CAPCO

# HOW TO RADICALLY IMPROVE THE UNDERSTANDING OF YOUR CUSTOMERS USING SCIENTIFIC PERSONAS

a **wipro** company

# INTRO

In recent years, interest in data science and machine learning has increased substantially. The technology industry was the first to adopt these tech-driven approaches, and now that they have entered the mainstream, companies in all industries want to understand how they can best utilize their data.

In financial services, there is a lot of hype about machine learning's potential. However, a quick search will confirm there are very few concrete examples of its application in large financial institutions and of it delivering tangible results.

Here at Capco, we strongly believe that data science adds significant value in financial services across multiple functions, and can offer a high return on investment (ROI). This latest series **Data Science in FS** aims to highlight the solutions Capco has provided clients, and further demonstrate how these solutions can apply in your organisation.

## BACKGROUND

With a staggering 2.5 quintillion bytes of new data created each day, and forecasts estimating that this figure will double every two years going forward, businesses find themselves in a deep information overload. One of the key challenges businesses face is turning raw data into behavioral insights to help better understand customers.

In this paper, we reveal how raw data can be effectively harnessed to achieve insights into distinct customer groups, through a combination of data science and design thinking, with a specific focus on Scientific Personas. This enables firms to have a radically better understanding of their customer base and thus create enhanced value propositions, position products and services more effectively, and increase retention.

## THE PROBLEM

Understanding customers and responding to their needs is at the heart of any business in any industry. Technology, in theory, makes this a lot easier. For example, since the start of the pandemic, far more interactions with customers have been digitalized, meaning there is a lot more data being captured on how customers use a product or service.

The problem is that the overwhelming amount of data involved is often held in silos, making it hard to see the full picture of a customer's behavior. These behaviors are, of course, key to designing new products and prioritising product improvements.

## THE SOLUTION: DESIGN THINKING AND CUSTOMER PERSONAS

Design thinking is a methodology used to align product development with customer interests. When consumer needs are given a priority status, a designer can define the problem scope, ideate possible solutions, and initiate rapid prototyping to build and test the product.

The purpose of effective design thinking is to better understand the customer. This process is often brought to life using personas – a detailed representation of the key customer group being addressed. Personas help designers understand experiences, behaviors, and goals of end-users.

Examples of design thinking can be found in numerous Fortune 100 companies, including Amazon and Apple – the brands famous for their customer-centric product development. Although design thinking is yet to be embraced by most traditional financial institutions, it is actively leveraged by several fintech disruptors. Monzo is a prime example and has implemented design thinking since 2018[i].

# HOW DO MOST BUSINESSES CURRENTLY UNDERSTAND THEIR CUSTOMERS?

**There are currently three key techniques that businesses rely on to understand their customers better:**

1. **Traditional persona (qualitative approach)** – commonly seen; products are designed using detailed customer interviews
2. **Poll / survey (blended approach)** – often applied; firms conduct a poll with customers, which can include both quantitative and qualitative aspects
3. **Standard segmentation (quantitative approach)** – rarely seen; firms use data science and machine learning to define customer groups

**Examples of these approaches with their respective pros and cons:**

## TRADITIONAL PERSONA

- Self-directed experience for servicing; high touch for key decisions
- Wants confidence that short-term desires won't impact long-term goals
- Will never meet physically

- Great for driving experience design
- In-depth customer interviews can empathise with customers to truly understand their needs and goals
- Very resource-intensive approach – limited time and resources often lead to just a handful of interviews being conducted, which would then be prone to scaling biases
- Not able to measure and quantify ROI for changes/initiatives/ideas

## POLL / SURVEY RESULTS

- 55% are between age 40 - 50
- 76% are confident in managing their own investment plans
- 47% are comfortable with alternative investments, with the most popular being cryptocurrency

- Can cover both quantitative and qualitative aspects
- Can link behavior traits to existing data attributes, therefore helping to enable clear and objective measurement for potential changes/initiatives/ideas
- Jack of all trades but master of none – not able to empathize with customers nor use the full scale of data available
- Prone to sampling bias if data collection is biased towards a certain group of customers

## STANDARD SEGMENTATION

- **Age:** 45
- **Occupation:** Business executive
- **Income:** $200k
- **Wealth Status:** Mass affluent

- Relatively easy to create
- Machine learning can be applied to detect hidden patterns
- Potentially misleading, especially in use cases such as new product designs, where the existing data may not be directly aligned to the objective
- Clustering is unsupervised learning, meaning there is no correct answer, and the output could be prone to interpretation and labelling bias

# CAPCO'S APPROACH

Our take on customer understanding blends the qualitative and quantitative approaches, to create an innovative Scientific Personas methodology that takes advantage of the winning features of both approaches.

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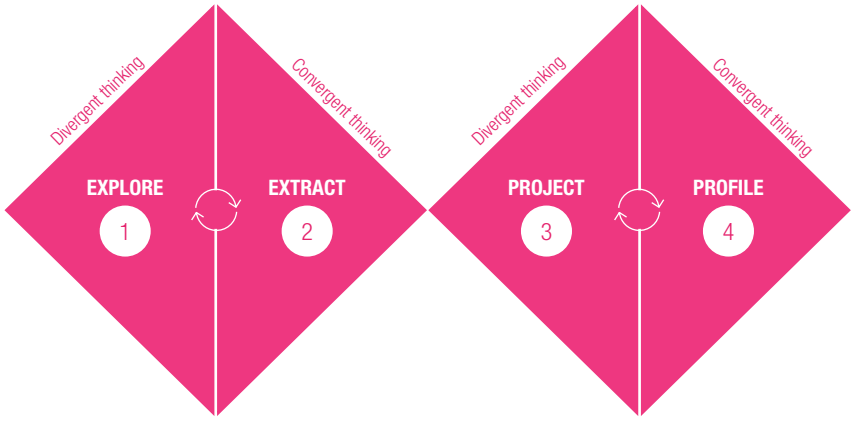
|---|---|---|---|---|
| **CUSTOMER RESEARCH** | Conduct qualitative discovery research with target customers | Distil behavioral personas from the discovery research based on distinct needs, goals, pain points | Prioritize behavioral personas and continuously validate and refine through iterative concept testing | Guide product prototype and design of key features using the prioritized behavioral personas |

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| **DATA SCIENCE** | Analyse available data elements useful in describing target population based on product vision | Model key persona traits onto existing attributes; prioritize and assign weights | Standardize modelled variables based on mapped behavioral traits | Identify key behavioral data to guide marketing approach for each persona |
| **BLENDED OUTPUT** | **DESCRIPTIVE DATA ANALYSIS**<br>Create attribute profiles and data summaries; identify gaps, proxies and assessed limitations | **TRAITS ENGINEERING**<br>Identify feature groups to describe each trait for research-based personas | **PERSONA PROJECTION**<br>Tag target personas and generated group volumes based on scientific distance metrics | **AUGMENTED PERSONAS**<br>Validate and augment research-based personas with industry-relevant data attributes |

We arrived at this methodology by adapting the widely used 'double-diamond' approach in design thinking, and further enhancing it with our own E2P2 approach (see diagram above). This involves two parallel workstreams of both qualitative customer research and quantitative machine learning. This interweaves the streams together, so that the two approaches are built off the other's progress and can validate one another.

# CASE STUDY: DESIGN A BRAND-NEW DIGITAL PROPOSITION

A tier-one global bank contacted Capco to design a digital proposition to build a brand-new product that will engage a particular group of customers and solve their needs.

**Starting with a blank canvas, Capco achieved the following:**

- Scoped out the high priority target customer groups
- Identified their keys needs and goals
- Prototyped a solution to address pain points
- Forecasted the product's future revenue and costs

These successes were a result of our Scientific Personas. Here is how we did it.

### STEP 1: UNDERSTAND OBJECTIVES AND EXPLORATION

The team worked closely with the client to understand their objectives for the product proposition and their target demographic.

To gain a full understanding of the bank's customer population, customer research teams worked in parallel with a machine learning workstream. Customer research conducted 27 in-depth interviews with existing and potential customers, while the machine learning workstream engaged with the client's internal data teams and vendors to gather relevant data. Through personal interviews, the team was able to gather an understanding of the bank's target demographic. Through an exploration of 600+ data sources, cross-referenced with the product vision and customer research, a final set of 1000+ behavioral attributes were chosen and analysed. The teams were careful to ensure all limitations, assumptions and risks were fully understood and considered.

### STEP 2: EXTRACT

The customer research team distilled the research into needs, pain points, goals, motivations, behaviors, actions, and traits. As a result, qualitative personas were built portraying a wide range of characteristics for each consumer group. Concurrently, feature engineering, carried out within the catalogue of the 1000+ attributes, modelled key behavior traits that surfaced during the machine learning research. The traits were prioritized in relation to consumer insights to ensure the focus was on behaviors and traits which accurately define a persona – from risk tolerance, to what their short and long term priorities would be.

### STEP 3: PROJECT

The draft qualitative personas were shared with stakeholders via multiple design sessions to further enhance the personas and identify potential gaps. Brainstorming sessions provided solutions to address identified needs and goals, which then played back in customer interviews to cross-check and validate. To maximize possible customer lifetime value, customer journeys were designed to show how customers would interact with the bank at different life stages. By combining the qualitative personas with quantitative data, the personas could be intelligently extrapolated from 27 in-person interviews to 24 million customers. This enabled the bank to have a much more granular understanding of their customer base and therefore know who was going to be most interested in the new product.

The team then further validated the findings by comparing the results against other published research papers and market research by third parties. This approach, combined with the above analysis, allowed us to forecast the product's future revenue and costs in financial models.

### STEP 4: PROFILE

One major benefit of the quantitative approach in our Scientific Personas methodology is that we can extrapolate information that standalone customer research wouldn't cover. By profiling our persona in a wide range of attribute dimensions, such as demographics, financials, hobbies and interests, the team was able to produce infographics and detailed dashboards which described each persona group. This is valuable for product feature design and marketing, as we can see at scale which aspects are of interest to key target customer groups, as well as the best ways of engaging with them.


Furthermore, we identified potential gaps in customer research, as well as resulting key hypothesis to be further tested. These findings are often obscure aspects that are unlikely to be picked up solely during traditional methods. These are often magnified when extrapolating to the population.

Some examples include:

- Low engagement previously attributed to innate behavior, but has now been more strongly linked to the lack of time due to other commitments.
- Two different types of customers can exist within a persona, despite showing the same behavior traits.
- There is a possibility of influencing one persona into another persona through various marketing and branding tools.

The continuous interweaving of qualitative and quantitive data is at the heart of what makes our Scientific Personas so powerful, as these feedback loops allow us to constantly explore and validate any new insights. Such interweaving allowed us to build a process and methodology that is scalable, yet also fine-tuned, and personalized to the lowest granularity.

# TO WRAP UP

Reaping the benefits of both qualitative and quantitative disciplines is the core principle behind Scientific Personas. This empowers businesses to truly understand the critical behaviors, needs, and motivations of customers, while also maintaining efficiencies in product design and scalability.

Enhanced understanding of customers will also help achieve:

- **Accurate product recommendation systems:** If most members of a particular persona have a particular product, it is likely that the rest of the members of that persona will also be interested in that product.
- **Increased business resilience:** Achieved through monitoring the affinity of a product to a customer persona and identifying any missing needs and wants in advance.
- **Tailored loyalty or rewards programme:** This can be accurately aligned with a customer persona's behaviors and preferences.

Our approach to understanding customers demonstrates the power of integrating data science with the well-established discipline of design thinking.

# REFERENCES

[i] https://medium.com/monzo-bank/understanding-our-users-7f9b7135deb9

Contact us to discuss how Capco can help you understand your customers better.

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## ABOUT CAPCO

The Capco Digital team are a collaborative, diverse, and passionate team focused on user-centric design, lean product development, and emerging technologies. They lead complex institutions into the future with a bold, entrepreneurial perspective.

Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

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