International Congress of Information and Communication Technology (ICICT 2017)

Car Sales Analysis Based On the Application of Big Data

Qi Zhang, Hongfei Zhan[*], Junhe Yu[a].

[a]Ningbo University, Zhejiang and 315211,China [*]
[*] Corresponding author. zhanghongfei@nbu.edu.cn.Tel.:0574-87600350

Abstract

Whether industrial 4.0 nor Internet industry, for today's industrial manufacturing enterprises, it should be to make full use of information and communication technology to deal with the arrival of smart and effective large data, combining products, machinery and human resources into together, according to the unexpected speed about the mode of sales product, it can change the manufacturing enterprises to process innovation and reform. This paper takes the automobile manufacturing industry as an example, based on sale car large data analysis, using data mining technology, through the Java program to prepare web crawler program for data collection. To give some suggestions for the automobile manufacturing industry in the production of automobile, it reduces the inventory of automobile enterprises and the waste of resources.

Keywords: big data; car manufacturing; data mining technology; web crawler

1. Main text

Manufacturing industry is the pillar industry of the national economy, however, there is still a big gap in our country with the independently intellectual property rights of innovative design, advanced manufacturing technology, equipment, modern design and management, so China is not manufacturing power, At the same time, with the formation of the world economic integration, foreign technology, capital, products influx of a large number of China, Chinese enterprises, especially the manufacturing industry is facing an unprecedented fierce competition.

Manufacturing industry to achieve new development, we must seize the opportunity, which requires enterprises advanced management philosophy of mining, the application of advanced computer network technology to integrate enterprise's production, management, design, manufacture, management ,in time for the enterprise "three level

decision" system (Tactical layer and strategic layer, decision layer) to provide accurate and effective data information with being made rapid response, its essence strengthens the enterprise's "core competence" , the final structure of the business enterprise dynamic alliance, in order to adapt the network economy to do appropriate bedding[1]. At the same time, with the manufacturing industry as the research object, it is based on large data analysis and research of product sales. Product sales analysis, including product sales strategy, sales analysis, and the impact of product sales factor analysis.

1.1. The characteristics of the big data

Viktor Mayer Schoenberg and Kenneth Ku Ke ye write the "big data era", big data refers to no stochastic analysis method of the shortcut, and the use of all the data. The basic meaning lies in the discovery, understanding of the information content and the relationship between information and information. Big data has three key features, including：
 (1)analyze a phenomenon which is related to all information and data, rather than the adoption of a small amount of sample data analysis;
 (2) accept the complicated data, rather than the pursuit of accuracy;
 (3) explore miscellaneous disorderly with having no chapter of causality, instead of pursue things correlation.
 Here the car in 2005 and 2015 auto sales data to collate large [3].

Table1.From 2005 to 2015 China automobile production and sales statistics

Year	Yield （ten thousand）	Sales volume （ten thousand）
2005	570.84	575.82
2006	718.87	721.60
2007	888.25	879.15
2008	929.29	938.05
2009	1379.10	1364.48
2010	1826.47	1806.19
2011	1841.89	1850.51
2012	1927.18	1930.64
2013	2211.68	2198.41
2014	2372.29	2349.19
2015	2450.33	2459.76

According to this table can be drawn constantly to increase China's auto production and sales, the manufacturers for different models of Health, the large amount of data, the type of variety, although lower-value density, however, high commercial value and the processing speed is fast, how they can effectively use these data together, in increasing car sales, allowing car manufacturers to get a seat in the car around the world, it is now the auto maker urgent problem to be solved, data mining tools generate, can effectively deal with data and applications, allow people to master effective information, we use data mining technology products for car sales data analysis.

1.2. Industry big data present situation

Physical information system and intelligent analysis will come, for us to achieve production management and industry transformation and upgrade provides a new train of thought, today measure of the manufacturing industry level has not only concerned about the product manufacturing capacity, but for the customer more innovative value. Professor Lu Wei believes that the nature of the industry's big data is data driven industrial upgrading, that is, through the big data analysis to stimulate research and development, service and manufacturing innovation, promote industrial upgrading. Professor Li jie thinks that enterprises must to know the client also does not speak out, customers speak out that it are not called problem[4], industrial data analysis is the competitive advantage of industrial development, industrial data analysis can help Chinese enterprises to reduce manufacturing cost, improve product quality, mining is not visible to the needs of users. He talked about the Trinity. With the achievements in the