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Customer Selection Criteria Using Existing Car Sales Databases

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Abstract

The main objective of the paper is to identify a general framework for the promotion of smart car products, the customer's requirements, and the market trend when the way of promotion changes. In this environment, it is necessary to use artificial intelligence to consult platforms / databases, from which the profile of each customer can be extracted, and the market requirement can be generalised. The specialised literature provides, in this sense, a series of market innovations, but the technological innovations required by customers, by age groups, and more, the adaptation of promotion to gamification or even metaverses are not specified. As a result of the new market requirements, in a continuous modification, the research will be an empirical one, from which the consumer behaviour, globalisation, and technological innovations required by the client will result. Thus, the analysis of platforms / databases was carried out in order to identify the reauirements formulated by the client, as well as the SWOT analysis of product promotion. The limitations of the research are due to the fact that the data collected from the specialised literature are minimal. For this reason, research is also necessary in the environment of profile companies, from which it can be concluded whether they have implemented modern tools to promote intelligent auto products and, moreover, whether they use simulating environments based on artificial intelligence for the presentation of the products. Promotion in the online environment leads to the use of electronic resources and the need to implement artificial intelligence. The practical implications resulting from the use of platforms/databases lead to the accelerated purchase of a car presented with specifications towards the new green technologies, with a content marketing and with a permanent communication between the customer and the seller, thanks to artificial intelligence.

Keywords: the customer, the market, marketing innovation tools, online promotion, databases.

JEL Classification: M31, M41, M21.

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1. Introduction

Traditional marketing has so far represented an important element in selling products (Savych, Shkoda, 2020), using communication channels with which an immediate profit is obtained (Wang, Moriarty, 2017). Today, in full transition process from Industrial Revolution 4.0.(I4.0.) to Industrial Revolution 5.0.(I5.0.) (Xun et al., 2021; Madsen, Berg, 2021), marketing is carried out online (Lopes, Oliveira, 2022; Wang et al., 2023), with the help of electronic tools and artificial intelligence (Cui et al., 2022; Ozdemir, Hekim, 2018) that make a consumer to be assisted and guided in choosing a brand (Engelmann et al., 2022; Dunska et al., 2018). Moreover, from this environment, artificial intelligence can populate a database (Engelmann et al., 2022) with various customer selection criteria, depending on their behaviours (Ma et al., 2022), for future promotion of the products.

The customer wants a market as close to his needs as possible, a market where the product, in this case a car, can be presented in a physical form (Dorčák et al., 2017). However, the lack of time for detailed research of the car before the purchase makes a customer ask for new methods of promotion, on secure platforms (Purcarea et al., 2017; Li et al., 2019).

Like the above ideas, the purpose of this paper is to identify the elements necessary for a transition from traditional marketing to that of I5.0 are observed (Ruan, Mezei, 2022; Wongleedee, 2015; Hein-Pensel et al., 2023). Several studies have brought to the limelight innovations in product promotion and how a car is reported in the green economy (Loiseau et al., 2016; Tang et al., 2017; Mansour, 2023; Goikoetxea-Gonzalez et al., 2022). The use of the environmentally friendly car, and the design of the car so that it consumes and pollutes as minimum as possible (Lo Franco et al., 2022) are advantages in the customer's choice of the finished product.

2. Problem Statement

The digitisation of business with the help of artificial intelligence (Xie et al., 2022), of electronic tools that took shape in I5.0. (Lachvajderová, Kádárová, 2022; Mansour, 2023) lead to the emergence of opportunities to test how sale (Lo Franco et al., 2022) of a car. Although there are still companies that have not implemented the processes from I4.0. (McLellan et al., 2021), have developed processes for market change and adapt to customer demands (Liu et al., 2019), substantially changing their business model (Cui et al., 2022).

In specialized literature, in the searches carried out in Web of Science articles, we did not identify whether a customer looking for products online. This is regarding to customer that can configure his car, according to his requirements (Ma et al., 2019), can check the performance of the car (Tang et al., 2017), can make a simulation in the environment in which he will drive his car (Dwivedi et al., 2023), is satisfied with the search result, and places an order.

In turn, the company should acquire these configurations with the help of artificial intelligence (Periyasami, Periyasami, 2022), populate databases with customer requests (Li, Yu, 2022; Li et al., 2019), and create groups according to their requirements. Moreover, in a future promotion of a product, either a component, or a car with a new brand, or a new market, artificial intelligence should help the company to target the customer profile of a certain group (Cheah, Shimul, 2023).

It is also important to research the situations in which a company finds itself, when implementing the components of I5.0. through a SWOT analysis from the specialised literature. This analysis will be based on empirical studies, which prove whether a customer with a certain profile prefers online instead of physical car presentation.

Of course, at some point, every driver will want to try the car in traffic (Wang, Moriarty, 2017). But time spent choosing a car, signing up for a test drive, and waiting time can be limited to simulating a virtual metaverse environment (Cheah, Shimul, 2023; Hwang, Lee, 2022; Periyasami, Periyasami, 2022; Chinie, Oancea, 2022), through situations where the car is valued, in gamification (Lucassen, Slinger, 2014; Conaway, Garay, 2014; Huotari, Hamari, 2017).

The purpose of this research is to verify the state in which companies are, with the help of specialised literature, if a customer looking for products online is satisfied with the results obtained (Savych, Shkoda, 2020), if these searches are personalised and reported to I5. 0. (Madsen, Berg, 2021). Moreover, the novelty brought by this work consists of the preparations made by the companies that present their products in metaverses, through gamification.

3. Research Questions / Aims of the Research

Digitisation is a key factor in the promotion of cars, and the use of smart product-service systems (PSS) ensures a safe environment for the promotion of smart car products (Tsunetomo et al., 2022; Xie et al., 2022; Li, Yu, 2022; Liu et al., 2019; Liua et al., 2019; Cheng et al., 2019), which will lead to the research question:

Q1: What are the new market requirements for car sales in I5.0?

This is how the demand arose, through the online promotion of cars, in a form of simulation of the gamification type (Lucassen, Jansen, 2014; Li et al., 2022; Hofacker et al., 2016; Hsu, Chen, 2018), in which the car is highlighted in different situations. The simulation environment is one of the metaverse type (Cheah, Shimul, 2013; Periyasami, Periyasamy, 2022; Hwang, Koo, 2023), where all configurations of a car are obtained virtually. For this reason, the question is formulated:

Q2: What are the requirements of the client, in the simulation during the car promoting?

The market for presenting a car will be online (Lachvajderová, Kádárová, 2022), and by using simulations, it will be possible to customise, depending on the customer's requirements, product sales (Aboltinsa, Rivza, 2014). The idea of

having a car configured in this way will lead to the creation of categories of customers, depending on their requirements (Wongleedee, 2015), on specialised platforms, for which the question will be answered:

Q3: How do we promote a smart car product in an online environment?

4. Research Methods

The research methodology consisted of analysing situations compatible with new market requirements for car sales, requirements of the customer in the simulation; promote a smart car in an online environment to identify the current state of companies in I5.0.

To achieve the objectives of this research, we searched for articles in the Web of Science, from which we extracted the following data collection template: identification of a general framework for the promotion of intelligent car products through the market innovations brought by I5.0., customer requirements in the field innovative technologies through the use of artificial intelligence, as well as the market trend, when changing the way of promotion by adopting a product usage simulation environment.

4.1 A Series of Market Innovations

When searching for market innovation, in Web of Science articles, we found 1183 (as of March 24, 2023) results that contain the identification of elements of exchange of goods, in our case of a car, exchange that can bring benefits to both the buyer and the seller. The car was delivered to the buyer through limited search time, and the seller made an immediate profit. Until now, the question of a safe market, in which the products reach the buyer, has been raised. Innovation in I5.0. leads to the appearance of trade platforms and with a minimisation of the search, carried out by artificial intelligence, according to the requirements given by the customer, to be able to obtain the product with the details requested by him, to satisfy his desire, and complete the transaction.

But the most important elements identified were technology innovation and market innovation, which leads to the fact that the two values of the business are intertwined.

4.2 Technological Innovations Required by Customers

A customer looking for cars online is satisfied with the results obtained only if this search is carried out in a short time. This is where the platforms come in, the artificial intelligence that helps the customer get the desired product.

Moreover, it is obvious that when creating groups on car sales platforms, these groups must be made by age groups, interests, customer income, and even driving style. In this sense, we found over 100 articles resulting from the description of customer profiles, written with the help of technological innovations.

4.3 The Adaptation of Promotion to Gamification

Web of Science searches were reported on client customisations and associated with innovations in I5.0. 189 articles were returned stating that gamification has been used since 2011 and that it is used in all fields, not only marketing, where a simulation of actions is desired. The maximum number of gamification use was in 2021, when a number of 1432 works with activity simulation were registered. And in the case of product promotion, 81 works resulted in 2021.

4.4 Metaverses for Simulation

92 papers confirmed that this type of simulation is used and takes shape in 2022 and 2023, most papers being in the field of marketing, which concludes that in the future the market, product promotions, exchange of views, and even negotiation will perform in the metaverse, with as little time as possible to complete the sale. Of course, delivery remains an issue for further study.

However, an important problem is the preparations made by the companies that present their products in the metaverse, through gamification. They will invest in hardware components that will support the online applications/platforms where gamification will take place. The costs incurred by the companies are covered only when the company starts selling with a minimum of online promotion effort.

It is the artificial intelligence that will produce profitable results, in the sense that the customer profile is also used for another customer, the requirements in the car market will be reported to the customer groups that the AI has made that can lead to customer satisfaction and after the sale through various bonuses.

5. Findings

An important result is the customer profile on the platform. A customer who has a family, who travels a long way with the family, will opt for a car with increased comfort, with interior improvements for every age, with low pollution. A customer who wants a car for its performance in traffic or speed will choose a car with higher engine power, agility in traffic, and less pollution. A customer who uses the car to commute to work every day will want a car that can weave through city traffic, find a parking spot quickly, and help with shopping. In this sense, the demand in the new market must be easy to identify. All these profiles should be found, processed, and returned by an artificial intelligence application.

It is also important to research the situations in which a company finds itself, when implementing the components of I5.0. through a SWOT analysis from specialised literature (Figure 1). This is proof that a customer with a certain profile prefers online instead of physical presentation.

Figure 1. Swot analysis of the virtual environment



Source: A car sales transaction is processed, according to the presented source at each element.

Consumer behaviour in the market (Loiseau et al., 2016) is an important factor in the transition from traditional marketing to online marketing.

Companies face different situations in presenting their products on platforms (Tang et al., 2017). Various formats and presentations are used across platforms to highlight products and the selling price (Ma et al., 2019). Platform providers understand user requirements (Engelmann et al., 2022).

The limitations of the research consist in the fact that the study was done only in the automotive industry and only based on articles published in Web of Science. In this sense, it is necessary to draw up some questionnaires or an interview, with respondents from companies with various fields of activity, to identify the requirements of a new market in I5.0. It is also necessary to identify companies that have implemented modern online product promotion tools or that use simulation environments based on artificial intelligence and adapt to consumer behaviour.

6. Conclusions

From the researched studies, we can extract the fact that expanding market access by setting up an electronic market, increasing sales, and reducing pollution (Loiseau et al., 2016), using platforms through metaverses with simulation from

gamification (Noorbehbahani et al., 2019; Nah, Tan, 2017), we responded to the requirements of selling a car in I5. 0. Marketing in the metaverse presents opportunities and strengths for a car (Vidal-Tomás, 2023; Zekree et al., 2021). The metaverse provides a new platform for digital marketing, allowing companies to interact with customers (Cheah, Shimul, 2023; Tsai, 2022; Ramadan, 2023).

Consumer preferences and demand for electric vehicles by collecting and recording online consumer behaviour is the answer to the following question (Ma et al., 2019). It is obvious that due to lack of time, customers want a platform, with customer profile groups that can provide them, with the help of artificial intelligence, very quickly, a type of car brand that suits them.

Companies develop smart cars according to the market and the marketing strategy is an important guarantee to achieve corporate value. Consumer groups use the same marketing tools and therefore will have limitations in searches and, furthermore, in promoting a car, relative to the customer group (Cui et al., 2022).

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