

Research Paper

Impact of Inward Internationalization on Outward Internationalization in Enhancing Organizational Capabilities in Iranian Pharmaceutical Companies



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ABSTRACT

Background: The objective of this study was to propose a model for examining the impact of inward internationalization on outward internationalization in Iranian pharmaceutical companies by focusing on organizational capabilities.

Methods: Qualitative research was employed, and the grounded theory approach was utilized for data analysis. The study involved conducting interviews with 16 individuals who possessed experience in international activities within the pharmaceutical sector and expertise, using the snowball sampling method. The data gathered from the interviews underwent open, axial, and selective coding analyses, resulting in the development of a paradigm model of internationalization within the pharmaceutical industry. The paradigm model is composed of causal conditions, background conditions, intervening conditions, central phenomena, strategies, and consequences.

Results: The research findings indicated that causal factors of internationalization encompass learning from other countries, updating medical and technical knowledge, expanding activities beyond domestic markets, facilitating production quality improvement, and promoting growth within the pharmaceutical industry. Strategies for internationalization include adopting an international perspective, implementing effective macro-level policies, utilizing long-term strategies, enhancing workforce professional capabilities through training, improving standards and documentation, devising strategies for rational budget utilization, planning for optimal capacity utilization, and strengthening international communication and political relationships.

Conclusion: Ultimately, the consequences of inward internationalization and the enhancement of organizational capabilities lead to outward internationalization and a favorable position within the global pharmaceutical industry, improvements in organizational capabilities and international relations, development of cross-border business, economic prosperity within the pharmaceutical industry, and heightened commitment to foreign markets.

Keywords:

Inward internationalization,
Outward internationalization,
Grounded theory,
Organizational capabilities

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1. Introduction

The global economy has been significantly impacted by internationalization, a dominant approach that affects business strategies and performance [1]. Internationalization involves gradually increasing a company's international involvement or adapting trading methods to international markets [2, 3]. Inward internationalization refers to domestic operations involving the purchase and production of important products, machinery, and raw materials, with the participation of foreign manufacturers in the sector [4]. On the other hand, outward internationalization involves entering global markets by selling products and services directly or indirectly, establishing sales branches, granting licenses, and producing goods in other countries [5]. Collaboration, as a cooperative agreement and network formed by multiple parties, including companies, higher education institutions, suppliers, consumers, and rivals, has been shown to improve efficiency in several industries, including the production chain, technology and discipline combination, information exchange, and innovation [6, 7]. In general, internationalization refers to a company's economic activities beyond national borders and is associated with its geographical development [8]. Many companies are expanding their businesses across national borders due to the reality of rapid globalization and increasing interdependence, and the expansion of internationalization provides new areas of potentially profitable markets, and access to new product ideas, innovations, and technologies, which increase companies' competitiveness [5, 9]. In the literature, it has been suggested that inward internationalization activities should contribute to outward internationalization, particularly in the early stages of internationalization [5]. Although this relationship may not be obvious since inward and outward internationalization may not occur simultaneously [5], inward internationalization can have a direct or indirect impact on outward internationalization [5]. Furthermore, the relationship between inward and outward internationalization is more evident in small firms than in large firms [5]. Against this background, the objective of this study was to explore the impact of inward internationalization on outward internationalization in enhancing the organizational capabilities of pharmaceutical companies.

2. Materials and Methods

The aim of this qualitative study was to develop a model for the internationalization of Iran's pharmaceu-

tical industry, requiring the design and identification of the model's components and dimensions. To achieve this goal, the grounded theory method was utilized with the Strauss and Corbin approach [10, 11] and semi-structured individual interviews were conducted to collect data. The interview questions were designed based on a literature review, with general and simple questions followed by more specialized and detailed ones.

The study participants included managers and experts in the pharmaceutical industry with a history of international activities. At the beginning of the study, five individuals were identified using a targeted (judgmental) approach based on predetermined criteria. Using the cooperation of this initial group, additional participants were added to the study. Sampling continued until the data collected from subsequent participants did not provide new insights into the theory's components. Therefore, in addition to the first few individuals selected by the researcher based on the desired criteria, the remaining experts were identified using the snowball method approved by other experts and met the expertise criteria [12]. Ultimately, a total of 16 qualified and approved individuals were interviewed to gather data for the research.

In this study, the interview process was carefully planned and executed. The researchers coordinated with the interviewees to determine the time and location of the interview. During the interview, they aimed to create a comfortable and non-judgmental environment to encourage open discussion. The interview topics were recorded with the interviewees' consent, and the researchers took notes of important points. To ensure confidentiality, the interviewees were assigned a code, and their names were not used in the study.

The recorded content of each interview was transcribed and reviewed by the researcher, who identified key concepts and assigned them codes. The coding process followed Strauss and Corbin approach, which includes open, axial, and selective coding. Open coding was used to extract concepts, and axial coding was used to form categories based on the relationships between these concepts. Finally, selective coding was used to finalize the model and remove irrelevant data. The categories and relationships between them were checked to design the research model. Categorize and coding of the data are shown in [Supplementary Table 1](#).

The grounded theory method involved three stages of coding: Open coding, axial coding, and selective coding. First, the recorded file of the interview was tran-

scribed and important concepts were identified through repeated reading of the interview materials. These factors or concepts were used for coding in the open coding stage. Next, in axial coding, related codes were grouped together to form subcategories, which were further organized into larger categories under the title of a main category.

The final stage, selective coding, involved selecting the main topic of the subject and determining its relationship with other categories based on the identified connections between the main and subcategories in open and axial coding. A model was designed to express the effects of the factors affecting internationalization.

The validation of the data and concepts extracted from the review was done through a participant validation approach [13]. Each interviewee was provided with the written text of their interview and the extracted concepts, and they confirmed their authenticity.

To review the supervisors, the second author, an expert in qualitative analysis method, was given the text of some interviews, extracted codes, and categories. The author expressed opinions regarding the extracted concepts, and necessary edits were made during several discussion sessions.

3. Results

In this study, 16 active managers in the pharmaceutical industry were interviewed, including 15 men and one woman between the ages of 33 and 74. The interviews had an average duration of 47 minutes, with the longest and shortest interviews lasting 98 minutes and 22 minutes, respectively.

Common themes that emerged from the interviews were the lack of sufficient experience in internationalization, the need to learn from other leading pharmaceutical companies in the world, the need to review political relations, economic problems, currency fluctuations, defects in infrastructure and GMP principles, and mismanagement.

One important factor in the success of internationalization in the pharmaceutical industry was the experience of working with large companies and learning from them. One interviewee stated, “before we can teach others, we must first learn ourselves. In fact, we can’t provide anything to others until we open our doors to welcome them and allow them to teach us about management, production methods, and technology (P 5)” .

Proper management and planning with a global perspective were also identified as important factors in achieving defined goals for internationalization. An interviewee noted, “in Iran, we lack management stability and a long-term strategy. We have taken certain paths in the past, but whenever there’s a change in management, the entire process falls apart. With such a procedure, it is not possible to have a long-term vision or accomplish great things (P 7)”.

Improving human resources was identified as another key element in the internationalization of the pharmaceutical industry. One interviewee stated, “we have acquired all the skills that we possess over the last 10-15 years primarily through our connections with foreign companies (P 2)” .

According to the interviewees, one of the expected outcomes of inward internationalization is to improve the quality of production and attain a prominent position in the global pharmaceutical industry. They considered it essential to develop a well-defined and rational plan to achieve this goal. Experts emphasized that internationalization provides opportunities for collaboration with major pharmaceutical companies, which is a crucial factor that needs to be taken into account. However, they also pointed out that political and cultural considerations are the primary drivers of internationalization. One interviewee (P 1) noted, “a major challenge we face is related to diplomatic issues. Regardless of the type of cooperation sought, our experience has demonstrated that even countries with whom we maintain active financial relations encounter difficulties due to prevailing conditions.” Another interviewee (P 6) suggested that cultural challenges must be overcome before establishing a cooperative agreement with a foreign company. The interviewees also highlighted the importance of infrastructure and repeatedly raised other pertinent issues. Using open coding, 210 distinct codes were identified.

The interviews were analyzed, and 31 main categories with 162 subcategories were identified. The following section explains these categories.

A) Causal conditions: In order to expand globally and enter international markets, it is necessary to create a suitable platform and motivation. This involves macro-level infrastructures related to the country, such as recognizing the importance of global markets and developing foreign trade to enhance the pharmaceutical industry’s growth and the ability to produce high-quality pharmaceuticals domestically. Additionally, internal conditions of pharmaceutical companies play a crucial role, includ-

ing the need to update technical knowledge, production, and packaging equipment, and to keep up with the latest global knowledge.

B) The phenomenon: The phenomenon of this research is the internationalization of Iran's pharmaceutical industries and the promotion of organizational capabilities. According to the interviewees, the competitive landscape among pharmaceutical companies has revealed their potential in establishing international collaborations. With the provision of necessary background conditions, significant progress can be made in the internationalization process. Iran has adequate capacities in terms of human resources and pharmaceutical knowledge, and by providing the necessary facilities for cooperation with larger companies, it is possible to improve product quality and create the necessary platform for an effective presence in international markets.

C) Contextual factors: Inward internationalization and promotion of organizational capabilities are crucial for success in international markets. Suitable conditions, facilities, and infrastructures for internationalization and proper management can largely guarantee a successful presence in international markets. Inward and outward internationalization are both the result of a positive attitude toward globalization.

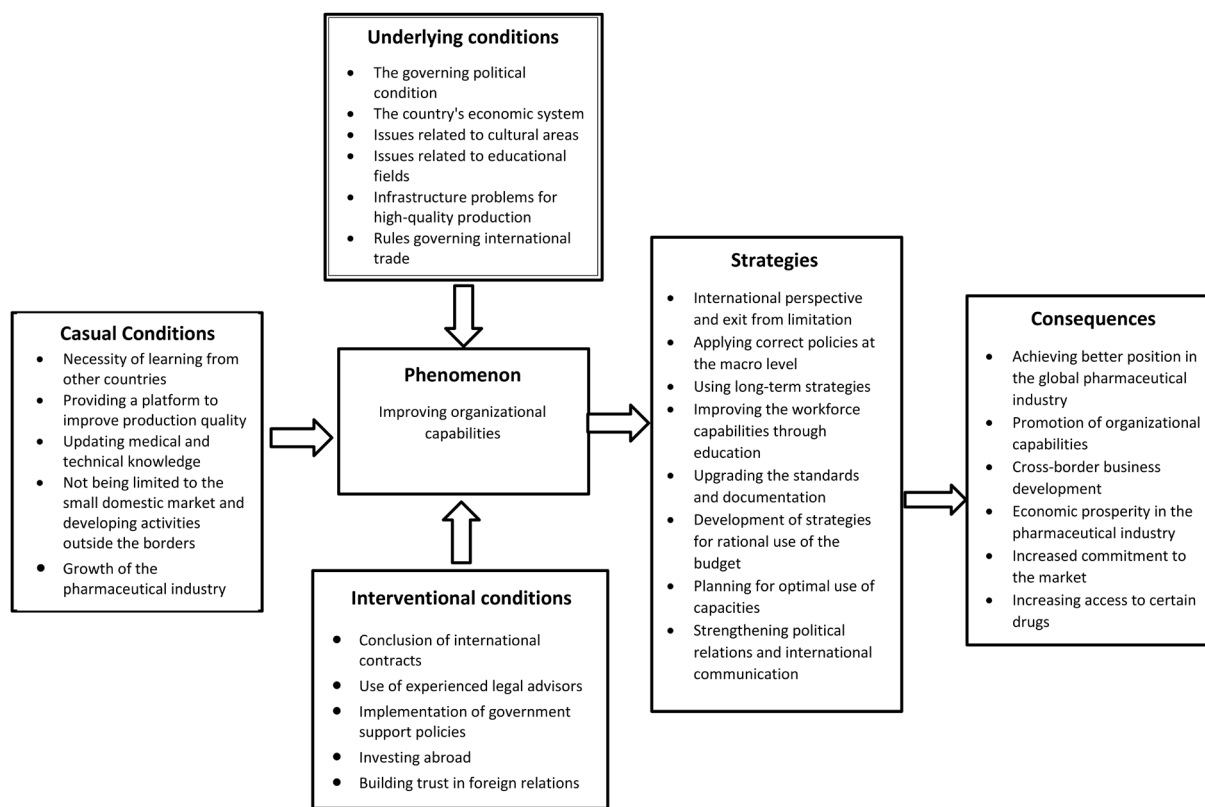
D) Politics: Political orientations of governments and officials' perspectives on international communications play a critical role in the internationalization path. Issues, such as sanctions can significantly affect communication with other countries.

E) Actions and interaction strategies: Closed-door policies can be detrimental to the pharmaceutical industry. Therefore, designing constructive strategies and long-term planning for the optimal use of existing capacities are crucial.

F) Consequences: Internationalization can lead to an increase in foreign investment, the development of cross-border businesses, and job creation. Additionally, it can promote organizational capabilities, establish international relations, enable effective presence in global markets with less risk, attain a prominent position in the global pharmaceutical industry, and improve production quality by learning skills from larger pharmaceutical companies.

4. Discussion

This study aimed to develop a model to demonstrate the impact of inward internationalization on outward internationalization in Iranian pharmaceutical companies, using an organizational capabilities approach (Figure 1). Analysis of the data resulted in the identification of 210 primary codes and 38 main categories. The findings of this study have practical implications for decision-making and strategy development in the pharmaceutical industry. With globalization and increased communication, countries are seeking to establish a presence in the international arena. This research highlights the importance of creating the necessary conditions and infrastructure before undertaking any internationalization efforts, as well as the need to provide a suitable platform for learning from leading companies to succeed in global markets and reduce the risks associated with the international entry. Given the competitive environment of the pharmaceutical industry [14], academic research into strategic factors affecting empowerment in this field should receive greater attention, confirmed by the findings of this study. As noted by Farhang, the shift from purely local to international companies is a topic that has been studied extensively by researchers in recent decades, to explain the motivations, characteristics, strategies, and methods adopted by companies to conduct and manage their activities abroad [15]. This study strongly suggests that adopting a global perspective and expanding commercial activities beyond domestic markets is crucial for the growth and development of the pharmaceutical industry in the country. Failure to do so not only wastes resources but also increases the risk of producing low-quality drugs, leading to compromising public health [16]. To ensure optimal drug quality, it is essential to develop a comprehensive system and effective models for quality assurance of pharmaceutical companies, including optimal production methods, while learning from successful models implemented in other countries and by leading pharmaceutical companies. The results indicated that developing an organizational empowerment model for Iranian pharmaceutical companies, taking into account the effectiveness of inward internationalization in outward internationalization can improve the quality of production and overall business performance. Previous studies have revealed that institutional factors, such as export laws and drug pricing systems significantly affect the internationalization of pharmaceutical technology companies [17]. Innovation is also a crucial factor that enhances the sustainable competitive advantage of pharmaceutical companies by creating a relationship between innovation and marketing, thereby maintaining or improving brand



International Journal of
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Figure 1. Designed model of inward internationalization effects on outward internationalization based on Corbin-Strauss-model

performance in the market [18, 19]. The cultural level of the organization is another important factor that needs to be promoted to facilitate the internationalization process [20]. Additionally, the ability to draw up international contracts plays a crucial role in internationalization, as it provides a platform for achieving world-class innovations [21]. Political decisions at higher levels significantly affect the internationalization process, as large corporations generally avoid politically risky investment locations [22]. Having a long-term strategy improves internationalization, but implementation can be challenging, requiring an action plan across the organization [23]. Inward internationalization can drive economic prosperity in the pharmaceutical industry, as economic growth is essential for the growth and entry of pharmaceutical companies into international markets [24]. Overall, our study shows that inward internationalization positively influences outward internationalization, with factors, such as recruitment and networking capabilities being enhanced through inward internationalization and contributing to outward internationalization [25].

Therefore, focusing on the dynamic capabilities of pharmaceutical companies in Iran and examining the effects of inward internationalization on outward internationalization can help drive growth and development in the industry.

5. Conclusion

In conclusion, this study provides in-depth insights into how inward internationalization affects outward internationalization, identifying the impact of each factor and categorization. The study findings indicate that with appropriate background and intervention conditions, inward internationalization can enhance organizational capabilities, leading to the emergence of companies with high-quality products in global markets and improved outward internationalization through effective strategy design.

Study limitations

This study is limited by the lack of access to real data on export and import due to confidentiality and lack of transparency in Iran. As a result, it was not possible to

conduct a detailed investigation based on accurate numbers. To obtain a better and more accurate view of the current situation, it is essential to overcome these limitations and access real data.

In the future, it is recommended to implement the suggested strategies in pharmaceutical companies continuously and challenge their situation in the field of international communication and outward internationalization. Collecting comprehensive data and conducting further research can also lead to more reliable results.

Ethical Considerations

Compliance with ethical guidelines

The researchers ensured the protection of the privacy of research participants, and also all of the items done with the consent of the participants.

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Authors' contributions

Interviews: Farnaz Afzal; Data analysis: Hoorvash Faraji Dana; Drafting the manuscript: Farnaz Afzal and Shahin Shadnia; Supervision, model design and interpretation: Mehdi Mohammadzadeh.

Conflict of interest

The authors declared no conflict of interest.

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Supplementary Table 1. Categorize and coding of the data

Theme (Selective Coding)	Open Coding	Axial Coding
Casual factors	<ol style="list-style-type: none"> 1. The need to develop production in the country 2. The necessity of training forces based on the needs of the country 3. The necessity of entering the world trade 4. The necessity of continuity in the modernization and improvement of the pharmaceutical industry 5. The necessity of updating scientific information and communication with advanced countries 6. Knowledge transfer 7. The necessity of internationalization in the pharmaceutical industry 8. The necessity of entering global markets 9. Limited domestic markets 10. The necessity of interaction of technical knowledge with the world's top pharmaceutical companies 11. Learning from other countries 12. The importance of preparation in internationalization 13. The necessity of competition in the pharmaceutical industry 	<ol style="list-style-type: none"> 1. The necessity of learning from other countries 2. Providing a platform to improve production quality 3. Updating medical and technical knowledge 4. Not being limited to the small domestic market and developing activities outside the borders 5. The growth of the pharmaceutical industry
Background conditions	<ol style="list-style-type: none"> 1. Existence of technical knowledge in the country 2. Difference in pricing policies Having experience in contracts 4. Weakness in political relations 5. Lack of trust in Iranian pharmaceutical companies 6. Currency problems 7. Licensing problems 8. Banking system problems 9. Unpredictability of conditions 10. Availability of available capacities to other markets 11. Specialist and professional human resources department in business development 12. Weakness of internationalization experience 13. The impact of various macroeconomic factors on the performance of pharmaceutical companies 14. Dependence of the economy on oil sales 15. Impact of macroeconomic policies 16. Weakness of the educational system to cultivate professional human resources in business 17. Existence of monopoly in domestic pharmaceutical companies (strength/threat) 18. The effect of major events such as revolution/war/sanction 19. Currency price fluctuations 20. Resulting infrastructure (GMP/documentation) 21. Weakness of domestic pricing policies 22. Accumulation of pharmaceutical products due to lack of supply and demand coordination 23. The existence of a system for updating equipment 24. Supply of resources 25. Lack of attention to quality 26. Existence of monopoly policies in other industries 27. Conflict of interest 28. People's lack of trust in domestic products (consumer culture) 29. Existence of problems in legislation and implementation of laws 30. The problem of the political view of the pharmaceutical industry 31. Lack of government support for domestic producers 32. Lack of motivation to invest in industry and production 33. Level difference between domestic and foreign contracts 34. Internal dispute resolution authority 35. The difference between marketing in Iran and other countries 36. Existing limitation 37. Weakness in the market and maintaining foreign markets 38. Cultural problems in connection with other countries and beliefs are not necessary 39. Absence of significant success in internationalization 40. Lack of stability in relationships 41. Failure to recognize opportunities 42. Weak management 43. Lack of managerial stability 	

Theme (Selective Coding)	Open Coding	Axial Coding
Background conditions	<p>44. The smallness of the drug market in Iran</p> <p>45. Sales and marketing experience of drugs before the revolution</p> <p>46. Use of medical or scientific representative</p> <p>47. The weak</p> <p>48. Wrong policies at a high level</p> <p>49. Lack of quality in raw materials of domestic production</p> <p>50. Lack of trained personnel in the country</p> <p>51. Lack of necessary capital to create technology</p> <p>52. Self-aggrandizement in the pharmaceutical industry</p> <p>53. Better performance in the field of drug supply</p> <p>54. Making excuses</p> <p>55. Lack of awareness of global markets</p> <p>56. Weakness in contracts</p> <p>57. Weakness of the legal system</p> <p>58. Resistance to</p> <p>59. Lack of transparency</p> <p>60. Customs problems</p> <p>61. Non-use of resources and facilities</p> <p>62. Failure of technical knowledge transfer win-oriented contracts</p> <p>63. Individualism in decisions</p> <p>64. Inconsistency of internal laws and regulations</p> <p>65. Ideological view contrary to the commercial policies of the world</p> <p>66. The problem of smuggling</p> <p>67. Weakness of relations and lack of reliable external</p> <p>68. Weakness of internationalization culture</p> <p>69. The existence of a large level of difference between reputable pharmaceutical companies</p> <p>70. Fear of communication with the stronger</p> <p>71. Demonstration aspect in government contracts</p> <p>72. Utilitarianism and taste functions</p> <p>73. Absence of a suitable industry in the field of internationalization of medicine</p> <p>74. Domestic embargo is an obstacle to internationalization</p> <p>75. Lack of sufficient mastery of the English language</p> <p>76. Incompatibility of our working calendar with other countries</p> <p>77. Weakness in communication skills</p> <p>78. Lack of integrity of information</p> <p>79. Immaturity of the pharmaceutical industry as the main obstacle to entering global markets</p> <p>80. State ownership of companies and government administration in industry</p> <p>81. Low level of knowledge</p>	<p>1. The prevailing political situation</p> <p>2. The economic system of the country</p> <p>3. Issues related to cultural fields</p> <p>4. Issues related to educational fields</p> <p>5. Infrastructure problems for quality production</p> <p>6. Laws governing international trade</p>
Phenomenon	<p>1. Partnership contracts</p> <p>2. Regulatory</p> <p>3. Solving legal problems</p> <p>4. Solving the problems of drug importation</p> <p>5. Improving the efficiency of the commercial and marketing unit (negotiation, opportunity finding, market recognition, sales)</p> <p>6. Learning from other countries</p> <p>7. Transformation of human resources: Changing the way of looking at business, quality, profitability, profitability models, organizational structures, how to interact with personnel</p> <p>8. Getting to know the concepts of Validation and Calibration and improving standards</p> <p>9. Improving production capabilities: Quality control and assurance, management issues, project manager, order and order, environmental issues, and improving the skills and experience of the personnel</p>	<p>Improving organizational capabilities</p> <ul style="list-style-type: none"> • Soft capabilities • Hard capabilities
Interventional conditions	<p>1. Knowledge and technology transfer contracts</p> <p>2. Attracting foreign investment</p> <p>3. Investment in other countries</p> <p>4. The necessity of using a legal consultant in complex contracts</p> <p>5. The necessity of determining a valid dispute resolution authority in contracts</p> <p>6. Unprincipled support of the government to the pharmaceutical industry (giving subsidies)</p> <p>7. Lack of government support for international activities</p> <p>8. Obstacles affected by political problems</p> <p>9. The lack of impact of drug importation from the embargo</p> <p>10. The need to pay attention to the added value resulting from the promotion of the biotechnology industry</p>	<p>1. Conclusion of international contracts</p> <p>2. Using experienced legal advisors</p> <p>3. Implementation of government support policies</p> <p>4. Investing outside the borders</p> <p>5. Building trust in foreign relations</p>

Theme (Selective Coding)	Open Coding	Axial Coding
Strategies	<ol style="list-style-type: none"> 1. Timely use of opportunities 2. The need to set up a Business Development unit in pharmaceutical companies 3. Strengthening international cooperation and communication 4. Strengthening the efficiency of the commercial and marketing unit <ol style="list-style-type: none"> 5. The necessity of determining a long-term strategy 6. Having international goals and perspective 7. Having an export perspective from the beginning of work 8. The importance of branding in the pharmaceutical industry 9. The necessity of learning in branding (imitating authentic brands) 10. The necessity of documenting and integrating information and documentation 11. Logical and intelligent choice of the dispute resolution authority 12. Improving the marketing situation in the domestic market 13. The importance of choosing a product portfolio in domestic and foreign markets <ol style="list-style-type: none"> 14. Planning for proper capacity utilization 15. Planning and rational use of the budget 16. The necessity of reforming the macro policies of the government <ol style="list-style-type: none"> 17. Investing in creation and innovation 18. Efficiency of virtual space to expand communication 19. Increasing international experiences 20. Use of young workers in the pharmaceutical industry 21. Necessity of manpower training in accordance with the current information of the world 22. Paying attention to the importance of quality against the profit and interests of the company 23. Necessity of continuous application of what has been learned 24. Carrying out negotiations at the management level 25. Use of technology transfer and licensing agreements to reduce learning costs 26. Necessity of learning before internationalization based on winning and entering international markets <ol style="list-style-type: none"> 27. Accuracy in choosing a business partner 28. Necessity to complete the infrastructure 29. Necessity of developing technology along with learning 30. The necessity of equalizing the currency price 31. Merger of small companies and formation of large companies 32. Getting the necessary preparation to close the contract, from the confidentiality agreement to the checklists 33. Attention to risk management and knowledge management <ol style="list-style-type: none"> 34. Knowing the markets and their needs 35. The necessity of mastery and awareness of our own potential and our products 36. The importance of knowing global standards and aligning with them <ol style="list-style-type: none"> 37. Using experiences in the path of internationalization 38. Giving importance to strengthening and diversifying the technology portfolio 	<ol style="list-style-type: none"> 1. International perspective and exit from limitation 2. Applying correct policies at the macro level 3. Taking advantage of long-term strategies 4. Strengthening the professional capabilities of the workforce through training 5. Improving standards and documentation 6. Compilation of strategies for rational use of the budget 7. Planning for the optimal use of capacities 8. Strengthening political relations and international communication
Consequences of outward internationalization	<ol style="list-style-type: none"> 1. Development and promotion of organizational capabilities 2. Improving the production infrastructure according to global principles and standards 3. Getting to know the principles and different cultures of business <ol style="list-style-type: none"> 4. Learning from other large and leading companies 5. Alignment with international trade laws 6. Increasing commitment to the market 7. Improving the quality of manufactured drugs and providing the necessary drugs to patients at a reasonable price <ol style="list-style-type: none"> 8. Economic prosperity 9. Employment generation 10. Increasing trust globally 11. Creating a context for attracting foreign capital 	<ol style="list-style-type: none"> 1. Obtaining a suitable position in the global pharmaceutical industry 2. Promotion of organizational capabilities in the development of international relations 3. Cross-border business development 4. Economic prosperity in the pharmaceutical industry 5. Increasing commitment to the market 6. Increasing access to certain drugs at reasonable prices