

## **Empathetic e-commerce: advanced behavioral clustering with AI**

***As the volume of online retail sales grows, remaining competitive in this marketplace requires retailers to deliver more than just quality, reliability and good prices: they have to understand clients, bringing the skills of great sales people to the automated systems that serve them***

*What is advanced behavioral clustering and why is it becoming important for online retailers? It is the process of determining the personality type of users in order to adapt the content and style of websites, apps, newsletters and chatbots accordingly. It is a tool to compensate for the lack of in person interaction on the internet, but it can also be leveraged by traditional stores to make sales staff in more effective. Logol, a pioneering Swiss company in the field of artificial intelligence, illustrates this new frontier lying at the crossroads of artificial intelligence and human psychology.*

Today, an enormous amount of retail activity has moved online, with e-commerce soon to represent 20 percent of the global retail market. Retailers expand their reach, while being put face-to-face with strong competition from all over the world. As clients are always just a click away from moving on, website design and functionality become extremely important in order for online shops to make the most of every visitor.

In a traditional store, when customers walk in, a good sales person will greet them and offer help. A great sales person will try to understand something more about them, 'reading' the customer's mind in order to make appropriate adjustments to their sales technique. For example, taking it slowly with reflective introverts and keeping it quick with impulsive extroverts.

Such a sophisticated interaction is not yet possible on the internet. While current e-commerce systems do remember their clients' names, where they are from and what they've purchased in the past, they do not attempt to understand their personality, much less adapt to it. It is basically one-size-fits-all. Yet, there is enormous room for improvement if the systems powering websites, apps, newsletters and chatbots could grasp what really motivates each client. Do they want success or do they want to do what is right? Are they competitive or do they look out for other people? Do they make their decisions by analyzing facts or by following their inner feelings?

With this type of information, an intelligent system could provide facts and figures to analytic users while painting pictures for those that need to visualize an outcome. It could work on building a relationship with the client when it is appreciated or cut to the chase when it is not. It could show the user how a product or service helps save the planet or how it will help them beat the competition. Such a system aims at providing the right type of information in the right amount and at the right time, in order to make the interaction feel more natural and productive to the user.

A future where empathetic systems such as this populate the internet may actually not be far away. Automatic personality recognition is already here and the next generation of intelligent websites, apps and chatbots will be better versed in dealing with human psychology, bringing great benefits to e-commerce as a whole and significant competitive advantages to the early adopters.

### **Artificial intelligence in business**

Artificial intelligence (AI) is intelligence demonstrated by machines, such as those that in the last few years have grabbed the headlines by winning at complicated games such as Go or poker even against our world champions.

Over this same period, thanks to the availability of greater computing power, artificial intelligence has also emerged as an effective, value-generating tool for businesses, often as a way to put to use the vast amounts of data they are collecting. Today's largest companies leverage leading edge ERP (Enterprise Resource Planning) and CRM (Customer Relationship Management) systems that have AI capabilities built in.

AI-powered algorithms are no longer built to solve a problem by working '*faster than a human*'. They can now find their own solution to a problem by analyzing data and '*learning*' what works and what does not. This is the type of technology that will power next-generation solutions helping businesses welcome customers to their online shops, and maybe even to their physical stores. These solutions rely on data.

### **Collecting user data**

Many companies still gather information about consumers by calling people at home to conduct marketing surveys, or trying to get them to fill out questionnaires about their preferences, perceptions and habits. The drawbacks to this approach are the risk of annoying clients and the uncertainty regarding the validity of the information gathered.

Today, more objective information can be collected unobtrusively and in full respect of privacy rights, using data that clients have agreed to provide when turning to online services. For example, a person's shopping history can be used to understand their habits and preferences, while many other correlations can be made by analyzing data points such as geolocation, sex, nationality, time spent on a page and sequence of page visits. Moreover, this approach has the advantage that it can be carried out in real-time.

Technology can take us even further. Logol, a pioneering Swiss company in the field of artificial intelligence, has developed state-of-the-art solutions that analyze the available data to determine the client's personality type. This information is then used to adapt the content of websites, apps, newsletters and chatbots that the user interacts with in order to make them more effective. The motivation is the acknowledgment that people view the world, interact with the world, take in information and make decisions in different ways. Not everyone feels comfortable or uneasy for the same reasons, just like not everyone can be motivated or persuaded to act with the same arguments. To be truly effective, online retailers, as well as sales staff in traditional stores, must be able to distinguish between different psychological types and present information or answer questions in different ways depending on the personality of the user.

## Personality types

There is a long history behind the current theories of human personality. Swiss-born psychiatrist Carl G. Jung (1875-1961) suggested that human behavior is not random and that, in fact, it can be predicted. In his view, humans are born with a predisposition to a certain type of personality, just like they are born either right- or left-handed. He described eight different patterns.

Many theories have since been developed, all agreeing on the principle that personalities can be classified according to small number of important traits. For example, whether someone is an extrovert or an introvert; or whether they rely more on reason or emotions to make decisions; or what techniques they use to gather information from the outside world. Many personality models exist and these generally cluster personalities into 4, 8, 16 groups or more.

For the sake of this overview of the work being done at Logol, personalities will be clustered into four main groups, which for convenience will be called *rationalist*, *idealist*, *artisan* and *guardian*.

## Behavioral clustering

In order to establish the personality type of an online user, written content from the person is needed. The process involves mapping relevant words into a set of nouns that the system has learned to be associated with certain personality types, nouns like “adventure” or “caution”, “revolution” or “efficiency” and many more. The more content is fed into the system, the more accurate its prediction becomes.

Logol studies have shown that the most useful data for determining personality types are emails. If none are available, the alternative is using data from one of the user’s social media profiles. To do this, the website has to require registration and offer the option of logging in using a social media account, as has become quite popular nowadays. Social media profiles can provide quite a lot of data, authorized by the user, including birthday, friends list, email address, employment, universities attended, posts, tags, photos and information that friends have posted about the user.

If the user interacts with a chatbot, he or she is providing further content that can also be sent back to the system to create a more accurate personality profile in real-time. In some cases, the system may have to start a chatbot dialogue without having previously determined the personality type of the client. In this case, it will start providing standard answers while the system determines whether the user is an extrovert or an introvert. This trait is determined first because it identifies their preference for acquiring information from the outside world, including from the chatbot. Fortunately, this is quite easy to do.

Extroverts tend to be quick at making decisions, will talk freely about themselves to anyone and will often interrupt the speaker. When communicating to an extrovert, it is important to pass as little reading material as possible, summarizing the information and providing links to extended content. Short and frequent messages are preferable.

Introverts on the other hand tend to be reflective, will talk freely about themselves only to people they trust and tend to let a speaker finish before answering. When interacting with an introvert, it is best to pass on sufficient reading material without summarizing. Less frequent but more thorough messages are preferable.

## **Shaping a response**

Once the system has determined the personality type of the user, it can leverage this information to shape the messages on whatever website, app, newsletter or chatbot the client interacts with. To do this, it is necessary to understand what motivates people belonging to each type.

For example, guardians tend to be assertive, goal-oriented, competitive and quick. Results are more important to them than personal relationships. They want information fast and become impatient with abstraction. How does one sell to them? Be professional and efficient. Do not waste their time. Emphasize how a product or service will solve their problems.

Artisans tend to be amiable. They value personal relationships and trust, and like new challenges and creative solutions. They tend to work in a less structured manner, are not quick decision-makers and will be looking for guidance. Pitch them a vision and show images to help them visualize the outcomes they could achieve. Take the role of an expert and walk them through the decision making process, but without overwhelming them with information. Take time to establish a relationship.

Idealists tend to be expressive. They value respect, loyalty, and friendship and are concerned with the well-being of others. They are creative, outgoing, spontaneous and rely on their intuition. Do not make commitments that cannot be maintained. Reassure them that you are looking out for them. Present case studies showing the company's track record of how its products or services have made an impact on other people's lives. Emphasize the ongoing relationship the company has with its clients. Do not focus too much on facts and figures.

Finally we have rationals, who tend to be analytic. They love data, facts and figures. They do not make decisions quickly, but stick to their deadlines. They care about thoroughly vetting all options available. They are logical and cautious. Never rush them. Assume they are prepared: expect to spend less time talking basic and more discussing cutting-edge features. Always provide data when making an assertion, or risk losing credibility. Do not force a relationship and avoid being overly flattering or deferential.

## **The future of empathetic systems**

By shaping the content and style of apps, websites and chatbots along these lines, an online retailer can make the most of every user visiting their web store. Systems such as these are already on the market, enabling merchants to achieve remarkable increases in lead-to-sale conversion rates. Moreover, their application is not limited to sales. Once a company has started predicting and storing the personality types of its contacts, it can leverage the system in numerous ways and in different departments, from preparing newsletters for Marketing to scanning resumes for Human Resources. It could even bring the results back to the physical store in order to help sales staff shape their conversations with customers, for example in high-end, luxury retail stores where most of the visits are always from the same small group of people. In fact, whenever a person is interacting, personality comes into play and behavioral clustering can play a positive role, regardless of whether the communication is between two people or between a person and a machine.

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## About Logol

Logol, a pioneering Swiss company in the field of artificial intelligence, brings the extraordinary benefits of this futuristic technology to the business world. Serving companies and organizations across multiple sectors, Logol offers advisory services, cloud migration services, cybersecurity solutions, best in class business applications and custom AI-based software development. Logol's success is based on its extraordinary international team of digital natives with top-class education from some of the most prestigious universities worldwide and extensive experience creating AI-based solutions. Founded in 2017, Logol is rapidly expanding, with 50+ people across offices in Zurich, Chiasso, Lausanne (Gland) and Milan.

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