCIAL MEDIA ARE NUANCED ACROSS GENERATIONS



The graph below shows that, for younger generations, TikTok is becoming a little bit of a search engine (46% of users are using social networks as search engines). On social media people are searching experiences of those who have already experienced what we are searching -> it's a different level of user experience and this is the reason why social media also can be more and more used with this regard.



REASONS FOR USING SOCIAL MEDIA ARE NUANCED ACROSS GENERATIONS



The influencer era is ending, what we are looking for is a more genuine connection with people we are inspired by, we admire, and not necessarily they have to make millions of followers to get our attention.

Data on audience and fan-sizing is nothing new

"The ABB FIA Formula E Championship has one of the fastest-growing online audiences, with a **347** per cent rise in the number of 13-17-year-old fans engaging with its online content..."

"A new survey has revealed that **1 in 10 of the world's 7B** population follows **Manchester United**."

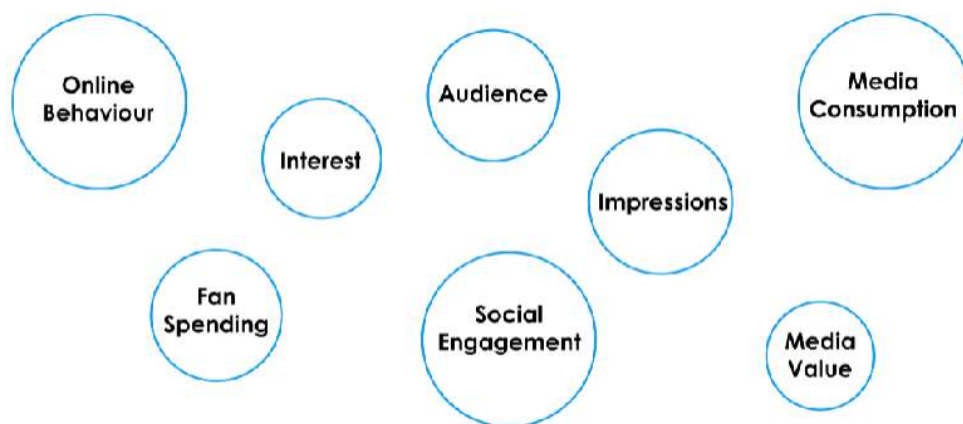
"According to the **NBA**, more than **300M** people in China play basketball. Meanwhile, the NBA is the most followed sports league on social media with more than **150M** followers..."

"Over the 365 days, **FC Barcelona** had **1.189B** interactions on platforms like Instagram, Facebook and Twitter..."

Social listening allows us to analyze what users are talking about on social media, but it doesn't really matter anymore how many people are talking about that specific topic, what we care is only the positive/negative sentiment.

Another important thing to mention that matters a lot when dealing with social media is that we can work real time adjusting what we are doing according to the sentiment analysis results.

It is also really important to understand the reputation that we have on social media to understand how we are perceived against our competitors, as well as understanding real time if we are doing right.



From Raw Data to Social Intelligence



THE INTER CASE

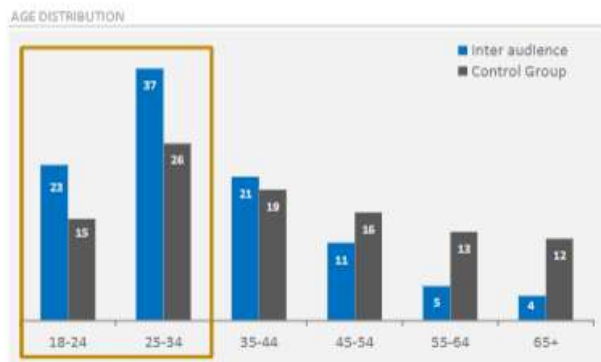
Digital Audience Profiling: Market research based on social media data



The first step in this research was to create a reference audience, in order to use it as a benchmark of the results coming from the target audience to understand if there are specific nuances or specific results which are defined by the target audience itself. In this case the reference audience was the US general population. Doing a market research this way rather than following a traditional pattern becomes easily very expensive; on the other hand, since it is entirely social-based, we are not asking questions to anybody, we are not central-based, but we see and we look at the entire population of people interested, who is on Instagram. Moreover, in this type of study, we got the results after 30 seconds, rather than after weeks/months, as with traditional research.

Inter showed a strong penetration among users between 18 and 34 years old...

GENDER DISTRIBUTION	TARGET	REFERENCE	AFFINITY
MEN	69,9%	46,9%	●●●●
WOMEN	30,1%	53,1%	●●●●



When the percentage of the target group is higher than the one of the reference group means that we have a so-called over-index, and we also have a positive infinity. Through this approach it is also possible to analyze passive behaviors: we can also track people that are not following Inter, but that every time that they scroll their feed they see an Inter content, meaning by this that there is an interest as well -> this process allow us to detect people that are possibly interested in Inter.

That was the first step; then the second step is understanding where they are.

**A target audience that shows concentration in four main areas
New York, Miami, LA and Houston**

The analyzed audience is mostly located in big urban areas, particularly New York (involving Boston), Miami, Los Angeles and Houston.

In particular, the two coasts show a general deeper penetration of this audience, and Texas result is unique among the *flyover states*, which did not emerge as interesting markets for Inter.



The green bubbles represent where we have the positive opinion, while the red bubbles represent the negative opinion; the size of the bubble represents the strength of the opinion.





Looking at the map, we can see that Boston, New York, Miami, Los Angeles and Houston are the most relevant spaces.

Key Touchpoint: Gaming & Entertainment

OTT services showed a lower penetration than traditional TV channels

The audience shows a **negative affinity** towards the OTT services. However, while Amazon shows a target audience far lower than its reference audience, Netflix reflects similar percentage in the two categories.

The interest of the audience is directed towards **traditional TV channels**, showing strong positive affinity for channels such as ESPN and Fox Sports.

OTT SERVICES		TARGET	REFERENCE	AFFINITY
	NETFLIX	35.5%	36.2%	● ● ●
	AMAZON	37.7%	47.6%	● ● ● ●
TV		TARGET	REFERENCE	AFFINITY
	ESPN	33.1%	21.4%	● ● ● ● ●
	FOX SPORTS	9.4%	5.7%	● ● ● ● ●



During the last years, we saw a trend towards the creation of ad-hoc contents for OTT services. The rise of docu-series such as Manchester City «*all or nothing*», Juventus «*first team*», Formula 1 «*drive to survive*», Sunderland «*til i die*» or Boca Juniors «*confidential*» determined the perception of sports and entertainment as joint concepts.



Here the focus is no longer on what type of content we have to use, but it shifts to which investment in TV, as a TV series, as a media branch, should be done.

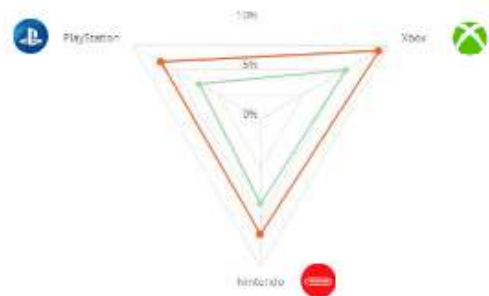
Consoles are among the most preferred entertainment products

The US audience shows a strong positive affinity towards **entertainment products** and, specifically, all major **gaming consoles** (PlayStation, Xbox and Nintendo). PlayStation has the highest affinity, while Xbox has the highest reference and target audience.

EA Sports emerges as one of the video game company with the highest positive affinity: FIFA, Madden NFL, and NBA Live are among the gaming titles closer to the target audience.

Moreover, **Fortnite** highlights one of the highest in-target penetration among the games analyzed

ENTERTAINMENT PRODUCTS



GAMES		TARGET	REFERENCE	AFFINITY
	FIFA	8.3%	2.8%	● ● ● ●
	FORTNITE	16.1%	9.5%	● ● ● ● ●
	LEAGUE OF LEGENDS	4.9%	3.1%	● ● ● ●
	MADDEN NFL	7.2%	5.7%	● ● ● ● ●
	NBA LIVE	2.9%	2.5%	● ● ● ● ●

Also games was a very good deal for Inter-transit in the United States, due to the fact that FIFA is made in the United States.

But something more creative should be done; that is the reason why Fortnite was born. Fortnite essentially developed a set of skills, especially in north America, useful for Inter-transit in the States.



FORTNITE



Fortnite is notorious for major partnership with other entertainment products. In fact, Epic Games created a whole set of skins to celebrate the FIFA World Cup in 2018 and recently, released custom skins and other football related items for all 32 NFL teams to be added into Fortnite for players to purchase.

Percentage of the target audience that has shown an interest in the requested criteria. Fortnite is the game title with the highest penetration in the target audience (16.1%).

16.1%

After understanding the initial idea of content to be produced, we need to understand where to produce these contents. In particular two platforms shown an interest: Youtube and Spotify. In particular, on Spotify people are interested and pay attention to podcast, but at the same time they are also exposed to ads.

Key Touchpoint: Channels & Contents

Spotify and YouTube are both key platforms but deserve different approaches

Spotify – the most used music streaming platform – emerged as a **key platform** to intercept *inter interested* audience in the United States.

A brand – or a club like Inter – has two different ways to approach this platform: with *ads* and with *podcasts*.

While music is often used to enhance a moment or mood, **podcasts** demand a little more auditory effort – and that's what makes them so unique.

81% of listeners have taken action after hearing audio ads during a podcast. These actions include researching a product online, connecting with the brand on social media, and talking about the brand with others¹.



SPOTIFY ----- ADS
PODCASTS

YOUTUBE ----- CONTENT

YouTube has, on the other hand, the power of the visual **content**, increasingly important in the world of music.

Ideally, YouTube represents the main asset to spread possible activities and activations involving music stars and personalities, leveraging their engaging power and established fanbase in the United States.

Hype brands are particularly appreciated by the audience...

The audience has a notably interest in the "hype" culture. Brands like Jordan, Supreme and the various collaborations between Nike and Artists or Designers revealed a *positive penetration* in the target.

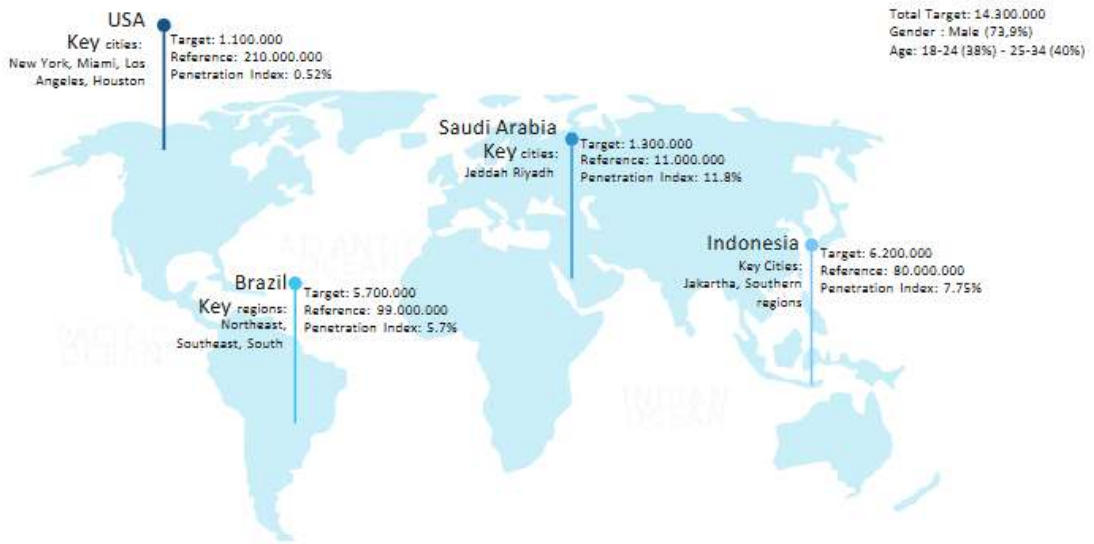
HYPER BRANDS		TARGET	REFERENCE	AFFINITY
	NIKE	21,6%	12,4%	●●●●
	SUPREME	10,5%	7,1%	●●●●
HYPER MAGAZINES/BLOGS		TARGET	REFERENCE	AFFINITY
	HYPERBEAST	10,5%	7,1%	●●●●
	HIGHSNOBIETY	4,2%	2,9%	●●●●



HYPERBEAST
HIGHSNOBIETY



Inter has been the first professional group of clubs to launch a kit on a high-requivalent magazine.



Geographical distribution of international Inter FC fans

A WELL ESTABLISHED AUDIENCE ACROSS THE WORLD

The Inter

YOUNG & CONNECTED

The target is composed for the majority by male from 18 to 34 years old with a particular affinity and interest towards digital world and electronic devices.

VIDEOGAME PLAYERS & SPORT FANS

Inter fans are video games heavy consumers, PS4 and Xbox are overall the preferred consoles. From the sports consumption perspective, they are avid fanatics of many disciplines.

PASSION FOR LIFESTYLE

Clothing, Shoes and accessories interest is a common traits among the target. Brazil fans are keen on sportswear, Americans and Indonesians are more streetwear oriented while the Saudi Arabians prefer the luxury garments.

fans



EXECUTIVE SUMMARY

SOCIO DEMO

Providing key informations related to Inter FC target across the 4 key markets.

ENGAGEMENT STRATEGIES

Developing practical and strategical insights to engage the audience.

COMMERCIAL STRATEGIES

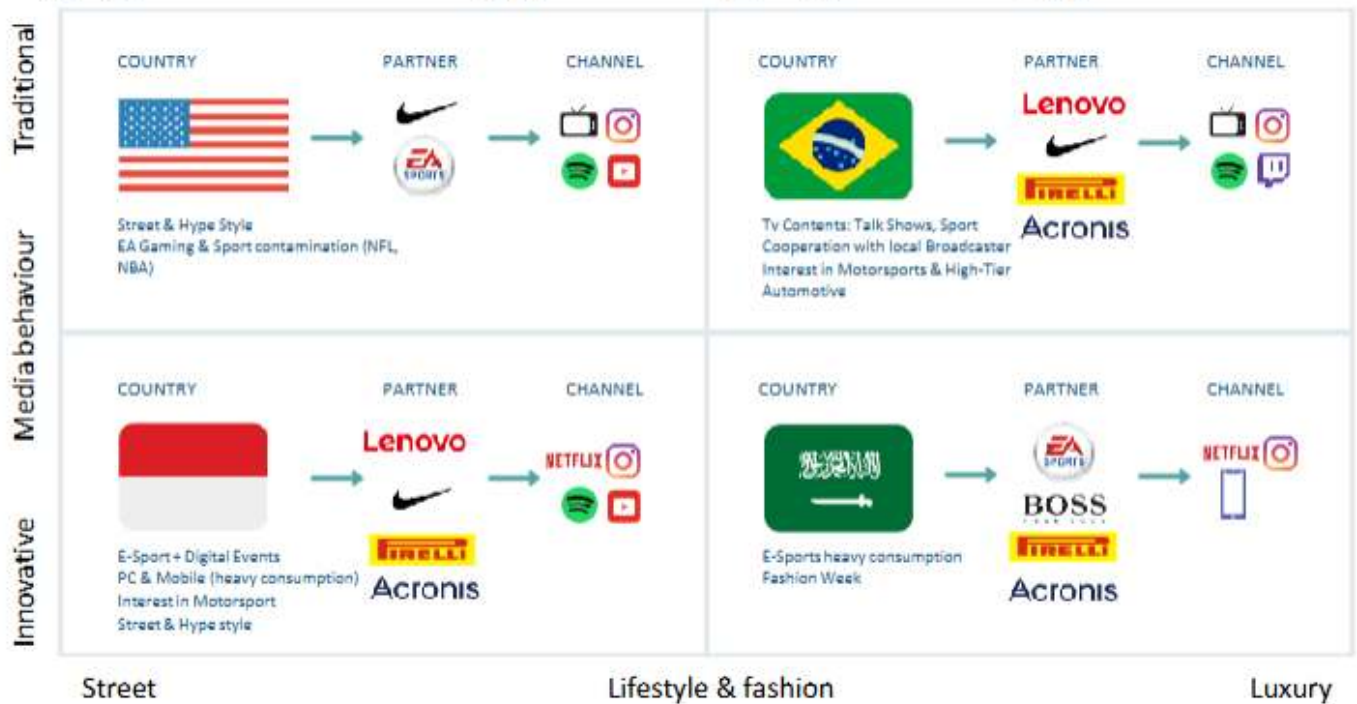
Exploiting Inter FC partners to explore new commercial markets.

REGIONAL OPPORTUNITIES

Taking advantage of the unique traits of the four countries to develop specific regional partnerships.

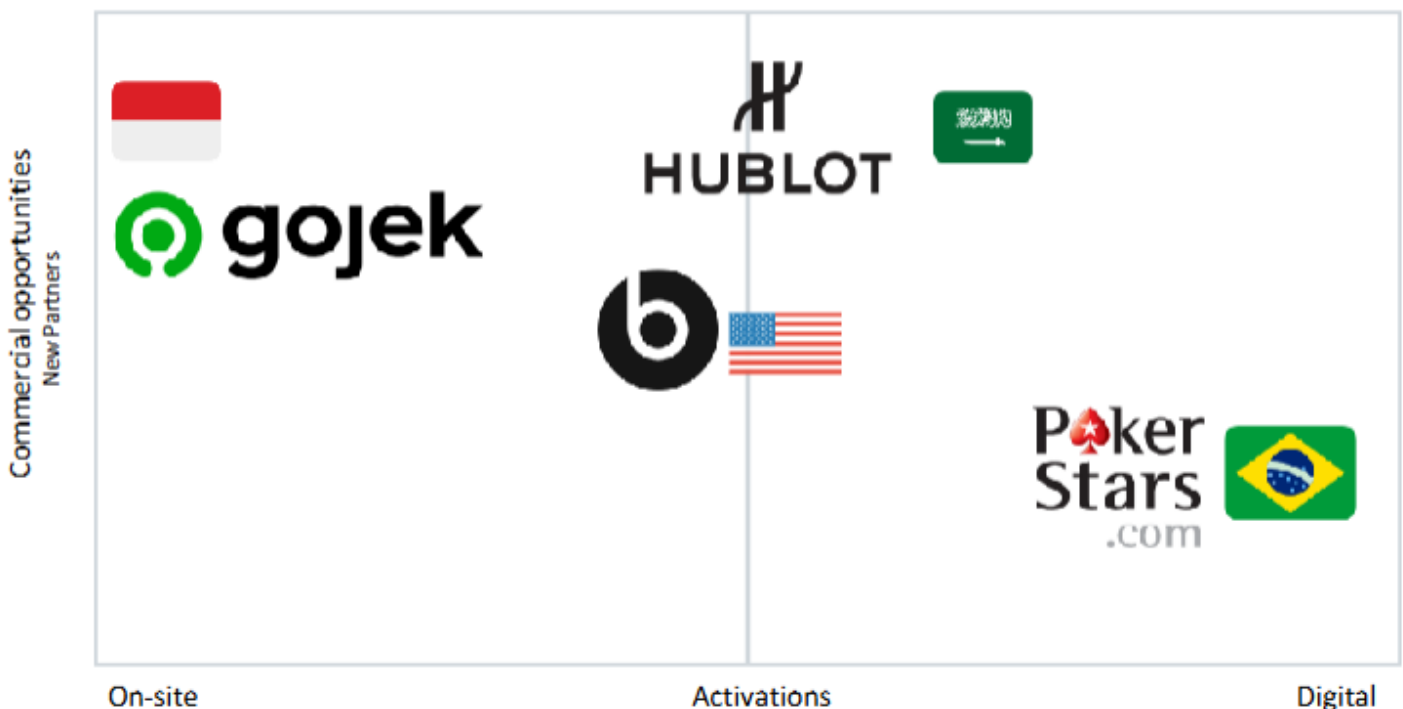


Engagement Strategy, leveraging existing partners



Finally, we ended up with a country by country, local strategy involving partners, shelters and contents. Starting by analyzing already existing partners, it is also important to think about future expansion through the usage of new partners.

Regional Expansion, exploring new partners



Using social data in these fields, allow us to be able to see how we can detect where people are, how we can detect the demographics of these people, how we can use a content strategy accordingly, which are the ideas that we have on the table and on which we are able to act on today.

Finally, we can also use this methodology to understand if there are any potential companies to make the things that we have to do together, what are the best things for us to invest on if we want to do competition, and so on and so forth.

⇒ a lot of decisions which are not social-based are made based on social.

SOCIO DEMOGRAPHICS

The Ray-Ban target audience is mainly composed by users between 18 and 24 years old. 55% of it is male.

PLATFORM MIX



Twitch has the highest affinity. At the same time Instagram and YouTube rank first and second in terms of target audience reach, with Facebook ranking third.



Music streaming platforms are showing the widest reach and the best affinities. Spotify has the highest volume in target and the second affinity score. Amazon Music has the best affinity even though a low reach.

ATHLETES & SPORTS

The audience shows a deep interest in sports, highlighted by the wide coverage and positive affinity achieved by athletes, and specifically motorsports brands and championships.



TRAVEL AND STAYS

The positive affinity with national and international airline companies, hotel groups and travel services signal that the target audience enjoys travelling.



MUSIC & CONCERTS

Pop and K-Pop have the highest reach and affinity. Coachella and Lollapalooza have the highest reach and the latter has the best affinity.



Where is "creator marketing" going?



1

Increased democratization in decision-making as influencers become more professionalized.

2

An acceleration in the trend toward longer-term partnerships.

3

From top-funnel-only marketing goals to mid and lower-funnel objectives as well.

4

A renewed focus on redefining measurement and success metrics.

With great power comes great...challenges

SEARCH & DISCOVERY

WHO IS THE BEST PERSONALITY FOR MY CAMPAIGN?

A consistent and robust selection methodology to identify the right mix of influencers (micro-medium-macro).

OPTIMIZATION & TRACKING

IS THIS PERSONALITY WORTH OUR INVESTMENT?

A measurement model to ensure influencers and audience quality to avoid frauds (fake followers, low quality audience).

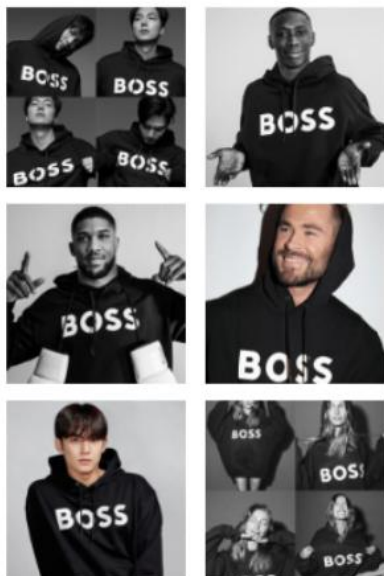
ANALYTICS & REPORTING

IS OUR INFLUENCERS ROSTER WORKING AS EXPECTED?

A comprehensive and trusted approach to calculate influencer marketing effectiveness, ROI and assess against benchmarks / media formats.

Understanding the role of influencers allows brands and marketers to efficiently work with them on a set of different marketing objectives.

1. **Become relevant** over a specific target or niche



Rebranding and positioning

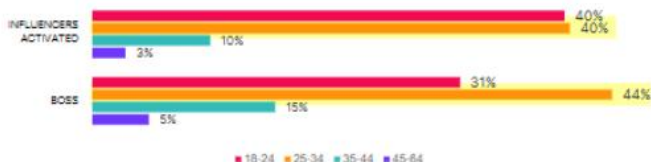
"Over the last six years, Hugo Boss has maintained its brand awareness but crucially lost its **relevance** in the fashion industry. Heritage is great and I realised that the potential of this brand is enormous — but we have to reframe it"

Full-scale rebranding complete with new logo: Boss is now aimed firmly at the millennials, aged 25-40, while Hugo targets Gen Z, aged under 25.

BOSS #BeYourOwnBoss Campaign

Main focus: **Instagram**

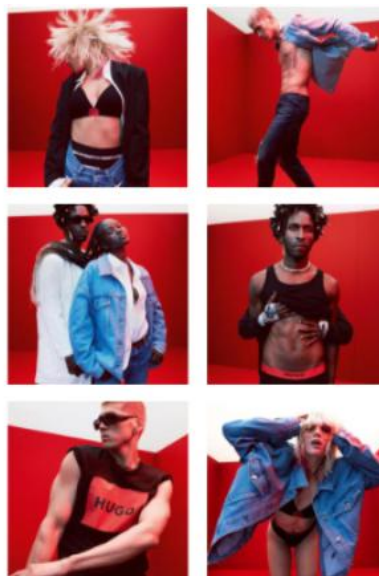
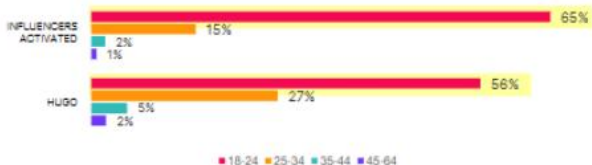
Audience age distribution: influencers vs BOSS



HUGO #HowDoYouHUGO Campaign

Main focus: **TikTok**

Audience age distribution: influencers vs HUGO



How did they get there?

- Right fit between target audience and influencers' audience
- Campaign focus on the most relevant platform for each target audience
- Coherence in terms of tone of voice and formats with the main platform

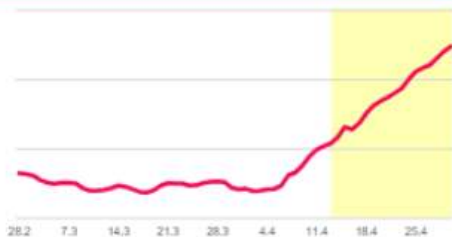
2. **Increase brand awareness** and users' interest



Enhance brand awareness and followers growth

During Coachella, Ray-Ban involved 43 influencers who were able to enhance the brand's Instagram page audience. On those two days over 4.7k new followers landed on @rayban.

RAYBAN DAILY FOLLOWERS GROWTH



43
Influencers involved

4.7k
New followers during Coachella

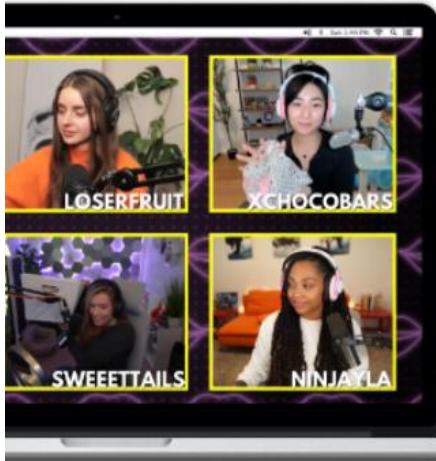
6x
Vs average weekly growth last three months

Which elements can drive followers growth?

- Influencers' ability to drive engagement within their fanbase
- Influencers' audience composition
- Content format

3. **Expand brand footprint** on new platforms

With creators, brands can expand their digital presence into new territories



By using live streaming platforms for marketing, beauty firms have the ideal chance to connect with the expanding women audience and shatter the idea of what a typical gamer "looks like."

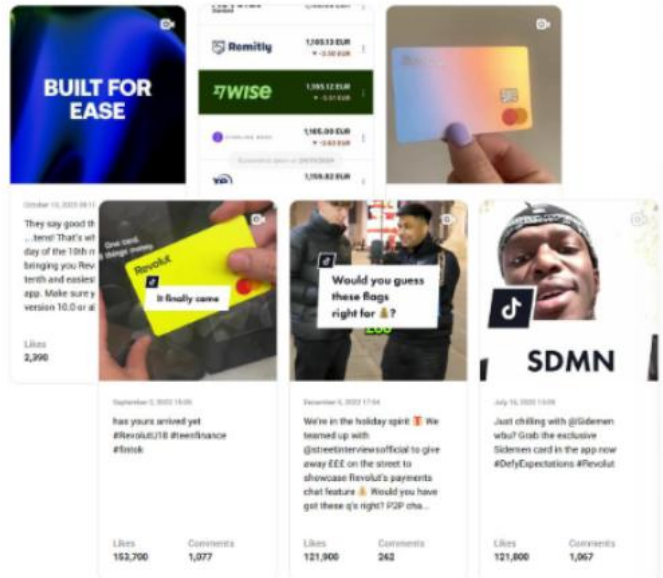
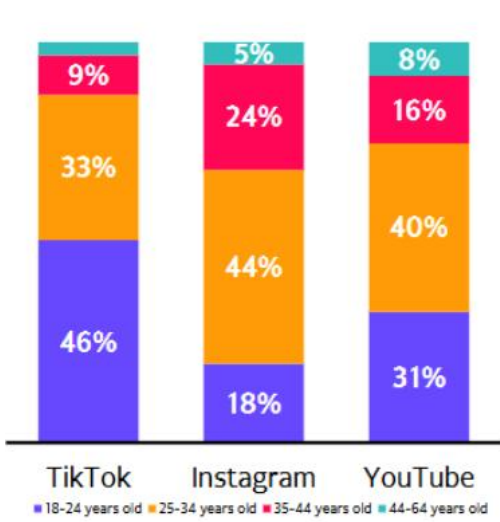
elfyou channel launch
6k hours watched
15k peak viewers

e.l.f. giveaways on Twitch
2k chat mentions across Twitch

By engaging with top Twitch streamers, brands can leverage on a multichannel approach that allow them to reach wider and complementary audiences through a combination of different approaches based on platforms characteristics.

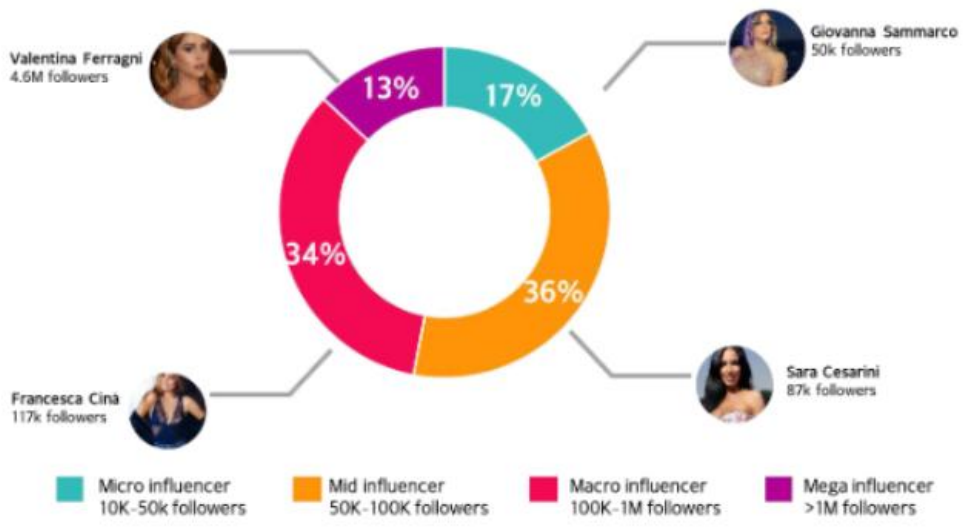
loserfruit
 2.8M followers on Twitch 3.4M followers on YouTube 1.2M followers on Instagram

REVOLUT



4. **Optimize campaign coverage** while maximizing ROI

Selecting the right roster of influencers: yepoda

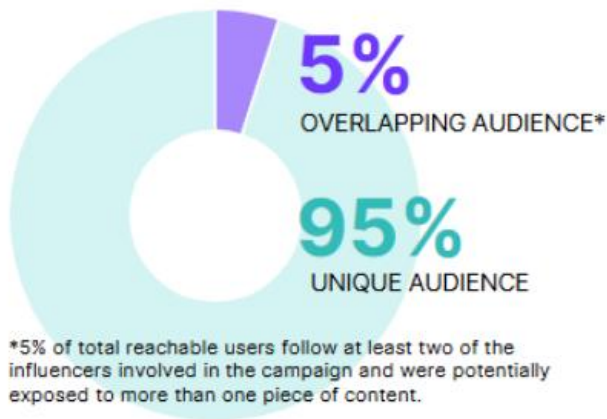


62
Total Influencers

10m
Total Followers

1.2m
Total interactions on IG

€450k
Media Value



Audience in comune: 10%

Audience unica: 90%



Audience in comune: 1%

Audience unica: 99%

How can brands optimize their talents pool?

By selecting influencers with a large share of overlapping audience, brands can reach each user more than once, while **choosing personalities with few shared followers allows to maximize coverage while containing costs.**

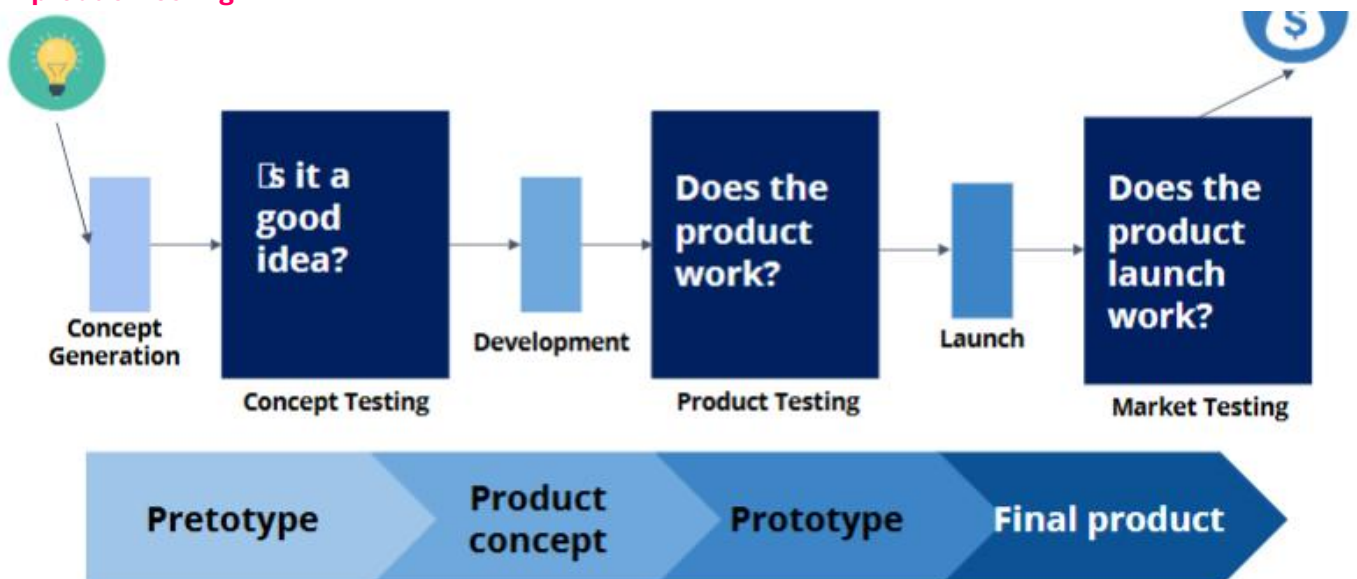
Final Remarks

- 1) Understanding existing and potential digital audiences is crucial to define key strategic activities. With new methodologies like Digital Audience Profiler, we are now able to analyze behavioral and unprompted data with speed and effectiveness.
- 2) Selecting the most relevant touch points, platforms, contents and creators can not be based on gut-feeling. In a digital-first world, we now sit on an unexplored set of data that can drive and support decisions.
- 3) Influencer Marketing is becoming more sophisticated: from top-funnel- only marketing goals to mid and lower-funnel objectives as well. Therefore, a renewed and comprehensive data-driven approach is needed.

CONCEPT TESTING

While with focus group we tend to connect the engagement into the generation of ideas, in this case we collect data, we generate insights and only then we have the ideation phase, with the idea of postponing the creative effort -> the first phase is so collecting the evidence to support the ideation phase.

New product testing



From the concept generation, which is basically the ideation phase, till the final product launch, there are different milestones, different moments. The idea is that we test the concept, the product and then the market, where we test the consistency with the product that we are launching and the marketing strategy than we are proposing.

Setting up a concept testing depends on the area on which the concept test is built, but of course there is a common pattern. There is an initial phase called **pretotype**, which is not always executed (it depends on how much money we are able to invest). It is a fake prototype of a product that doesn't exist just to have a visual representation of what we will have at the end.

Why conduct testing?

Theranos case

The company came up as a scam, and the scam was coming from the fact that she fakes most of the results of the lab testing of her technology.

The reason why company, and investors, engage with concept testing is to avoid this type of errors.

Type 1 error (false positive): invest in an idea that doesn't work

- Reputational damage
- Financial loss
- Time loss
- Cost opportunity on alternative projects -> the resources that we are investing in a start-up cannot be invested in another start-up

Type 2 error (false negative): lack of investment in an idea that could work

- Loss of profits and market opportunities
- Loss of first-mover advantage

⇒ This process is mainly used to reduce the confidence interval, and the range of volatility of our results.

From ideas to concepts: definitions and examples

When we talk about concept, we usually talk about an object, not physical, to test an idea outside the boundaries of our company, understanding the consumers responses. It is a way to show consumers what we are thinking for them.

What is a good product concept? Which are the relevant characteristics of a concept, the ones that we need to make sure that the concept testing is providing us with relevant information?

The concept testing should start from a consumer need and should give back a benefit and a promise to the market. The benefits have to be relevant for the consumer, so we need to give them a reason why to buy that product instead of other existing product, we do not care that much about the feasibility of our idea if it is very relevant for our consumers at this initial point.

It is a concise description, in written or visual form, of the new product idea; it defines the main features of the product and the main benefits to the consumer

**CONSUMER
INSIGHT**

REASON WHY

WRAP UP

BENEFIT

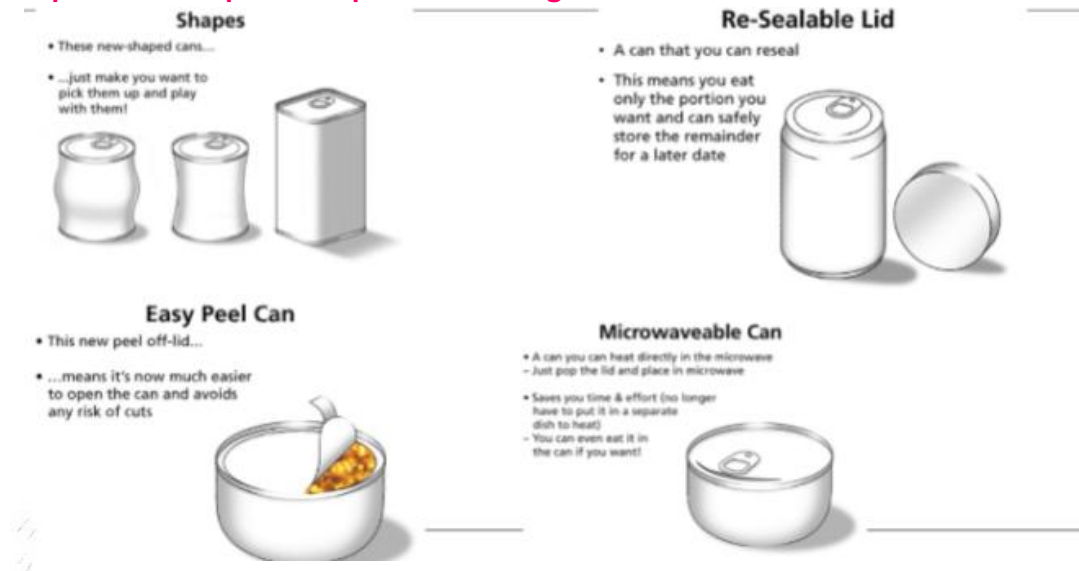
KEY ELEMENTS

Example: Barilla – Pandistelle

Pandistelle at the beginning were just biscuits, now the line is really extended including ice-cream, snack, spreadable cream and so on.

In adding products into the line, Pandistelle also thought about a series of elements such as the jingle, the wrap-up, the prices and the packagings.

Concept examples in the exploration phase – Green giants



Example - Roc hydra+: concept board

New ROC HYDRA +

- 24-hour moisturizer for visibly glowing skin
- Every day your skin is exposed to pollution
- Discover the new RoC Hydra+: moisturizes and protects your skin for 24 hours and allows it to breathe freely
- Exclusive RoC complex, vitamins and anti-radical ingredients help your skin replace residue from the environment with revitalizing substances
- Visible results: new Hydra+ keeps your skin hydrated, glowing and soft. Throughout the day.
- RoC -Keeps its promise. 40ml Price: euro 24.00
- Non-oily texture. No-gas spray

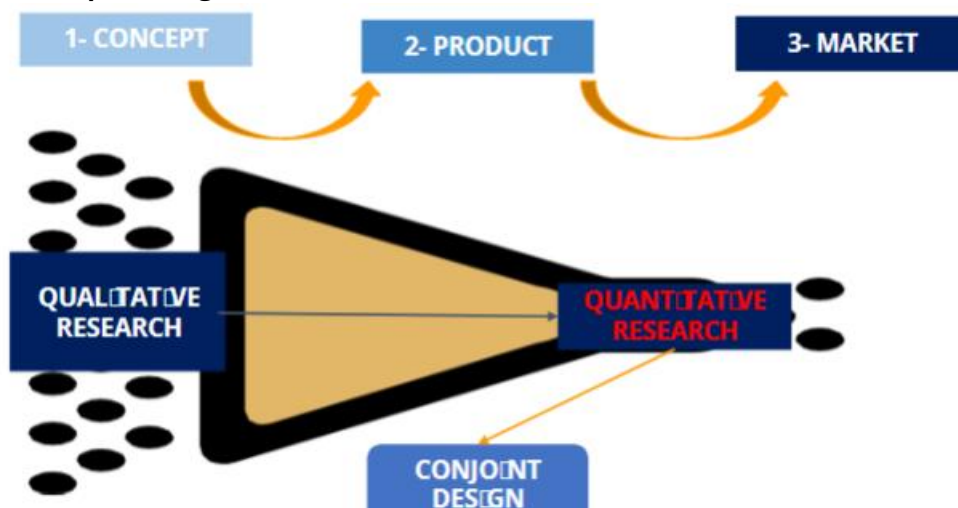
External concept evaluation: concept testing

Goals:

- Identify and delete potentially unsuccessful concepts -> avoiding the incurring into type 1 and type 2 errors
- Estimate the sales and the trial rate the product would have if launched in the marketplace -> we need to plan in advance whether our investments will be a success or a failure
- Help the innovation team develop an idea -> now it is time to also estimates the sales, and we need to inform the innovation team about the features of the new product that are interesting for consumers
- Share the product idea with other departments within the company

How to do: concept testing

How to carry out concept testing?



Some companies use qualitative research, and the advantage of it, is that we can interact with consumers, and we have the opportunity to analyze the reactions to understand which are potential solutions that might have sense to make the final product relevant.

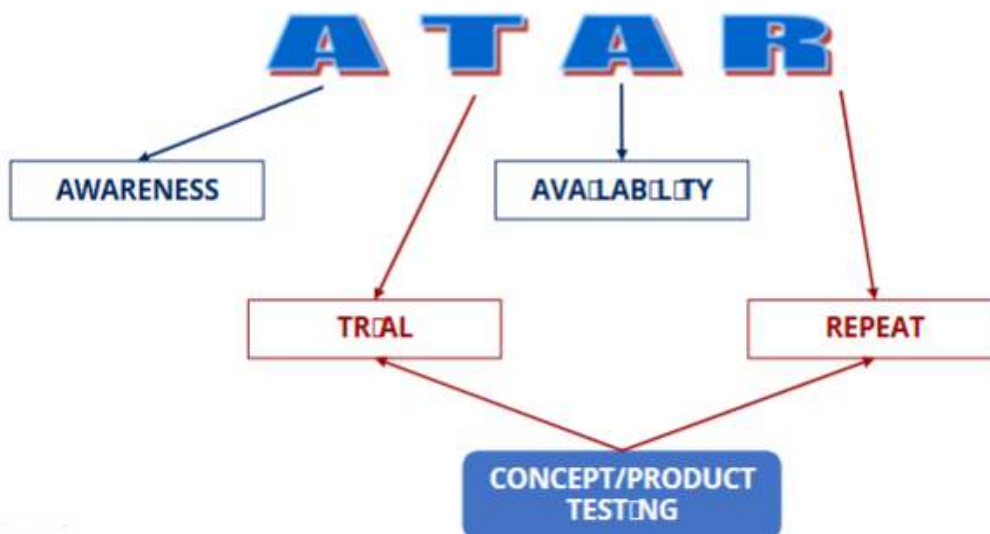
Most of the companies, however, use a quantitative approach, which means launch a survey or use a conjoint design approach.

Basic concept testing model to estimate the trial of the new product: the model of the new concept

This model is used by most of the companies in leveraging on concept testing to estimate the trial and it is a model that tells us the market share that a new product is going to reach, meaning by this that the market share depends on 4 variables:

1. Awareness
2. Trial
3. Availability
4. Repeat

⇒ It is a multiplication of the percentage of awareness that the product will enjoy, the percentage of trial, the percentage of availability and the percentage of repeat.



In the flow of the consumer, the market share depends on the fact that they are aware that there is a new product on the market; if they do not know that there is a new product, they are probably not willing to try it. Once they are aware they need to try it, and so they need to find it in a place that is convenient for them. Finally, once they have bought it the first time, if they are happy, they might repeat their choice.

⇒ This model is mainly adopted for **non-durable goods**. For durable goods there is other models that leverage more on big data.

Which is the difference among these four variables?

Awareness and availability depends on the investments of the company, and how much strategic is the product in the portfolio of the company, while the other two elements are more related to the product itself and the consumer behaviors.

Awareness and availability are also something that we can leverage on, because from our first prediction we get a certain market share, but if we are willing to keep the market stronger, what we can do is invest more, so change the investment in one of these two areas.

The problem is more on understanding the trial and the repeat phases, since we do not have a real product, maybe just a prototype: that is the reason why in this stage we need to test the trial.

Data collected through concept testing

How do we test the trial?

1. Intention to trial
2. Evaluation of the concept as a whole
3. Evaluation of the single attributes
4. Consumer profiling

Purchase measures – trial & repeat estimation

Purchase measures that capture purchase intention and expected frequency. The form is typically, “**Based on the description of the product, how likely would you be to try it if it were available in your area?**”:

- a. I would definitely try it
- b. I would probably try it
- c. I am uncertain about trying it
- d. I probably would not try it
- e. I definitely would not try it

We estimate the trial through the **top-two-boxes** methodology, which is a methodology that is used in many evaluations of consumers. The idea is that basically the percentage of trial is a sum of the percentage of those who answered *a* and those who answered *b*. Of course this gives us an estimation of the trial, but in most cases, this is not exactly the trial that we are going to consider.

⇒ We need to move from the trial to the **adjusted trial**, which is a discount factor that we apply to the percentage of those who answered, “*I would definitely try it*” and those who answered “*I would probably try it*” in different ways (generally speaking, the rule is to have a higher discount for the second box because of course it's less certain than the first one).

To define the discount factor, companies usually use past data on similar launches in similar categories, since they know more or less how many of the consumers that declared that they would buy, or they probably would buy the new product, actually bought it.

Frequency of the purchase

Another thing that we try to understand is the frequency of purchase (critical for nondurable products): “**Which statement best describes how often do you think you would buy this product if it were available to you?**”:

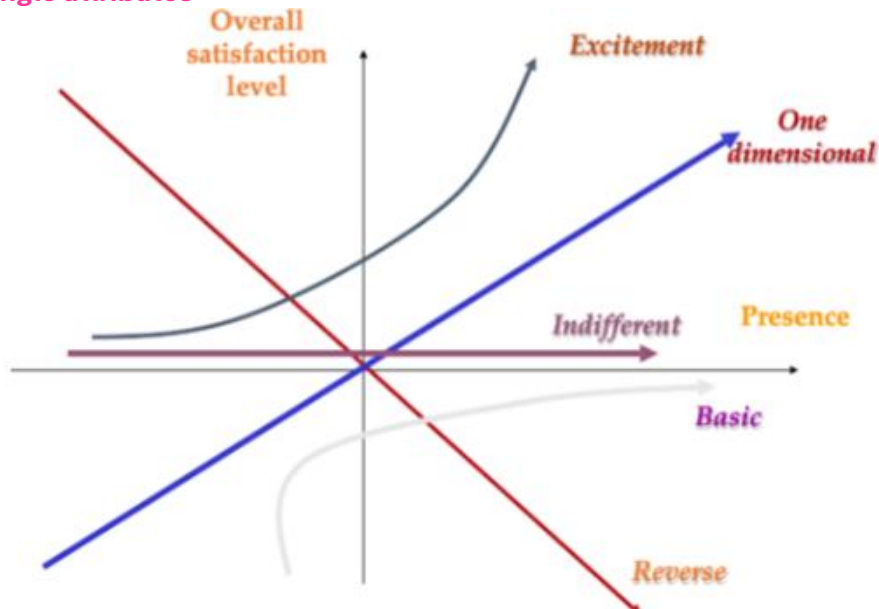
- a. Once a week or more often
- b. Once every 2 or 3 weeks
- c. ...
- d. Less Often
- e. Never

Evaluation of the product as a whole

This assessment is critical to understanding the variables that explain the purchase measures. A series of questions linked to the following items is used for this purpose:

1. Uniqueness and differentiation from other products
2. Credibility
3. Importance in responding to a consumer problem
4. Interest
5. Value for the money

Evaluation of the single attributes



In this phase we should have a conjoined approach to the question, since thank to the conjoint analysis we can really estimate what is the contribution of each single characteristic of the product to the overall perception of the consumer.

This graph gives us a ranking of importance of the different characteristics, but even more impart it also highligh those variable that are perceived as indifferent by consumers. This is really imporatnt since it is a way to understand **where invest more and where, on the other hand, stop investing.**

Consumer profiling

Demographic variables are the most traditional ones in defining a targeting strategy. However, additional variables that help understand perceptions of current market offerings are also useful. For example:

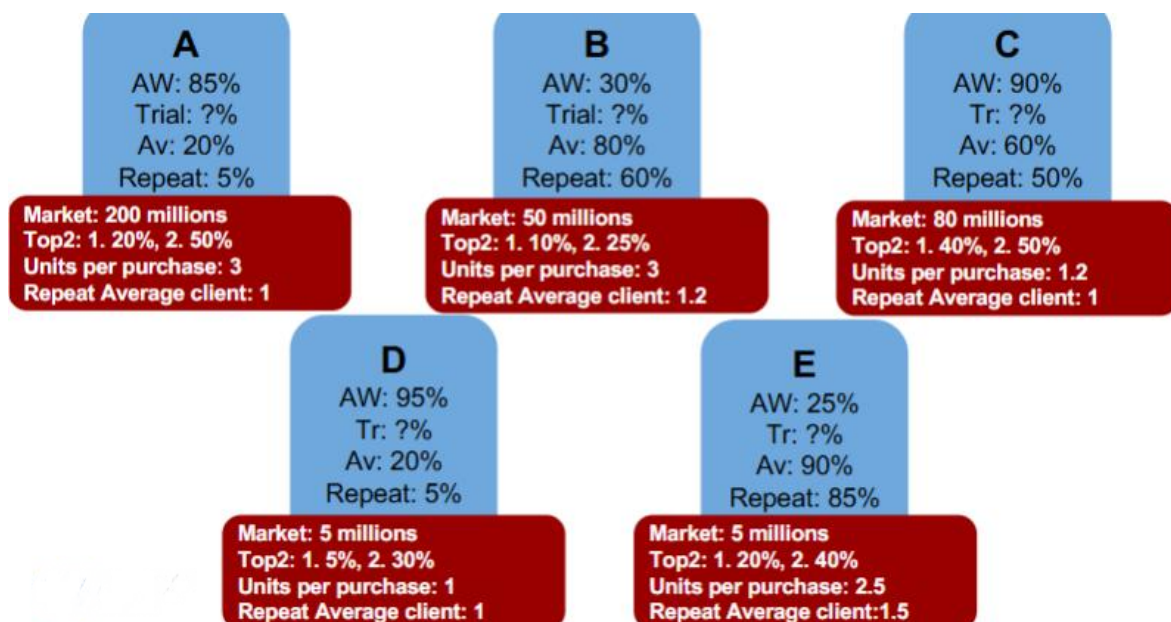
- Current buying behavior
- Category perceptions
- Barriers to brand change
- Influence in current buying process

Stima del trial – Nestlè Contadina Pasta Case

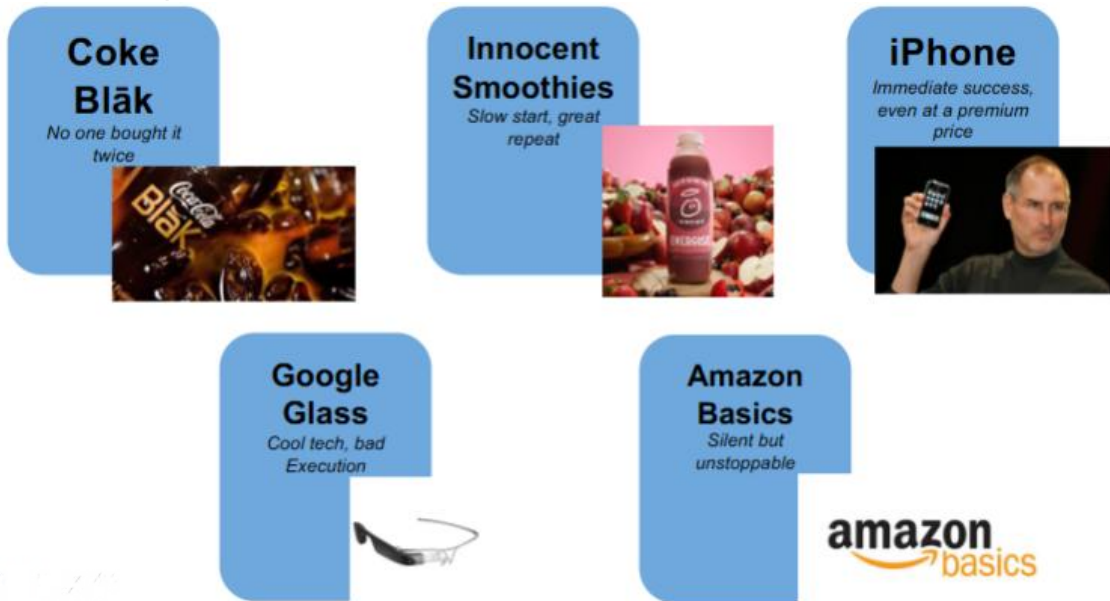
Case Study: Nestlé Contadina Pasta

- 300 buyers
- 75% top-two-boxes score (24% would definitely buy it + 51% would probably buy it)
- The median split (the way we split a sample) of respondents between favorable and unfavorable to the product shows that:
 - Both groups appreciate the following features: natural product, variety, freshness, ease of preparation, time saving
 - Negative aspect: price
- Adjusted Trial: 80% of “definitely will buy” + 30% of “probably will buy”: $(0.8 \times 24\%) + (0.3 \times 51\%) = 34.5\%$
- Assuming 48% awareness & 70% availability: $AW \times T \times AV = 0.48 \times 34.5\% \times 0.70 = 11.6\%$
- Potential market: 77.4 mil.
- Trial: $77.4 \text{ mil.} \times 11.6\% = 9 \text{ mil.}$
- Repeat for similar products= 39%
- Repeat for average consumer = 2.5 times
- Number of units bought each time = 1.4
- Repeat estimate: $39\% \times 2.5 \times 1.4 = 136.5\%$
- Estimate of the final market: $9 \text{ mil.} \times 136.5\% = 12.3 \text{ mil. units}$

Let’s now apply this to different concepts. These 5 are real products that have been launched, and the data are real data that these products have experienced. Assuming that the discount factors are 80% for the first group and 30% for the second one, we need to calculate the trial.



Which products are they?



The product A, Coke Black, since does not have a good percentage of repeat, is not a good product to invest on, even tough the awareness is really high.

The Innocent Smoothies even though the awareness is not that high, has a really high repeat percentage, as well as the availability, meaning by this that it represents a successful product.

The third product, with a very high awareness, availability and repeat percentage, represents an immediate success.

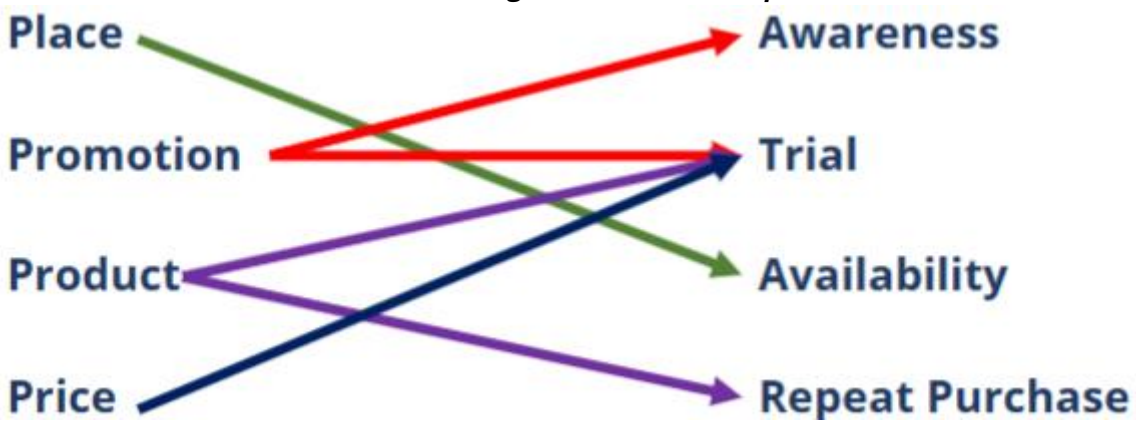
Then we have Google glass, bad execution, cool technology, and Amazon Basics the silent but unstoppable.

What would you do as a CMO?

The information that we gather from the concept testing allow us also to identify which kind of variables or specific parameters we need to invest more.

A-T-A-R and marketing mix

How do the different elements of the marketing mix influence the parameters in the ATAR model?



A
 AW: 85%
 Trial: 40%
 Av: 20%
 Repeat: 5%



- Better distribution (Place)
- Change the taste (Repeat)

E

AW: 25%
Tr: 23.5%
Av: 90%
Repeat: 60%

• Promotion!



Concept test survey

This is a concept that Hiro, a brand already existent into the category of health boosters, wanted to launch. In particular, they wanted to understand which position it would attract more consumers, and it would be more interesting for consumers, focusing mainly on male.

Health Boosters Test Concepts

Energy



Vitality



Mobility



Thank you for your interest in participating in our study about sports/energy drink products. Your responses and your identity will, of course, be kept strictly confidential.

Are You...

Male
 Female

Which of the following BEST describes your role in the grocery shopping that is done for your household? (Please select only one response.)

I am responsible for MOST of the grocery shopping for my household
 I SHARE the grocery shopping responsibility EQUALLY with someone else in my household
 Someone else in my household does MOST of the grocery shopping

Do you or any of your family or friends work for any of the following types of companies? (Please check all that apply.)

An advertising agency
 A marketing research firm
 A food retailer or supermarket
 A company that is involved in the manufacturing, processing or distribution of food and beverage products
 None of these

First of all, we need to put screening questions to avoid making interviews to people that we do not really care about.

Considering the price of **Hiro Vitality** is **\$1.39** for **one 8.3 OZ can**,
Please indicate how far along the **VALUE BAR** you feel this line of product lies?
(0 = No Value, 100 = Excellent Value)



How would you rate this product in terms of being new and different from other products currently available? (Please select only one response.)

- Extremely new and different
- Very new and different
- Somewhat new and different
- Slightly new and different
- Not at all new and different

Which statement best describes how much you think you would like or dislike this product? (Please select only one response.)

- Like extremely
- Like very well
- Like quite well
- Like somewhat
- Like slightly
- Not like at all

Please note: This question would only be asked of respondents who:
(1) saw alternate versions, featuring different flavors, of the Hiro Vitality Concept and
(2) also mentioned purchasing Hiro in the past 3 months.

What effect would this new product have on your purchases of Hiro Energy Original in the future? Would you say that this new product would totally replace, partially replace, or have no impact on your purchases of Hiro Energy Original? (Please select only one response.)

- Totally replace Hiro Energy Original purchases
- Partially replace Hiro Energy Original purchases
- Would have no impact on Hiro Energy Original purchases

How frequently would you **drink Hiro Vitality**? (Please select only one response.)

- More than twice a day
- Twice a day
- Once a day
- Once every 2-3 days
- Once a week
- Once every 2-3 weeks
- Once a month
- Once every 2-3 months
- Less often than every 3 months
- Never use

Which statement best describes how believable the product description is for Hiro Vitality? (Please select only one response.)

- Very believable
- Somewhat believable
- Neither believable nor unbelievable
- Somewhat unbelievable
- Very unbelievable

Which statement best describes how relevant the idea for Hiro Vitality is to you? By relevant, we mean how appropriate is the idea for you personally? (Please select only one response.)

- Extremely relevant
- Very relevant
- Somewhat relevant
- Slightly relevant
- Not at all relevant

Please indicate how much you agree or disagree that the following statements describe the Hilo Vitality product you saw. (Please select one response per row.)

Completely Disagree	Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Agree	Completely Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
is a good value for the money						
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would keep me mentally sharp						
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would taste good						
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
is something I would drink everyday						
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has attractive packaging						
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would provide me with a high level of energy						

Thinking about where you shop for sports/energy drinks, where do you, yourself, typically purchase your sports/energy drink products? (Please check all that apply.)

<input type="checkbox"/> Mass Merchandise (i.e. Wal-Mart, Meier, Target, Wal-Mart)	<input type="checkbox"/> Club/Warehouse Stores (i.e. Sam's, Costco)
<input type="checkbox"/> Drug Store	<input type="checkbox"/> Internet
<input type="checkbox"/> Grocery Store/Supermarket	<input type="checkbox"/> Health Food Store
<input type="checkbox"/> Specialty Retail Store	<input type="checkbox"/> Gas Station/Pony King
<input type="checkbox"/> Direct marketing	<input type="checkbox"/> Do not purchase sports/energy drinks
<input type="checkbox"/> Dollar Store (i.e. Dollar General, Family Dollar)	<input type="checkbox"/> Other (Please specify)
	<input type="text"/>

INCLUDING YOURSELF, how many people live in your household?

GenAI & SILICON CONSUMERS

Introduction to Generative AI

How AI will divide the best from the rest?

Nowadays, AI is becoming a strong ally in many work places; on the other hand, there is this emerging common wisdom that the generative AI is going to kill marketing. Many businesses, newspapers and magazines are saying that the generative AI is going to lead to a decrease in marketing jobs, marketing budgets and the team size of marketing teams.

This reaction is due to two misconceptions:

1. The first misconception is what the generative AI can do and what can't do
2. The second one is what the marketing is

⇒ to survive, marketing people need to understand what the generative AI is and need to educate people about what we want to do.

Another reason why we should not care a lot about this, is that when GenAI arrived, there was this hope that it was going to close the gap between skilled workers and those with less skills. After two years of research, there is a new understanding of this reality: AI is going to increase the gap even more -> in fact, the skill that is going to be rewarded most in the short run is imagination in finding creative ways to use AI. In order to advantage over AI, we need to have a deep understanding of our context and of what these tools can do.

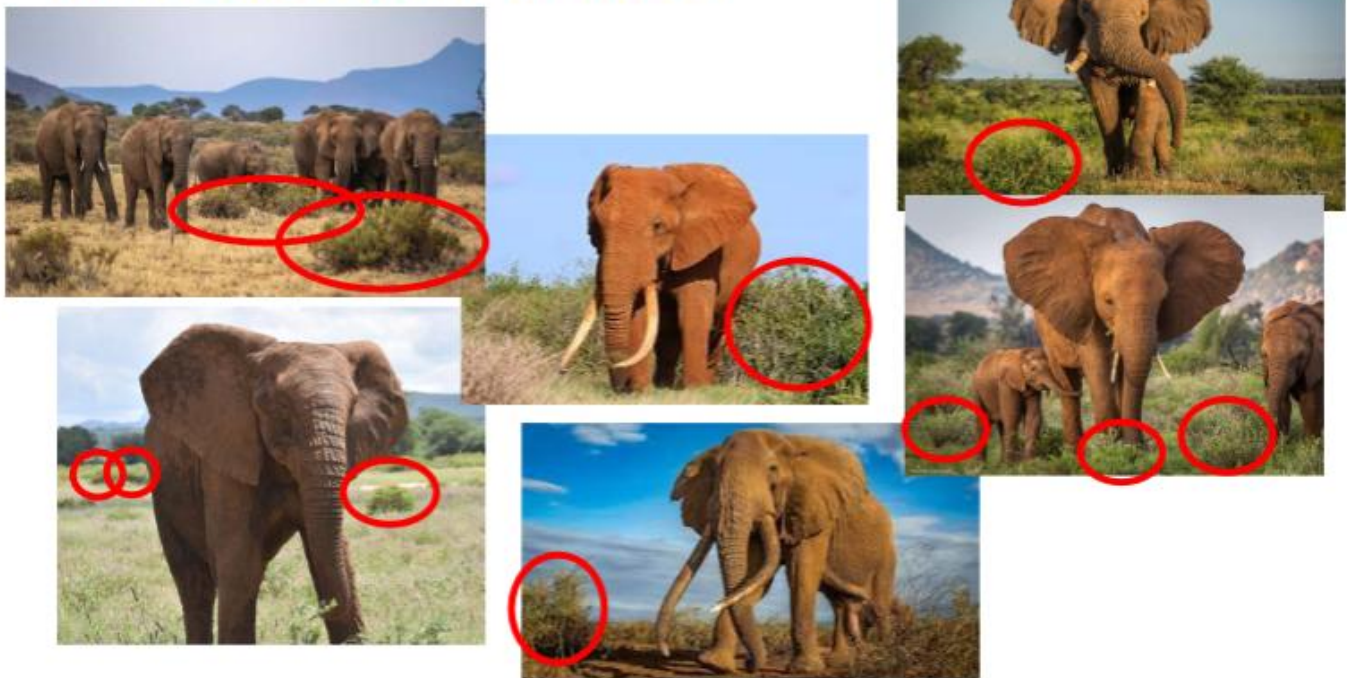
Training variety -> training size

Let's assume that we want to train a model that identifies elephants.

How can the model learn to identify elephants?

Generally speaking, the goal is to identify distinctly the figures, meaning by this that the model need to learn the distinctive features of an elephant: the long nose, the trunk and so on.

WHAT DOES A COMPUTER SEE?



The problem here, it that the computer also see the bushes, which are something that our methal model doesn't even see, since we learned to disregard it. The problem is that if e feed these images to a computer, the computer is going to associate bushes to elephants, making them a distinctive feature.

How can we solve this problem?

We need to provide more pictures without bushes, to help computer to disregard bushes from elephants. In order to o so, we need a **big annotating dataset** (annotating a dataset refers to the process of labeling or tagging data, such as text, images, audio, or video, with relevant information or metadata, in order to train, validate, or test machine learning models), which is necessary to guarantee sufficient variety.

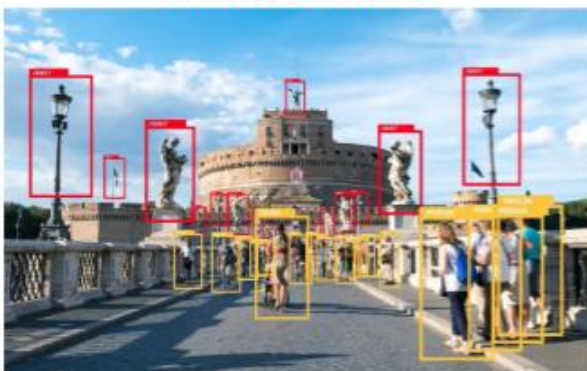
Generative AI (GenAI)

Main learning paradigm during training -> **self-supervised**, which means something very smart that re-create human intelligence. Generative AI refers to a class of artificial intelligence models capable of creating new content, such as text, images, audio, video, or code, by learning patterns and structures from existing data.

⇒ Goal of the inference phase: **generate data**

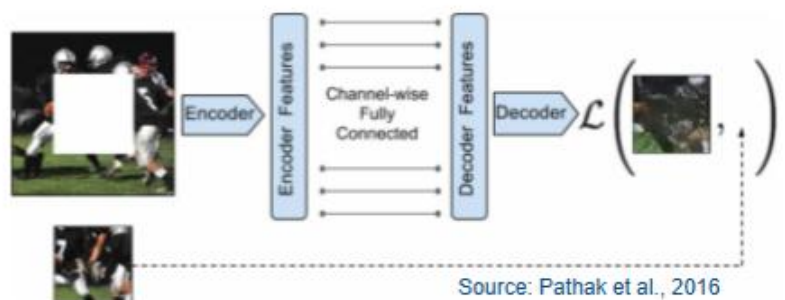
Generative AI: a paradgim shift

DATA-CENTRIC AI



"All that progress in algorithms means it's actually time to spend more time on the data," Andrew Ng, Google Brain founder, June 2021

MODEL-CENTRIC AI

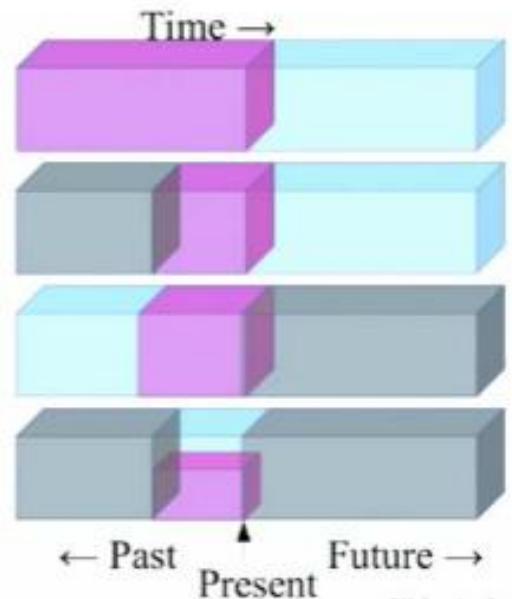


Meta's Yann LeCun is betting on self-supervised learning to unlock human-compatible AI March 13, 2022 ·

A type of GenAI: Large Language Models (LLMs)

1. Self-supervised language model trained by being provided with excerpts of text in which some words have been removed
2. The model must try to predict the missing parts

- ▶ Predict any part of the input from any other part.
- ▶ Predict the future from the past.
- ▶ Predict the future from the recent past.
- ▶ Predict the past from the present.
- ▶ Predict the top from the bottom.
- ▶ Predict the occluded from the visible
- ▶ Pretend there is a part of the input you don't know and predict that.



Slide: LeCun

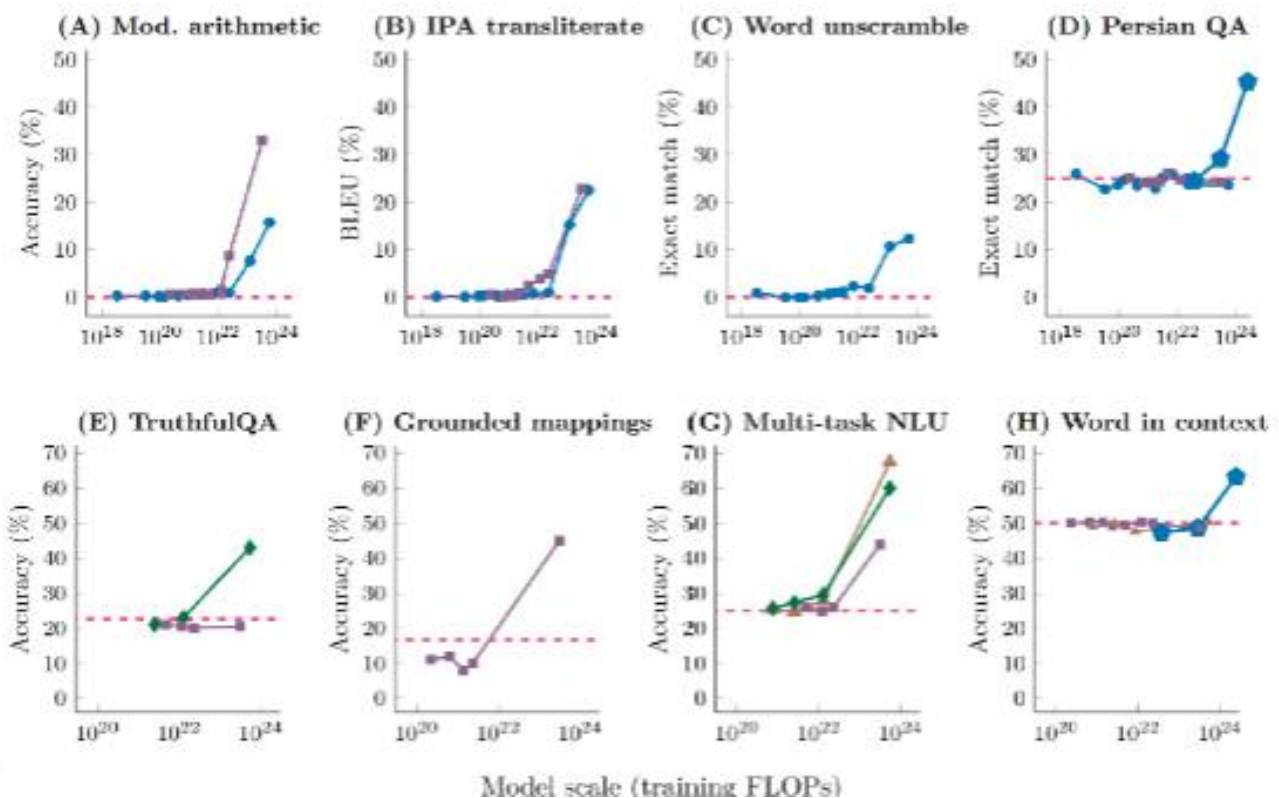
The important thing to highlight is that there is no human providing the label used in the prediction, but the label is self-contained in the model.

This represents an evident advantage with respect to the supervised model, since human beings are no longer needed.

This process allows the model to learn quicker, and more knowledge makes it smarter and better at multiple different tasks.

Emergent abilities

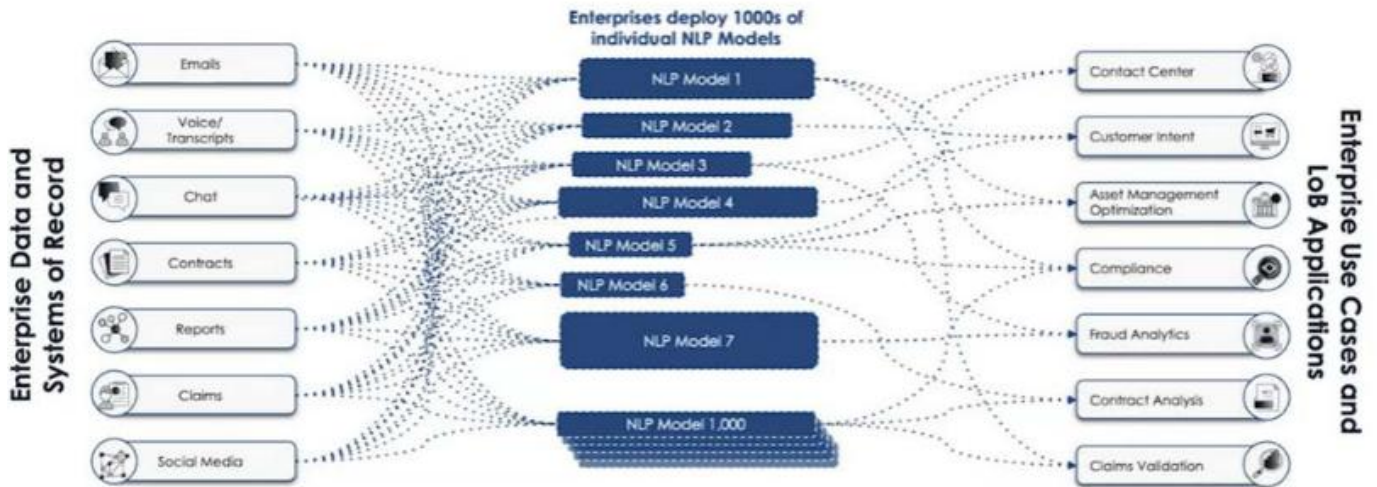
An ability is emergent if it is not present in smaller models but it is present in larger models



Predictive VS. Generative AI: different capabilities

- a. **Predictive**: narrow and domain-specific capabilities. Predictive AI is based on one specific type of learning, which is the main learning paradigm behind the predictive AI. The main limit to the development of predictive AI is that there is a human concern.
- b. **Generative**: fungible and generic capabilities. The paradigm used is the **foundation model**, a model that has been trained with all possible kind of data that we found.

Predictive AI world

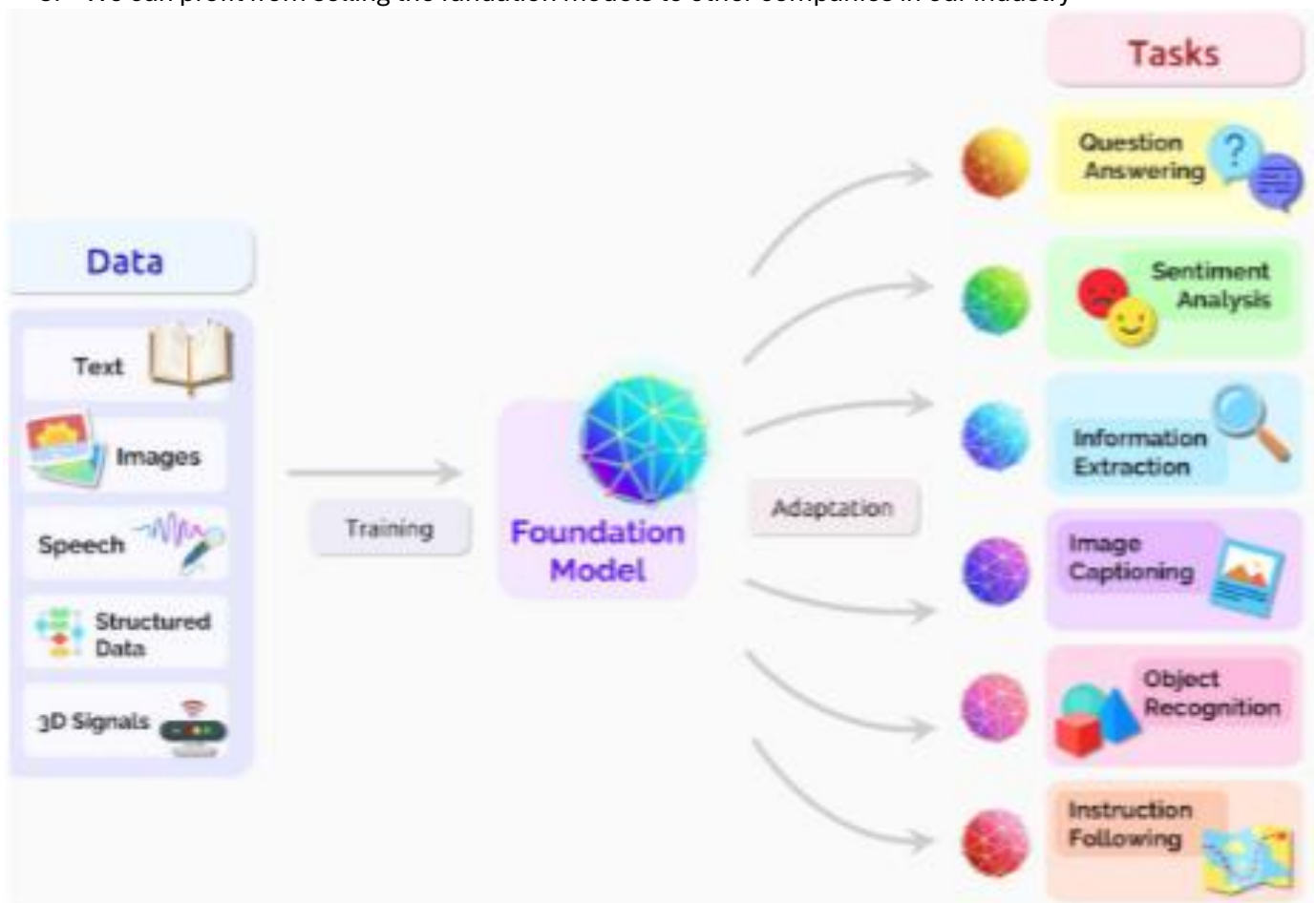


Generative AI: the foundation

A foundation model is a large, pre-trained language model that serves as the starting point for creating more specialized and task-specific models.

There are 3 main advantages of using this model:

1. Lower training costs, especially in the long run
2. Privacy is granted, since we do not need to share data with big tech companies
3. We can profit from selling the foundation models to other companies in our industry



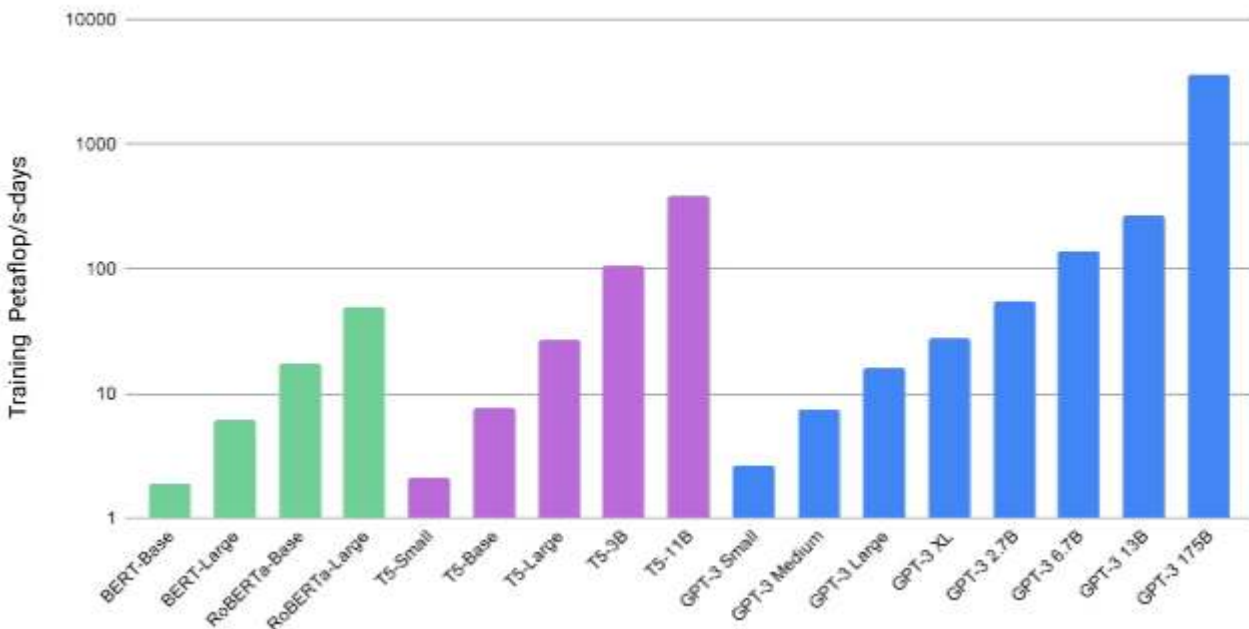
GenAI: the fruit (adaptation)



Training

How much does it take?

Total Compute Used During Training



Inference

How GenAI works: the case of LLMs

- Let's imagine that we ask an LLM to complete the sentence "I am going to ..."
- During the training, the foundation model used in the LLM has memorized, for each word, the probability of being the one that comes after "I am going to ..."

Word (token)	Probability
Classroom	0.02
Gym	0.03
Home	0.00000001
Home	0.05
Stadium	0.01
Bed	0.00002
Bed	0.05
Theater	0.03
Theater	0.00000001

Word (token)	Probability
Classroom	0.02
Gym	0.03
Home	0.05
Stadium	0.01
Bed	0.05
Theater	0.03

- It **randomly** choose among the most plausible words

This is exactly what happens with generative error, due to the fact that GenAI must give us an answer always.

The fact that the choice of the world is random as both a positive and a negative consequence: even if we use the same prompt, we will have each time a different answer, meaning by this that we have several opportunities. On the other hand, and this is the cons, it makes mistakes.

The importance of the prompt

1. Now let's imagine that our initial sentence is "I am at the university and I am going..."
2. The new prompt changes the probabilities of each word to be the next one. This change is called conditioning of the model.

Word (token)	Old probability	Probability after conditioning
Classroom	0.02	0.07
Gym	0.03	0.02
Library	0.00000001	0.00000001
Home	0.05	0.03
Stadium	0.01	0.01
Workshop	0.00002	0.00002
Bed	0.05	0.001
Theater	0.03	0.003
Bar	0.00000001	0.00000001

Differently from the previous example, by adding some context, the probability of some worlds increases, above all classroom since we are talking about university, while other probabilities decrease, such as the theater one.

⇒ By just adding appropriate context in the prompt, what we are doing is improving the accuracy of the predictions that the motor makes.

How does GenAI create?

1. Born this way -> trained to predict the next item given the preceding sequence
2. Designed to generate approximately the statistically most plausible sequence of text based on their training data (not the most likely)
3. In a random way
 - a. Swiftly generate variations of the same content
 - b. Impossible to detect whether something is GenAI-generated

Beware of hallucinations

Google's AI chatbot Bard makes factual error in first demo.

When working with GenAI we need to always check its work, since as we know very well, it can make mistakes.

A better positioning

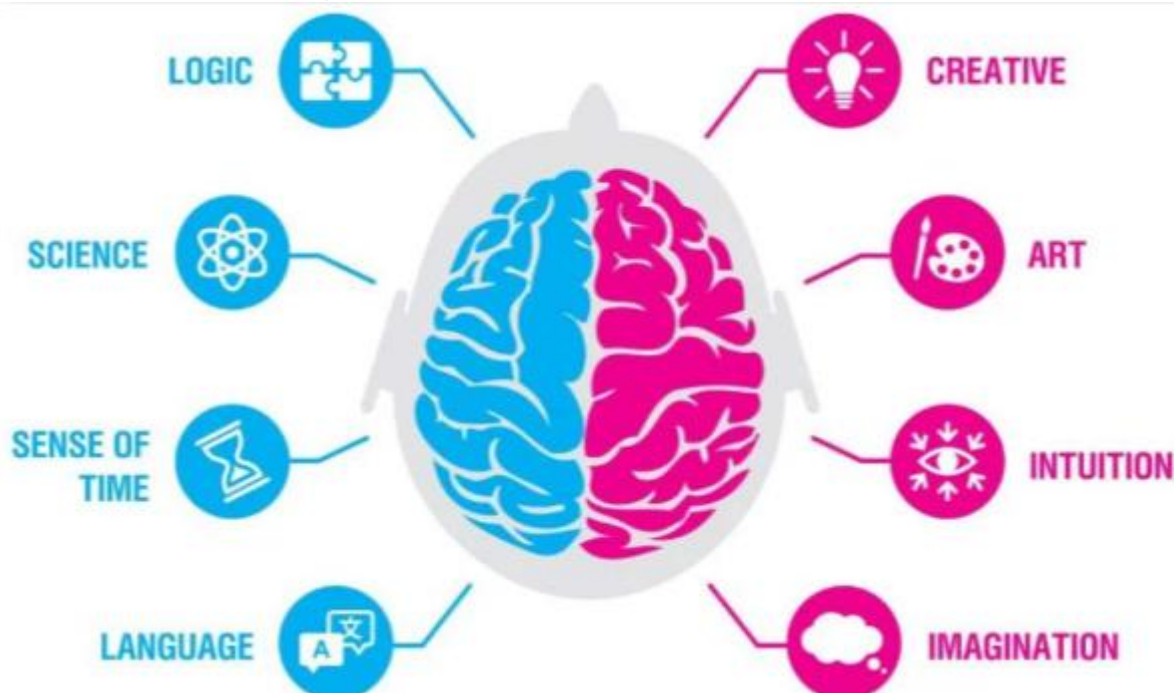


/ In less than a year, it's hit 100 million weekly users, and over 2 million developers are currently building on the company's API, including the majority of Fortune 500 companies.

The boundaries of GenAI

Capability	Verdict	Test Time	Source	Reason
New product development		July 2023	Girotra et al. 2023	In creative problem-solving, variability in quality, and productivity (i.e., the number of ideas generated) are more valuable than consistency
Solve verbal analogies		Oct 2023	Stevenson et al. 2023	Associative processes often underlie correctly solved analogies (like in children). Adult humans, instead, use relational mapping
Logical reasoning on new cases		May 2022	Zhang et al. 2022	Instead of learning the correct reasoning function, BERT has in fact learned statistical patterns in logical reasoning problems
Making causal inferences		Aug 2023	Zečević et al. 2023	Current LLMs are unable to process actual physical data measurements to ground their available textual facts
Planning		Feb 2023	Valmeekam et al. 2023	LLMs rely on pattern matching (rather than inducing internal model from the prompts)

In what sense is AI intelligent?



How can firms use GenAI?

Adaptation

Purpose: To specialize the generic capabilities of a generative model

1. Use off-the-shelf-models (transfer learning)
 - a. No adaptation
2. Prompt-tuning (specific to GenAI)
 - a. Adaptation in the inference phase, while using it
 - b. A temporary form of adaptation, which specifies the task that the model has to perform (Radford et al., 2019) -> in the moment in which we close the chat, ChatGPT will forget everything we told to it.
3. Fine-tuning
 - a. Adaptation in the training phase with novel and domain-specific data
 - b. A permanent form of adaptation

1) *Off-the-shelf*

How Mattel is using AI to bring your next Barbie box to life

Moderna partners with OpenAI to deploy ChatGPT Enterprise to thousands of employees across the company. Now every function is empowered with AI, creating novel use cases and GPTs that accelerate and expand the impact of every team.

GE APPLIANCES HELP
PERSONALIZED RECIPIES
KITCHEN WITH GOOGLE

Zoom's federated AI approach delivers the best quality results for our most popular features

Prompting strategies: zero shot

Simply ask the model to do something, but provide context.

SYSTEM PROMPT

You are working for a gym in the West Coast of the US. You want to develop a novel idea to increase yearly subscription to the gym. You are a creative entrepreneur looking to generate new product ideas. The product will target **college students (PERSONA)** in the United States. It should be a physical good, not a service or software. I'd like a product that could be sold at a retail price of less than about USD 50. The ideas are just ideas. The product need not yet exist, nor may it necessarily be clearly feasible. Number all ideas and give them a name. The name and idea are separated by a colon.

USER PROMPT

Please generate ten ideas as ten separate paragraphs. The idea should be expressed as a paragraph of 40-80 words.

NB. The user prompt must be very specific, otherwise the output will be probably full of mistakes.

Results

ASSISTANT

1. FitKit Cube: A compact, cube-shaped fitness kit designed specifically for college students. The FitKit Cube includes resistance bands, a jump rope, a mini foam roller, and a foldable workout guide. Its small size and versatile equipment make it perfect for dorm room workouts or bringing to the campus gym. Retailing under \$50, it offers an affordable way to stay fit without needing a lot of space or expensive gear.

2. SmartShaker Bottle: This is not just any shaker bottle; it's a smart bottle designed with a built-in timer, reminding users to hydrate and refuel with protein shakes at optimal times throughout the day. It includes a powder compartment for storing supplements or protein powder, making it a great companion for gym-goers. It's perfect for college students who need reminders to stay hydrated and nourished during busy days.

Here we are in the variation phase of the new product development process, so the goal here is to generate variation, meaning by this as many ideas as possible. In this phase, we don't care if they make sense, if they are technologically feasible, we simply need ideas.

Can we be more creative? Prompt strategies

Prompting strategies: few-shot

Provide demonstrations in the prompt: one can use a text or template known as a prompt to strongly guide the generation to output answers for desired tasks.

Circulation revenue has increased by 5% in Finland. // Positive

Circulation revenue has increased by 5% in Finland. // Finance

Panostaja did not disclose the purchase price. // Neutral

They defeated ... in the NFC Championship Game. // Sports

Paying off the national debt will be extremely painful. // Negative

Apple ... development of in-house chips. // Tech

The company anticipated its operating profit to improve. // _____

The company anticipated its operating profit to improve. // _____



Does not work for complex reasoning tasks.

GenAI VS. MBA students

2) **Fine-tuned with examples**

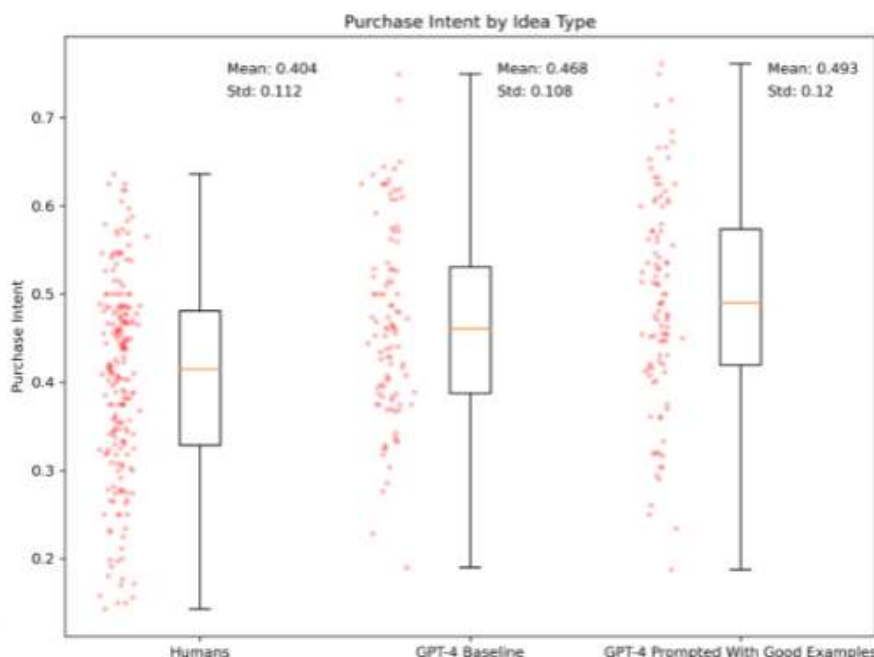
System Prompt

PERSONA

"You are a creative entrepreneur looking to generate new product ideas. The product will target college students in the United States. It should be a physical good, not a service or software. I'd like a product that could be sold at a retail price of less than about USD 50. The ideas are just ideas. The product need not yet exist, nor may it necessarily be clearly feasible. Number all ideas and give them a name. The name and idea are separated by a colon."

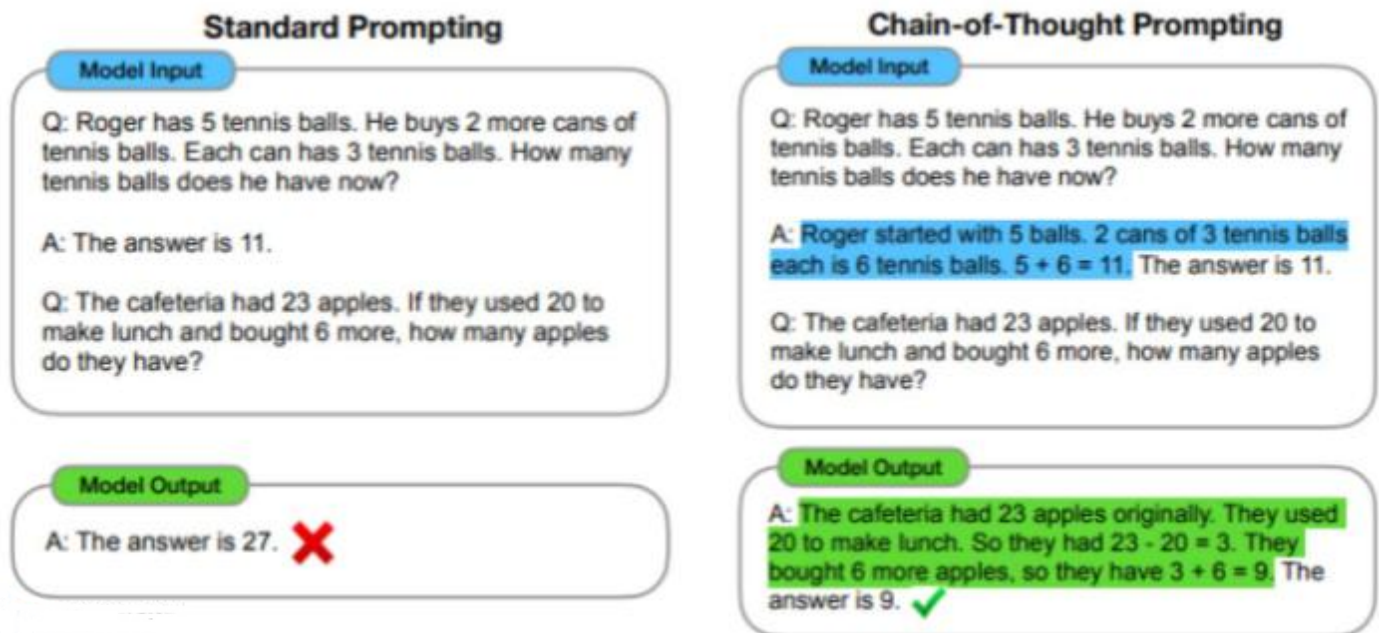
Good Ideas Prompt

<Original System Prompt> + "Here are some well received ideas for inspiration: <Good Ideas>"



Prompting strategies: chain-of-tough

InstructGPT: Inducing LLMs to "reason step-by-step" (Wei et al., 2022)



Idea generation with CoT

Generate new product ideas with the following requirements: The product will target college students in the United States. It should be a physical good or a service or app. I'd like a product that could be sold at a retail price of less than about USD 200.

The ideas are just ideas. The product need not yet exist, nor may it necessarily be clearly feasible.

Follow these steps. Do each step, even if you think you do not need to:

1. First generate a list of 10 ideas (provide the short title only and no description)
2. Second, go through the list and determine whether the ideas are different and bold, modify the ideas as needed to make them bolder and more different. No two ideas should be the same. This is important!
3. Next, give the ideas a name and combine it with a product description. The name and idea are separated by a colon and followed by a description. The idea should be expressed as a paragraph of 40-80 words. Do this step by step!

Results

Initial List of 10 Ideas:

1. Sleep Optimizer App
2. Fitness Buddy Matching Service
3. Portable Workout Kit
4. Virtual Reality Fitness Program
5. Gym Fashion Subscription Box
6. Nutritional Meal Planning App
7. Interactive Workout Mirror
8. Fresh Smoothie Subscription Service
9. College Fitness Challenges Platform
10. Stress Relief Meditation Sessions

Modification for Boldness and Differentiation:

1. Ultimate Sleep Optimizer: Sleep + Fitness Tracker Hybrid
2. Campus Fit-Friend Connector: AI-Powered Matching
3. Pocket Gym: All-in-One Bodyweight Exercise Tool
4. Immersive VR Adventure Workouts
5. Athleisure Mystery Box: Gym + Streetwear

Final Product Names and Descriptions:

1. **Ultimate Sleep Optimizer**: A hybrid app utilizing wearable technology to track both sleep patterns and daily fitness activities, providing personalized recommendations for improving sleep, recovery, and overall physical health specifically tailored for the active college lifestyle.

4. **Immersive VR Adventure Workouts**: A virtual reality fitness program that takes users on thrilling adventures while working out. Each session offers a unique escapade, from climbing mountains to surfing, combining the thrill of gaming with physical exercise.

Silicon consumers

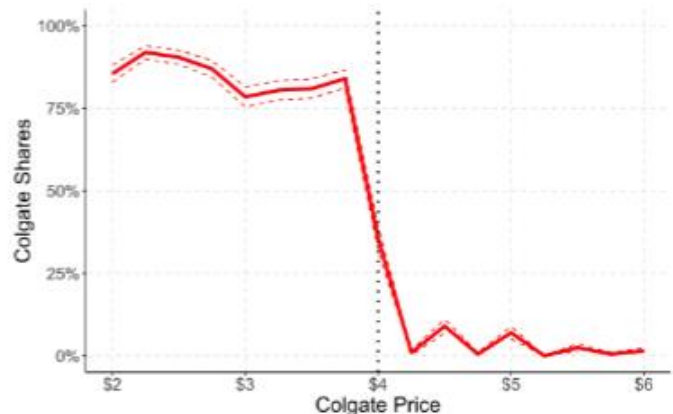
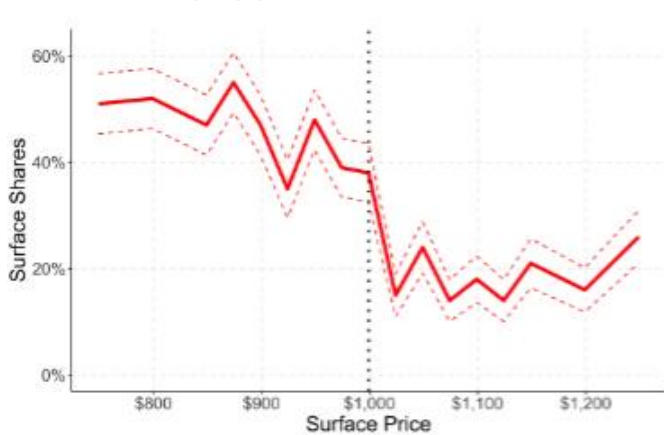
Can we use LLMs to replace consumers?

1. Downward demand slope

GPT has to choose between:

- A laptop (Surface Laptop 3)
- Another laptop that costs \$1000 (reference price)
- Nothing

The Surface Laptop price varies between \$749 and \$1249 across simulations.



When the laptop price is below \$1000, the share of consumers who buy the laptop is almost 10% bigger than when the price is higher than \$1000.

2. Effect of income on demand

“A customer is randomly selected while shopping for laptops. Their annual income is $\$income$.”

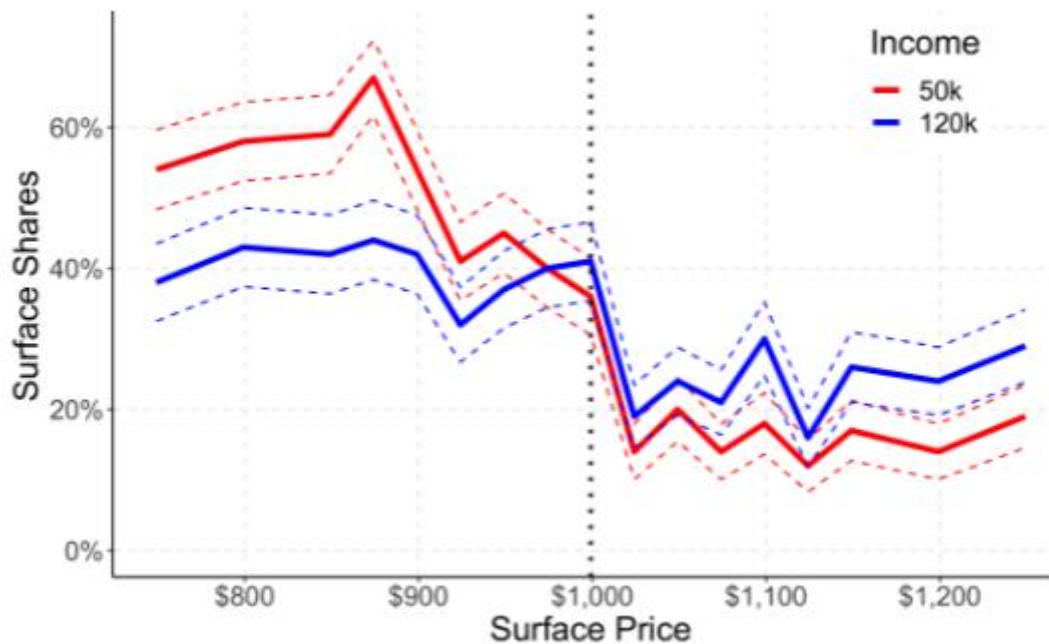
While shopping, the customer has three options:

– Surface Laptop 3, Price: $\$surfacePrice$, Processor: Intel Core i5, RAM: 8GB, Screen Size: 13.5in, SD: 128GB

Reference price

– Macbook Air (2019), Price: \$999, Processor: Intel Core i5, RAM: 8GB, Screen Size: 13.3in, SD: 128GB

They also have the option not to purchase a laptop. The customer is asked, after they finish shopping: Which laptop, if any, did you purchase?



This graph shows that poor consumer are more responsible to buy if they cheaper, while the rich consumers are more responsible if they are expensive.

3. Inertia in the choices

State prompted as "customer says":

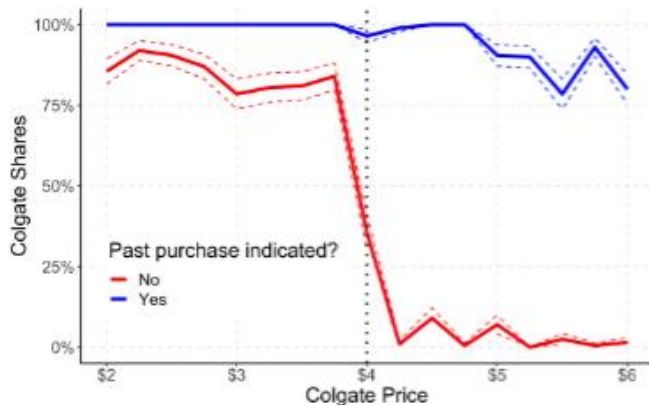
"A customer is randomly selected while shopping in the supermarket. Their annual income is $\$income$.

While shopping, the customer passes by the toothpaste aisle and sees two options:

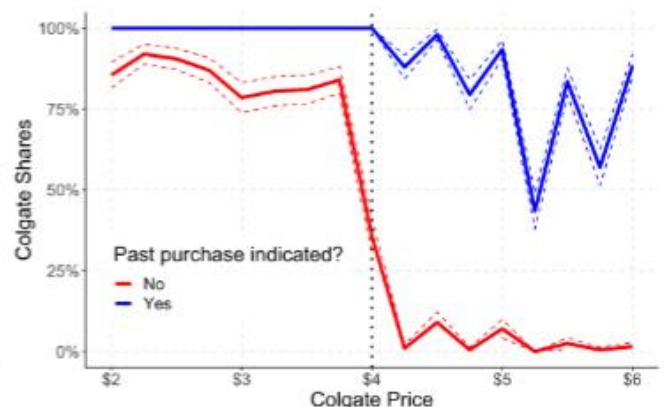
- Colgate whitening toothpaste with fluoride, price $\$colgatePrice$.
- Crest whitening toothpaste with fluoride, price \$4.

They also have the option not to purchase toothpaste. The customer says that last time they shopped for toothpaste they purchased the Colgate whitening toothpaste.

The consumer is asked: "Which toothpaste have you bought (if any)?"



(a) State prompted as "...customer says"



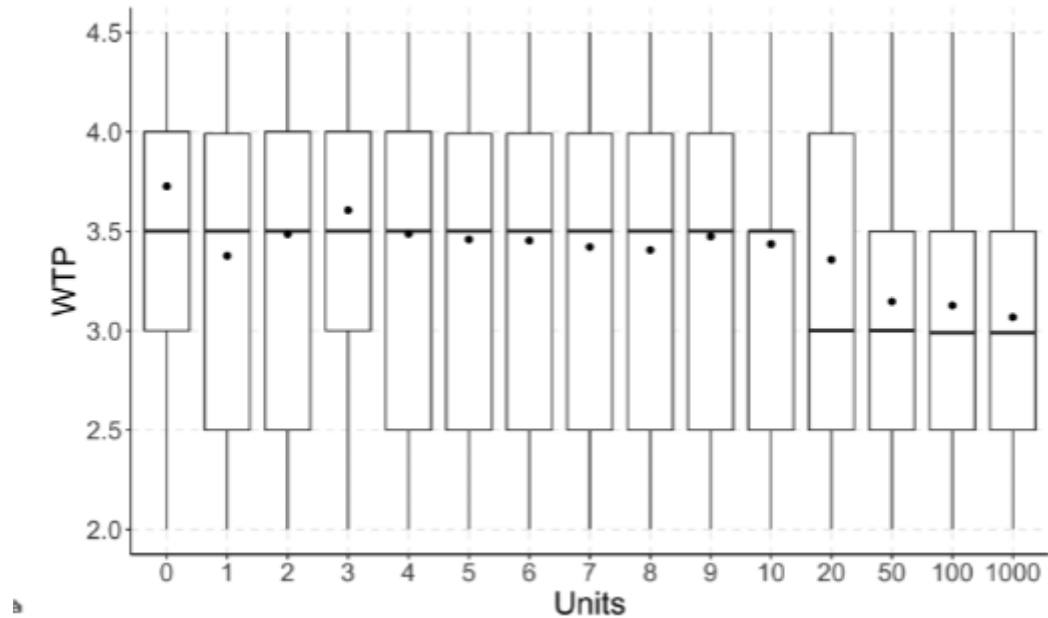
(b) State prompted as fact

4. Decreasing marginal utility

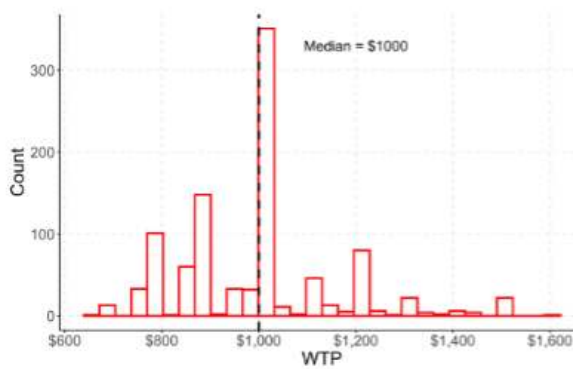
“A customer is randomly selected while shopping in the supermarket. Their annual income is $\$income$.

The customer has $\#units$ units of yogurt at home.

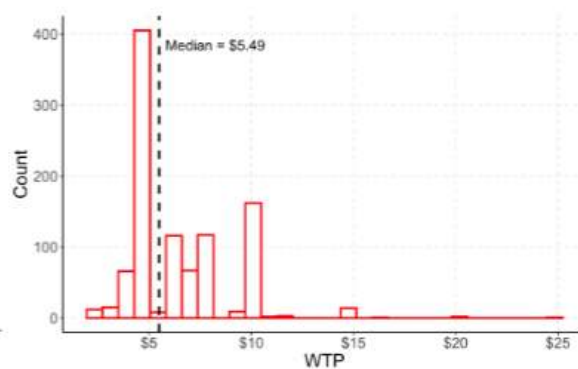
The customer is asked: What is the maximum price you would be willing to pay for one additional unit of yogurt? please give a single price as your answer.



Type of product

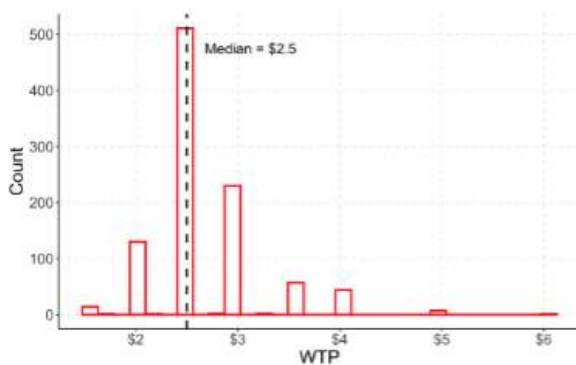


(a) Surface Laptop 3

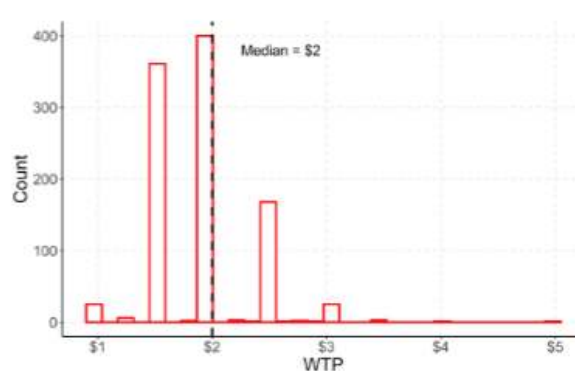


(b) Whitening Toothpaste

Same product, different context

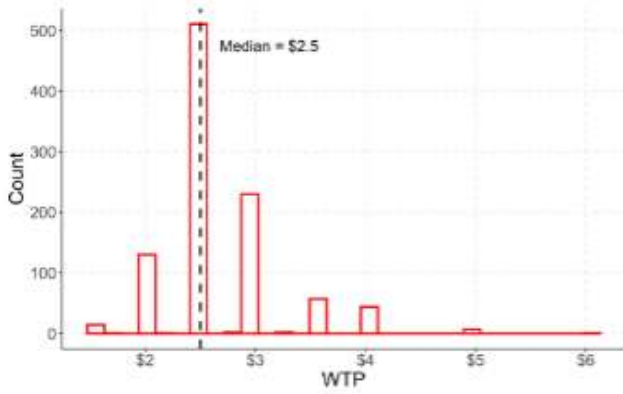


(c) “Glass of soda (at restaurant)”

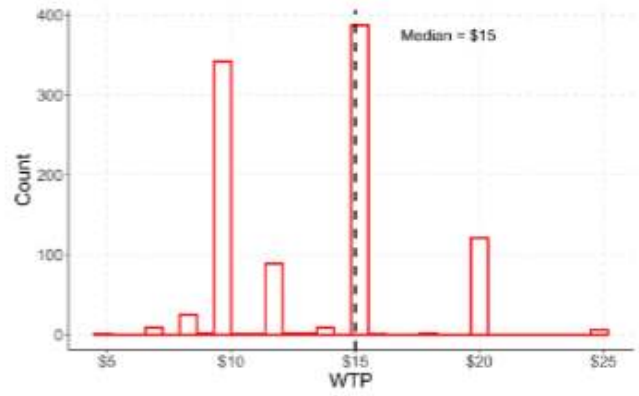


(d) “Can of soda (at supermarket)”

Same context, different product

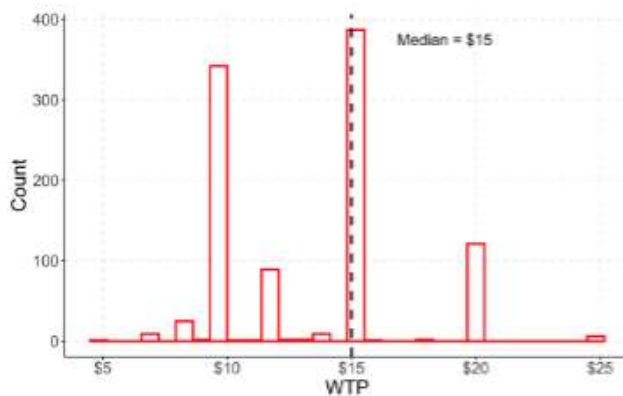


(c) "Glass of soda (at restaurant)"

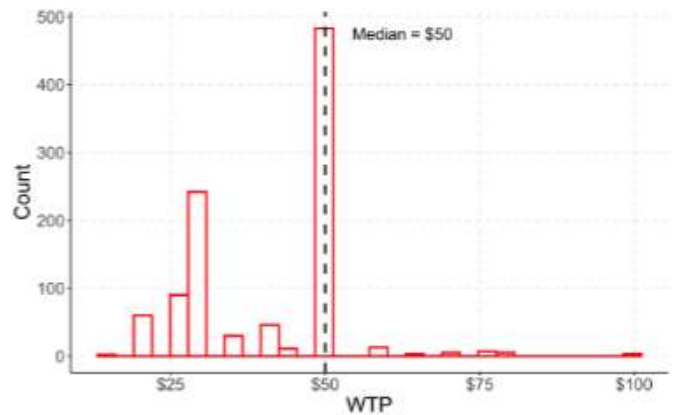


(e) "Glass of wine (at restaurant)"

Same product, different quantities



(e) "Glass of wine (at restaurant)"



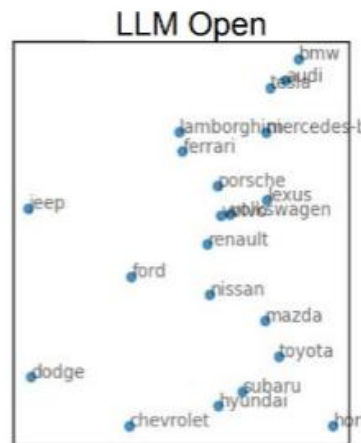
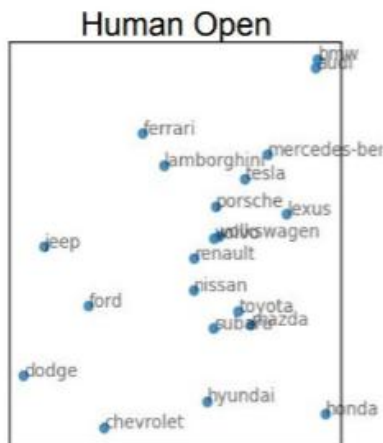
(f) "Bottle of wine (at restaurant)"

LLMs seem to be able to reproduce behaviors consistent with the economic theory:

1. Downward demand slope
2. Effect of income on demand
3. Inertia in choice
4. Decreasing marginal utility

1. Positioning map with ChatGPT

Prompt: the car brand X is similar to the car brand ...?



2. Conjoint analysis with LLMs

A type of statistical analysis used to understand the economic value that consumers attribute to each product component



CONJOINT ANALYSIS WITH ChatGPT

300 replies for each of the 36 possible combinations (10,800 replies)



Effect on willingness to pay	Conjoint with consumers	Conjoint with LLM
Price	-0.436	-0.484
Fluoride presence	1.244	1.647
Brand 1	-0.764	-0.801
Brand 2	-0.402	-0.491

3. Concept testing with silicon consumers

Conjoint analysis with ChatGPT, please use the prompts described in the file "Concept Testing - prompt for ChatGPT" contained in the folder "03_concept_testing" of your repository.

NB. Remember to create a new file "concept_testing_survey_mine.docx" to provide to ChatGPT. The file contains the description of the concepts that you want to test.

I have generated the concept testing survey results for 30 interviewees. You can download the Excel file from the link below:

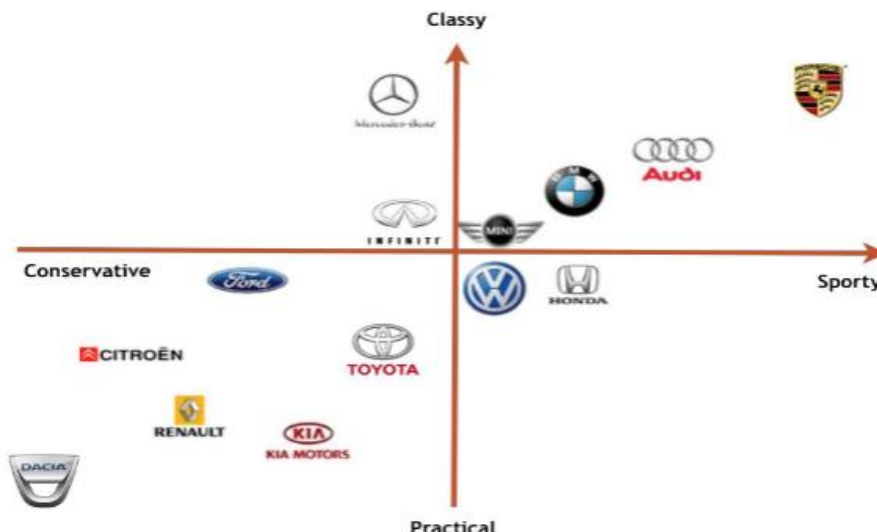
[Download concept_testing_survey_results.xlsx \[-\]](#)

Remember to replicate the interview for each persona that you are interested in.

BRAND AUDIENCE ANALYSIS AND POSITIONING MAP

Positioning map

Graphical representation of the relative position that brands occupy in consumers' minds. It is also called **perceptual map** and it is made of two axes, that refers to the two most important attributes that we want to measure.



In this case, we have one attribute that is discontinued from conservative to sporty, and another attribute that is discontinued from practical to classy; the different brands are positioned in this perceptual map according to the value that they have along these two attributes.

When do we use positioning map in the NPD process?

We use the positioning map in two main phases:

1. When **identifying** white spaces in the market -> at the beginning of the NPD process, we use the map to identify market opportunities, and we need to verify whether the opportunity is good or bad for our business
2. When deciding how to **position** and **sell** the product -> at the end of the NPD process, to identify we are the closest competitors

Steps to create a positioning map with questionnaires

1. Identify a set of relevant brand, a set of relevant competitors in the market -> e.g., a set of car brands
2. Identify the two most relevant attributes in the industry, and this largely depends on the experience of the managers, or basing of the consumers answer to a survey -> e.g., eco-friendliness
3. Obtain customer perceptions -> this process is costly and time consuming, because companies have to go around and survey consumers
4. Factor analysis
5. Positioning map

Steps to create a positioning map with big data

- a. Look for keywords associated with the attribute we are interested in, and that we want to use along one of the two axes -> e.g., environment
 1. Keywords: #environment, #nature, #climatechange
- b. Collect the hashtags used in the post in two groups containing:
 1. Keywords associated with the attribute
 2. Brand mentions
- c. Calculate the similarity between each pair of keyword and brand -> to do that we use the metric called **Jaccard similarity**
- d. Use the similarity to position the brands in the positioning map

Jaccard measures of similarity

Let us suppose that we have two accounts: B (brand) and E (keyword) -> B and E are the two sets of hashtags of B and E, respectively

$$\text{Jaccard similarity} = J(B, E) = \frac{B \cap E}{B \cup E}$$

where the numerator is the intersection between B and E, while the denominator is the union between B and E

How do we combine different keywords?

So far, we have a measure of similarity between brand B and one keyword E. We will get this measure of similarity for each of the n keywords E. We need to combine these n measures of similarities to understand how «environmentally friendly» brand B is perceived to be.

Weighted similarity

Let us assume that we have two keywords for eco-friendliness:

- #nature has 1,115 hashtags
- #climatechange has 727 hashtags

Intuition: if brand B is associated with hashtags related to #climatechange, then it represents stronger evidence of the environmental affinity of brand B ... Than it being mentioned with hashtags related to a more

general keyword such as #nature

We weight each keyword inversely proportional to its number of associated hashtags.

Social perception score

We weight each keywords inversely proportional to its number of associated hashtags.

Social Perception Score between Brand B and attribute E:

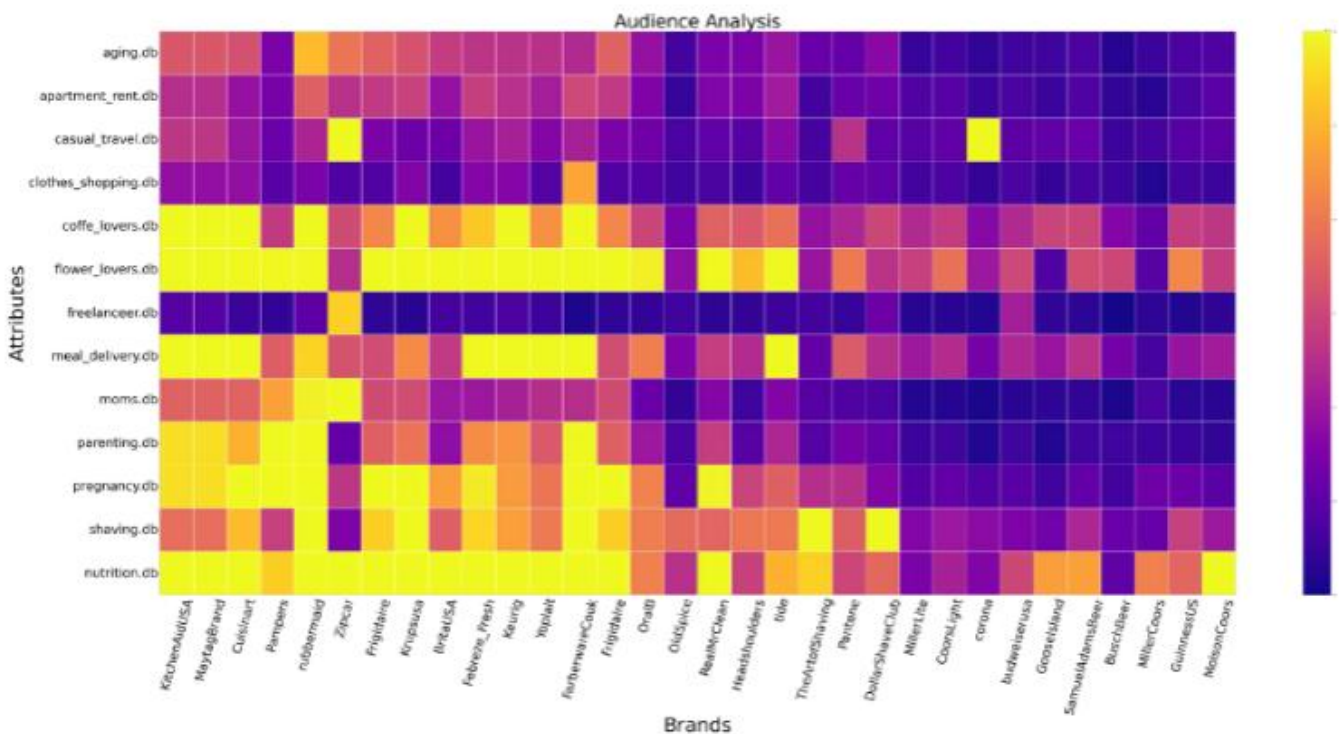
$$SPS(B, E) = \frac{J(E_1, B)}{E_1} + \frac{J(E_2, B)}{E_2} + \dots + \frac{J(E_n, B)}{E_n}$$

⇒ The social perception score is the weighted Jaccard similarity!

Brand audience analysis

We are at the very end of the NPD process and we want to decide how to engage our customers with the innovation that we just developed.

The brand audience analysis followed the same procedure as positioning map, just with as many attributes as we want, and since we are going to have more than two attributes, we are not going to be able to represent it on a typical graph, but we are going to use a heat map.



To interpret this map we need to look at the scale on the right, which basically says that as the color gets more and more closer to yellow, it means that the consumers of a brand are interested in that attribute, while as the color becomes closer to purple or blue, it means that the consumers are not interested in that attribute.

FOR DOUBTS OR SUGGESTIONS ON THE HANDOUTS



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TEACHING DIVISION



OUR PARTNERS



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