Chapter 9
Studying Customer Experience and Retention Using Applied Data Science and Artificial Intelligence

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ABSTRACT

Data science has established itself as a discipline of study in the new technological paradigm of the 21st century. Customer data and metadata are not only unique opportunities for companies that are interested in collecting, processing, and elaborating useful information for customer-centric business management. They are also starting to feed other disciplines, such as industry and computer engineering, which are developing new ways of organising information and intelligent response, where significant technological advances in facial, sensory, text, voice, and image recognition are constantly emerging, with response capabilities ever closer to human thinking. From this continuous interaction emerges a new asset for companies: knowledge. Thus, science applied to data is consolidating as an opportunity for companies in customer loyalty and retention by being able to include a relevant aspect in human relations such as warmth and empathy, basis of marketing 5.0, oriented once again towards human relations, from a virtual existence and total digitalisation.

INTRODUCTION

The **competitive pressure** produced by the **globalisation** of the economy has focused on the client as a strategic objective of companies (Kohli, Jaworski & Shabshab, 2019). From the perspective of an unprecedented consumer society, knowing their profile and offering **personalised** products that meet their needs is the great challenge in the field of marketing today. In this race for **differentiation**, providing **experiential consumption** is where brands have found their great opportunity to stand out from the competition (Triantafillidou & Siomkos, 2014).

This change in the economic scenario has been possible thanks to the democratization of the so-called **new information and communication technologies** (henceforth ICT) where connectivity and knowledge have transformed the way of understanding interpersonal communications and the way of relating to companies (Torrent-Sellens, 2020). This technological paradigm focused companies on attracting new online customers until the end of the 20th century given the penetration capacity and attractiveness of the digital channel (Ha, & Stoel, 2009). However, this strong competitiveness generated in the offer, has simultaneously generated the need to retain and to build customer loyalty that allows to maintain and to assure their portfolio (Mascarenhas, Kesavan & Bernacchi, 2006). This is how the concept of Customer Experience was born, where anticipating, surprising and enthusing the user is the objective (DEC, 2020).

According to Cisco's statistical sources (2020), more than 1000 terabytes (1 TB equivalent to 1000 gigabytes, GB) of information is generated monthly on the Internet. This reputable IT consulting firm estimates that by the year **2022** there will be as much data traffic on the internet as has been accumulated over the last 32 years, with **60% of the world's population connected to the internet** (computers, mobile phones, tablets, watches or smart TVs); global mobile networks will record **more than 12 billion mobile devices** and IOT (Internet of Things) type connections. This huge amount of data will exceed the Zettabyte milestone (1 ZB equals 1 million terabytes, Cisco, 2020). This huge amount of information has overwhelmed the companies' information systems and made the so-called digital transformation necessary (Sarenet, 2019). In this new omni-channel environment, companies must look for new resources to attract their potential consumers and customers (Sabio & DEC, 2020). Being the first choice for the consumer requires intelligent browsers that can efficiently process increasingly complex searches within distributed and, in most cases, defragmented information. Similarly, designing the information architecture required by the new informed citizen implies that the technology must guarantee information that is not only current, but also adapted to our needs, sufficient and precise (Méndez-Aparicio, Jiménez-Zarco, Izquierdo-Yusta & Blazquez-Resino, 2020). Characteristics that can only be satisfied from **Applied Data Science** (hereinafter, ADS).

Thus, we are in the new **Knowledge Economy** (Hendarman & Tjakraatmadja, 2012, Torrent-Sellens, 2016) and the new **Behavioural Economy** (DEC, 2019), where intelligence applied to data has become a service for companies, information a right for customers, and innovation a brand attribute. This reality has been shared by business and industry and not in vain, companies are immersed in a new technological transformation with the irruption of 5G (Martín Lineros, 2020; Torrent-Sellens, 2020).

This chapter is set in this socio-economic context and aims to explain how technology applied to data can help in the sustainability of the economy, creating loyal customers from the information collected in each mutual interaction as a source of data. This knowledge not only allows the offer to be personalised and empathy with the service to be improved, but also makes it possible to create new innovative products and services using virtual reality technology, mobility and consumer behaviour models. Through innova-

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