

# THE ROLE OF STRATEGIC INFORMATION SYSTEMS IN BUILDING STRATEGIC ALLIANCES: APPLICATION TO AL-HIKMA PHARMACEUTICALS COMPANY

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## ABSTRACT

*The objective of this study is to demonstrate the role that strategic information systems can play in building a strategic alliance at Hikma Pharmaceutical Company in Jordan by analyzing the company's annual report in 2017. The analysis is based on the fact that the Strategic Information System (SIS) provides three types of strategic information (environmental information, competitive information and internal information). Environmental information is used to analyze five types of external environmental factors (technological factors, economic factors, social factors, legal factors and international factors). Competitive information is used to analyze three essential elements (competitors, suppliers, and customers). While internal information is used to analyze four major organizational activities (financial activity, human resources activity, market activity and production activity activity). Which in turn should define the proposed five strategic criteria; as the main determinants of the Alliance's strategic value. In the light of this analysis, the researcher designed an intellectual framework, which was adopted in the preparation of a future vision of what the management of the pharmaceutical company wisdom to adopt in order to activate the role of strategic information systems in the construction of strategic envelopes to enhance the strategic value of these alliances.*

**Keywords:** Strategic Alliance, Strategic Information System (SIS), Strategic Value of the Alliance.

## INTRODUCTION

Strategic Information System (SIS) and Strategic Alliance are very important competitive tools for organizations. It is critical for organizations to understand how to build competitive advantages from the employment of the Strategic Alliance and the Strategic Information System (SIS). This understanding is increasingly important in the international markets where the Hikma Pharmaceuticals Company operates. Strategic alliances needs to be determined in a sound and effective way by identifying the Strategic Criteria which determinants of the strategic value of the alliance. The potential for Strategic information systems is not limited to any particular role or process within the organization, although it might be valued more highly in some areas than others.

The main objective of SIS (Rubel et al., 2014) is to identify the clear relationship between the organization's business plans and IS plans to better achieve goals and objectives and provide closer management control for important IS/IT systems.

There is scope for strategic information systems to make significant gains for the organization, and in the forefront of these gains is its role in building strategic alliances. Therefore, Strategic information systems can be seen as tools in this direction. Studies have

provided a variety of evidence supports the role of Strategic Information System (SIS) in building strategic alliances.

In this context, the main purpose of this study is to highlight the role of Strategic Information Systems (SIS) in supporting and building strategic alliances; in order to obtain the higher level of Strategic Value of the Alliance by Al Hikma Pharmaceutical Company.

### **Study Problem**

In the light of analyzing the content of the paragraphs contained in the introduction to the report of the Al-Hikma Pharmaceutical Company, the researcher found that it contains a scientific paradox that is difficult to justify, when it indicated that the company's future data are inherently dependent on current expectations and expectations about future events, and therefore they are subject to assumptions, risks and uncertainties that exceed Hikma's ability Precise control or estimation that can cause actual results or events that are materially different from those expressed or implied from future data. Consequently, no assurance can be given that any special expectation will be fulfilled.

The forward-looking statements contained in this declaration regarding past trends or activities should not be considered as a representation that these trends or activities will continue in the future. The scientific paradox here is the inconsistency of the contents of these paragraphs with the consensus of the specialists on the role of strategic information systems and their applications. Researchers point out that strategic information systems will contribute to building a flexible operational framework to support organizational capabilities, improve organizational performance, and achieve sustainable competitive advantages and brand differentiation. In addition, Strategic Information System (SIS) provides the opportunity to enhance the organization's ability to manage risks and improve the efficiency of decision-making process in various hierarchical levels. In addition to enabling leaders to discover strategic opportunities and align planning for the strategic use of information systems with the overall strategic planning process of the organization (Alshubaily & Altameem, 2017). At the forefront of these, the role of Strategic information systems in building strategic alliances.

### **Objectives of the study**

The study seeks to achieve the following objectives:

1. Looks at various definitions that have been put forward for strategic information systems and strategic alliances.
2. Provide a conceptual framework for these two concepts and shows how they are linked with each other.
3. Recognize the strategic role of information systems in building strategic alliances in Al-Hikma Pharmaceuticals Company through Analytical approach.
4. Provide the necessary recommendations to enhance the strategic role of information systems in building strategic alliances in Al-Hikma Pharmaceuticals Company, in light of the study conclusions.

### **What is Strategic Information System?**

The concept of strategic information systems is one of the contemporary concepts of the historical development of the applications of information systems in different fields. This concept is related to facilitating the management of strategic planning, which enables the organization to achieve its objectives while recognizing changes in the internal and external

environments that contribute to generating real threats and opportunities. Thus, strategic information systems contributing to the formulation of their strategic objectives through the provision of appropriate information (Turoff et al., 2004).

In the past, information has been used as a specific decision-making tool. In today's business environment, fundamental changes have taken place in the role of information systems, so that information has become a weapon of competition and a strategic resource (Al-Tae & Al-Khafaji, 2016).

Turoff et al. (2004) points out that our modern world is characterized by complexity and speed of change. Strategic information systems are an important tool in dealing with this world. Within this approach, many research and development efforts have been made in recent years, focusing on the design, construction, use and evaluation of strategic information systems that facilitate the task of the organizations' departments in preparing for and responding to crises.

Strategic information system has been looked at from many different perspectives, particularly in the Information system (IS) literature. Hemmatfar et al. (2010) define strategic information system as “*Any IS has the ability to change objectives, processes, products or environmental relationships to help the organization gain competitive advantage or reduce competitive disadvantages*”.

The strategic information system also can be defined as an information system that creates or enhances the company's competitive advantage or changes the industry structure by fundamentally changing how business is conducted. It is conventional information systems used in innovative ways (Rubel et al., 2014).

### **Strategic Alliance Concept**

There is no comprehensive definition for a strategic alliance, so the term strategic alliance is subject to various interpretations that are reflected in a wide range of definitions that have been introduced and applied by different researchers. This study does not provide solutions to different perspectives, but to use a variety of perspectives to understand the contexts in which strategic alliances in Al-Hikmah Drug Company must be held. It has become common for multinationals today to use cross-border mergers and acquisitions, or to form cross-border strategic alliances in order to expand their business internationally (OECD, 2001).

The strategic alliance has been defined in several different ways over the past years. So, although most of the definitions focused on two main aspects: the concept of strategic alliances and their target, there is a difference in these two aspects between these definitions. Four particular definitions seem relevant to the Strategic decision makers in the organizations' working environment:

The first of these definitions provides insight into meaningful partnership relationship in the concept aspect to achieve several targets, Strategic alliance is defined as “*meaningful partnership relationship between two or more organizations to share goals, and strive hard to achieve mutual benefits, and working with the highest level of cooperation and reliability*”. (Pansiri, 2005)

The second definition focused on partnership as a concept and on achieving two specific targets when Strategic alliance were defined as “*partnership*” that offers businesses a chance to join forces for a mutually beneficial opportunity and sustained competitive advantage (Wei, 2007).

The third definition emphasizes cooperation rather than competition as a concept and achieving two specific targets, where Strategic alliance is defined as establishing cooperation rather than competition and conflict. Often it leads to joint efforts in controlling the risks and threats and share the profits, benefits and gains (Chen et al., 2008).

While, the fourth definition refers to any arrangement as a concept and to achieving specific goals. Where Strategic alliance are defined as *“any arrangements in which two or more parties come to share resources and expertise, to achieve specific goals”* (Luvison & Man, 2015).

Expressing the importance of an alliance is not enough unless it is coupled with the strategy, because the alliance process is not a transient thing, or is merely a desire to work with others only, but the alliance represents a holistic view of multiple aspects that allow the organization to achieve the expected goals well, and identify the means necessary to achieve this alliance. The strategic alliance means the presence of allied organizations that provide real support to continue the activity and expand in the future (Al-Tae & Al-Khafaji, 2016).

The strategic alliances vary widely, and their diversity only governs the ability of allies to define their desires. The Alliance could be involved in sales or processing of production and labor inputs, could be for the purpose of providing consultants, and could be investment, production or technology (Kawar, 2018).

Strategic alliance may be the coalition in the capital or in a joint organization or in all of them, with the consequent joint commitments to allied parties, and forms of informal written cooperation, and the kind of unwritten cooperation, with the exercise of control of one party over the other in the areas of participation or contracting. Accordingly, the strategic alliance allows the substitution of cooperation rather than competition, thus enabling organizations to utilize available capabilities to achieve common goals, rather than adopting competition, which may lead to the withdrawal of one of the two organizations from the market due to their inability to face this competition (Luvison & Man, 2015).

### **The linkages between Strategic Information System, and Strategic Alliance**

Information system has to contribute to the successful implementation of the strategic alliance; therefore, information system must be strategic in nature. However, (Arvidsson et al., 2014) Argues that the full potential of strategic information systems is unlikely to be realized without understanding that the strategic impact of such systems is not always achieved even when they are strategically aligned with the successful implementation of information technology. SIS includes the use of information and communications technology to develop the core capabilities of the organization that enable it to achieve strategic advantages over the competitive forces it faces in the global market. The most important of these capabilities is strategic alliances (Rubel et al., 2014).

In the same direction (Ankrah, 2014) sees that understanding the role of strategic information systems requires looking at a set of evidence from various sources. There are somewhat few contributions in management literature on the role of the strategic information system (SIS) in organization strategic alliances. Most literature has focused on the role of these systems in achieving competitive advantage.

Strategic information systems play a distinctive role in describing the characteristics of strategic alliances and diagnosing their advantages. As well as the creation of information and tools to help examine the motivations of business enterprises to belong to a different form of alliances, and help identify the factors identified for its success in responding to the interests of

the parties involved, including strategic partners. These roles are integrated and sustainable in order to maximize the value of the business of companies at the level of one country and countries globally. The aspects of these roles can be identified as follows (Kawar, 2018):

### **Describe the Characteristics of Strategic Alliances and Identify its Advantages**

Jones (2007) described the Strategic Alliance as an agreement that requires two or more groups of companies to share their resources to develop a joint venture to invest in business opportunities. For example, in 2005, Microsoft joined a strategic alliance with MTV to integrate its windows. Companies are linked by a strategic alliance that shares their resources to develop joint ventures that help to leverage the strengths of both alliances. While (Hill et al., 2014) described the Strategic Alliance as a long-term agreement between two or more groups of companies to develop joint ventures for interest products for all relevant companies. The Global Strategic Alliance is also described as cooperative agreements between companies from different countries that actually compete or are likely to compete in the future. Alliance structuring translates its role in generating opportunities to maximize partner profitability.

Trott (2005) identifies the need for organizations to think about many of the advantages of strategic alliances, most importantly: the need to share the notification related to the objectives of the allied companies, providing the allied companies with abundant resources and expanding access to them, improve the capacity of the Alliance and expand its role in the creation of a new product, access to new technologies and access to new markets, search for new scenarios to stay in the global markets and develop the virtual state of interaction and participation with supplier networks to achieve competitive advantage. Pearce et al. (2000) identified features that urged global business to adopting an alliance strategy are improve business focus, increasing global and international capacities, maximizing the benefits of business reengineering, risk sharing and the ability to use the resources for a variety of purposes.

Wheelen & Hunger (2008) have linked the thinking of managing companies or business units with multiple alliances with the features like, access to technology to enhance manufacturing capabilities, obtain opportunities to expand their own markets, contribute to reduce financial and political risks and learn new abilities.

### **Support to Identify the Motives for Forming Strategic Alliances**

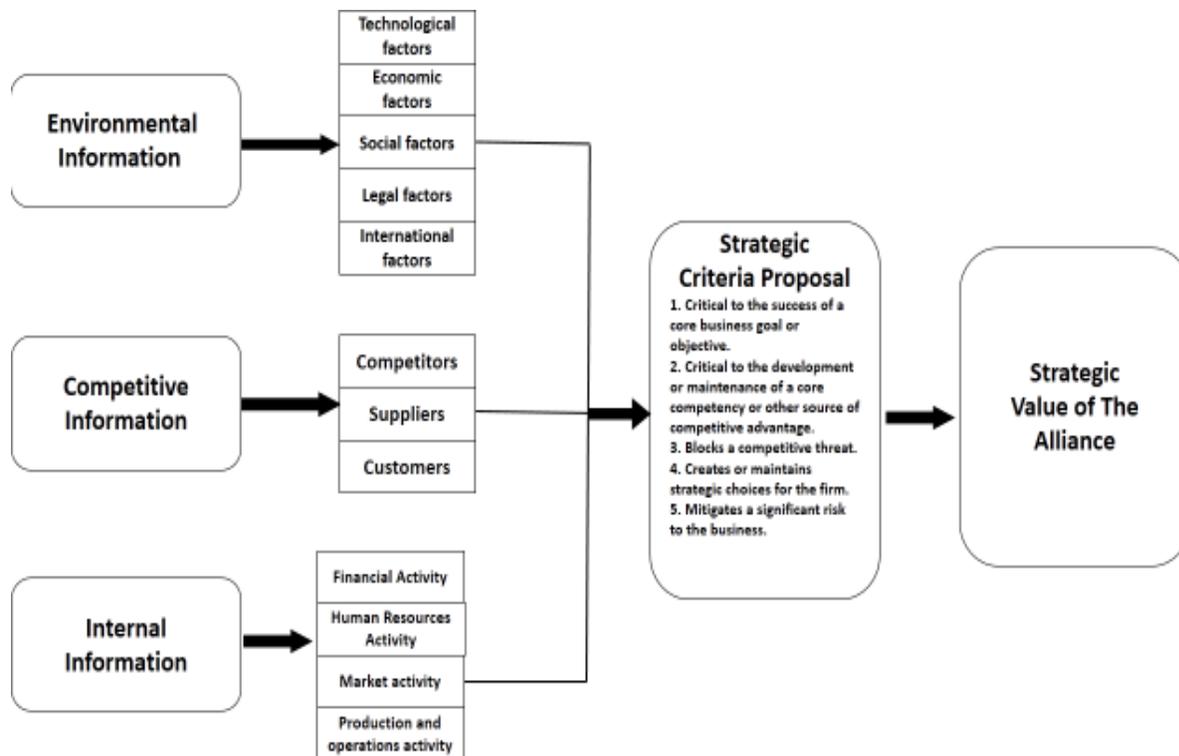
Cravens & Piery (2006) emphasized that the formation of strategic alliances as a language of interrelationship between rival businesses is driven by a set of motives, the most important: market access motives and other motives related to market positioning, motives related to the product/market, motives related to the structure of the market, motives related to market entry time, motives related to the efficient use of resources, motives related to reducing and increasing resources and other motives related to enhancing skill. On the other hand, Schilke & Cook (2015) identified three types of the motives for forming strategic alliances: the need to mobilize the critical factors that lead the company to reduce costs and improve what is offered to the customer, an investment that companies use in a productive way, especially when each partner is specialized in certain activities, it provides an opportunity to meet these capabilities and their interaction and learning from partners to develop capabilities with their wealth.

## Facilitating the Diagnosis of Determinants of Successful Strategic Alliances

The success of strategic alliances is reflected in the benefits that allied companies have. Success depends on overcoming many of the determinants that strategic information systems contribute to their diagnosis, including clarity of strategic purpose, ability to deliver, determining expected performance, possession of will and information, clarity of objectives, governance and arrangements of the Organization and trust among companies in the use of resources and capabilities to achieve the goal of the alliance (Schilke & Cook, 2015).

### Study Conceptual Model

Based on the literature that are closely related to this study, the conceptual model is proposed, Figure 1 shows the components of the study conceptual model.



**FIGURE 1**  
**STUDY CONCEPTUAL FRAMEWORK**

This model will be used for identifying and analyzing the nature of the problem, detailing exactly what is going to be studied and provides an overview of the way through which Strategic Information System (SIS) can Effect on Strategic Alliance. It is clear from this Figure 1, that Strategic Information System (SIS) provide three types of strategic information (Environmental Information, Competitive Information and Internal Information). Environmental information is used to analyze five types of external environmental factors (Technological factors, Economic factors, Social factors, Legal factors and International factors). Competitive information is used

to analyze three intrinsic elements (Competitors, Suppliers and Customers). While internal information is used to analyze four major organizational activities (Financial Activity, Human Resources Activity, Market activity and Production-operations activity). Which in turn should identify the five Strategic Criteria Proposal suggested by Wakeam (2003) as the main determinants of the strategic value of the alliance. These criteria have been used to analyze whether this company has forged real strategic alliances and as a guide to the development of future strategic alliances to improve the role of strategic information systems in this direction.

### **Analytical Approach**

This study considers how Strategic Information System (SIS) effect on strategic alliances. There are significant challenges to developing a conceptual framework that adequately explains the contribution Strategic Information System (SIS) make to organization strategic alliances:

The full potential of strategic information systems is unlikely to materialize without realizing the significant challenges facing the construction of the SIS system, and without the conviction that strategic influence may not always materialize, even when the SIS system is strategically aligned, and successful in applying ICTs (Alshubaily & Altameem, 2017).

There are few results of studies that support the analysis of the role of strategic information systems in the formation of strategic alliances. This partly reflects the nature of this role, which is difficult to define and measure. In this study, we had to rely on the results of studies designed for other purposes such as the role of strategic information systems In supporting the decision-making process, increasing organizational efficiency and effectiveness, enhancing quality, reducing costs, creating new strategic opportunities, enhancing response capacity for change, increasing organizational competitiveness, supporting innovation, improving market share, creating accumulation of knowledge, creating resources and flexibility. Although these studies provide good data, they cover some of the many and varied problems that arise. In particular, trying to adopt structures, processes and practices to keep pace with the institutional environment that reflects society's perception of what is right, and acceptable, and illegal behaviors, practices and acts (Pansiri, 2005).

The following analytical approach was developed to determine the extent to which strategic information systems are being used by Al Hikma Pharmaceuticals as a strategic tool in achieving strategic alliances, as well as identification which of the five Strategic Criteria Proposal suggested by Wakeam (2003) as the main determinants of the strategic value of the alliance has been achieved.

### **Environmental Information**

Includes strategic information covering five types of environmental factors: Technological factors, Economic factors, Social factors, Legal factors and International factors. This strategic information can be used to mitigate 28 types of risks and uncertainties in Al-Hikma Pharmaceuticals PLC reports. These risks and uncertainties are distributed among the five factors as shown in Table 1.

<b>Table 1 USE OF ENVIRONMENTAL STRATEGIC INFORMATION IN DEALING WITH ENVIRONMENTAL FACTORS TO ADDRESS RISKS AND UNCERTAINTIES MITIGATING ACTIONS</b>	
<b>Factors</b>	<b>Risks and uncertainties mitigating actions</b>
Technological	<ol style="list-style-type: none"> <li>1. Development of capacity, diversification of capability through differentiated technology, and investment in local markets.</li> <li>2. IT organizational structure designed to enable coordinated, consistent and comprehensive enterprise approach.</li> <li>3. Industry-standard information security solutions and best practice processes adopted and adapted for local and Group requirements.</li> <li>4. Cyber-risk activity monitored and changes implemented as necessary to combat evolving threats.</li> <li>5. Partnership established with strategic third parties to implement and maintain a robust Group wide information security program.</li> <li>6. Investment in enterprise-wide standardization initiative incorporating data management, access and process control and risk management</li> </ol>
Economic	<ol style="list-style-type: none"> <li>1. Post-transaction reviews highlight opportunities to improve effectiveness of processes.</li> <li>2. Program being rolled out to enhance our ability to respond effectively to crises, and to expedite the restoration of critical processes after disruption.</li> <li>3. Where it is economic and possible to do so, the Group hedges its exchange rate and interest rate exposure.</li> </ol>
Social	<ol style="list-style-type: none"> <li>1. Review of organization design, structures and accountabilities to maintain empowerment in decision making and bring appropriate level of governance</li> <li>2. Investment and group alignment of corporate responsibility and ethics through transparent reporting and compliance with global best practices and strategic industry and community partnerships.</li> <li>3. Board level oversight from the Compliance, Responsibility and Ethics Committee.</li> <li>4. Anti-bribery and corruption, Sales and marketing, and other compliance programs implemented and monitored through internal compliance assessments, Sales and marketing, and other compliance programs implemented and monitored through internal compliance assessments.</li> </ol>
Legal	<ol style="list-style-type: none"> <li>1. Internal and external monitoring for early detection and monitoring of issues that may impact reputation.</li> <li>2. Development of third party due diligence and oversight program.</li> <li>3. Strengthening trade compliance capability to ensure compliance and drive efficiency.</li> <li>4. Central oversight being established of systems, processes, and capabilities to enhance our Group-wide resilience and preparedness.</li> <li>5. Corporate insurance program reviewed and updated to ensure appropriate coverage of high impact low likelihood events.</li> <li>6. Facilities are maintained as inspection ready for assessment by relevant regulators.</li> <li>7. Continued environment and health certifications.</li> <li>8. Management obtains external advice to help manage tax exposures and has upgraded internal tax control systems.</li> </ol>
International	<ol style="list-style-type: none"> <li>1. Collaboration with external partners for development and in-licensing partnerships</li> <li>2. Globalizing communication and corporate affairs capabilities.</li> <li>3. Active participation in international anti-corruption initiatives.</li> <li>4. Engagement with key third parties involved in preparedness, response and recovery.</li> <li>5. Quality culture driven throughout the organization by global Quality office initiatives, and regularly reinforced by communication from senior executives.</li> <li>6. Global implementation of quality systems that guarantee valid consistent manufacturing processes leading to the production of quality products.</li> <li>7. Global pharmacovigilance program in place and being enhanced.</li> </ol>

## Competitive Information

Competitive strategic information is used in dealing with three target groups, Competitors, Suppliers and Customers. This strategic information can be used to mitigate 9 types of risks and uncertainties in Al- Hikma Pharmaceuticals PLC reports. These risks and uncertainties are distributed among the three target groups as shown in Table 2.

## Internal Information

<b>Table 2</b>	
<b>USE COMPETITIVE STRATEGIC INFORMATION IN DEALING WITH TARGET GROUPS TO ADDRESS RISKS AND UNCERTAINTIES MITIGATING ACTIONS</b>	
<b>Groups</b>	<b>Risks and uncertainties mitigating actions</b>
Group One Competitors	<ol style="list-style-type: none"> <li>1. The mergers and acquisitions team undertake extensive due diligence of each acquisition in partnership with external advisors including financial and legal advisors, investment banks, and industry specialists in order to strategically identify, value, and execute transactions</li> <li>2. Executive Committee reviews major acquisitions before they are considered by the Board. 7.3 The Board is willing and has demonstrated its ability to refuse acquisitions where it considers the price or risk is too high.</li> <li>3. Dedicated integration project teams are assigned for the acquisition, which are led by the business head responsible for proposing the opportunity. Following the acquisition of a target, the finance team, the management team and the Audit Committee closely monitor its financial and non-financial performance.</li> </ol>
Group Two Suppliers	<ol style="list-style-type: none"> <li>1. Maintaining alternative API suppliers for the Group's top strategic products, where possible.</li> <li>2. Rigorous selection process for API suppliers and focus on building long-term supply contracts.</li> <li>3. Utilizing supply chain models to maintain adequate API levels.</li> </ol>
Group Three Customers	<ol style="list-style-type: none"> <li>1. Communication and engagement programs on appropriate use of products.</li> <li>2. IT organizational structure designed to enable coordinated, consistent and comprehensive enterprise approach.</li> </ol>

This information is used to accomplish four main types of organizational activities: Financial Activity, Human Resources Activity, Marketing activity and Production activity, to mitigate 19 types of risks and uncertainties in Al- Hikma Pharmaceuticals PLC reports. These risks and uncertainties are distributed among the four activities, as shown in Table 3.

<b>Table 3</b>	
<b>USE OF INTERNAL STRATEGIC INFORMATION IN PERFORMING ORGANIZATIONAL ACTIVITIES TO ADDRESS RISKS AND UNCERTAINTIES MITIGATING ACTIONS</b>	
<b>Activity</b>	<b>Risks and uncertainties mitigating actions</b>
Financial Activity	<ol style="list-style-type: none"> <li>1. Portfolio management program to focus on strategic products that support revenue, profit and margin targets.</li> <li>2. Extensive financial control procedures implemented and assessed annually as part of the internal audit program.</li> <li>3. A network of banking partners is maintained for lending and deposits.</li> <li>4. Management monitors debtor payments and takes precautionary measures and action where necessary.</li> <li>5. Introduction of new automated financial consolidation module.</li> </ol>

Human Resources Activity	<ol style="list-style-type: none"> <li>1. Securing of key talent to manage complex commercial environment and develop business.</li> <li>2. Strengthening executive experience with key talent to fill strategic global positions, including appointment of new CEO.</li> <li>3. Investment in group-wide human capital management system.</li> <li>4. Developing global HR programs that attract manage and develop talent within the organization.</li> <li>5. Code of Conduct approved by the Board, translated into seven languages and rolled out to all employees.</li> <li>6. Documented procedures are continuously improved and staff receives training on those procedures on a regular basis.</li> </ol>
Marketing activity	<ol style="list-style-type: none"> <li>1. Growth and expansion in new markets, with new products and in new therapeutic areas.</li> <li>2. Partner marketing and business development departments to monitor and assess the market for arising opportunities.</li> <li>3. Launch of new corporate brand to better communicate our values, purpose and strategy.</li> </ol>
Production activity	<ol style="list-style-type: none"> <li>1. Active product life cycle and pricing management across all regions.</li> <li>2. Expansive global product portfolio with increased focus on high value and differentiated products.</li> <li>3. Experienced internal R&amp;D teams developing products and overseeing joint venture activities.</li> <li>4. Product related acquisitions bolster pipeline.</li> <li>5. Third party pharmaceutical product specialists brought in to assist in the development of manufacturing processes for new generic products.</li> </ol>

## CONCLUSION AND RECOMMENDATION

The conceptual model proposed by this study can be used as a road map for Al-Hikma Pharmaceuticals company decision makers to adapt a comprehensive overview of applying the strategic information system to enhance the Strategic Value of the Alliance.

The analytical approach allows consideration of both the role of strategic information system on enhancing the Strategic Value of the Alliance, and also the available evidence on how Al-Hikma Pharmaceuticals company decision makers can develop and use them effectively.

Considering the five Strategic Criteria Proposal as the main determinants of the strategic value of the alliance provides a basis to analyze whether this company has forged real strategic alliances and as a guide to the development of future strategic alliances to improve the role of strategic information systems in this direction, in particular to achieve higher profit margins or be more successful in highly competitive markets.

This study was conducted at Al-Hikma Pharmaceutical Company in the Hashemite Kingdom of Jordan. A proposed conceptual model was adopted, for application. Therefore, it is difficult to confirm the results and generalize them only after the application of this model by the company.

However, this study provides interesting opportunities for future SIS research, which needs further study and exploration. Future researchers should consider whether this proposed conceptual model (in its general framework, not in fine detail) can be applied to other pharmaceutical companies in the Hashemite Kingdom of Jordan, or to companies in other sectors.

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