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The impact of the holonic manufacturing system on seizing marketing opportunities: An analytical study of a group of private pharmaceutical companies in Samarra

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Abstract

The research aims to clarify the role and contribution of the components of holonic manufacturing, represented by its dimensions (demand holon, product holon) in seizing marketing opportunities, which are represented by its following dimensions (marketing innovation, marketing efficiency). The components of holonic manufacturing are a contemporary approach pursued by industrial organizations in order to achieve their strategic goals of excellence. Competitors and stability in the market by adopting modern methods and systems that would enhance and maintain the objectives of the industrial organization. The researcher adopted the questionnaire, which was a main tool for the purpose of collecting data and information about the companies that were chosen. The companies were represented by (Aswar Al Khaleej Company, Dubai Company, Company Tigris) the national pharmaceutical industry in Samarra and was a field of study, instead, The research population was (207) individuals working in companies, and the questionnaire was distributed to the individuals surveyed from the workers in a direct way, while (167) questionnaires were retrieved, all of which were valid for the purpose of statistical analysis. For the purpose of analyzing the data collected from the field side and by relying on the hypothetical chart that reflects the correlation and influence of the nature of the relationship between these variables, which was explained by the main and subsidiary hypotheses, the study relied on the statistical program (SPSS Ver. 22) in order to conduct a statistical analysis and work on Testing the hypotheses that were developed previously, and in order to diagnose the relationship between holonic manufacturing and the marketing opportunity, and the most important conclusions reached by the researcher, The holonic manufacturing system is considered one of the modern concepts in production in the field of manufacturing, which requires industrial companies to focus their attention on it in order to improve the efficiency and effectiveness of their production processes. The research concluded that industrial organizations provide everything necessary to facilitate the application of the Holonic system by describing it in the contemporary environment as a necessity and of great importance, especially for the organizations that are the subject of the research.

Keywords: Holographic marketing, marketing opportunities

Introduction

For the success of organizations at the present time, it has become necessary to obtain a larger share by possessing the elements of excellence within markets that are characterized by continuous and sudden changes. With the increase in changes in the environment and the increase in intensity and intensification of competition between companies, newly established organizations have turned to formulating policies that ensure their distinction and superiority over the rest. Competitors: Adopting more modern manufacturing systems is one of these important policies through which organizations can confront challenges by gaining the ability, flexibility, and effectiveness to confront competitors, and to seize, manage, and exploit opportunities in a way that ensures the organizations continue their work and survival, In order to achieve its goals in the business world. The business environment, with its transformations, challenges, fluctuations and developments, pushes companies to continuously improve their performance, and this improvement ensures that they obtain competitive primacy and a uniquely distinguished position in the market. At present, this represents the goals of all companies, so organizations are required to realize the existing relationship between them and... The environment and knowledge of its future trends and

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components for the purpose of adopting a manufacturing system that has the efficiency, ability and effectiveness to work in the environment and influence it. Here comes holonic manufacturing as a manufacturing system in turn capable of adapting to changes, overcoming all challenges and benefiting from marketing opportunities. This ensures organizations' excellence in the work environment. The principle of operation of the holonic manufacturing system is cooperation and independence between various resources and departments to form flexible behavior that has the ability and efficiency in order to overcome problems and adapt to changing production conditions. The holonic system helps to develop acceptable plans according to many holons within manufacturing processes, in addition to enabling It enables organizations to accomplish their scheduled tasks and goals with high accuracy and effectiveness. It also contributes to the success of the industrialization process in organizations through the flexibility it enjoys, and paves the way for organizations to return to competition and increase their ability to face current and future challenges.

The first section: the scientific methodology of research

First: the research problem

One of the most prominent problems and challenges that they may face is the extent to which organizations are able to adopt appropriate and effective production systems in order to use their resources optimally, with high flexibility in order to adapt to disturbances (internal and external) and have the ability to adapt to environmental changes surrounding them. In order to develop its competitive capabilities that will help it stabilize and grow in the market, especially since competition has become dominant both in local and global markets. The main problem of the study revolves around the weak ability to exploit and manage marketing opportunities in the researched organizations in a way that guarantees them, In the local markets, outperforming the rest of the competitors, and this explains the weakness of its competitive capabilities and industrial capabilities in the local and global markets. Therefore, change, adaptation, and a deep understanding in international environments of the changes taking place and how organizations compete, so we arrive at presenting the research problem that is addressed according to an analytical theoretical and applied context of By answering

the following main question: What is the impact of Holonic manufacturing on marketing opportunities?

Second: The importance of research

The importance of the research stems from the fact that the holonic system works in the industrial sector as a modern manufacturing system that works to reach the maximum levels of flexibility and creativity required by relying on a number of manufacturing systems for the purpose of covering market demands, as well as the speed of responding to customer needs. The importance of marketing opportunities is focused on the one hand and manufacturing. Holoni, on the other hand, especially since recent trends in industrial organizations have focused on preserving their resources in an optimal manner, and having high flexibility with the environmental changes surrounding them.

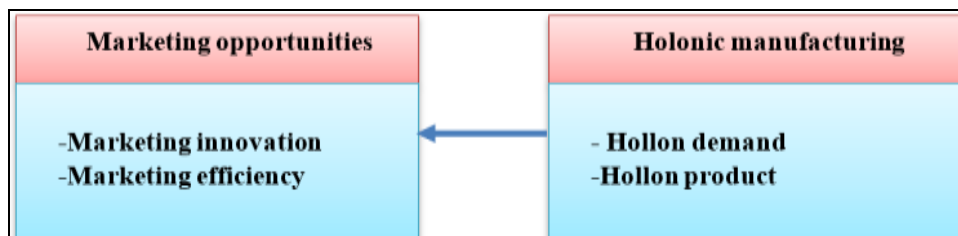
Third: Research objectives

The objectives of the study and how the Holonic system can contribute to seizing marketing opportunities, in addition to achieving a number of objectives:

1. Identify the reality of the components of Holonic manufacturing through their analysis and diagnosis in the researched industrial organizations.
2. Determine what marketing opportunities are available in the industrial organization under study, and attempt to lay the necessary foundations to identify, analyze, and evaluate those opportunities in the marketing environment.
3. Explaining the nature of the relationship and impact between marketing opportunities and the Holocaust system in the researched organizations.
4. Explaining the important role of the Holocaust system in achieving continuity of life for industrial organizations by working to exploit opportunities that lead to the organizations' superiority over competitors.

Fourth: Hypothetical model for research

The hypothetical model for the research summarizes the nature of the interrelationships and influence between the investigated variables, through which its main idea can be clarified and relied upon in formulating its hypotheses, and it can be illustrated through Figure (1).



Source: Prepared by the researcher.

Fifth: Research hypotheses

In line with the contents of the proposed study problem, its objectives and its plan, main hypotheses have been formulated and a group of other sub-hypotheses have branched from them, and they will be presented as follows: The first primary hypothesis is that there is a substantial relationship between marketing opportunities and the needs for holonic manufacturing in the industrial organizations under study. From this, the following sub-hypotheses have been identified:

The first sub-hypothesis: There is a positive, significant correlation between demand and marketing opportunities in the industrial organizations studied.

The second sub-hypothesis: There is a positive, morally significant correlation between the product quality and marketing opportunities in the researched industrial organizations.

The second main hypothesis: There is a positive, morally significant influence relationship between the requirements of holonic manufacturing and marketing opportunities in the researched industrial organizations. The following sub-hypotheses have been confidently stated

The first sub-hypothesis: There is a positive, morally significant influence relationship between the level of demand and marketing opportunities in the industrial organizations investigated.

The second sub-hypothesis: There is a positive, morally significant influence relationship between the product quality and marketing opportunities in the industrial organizations investigated.

Sixth:- The research community

The field of study was exemplified by the private industrial sector, due to the importance of this sector in moving and

accelerating the wheel of development in local economies, while the population of the study was represented by all workers in private industrial companies specialized in the pharmaceutical industry in Samarra, which numbered 3 companies, and the number of employees in them reached (207) which represents the study population. The researcher adopted the comprehensive inventory method to represent the study sample, as (207) questionnaires were distributed to all the two workers, and (167) questionnaires were retrieved, all of them valid for analysis with a retrieval rate of (80.6%).

Seventh: Description of the sample members

The questionnaire form includes in its first axis the demographic characteristics of the sample members, which represents the personal information of these individuals. Table (1) shows the distribution of the sample members according to the five demographic information specified in that axis.

Table 1: Distribution of sample members according to demographic information

ratio %	number	category	Information
52.7	88	male	Gender
47.3	79	feminine	
74.3	124	From 20-39 years old	Age
20.4	34	From 40-59 years old	
5.4	9	From 60 years and over	
18.6	31	Preparatory school and below	Academic achievement
13.8	23	diploma	
54.5	91	Bachelor's	
9.6	16	Master's	
3.6	6	Ph.D	Functional specialization
11.4	19	geometric	
39.5	66	Administrative	
23.4	39	professional	
25.7	43	Other	Years of Experience
63.5	106	Less than 5 years	
29.3	49	From 5-15	
7.2	12	year	

Source: Prepared by the researcher through the adoption of the statistical program (SPSS).

Through the results of Table No. (1), we conclude the following

1. Gender: The majority of workers are male (52.7%), compared to males whose percentage is (47.3%). This indicates that the organization in question assigns administrative job positions to males at a similar rate to females.
2. Age: It was found that the largest portion of the sample was in the age group (20-39 years), with a percentage of (74.3%), followed by the age group (60 years and over) with a percentage of (53.4%), and finally came the age group (59- 40 years old (20.4%) of the total sample surveyed.
3. Academic qualification: It was found that the majority of the sample members held a bachelor's degree, as their percentage reached (54.5%), followed by a diploma certificate (13.8%), followed by (9.6%) for holders of a master's degree, and followed by (3.6%) holders of a secondary school certificate and a doctorate. Finally, those holding a middle school certificate with a percentage of (18.6); These results indicate that the majority of employees hold bachelor's, diploma, and master's degrees, due to the organizational nature required by the organizational structure for job occupancies in the organization under

investigation.

4. Academic achievement: The highest percentage was (39.5%) for administrators, followed by (25.7%), followed by (23.4%) for professionals, with (11.4%) for engineering.
5. Number of years of experience: The results showed that the majority of the sample members reached the percentage of the least five years (63.5) in a row, followed by (29.3%) from (5-15) and from. (7.2)

The second section: The theoretical framework of the research

1. Holonic manufacturing

First: The concept of holonic manufacturing

Holonic manufacturing is considered one of the largest models being tested and developed as part of Intelligent Manufacturing Systems (IMS), and it can also be described as one of the six projects (simultaneous engineering, clean manufacturing, integration of global manufacturing companies in the twenty-first century, systematic knowledge systems, Rapid product development, and the Holonic Manufacturing System (which was approved by the Intelligent Manufacturing Systems Steering Committee (Nouri *et al*, 2017) ^[7], a manufacturing system that organizes the work of collecting modern activities in

manufacturing in order to meet customer requirements, and to be able to overcome the most prominent challenges faced by the systems. Classic, (Luca, 2022) ^[8], It is a decentralized system that organizes manufacturing activities to meet demand and overcome the culture found in traditional systems. (Frumuşanu & Epureanu, 2021) ^[9] It is a flexible, sequential technology that integrates all manufacturing activities, starting from receiving orders, through designing and manufacturing the product, and ending with marketing it to the market in order to complete an effective manufacturing project. (Jovanovic, *et al.*, 2014) ^[10].

Second: The importance of holonic manufacturing

There are a set of guiding principles and tasks for the Holonic Manufacturing System that are being developed as vital systems through which the organization is able to control the manufacturing process through what this system produces of great importance that contribute to the organization achieving its desired goals, which are:

1. In order to control freely, autonomy is granted to entities in the manufacturing system environment.
2. The Holonic manufacturing system combines the advantages of both hierarchical (sequence and variation) of manufacturing processes.
3. Comprehensive monitoring of the performance of operations. In the single structure of the production system, work is done to bring together independent entities, and this contradicts the operations system found in traditional structures. (Papp *et al.*, 2018) ^[11], Implementing and developing all individual processes through the use of goal-oriented programming. The importance of the holonic manufacturing system lies in its high ability to work in isolation from other holons on the one hand, and on the other hand to work cooperatively with other holons. This characteristic gives importance to the system in helping the organization to Achieving the goals it seeks to achieve through coordination with its surrounding environment (Piardi *et al.*, 2022) ^[12].

Third: Dimensions of Holonic manufacturing

A. Holon demand

Demand Holon deals with the product during manufacturing, as well as Demand Holon deals with the logistical operations necessary for the process of directing the product Holon, in addition to negotiating with Resource Holon and the remaining other manufacturing holons in order to achieve the best results. Demand Holon also works to respect delivery dates. Which is its primary goal (Rossouw, 2021) ^[13], to democratize demand and through. Coordination with other holons undertakes the tasks of processing the production process and makes it move in the planned and correct direction, as the demand holon plays a special role in the production process as it is a member of more than one task, in addition to being primarily responsible for external interaction with existing other holons. This type of approach is often used in demand holon-based business models due to its ease of implementation and reduced number of communication channels. (Dolnicar, 2018) ^[16].

B. Holon product

Any organization considers the product to be the final outcome of its activity, meaning that the product is considered anything that the organization can present to the

market for use or consumption for the purpose of meeting a specific need. The product is not only tangible things such as telephones or computers, but there are also services, organizations, ideas, events, and people. Among these things, we can use the product on a large scale, and it may include one or all of these entities, such as Toyota, Camry, Apple, or investment services through the Internet (Buckhorst *et al.*, 2022) ^[15], That the product holon, in light of joint cooperation, works with the other remaining holons. The product holon may exchange information with the resource holon through identification marks, as in (barcode), or through visual characteristics, as in (color or shape), for example, and in this way, it is the product holon. He knows what needs to be done, and this can be known as the essence of self-organization of the process. (Foit, *et al.*, 2017) ^[14]

2. Marketing opportunities

First:-The concept of marketing opportunities

It is a set of trends that the organization works on through new methods to outperform competitors and analyze everything new that appears in the environment and work to exploit it. (Abdullah, and Latif, 2021) ^[1] These are the conditions, situations, and events that can occur in the environment in which the company finds an attractive field for work, achieving goals, gaining market share, and superiority over competitors. (Al-Douri, 2019) ^[2], which is the possibility of realizing potential economic value for a new set of resources and market needs, arising from changes in science or technology, customer preferences, or mutual relationships between economic actors. (Urban & Wood, 2015) ^[7].

Second: The importance of marketing opportunities

Marketing opportunities are important in the life of the organization and this importance stems from their connection to the fate of the organization at the level of competition that prevails in its work environment, as the only way to confront that competition is to work to seize the opportunities (Graysa, (2017) ^[3], that marketing opportunities help the organization reach... The required results, which are what have been prepared in advance, are achieved by seizing those opportunities, not just by facing challenges. Identifying these opportunities is of great importance in the process of making marketing decisions, as well as in choosing the appropriate strategy for the nature of the opportunities available in the environment, which is usually characterized by. With rapid change (Handal and Rashad, 2019) ^[4].

Third: Dimensions of marketing opportunities

A- Marketing innovation

Because innovation within companies, due to its importance, has expanded to include all forms of business and various types of activities, and that innovation cannot be independent of marketing, so from this standpoint it can be said that the term innovation has appeared in the field of marketing, and that research began in the field of marketing innovation. Appearing since the 1980s of the last century, by focusing on scientific aspects without forming a theoretical framework for it. (Manal, 2017) ^[5] Marketing innovation is part of marketing strategies and concept, as it differs significantly from marketing methods that were traditional, and therefore the principle of commitment or reliance on marketing rules, Current methods alone are not sufficient to ensure competitiveness, success, and excellence

in crowded markets, as the fields of marketing innovation have gradually developed to include: environmental marketing, personal marketing, viral marketing, buzz marketing, word-of-mouth marketing, mobile marketing, neuromarketing, and marketing. Behavioral marketing, geographic marketing, etc. (Ungerman, *et al.*, 2018) [18].

B. Marketing efficiency

He mentioned that there is great interest in the importance of using resources optimally since ancient times, which is currently called efficiency, for many reasons, including the factor of scarcity that most resources are characterized by, and through the use of many methods and methods, which can result in many theories and concepts related to the concept of efficiency. The ways to achieve it are that marketing efforts lead to enhancing the degree of efficiency and represent an opportunity and a challenge at the same time, by working to direct the efforts of everyone working in the marketing activity, including officials. It is the discovery of opportunities in order to perform the work required of them at lower costs and achieve the best results required with the same efforts made, (Al-Murad, 2018) [6]. Marketing efficiency is linked to the production of products characterized by high quality and good productivity, which in turn is reflected in a decrease in the cost. The unit produced, which has an impact when measuring efficiency. Therefore, achieving marketing efficiency will lead to

reducing the rates of loss or damage in production processes during marketing, and this will be reflected in marketing in reducing the loss rate. (Jassam, *et al.*, 2018) [19].

The third section: the applied aspect of the research.

This research includes examining and testing the main measurement tool for collecting data (the questionnaire) before and after distributing it to the research sample, with the aim of ascertaining the extent of its ability to measure and its suitability to the reality of the Salah al-Din Municipal Directorate, the study sample, as follows:

First: coding and describing the research variables

The research variables include two main variables: -

1. The first variable is the independent variable, Holographic Manufacturing, which is measured by two sub-dimensions: (demand, product).
2. 2-The second variable is the dependent variable, marketing opportunities, which was measured by two sub-dimensions: (marketing innovation, marketing efficiency). These variables were measured based on approved ready-made standards that were presented in the methodology of the current study. Table (2) shows the main research variables, their sub-dimensions, and their symbols according to their English terms and the number of paragraphs in each dimension.

Table 2: Coding and description of the variables and their sub-dimensions

Number of paragraphs	Indicator symbol Statistician	Dimensions sub	Main variables
7	YY1	Sustainable innovation	Marketing opportunities
7	YY2	Marketing efficiency	
5	XX1	Holon demand	Holon manufacturing
5	XX2	Holon product	

Source: Prepared by the researcher based on the questionnaire form.

Second: Testing the reliability of the measurement tool

The reliability test is one of the important factors or characteristics that must be present for the validity of using a particular measure. It means that the measure is reliable and reliable. Validity and reliability relate to the extent to which the measure provides a stable and consistent result. It is said that the measure or test can be relied upon if the measurement that was conducted under repeated conditions is Fixed will give the same result, and the scale has high reliability in consistency if its items measure the same construct. Cronbach's Alpha scale is one of the most important scales, It is used to measure the stability of the questionnaire and is the most famous and common among researchers in various fields of scientific research. If the test value is less than (60%), this is considered a weak indicator of reliability, while the reliability is considered acceptable if its value exceeds (70%), and the reliability rate is considered good if It reached (80%) and more, To assess the accuracy of the scale and the consistency of the questionnaire for the present variables, the researcher utilized the Cronbach Alpha test. The coefficient values for the main study variables and their sub-dimensions varied from 0.974 to 0.832. These values are deemed acceptable in descriptive research due to their great magnitude relative to Cronbach's values. Alpha standard. Additionally, it was demonstrated that the structural validity coefficient values were very high and met the permitted levels. Consequently, the research tool is deemed legitimate for its ultimate application due to its precision, dependability, and high consistency. Table (3) displays the reliability and validity

coefficients for the measuring instrument utilized in the present investigation.

Table 3: Validity coefficient and Cronbach's alpha coefficient for the questionnaire

Cronbach's alpha coefficient	Honesty coefficient	Variables and dimensions
0.887	0.942	Marketing innovation
0.838	0.915	Marketing efficiency
0.858	0.926	Holon request
0.832	0.912	Holon product
0.974	0.987	Total for the questionnaire as a whole

Source: Prepared by the researcher based on the outputs of the SPSS V.29 program.

The table above indicates that the Cronbach's alpha value varied from 0.974 to 0.832. These numbers suggest that the questionnaire has acceptable levels of dependability and reliability. These results validate the form's suitability for investigation in subsequent phases. The percentage is 60%.

Third: Description and statistical analysis of the research variables

1. Description and diagnosis of the study variables.

The researcher performed a descriptive analysis using the statistical program SPSS Ver. 22 to describe the variables and dimensions of the study. The analysis aimed to identify the arithmetic averages, standard deviations, highest value,

and lowest value that explain the characteristics of the study variables based on the respondents' opinions. The results are

presented in the table.

Table 4: Analyzed the factors and dimensions of the research in a descriptive manner.

Intensity of approve	Relative importance%	highest value	lowest value	standard deviation	Arithmetic mean	Variables and dimensions
High	80.38%	5.000	1.000	0.774	4.019	Marketing innovation
High	77.69%	5.000	1.286	0.686	3.885	Marketing efficiency
High	81.92%	5.000	2.000	0.682	4.096	Holon demand
High	81.58%	5.000	1.800	0.668	4.079	Holon product

Source: Table prepared by the researcher using the statistical program (SPSS).

As for the independent variable, holonic manufacturing, it is also noted that there is a high agreement according to the opinions of the respondents about holonic manufacturing. It recorded the highest value according to the relative importance ratio of (81.92) and with an arithmetic mean value equal to (4.096) for the holonic order. As for what is related to the holonic product, it comes in second place. It was Its relative importance is equal to (81.58) with an arithmetic average of (4.079). This agreement confirms the decrease in the level of dispersion and variation between opinions, This is evidenced by the decline in the standard deviation number. As for, The dependent variable is marketing opportunities. It is also noted that there is a high agreement according to the opinions of the respondents about marketing opportunities according to the relative importance of (80.38) and an arithmetic mean value equal to (4.019) for marketing innovation. As for marketing efficiency, its relative importance was equal to (77.69) and an arithmetic mean value. (3,885) This agreement confirms

the decrease in the level of dispersion and variation between opinions, This is evidenced by the drop in the standard deviation value.

Fourth: Testing the relationship hypotheses

The paragraph included two main hypotheses as follows:

The primary hypothesis posits that there exists a strong and meaningful relationship between holonic production needs and marketing potential inside the industrial organizations under investigation. This hypothesis gives rise to the following sub-hypotheses:

The first sub-hypothesis posits that there exists a positive and ethically relevant relationship between the demand holon and marketing opportunities in the industrial entities under investigation. In order to examine this hypothesis, the Pearson correlation coefficient was computed to ascertain the direction and magnitude of the association between the demand holon dimension and marketing opportunities.

Table 5: The relationship between the dimension of demand and marketing opportunities.

Marketing opportunities	Marketing efficiency	Marketing innovation	Variables and dimensions	
0.844**	0.691**	0.738**	Pearson	Holon demand
0.000	0.000	0.000	Moral	

Source: Table prepared by the researcher with the approval of the statistical program.

It is noted from Table (5) that there is a positive moral correlation between the demand dimension and the dependent variable (marketing opportunities), which indicates that the availability of the demand dimension will be accompanied by an increase in marketing opportunities. It is also noted that there is a positive moral relationship between the dimension. Holon demand and dimension (marketing innovation, marketing efficiency). Therefore, it can be said that the first sub-hypothesis is accepted.

Second sub-hypothesis: The examined industrial organizations exhibit a strong and meaningful association between product identity and marketing prospects. In order to evaluate this hypothesis, the Pearson correlation coefficient was computed to ascertain the magnitude and direction of the association between the product dimension and marketing opportunities. Table 6 displays the outcomes of this examination.

Table 6: The relationship between the product dimension and marketing opportunities.

Marketing opportunities	Marketing efficiency	Marketing innovation	Variables and dimensions	
0.783**	0.625**	0.692**	Pearson	Holon product
0.000	0.000	0.000	Moral	

Source: Table prepared by the researcher using the statistical program (SPSS).

It is noted from the table that there is a positive moral correlation between the (product holoon) dimension and the dependent variable (marketing opportunities), which indicates that the availability of the (product holoon) dimension will be accompanied by an increase in marketing opportunities. It is also noted that there is a positive moral relationship between the product holoon dimension and the dimensions of the marketing opportunities variable. The relationship, in terms of strength according to the sequence, was strongest with the (marketing innovation) dimension and finally with the (marketing efficiency) dimension. Therefore, it can be said that the second sub-hypothesis is

accepted.

Testing the impact hypotheses fifth

The paragraph included two main hypotheses as follows:

The second main hypothesis: There is a significant influence relationship between the requirements for holonic manufacturing and marketing opportunities in the industrial organizations investigated, and the following sub-hypotheses emerge from it:

The first sub-hypothesis posits that there exists a substantial causal link between demand and marketing possibilities inside the industrial entities under investigation. In order to

examine this hypothesis, a basic linear regression equation was created to estimate marketing opportunities based on the (Demand Holon) dimension. This was done to assess the level of effect that the latter has on marketing chances. The table displays the outcomes of this examination.

Table 7: Results of the effect of demand holon on marketing opportunities.

Sig.	F value	R ²	Variable
0.000	242.587	0.595	(Holon demand)
Sig.	T value	Regression coefficient β	
0.000	15.575	0.771	

Source: Table prepared by the researcher with the approval of the statistical program

It is noted from the table above that the validity of the simple linear regression equation model is stable in terms of the value of (F) amounting to (242.587) at a relevant significance level (5%), which means the possibility of estimating marketing opportunities in terms of the dimension (holon of demand), and this confirms the validity of the model, while it indicates The value of (T) of (15.575) is at a significant level of significance (5%) regarding the moral and validity of the effect, while the positive beta (β) value of (0.771) indicates the positivity of the effect, meaning that whenever the dimension (Holon of Demand) is available, this will lead to Strengthening and expanding the scope of marketing opportunities in the organizations investigated, as the value of the coefficient of determination (R2) of (0.595) indicates that the dimension (First: Holon of Demand) explains (59.5%) of the changes that occur in the variable of marketing opportunities, so it can be said that it is accepted. The first sub-hypothesis.

The second sub-hypothesis: There is a positive, significant

influence relationship between the product identity and marketing opportunities in the industrial organizations investigated.

In order to examine this hypothesis, a basic linear regression equation was created to estimate marketing opportunities based on the (Product Holon) dimension. The purpose was to ascertain the degree to which the latter factor impacts marketing chances.

Table 8: Results of the effect of product holon on marketing opportunities.

Sig.	F value	R ²	Variable
0.000	261.860	0.613	(Holon product)
Sig.	T value	Regression coefficient β	
0.000	16.182	0.783	

Source: Table prepared by the researcher using the statistical program (SPSS).

Table (8) shows that the simple linear regression equation model is stable, as indicated by the (F) value of (261.860) at a significance level of 5%. This means that it is possible to accurately estimate marketing opportunities related to the dimension (Second: Product Holon), thus confirming the validity of the model. While the (T) value of (16.182) at a significant level of significance (5%) indicates the significance and validity of the effect, while the positive beta (β) value of (0.783) indicates the positivity of the effect, meaning whenever the dimension (Second: Holon) is present. The product) will lead to enhancing and expanding the scope of marketing opportunities in the organizations studied, and the value of the coefficient of determination (R2) of (0.613) indicates that the dimension (second: the product) explains (61.3%) of the changes that occur in the opportunity variable. Marketing, so it can be said that the second sub-hypothesis is accepted.

Table 9: Summary of the study hypotheses

test result	Hypothesis	Sequence
Acceptable	The first main hypothesis: There is a positive, significant correlation between holonic manufacturing requirements and marketing opportunities in the researched industrial organization.	H1
Acceptable	The second main hypothesis: There is a positive, significant influence relationship between holonic manufacturing requirements and marketing opportunities in the researched industrial organization.	H2

Source: The table was prepared by the researcher

Conclusions and recommendations

First: Conclusions.

1. -The order holon fulfills prominent and vital tasks in the holon manufacturing system, as it is tasked with carrying out the tasks assigned to it at the right time and in the correct manner. It also manages the physical products that have been produced, product maintenance models, and all logistical information related to the task.
2. Organizations that seek to implement the holonic manufacturing system must do more to be able to produce products that can be described as being of distinguished quality that will help them to be comparable in their work to the products of the organizations' competitors. This is done through the holonic system focusing its focus on one of its components, which is the product's holon. As this component helps reduce cost, time, and control production capacity, which makes it important in a language that makes it the most important component in the system.
3. The holonic manufacturing system is considered one of

the modern concepts in production in the field of manufacturing, which requires industrial companies to focus their attention towards it in order to improve the efficiency and effectiveness of their production processes.

4. The role of the holonic system is highlighted by achieving efficient use of available resources in manufacturing processes, which achieves savings for the factory, whether in (costs, quality, time, and improving productivity), and this is what industrial companies aspire to.

Second: Recommendations

1. The management of the researched organizations must increase their interest in the components of the Holon system, which are (Demand Holon, Product Holon) in an effort to be able to produce products that meet customers' desires and needs in terms of appropriate (cost and quality), in addition to the economic benefits that the organizations reap. As a result of the correct application of the Holonic system at work through its five components.

2. Set a timetable for the tasks through which the products are manufactured in the researched organizations. For production parts that are determined through production line scheduling and serialization.
3. Determine specifications in production processes and products, as product specifications describe the physical characteristics of the product, while production process specifications describe what the product components must adhere to when manufacturing the product.
4. The management of organizations must strive to continuously (design, produce, and develop) their products by seizing opportunities that give them the ability and strength to confront similar competitors in the market and outperform them.

Reference

1. Abdullah MN, Latif TO. The Role of Entrepreneurial Marketing in Investing in Marketing Opportunities: An Analytical Study of the Opinions of Managers in the Organo National Group of Companies for Medical Services and Supplies in the City of Erbil. *Tikrit Journal of Administrative and Economic Sciences*. 2021;17(55):45-62.
2. Al-Douri OAMR. Managing Marketing Opportunities Within the Framework of Adopting Requirements for Effective Manufacturing of Pharmaceutical Products: An Applied Study in the General Company for the Manufacture of Pharmaceuticals and Medical Supplies in Samarra. Master's thesis in Business Administration, College of Administration and Economics, Tikrit University; c2019.
3. Gharaisa R. Mechanisms for Exploiting Marketing Opportunities in a Service Institution to Enter the Monopolistic Competition Market: A Case Study of Al-Awael Private School Annaba. Master's thesis in Economic Sciences, Faculty of Economic, Commercial and Management Sciences, Kasdi Merbah University - Ouargla; c2017. Algeria.
4. Handal QA, Omar ABM. Managing Marketing Opportunities Within the Framework of Adopting Requirements for Effective Manufacturing of Pharmaceutical Products: An Applied Study in the General Company for the Manufacture of Pharmaceuticals and Medical Supplies in Samarra. *Tikrit Journal of Administrative and Economic Sciences*. 2019;15(46):170-188.
5. Manal K. The Role of Marketing Innovation in Strengthening an Organization's Competitiveness: A Case Study of Mobile Phone Customers in the State of Setif. Doctoral thesis in Economic Sciences, Faculty of Economic, Commercial and Management Sciences, Farhat Abbas University of Setif; c2017. Algeria.
6. Al Murad YM. The Possibility of Enhancing Marketing Efficiency in Light of Marketing Alliances: An Exploratory Study of the Opinions of a Sample of Employees in the National Bank of Iraq. *Tanmiya Al-Rafidain Magazine*. 2018;37(118):23-39.
7. Nouri HE, Driss OB, Ghédira KO. Variational Genetic Algorithm for NP-Hard Scheduling Problem Solution. *Procedia Computer Science*. 2017;103:52-58.
8. Luca A. Developing a Holonic Shop Floor Control System Using MANPro for Agent-to-Agent Communications. *Intelligent Systems Group; SOS-Conference*; c2022.
9. Frumușanu G, Epureanu A. Architectural Hierarchy of Next Generation Manufacturing System. *International Journal of Modeling and Optimization*. c2021; accepted for publication.
10. Jovanovic M, Zupan S, Starbek M, Prebil I. Virtual Approach to Holonic Control of the Tyre Manufacturing System. *Journal of Manufacturing Systems*. 2014;33(1):39-48.
11. Papp J, Tokody D, Flammini F. From Traditional Manufacturing and Automation Systems to Holonic Intelligent Systems. *Procedia Manufacturing*. 2018;22:109-116.
12. Piardi L, Leitão P, Costa P, de Oliveira AS. Fault-Tolerance in Cyber-Physical Systems Using Holonic Multi-Agent Systems. In: Borangiu T, Trentesaux D, Leitão P, Cardin O, Joblot L, editors. *Service Oriented, Holonic and Multi-Agent Manufacturing Systems for Industry of the Future. SOHOMA 2021. Studies in Computational Intelligence*. Springer; c2022, 1034. Cham.
13. Rossouw JJ. An ARTI Holonic Architecture Implementation for Table Grape Production Management. Master's thesis, Stellenbosch University; c2021.
14. Foit K, Banas W, Gwiazda A, Hryniewicz P. The Comparison of the Use of Holonic and Agent-Based Methods in Modeling of Manufacturing Systems. *IOP Conference Series: Materials Science and Engineering*. 2017;227:1-10. 14–17 June, Sibiu, Romania.
15. Buckhorst AF, do Canto MKB, Rabelo RJ, Schmitt RH. A Holonic Control System Approach for Line-less Mobile Assembly System Operations. *Procedia CIRP*. 2022;107:1449-1454.
16. Dolnicar S, Grün B, Leisch F. Market Segmentation Analysis. Published with the support of the Austrian Science Fund (FWF): PUB 580-Z27. eBook; 2018. <https://doi.org/10.1007/978-981-10-8818-6>
17. Urban B, Wood E. The Importance of Opportunity Recognition: Behavior and Motivators of Employees When Engaged in Corporate Entrepreneurship. *Journal of Business Economics and Management*. 2015;16(5):980-994.
18. Ungerma O, Dedkova J, Gurinova K. The Impact of Marketing Innovation on Enterprises in the Context of Industry 4.0. *Journal of Competitiveness*. 2018;10(2):132-148.
19. Jassam QT, Ali N, Shukur AS. Economic Study to Measure the Efficiency and Marketing Margins of the Main Vegetable Crops in Baghdad Province for the Agricultural Season. *Journal of Agriculture and Veterinary Science (IOSR-JAVS)*. 2018;11(7):11-15.