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# The Significant Role of Mutual Understanding in the Strategic Management of Relationship between Industry and University

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**ABSTRACT:** Today, the link between industry and university, with the expansion of factors such as globalization, the daily increase of competition at international level and fast changes of technology has changed towards the fast development of knowledge market. The purpose of this article is to identify the main foundations of the cooperation and link between universities and organizations. If they are properly and effectively managed, the resulting interests will be at a maximum level. The research methodology is of the descriptive-survey type by using the library sources and theoretical academic bases. In fact with the use of Johari Window and its application in the intra-organizational links, it is possible that with the increase of the vivid area, to increase the rate of awareness of university and industry about each other. In this process, if only one side takes action to self-openness and the other does not do it, the link will not be established. So, one of the measures which should be taken by universities and industries in line with the link between industry and university is to call the trust of both sides with the self-openness and understanding. The results show that the presence of university in industry and on time information dissemination and paying attention to the needs of the industry on one hand and on the other hand, the presence of industry in university and paying attention to the abilities of universities and giving their own research needs to them will bring about the growth and flourishing state of the country.

**KEYWORDS:** Link between Industry And University, Research Centers, Self-Openness, Mutual Understanding.

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## 1. INTRODUCTION

Today due to reasons such as the daily growth of competition at international level, governments try to have an active cooperation and interaction with universities and industry to increase innovation, efficiency and creation of wealth. This issue can have many advantages for universities as well (Bestiller et al, 2015). Though our knowledge and awareness of different forms of intra-organizational cooperation is relatively limited, but the formation of networks is an evidence of greater attention towards them and management over them in the real world (O'Toole, 2014). There are many issues and challenges in the society whose solution and management is beyond the power of a single organization and necessarily, it is necessary that many organizations and institutions should cooperate with each other to be able to take an action about them. Cases such as tourism, employment, presentation of health services, urban services, research and development are of these types. Because in all of them, cases such as insufficient financial and information resources, daily growth of environmental complexes, multi-dimensional form of issues and etc. necessitates that a network comprising of different organizations and institutions make decision about them and take action (Shertel et al, 2014). To the extent that our knowledge about the intra-organizational networks is greater, to the same extent the possibility of success in them in practice will increase greater. This is the same thing that the governments and leaders of the society are in need of that to be able to be a source of better services in the society. In the most primary form, the emergence of an intra-organizational cooperation will be in need of the presence of the five-fold cases including tendency to cooperation, need to cooperation due to the management of multidimensional issues and challenges, need to a greater financial resources, acceptance of contribution in risk and need to efficiency (Rapkin et al, 2012). So, the relation between industry and university has changed with the expansion of factors such as globalization towards the fast development of knowledge market. The results of researches show that in most of the countries, the concentration of policy making of the government is directed at the role of the relation of the industry and university (OECD, 2002). The experience of countries in which the two way link between industry and university in them is strong shows that this relation has been laid down properly from the beginning and has moved ahead in structured form. In our country, so far, different measures have been performed to increase the cooperation between university and industry, however, despite the efforts made, the results have not been satisfactory sufficiently. Different factors have impacts on the interactions and cooperation between university and industry. When this relation might be possible and efficient that could establish a link through a common language. The problem starts when this relation and common language is not observed in our industry and universities. Universities mainly speak with the language of expansion of knowledge frontiers and industries speak with the language of cost and interest. This lack of common language reduces the effective cooperation and interaction of them with each other.

The main purpose of developing the present article is to offer a new approach in the relation between university and industry with the pre assumption of mutual understanding and self-openness in reviewing the quality of the impact of it on university and industry relation. While reviewing the studies already performed, efforts have been made to study the models prevailing in this domain.

## 2. RESEARCH BACKGROUND

The results of researches show that in most of the countries, the focus of government policy making has been directed at the role of the relationship between the industry and university (OECD, 2002). The cooperation between industry and university was started in America with the introduction of the Muriel Act in 1862 in which the academic system launched the grant of lands. This act allocated governmental lands in each state to create and establish faculties of agriculture and industry for the purpose of granting lands to the educational centers. These faculties were both educational institutions and research centers for scientific agriculture.



Following that, the congress allocated a budget for the construction of centers of experimental agriculture throughout the country. It gave this budget directly to the department of agriculture for research objectives. The result was that in the beginning of the twentieth century, the scientists throughout the US were involved in many research projects on agriculture (Carlson, 2007). Thus, the revolution which took place in the end of the 19<sup>th</sup> century on university scene was added as a duty to the traditional duty of the university based on education and at least at educational level, it was considered equal to teaching. With the increase of the undeniable role of knowledge and research in economic development, concurrent with the World War II, another revolution was created in university scene and a third duty was delivered to university. According to this duty, university should have a specific role in the economic development of countries (Gulbrandsen, 2005). This third role became more sensible from the end of the cold war onwards. In USA, in 1970's and in the countries of the Western Europe since 1980's, the impacts resulting from this revolution has led to the revaluation of the role of university in the society. Similar revolutions have taken place in Latin America, Asia and other spots of the Europe. After the Cold War, the military role of the governmental institutions in America, former Soviet Union Republics and many other countries has reduced and their academic roles have increased. The newly established atmosphere created a new framework in the university-industry-government relations (Etzkowitz, 2000). Universities mainly speak with the language of expansion of knowledge frontiers and industries with the language of time and cost. This lack of common language decreases the possibility of their effective cooperation and interaction with each other. The root of this lack of coordination dates back to the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Though governments undertook the centralized financial support to the researches in many areas, i.e. when this action made the daily growth of researches, but due to the fact that the minds of universities and researchers were free from financial preoccupations, so that it led to greater freedom of action on the selection of research areas and the daily growth of university and research centers with the needs of the society and industries. In an effort towards the supportive policies of governments, the establishment of intermediary organizations for the direct link of universities and industry with each other and their synergy and interaction in the cycle of researches and innovations were placed in the blueprint of governments. Thus, the incubators, science and technology parks, RTIs, industrial towns and various academic and scientific centers were founded. The first science and technology park started its activities in the early 1950's in USA with the establishment of the Stanford Research Park and the park of research triangle. However, the first important park was established in 1951 and in Silicon Valley in USA. The miracle and electronic revolution arising from this park directed the global attention towards this phenomenon (Kanani, 2005).

Reviewing the past articles and researches, Changa et al in 2009 (quotation from Zareh and Hejazi), describe the two main trends of these researches which have dealt with the study of commercialization of university researches. One is the trend of transfer of technology which in 1980's puts forth that commercialization should be viewed as the process of transfer of technology from university to industry. So for the promotion of commercialization of university researches, through a motivational gap, university should notice to the obstacles and confrontation between those benefiting from this transfer process. The second trend is the trend of institutional and organizational sources. This trend which emerged in the early 21<sup>st</sup> century states that the ideal institutional and organizational sources including the commercial supportive infrastructures, organizational motivations, access to capital, have a main role in the enhancement of commercial performance of university research.

In Iran, the relation of industry with university shows that primarily, the formation of this link has not laid down in a firm base in the course of time and no basic infrastructure has been shaped for it. Secondly, the content and direction of this relation has not been specified and targeted properly (Shafiei, 2003). The history of the relation between university and industry has been from the time of the establishment of University of Tehran in 1934 to 1961. In this



period, the interaction between university and industry has been based on education. In line with coordination of universities with the new imported industries and creation of academic fields needed by the newly established industries, the government was making efforts in the second period which is from 1961 to 1981. In this period, the interaction was based on education and government was still trying to coordinate universities with industries with this difference that in this period, some trainees were being sent from university to get familiar with the new importing technologies and familiarity with some of the issues to the public industrial companies. The third period is from 1981 to 1995. In that period, government tried to extend the base of interaction of university and industry to research in addition to education. In the fourth period, since 1995, government tried to present a new base for the interaction of university and industry. This new base can be called the development of technology. In line with this, since 2000, government has established scientific and research estates, science and technology parks and incubators centers. Since then, so far, some other actions have been taken such as the creation of national system for traineeship, establishment of research-oriented Ph.D. fields and so on. However, the latest measure to establish an effective link between university and industry has been the formation of the centers for the coordination of knowledge and industry (Saljouqi, 2006). Considering the mission of the Office of Vice-President for Science and Technology for the establishment of effective link between university and industry and pathological study of the experiences, this office has created certain bodies as the centers for the coordination of knowledge and industry in order to form a close and effective link between universities and industries and other beneficial parties of the science, technology and innovation system. Having concentrated on a product, service or a specific technology, these centers are missioned to put the problems of that domain in their agenda aiming at creation of closer interactions between universities and industries and facilitating the process of conversion of idea into business. The main attitude in the formation of the centers of coordination between knowledge and industry is to create an infrastructure for the constant and close interaction among different beneficiaries of each domain including governmental, non-governmental and academic sectors. At present, no serious activities is observed in these centers.

Many researches have been conducted throughout the world on the relation between industry and research-academic centers. Some of them have been summarized in the Table No. 1 (Feiz and Shahabi, 2012).

Table1. A summary of a number of researches on the relation between industry and research centers

Author	Year	Result
Ofenso	2012	The results of research in Madrid showed that education based on the needs of the industry and the presence of suitable training period in industry and presence of experts of industries in university programs have the greatest impact on the reinforcement of employment.
Osman and Omar	2012	They have studied different factors such as skilled human force supply, education and increase of the abilities of industry workers and... which reinforce cooperation between university and industry in Malaysia and they showed that with the presence of a strong two-sided relation between university and industry, sustainable development is obtained.
Ayami and Keshti Aray	2012	The results show that the percentage of non-educational and outside university activities at Islamic Azad University in Sanandaj has a great difference with Kingston university and suggest that the outer university courses and learning in working environment should be placed in the priority of



		programs.
Rosi	2010	The effective relation between university and industry can cause the increase of innovation and transfer of knowledge and technology.
Salter	2009	Knowledge produced in universities can be considered a competitive advantage for industry.
Kaou et al	2009	Yang Kaou et al in their research in China showed that the link between university and industry through the supply of capital in the side of industry and faculty members, graduates and education in the side of university can promote the research, inventions and technology. Government can also help with the establishment of this tie through creation of motivation structures.
Faez and Shahabi	2010	They introduced the obstacles of relation between university and industry with the following priorities: Legal obstacles , cultural barriers, lack of demand-oriented of university projects, lack of efficiency of traineeship course, lack of harmony between university fields and needs of the industry
Welsh et al	2008	Cooperation of university and industry has caused the increase of income and facilitated the process of technology transfer. The university researchers have supported labor force and forces of commercial market.
Frank	2007	University can also use the financial resources and equipment of industries. Students can also get familiar with the industry environment and face the existing daily challenges by passing their traineeship courses in industries.
Muller	2006	The sharing of the researches of university and industry, the canal of transfer of companies for production is services and commercialization of knowledge.
Entezari	2003	The study of the models of interaction of science and industry presented a new model which is called the national system of knowledge development.
Abbaszadeh et al	2002	Interaction of university and industry has been studied by them from the convergence perspective. According to their discussion, with the application of the convergence view in the new technology, the frontier of science and technique is not limited but with the application of proper industrial strategy and correct planning, the distance of the lines of industry and university is removed and two separate lines come closer to each other.
Salimi and Seifoldin	2002	The effective relation of government, university and industry is in need of the framework of the national system of innovation. Innovation and development of technology is the result of a complex set of relations among the active elements in the innovation system. The innovation system at national level acts in an integrated way for the commercialization of ideas and constant transfer of knowledge up to the level of utilization and production
Sentro	2001	Relation between industry and universities are in four main domains: Basic researches, Participatory researches, Transfer of the knowledge of technology. Universities enjoy a unique potential. They not only can gain their knowledge in need



		from industry, but they can use the graduates and faculties to give service as advisors or staffs.
Fambron	1996	Benefits gained from universities for industries: Access to high level trained students, scientific forces and facilities that enjoy a high ability and flexibility in facing a scientific organization.
Li and Reed	1991	Power to do a technical action in the country depends on factors such as power of research and educational activities, collaboration among industry, university and government, development of humane, physical, financial and legal infrastructures, national policies to support technology and so on
Bets	1987	Concerning the cycle of high wave, it states that the explorations performed in the science is the base of innovation in technology and the development of technology by itself leads to the creation of new sciences and its progress. (scientific pressure)
Denison	1985	Productivity is intensively dependent on scientific and technological innovations. About eighty percent of the growth of productivity of America since the great recession onwards is resulting from innovation directly or indirectly

### 3. THEORETICAL FOUNDATIONS

Contribution and coordination display two types of relations in which the partners put together their resources to both use, the mutual and common interests and achieve their own common objectives (Fischer, 2012). Intra-organizational cooperation has been defined as the use of the resources and administrative structures of more than one organization. Due to the presence of a common intra-organizational language, the presence of intra-organizational cooperation between university and industry will be possible and effective when they establish link through a common language (Sarala et al, 2014). In a communicative situation, the sender of the message merely sends information and not knowledge and it is the receiver who should receive the information and convert them into knowledge. The use of a common language is a precondition of an effective trend in establishing communication. In addition, the common language is an important aspect in learning too (Von Krogh, 2000). Bili and Keni (2000) believe that the efforts of intra-organizational cooperation, irrespective of the names like consortium, collation, association, network, federation, etc., all have an interactive structure which notice to cooperation and participation among organizations to achieve a joint objective(s).

#### 3.1. The Significance of Relation between Industry and Research Centers

University is the main center for the train of expert and educated human forces. Enjoying the new idea, university can inject a new force in the vital veins of the society which moves ahead at each moment. Also, employing the newly emerged ideas of the university community, the industry can materialize the idea of economic development and progress of the society. So any kind of shortage, either sectional or constantly in the continuation of cooperation between these two institutions challenges the multilateral development.

The cooperation between university and industry are examples of contractual agreements which are concluded on scientific and research activities among universities and administrative organizations. This type of cooperation is performed usually by using the scientific power of university and experiences of industry and effort to achieve this goal. The relation and



cooperation between university and industry have special position in the scientific development of countries. For the purpose of training capable human forces and scientific innovation, universities are in need of expansion of academic services and settlement of social problems in line with the improvement of the people's life. In order to achieve such objectives, the establishment of cooperation and a logic link with institutions such as industry sector seems to be necessary for universities. Considering the theoretical and experimental backgrounds, these two institutions cannot have necessary success individually and any kind of separation in the link between these two causes disruption in the process of sustainable development. The deepening of cooperation between university and industry can take shape based on different motivations including the financial interests, advancement of science and new innovations (Shafeai, 2005). Ignoring the importance of evaluation of commercialization of university researches by the policy makers of university and government leads to a very high cost to implement the projects of commercialization of university researches (Read, 2003), waste of time in the side of university researchers (Zhao, 2004) and reduction of motivation among researchers (Vohora and Wright, 2004). Thus, the general goal is to use the intra-organizational cooperation, giving a good and effective direction to the programs and decisions related to multidimensional issues and challenges existing in the society and presenting better and greater services to the society.

### **3.2. Effective Relation with Mutual Understanding**

Concerning the intra-organizational and institutional link, the concept of relation and process of a proper relation has been tackled less. Moorhead and Griffin in their book of Organizational Behavior (Griffin and Moorhead, 2012), have referred to this subject well. That communication is the process of transfer of message from sending to a receiver provided that there is an equal meaning between them, or communication is an organized process to exchange information among the parts and usually through a set of signs. Communications is a social process in which information is exchanged and a kind of understanding and agreement is made among the beneficiaries. Firstly, communication is a social process because two or more than two people are involved in it. Secondly, communication is a two-sided process which does not take place at a moment but it is materialized in the course of time. The process of communication is the formation of a circle between the source and receiver of a data. Each of the components of communication process is important. If one of the components is deleted, it is possible that the message could not be exchanged as it has been desired.

**Source:** It is an individual, a group or an organization who desires to establish relation with the other party. It is possible that a person sends a message on behalf of a group or an organization. The source is in charge of preparing a message, to codify it and select a proper instrument to send it. In some cases, It is possible that the recipient selects the source of data himself like when the decision makers desires to receive information from the trusty and informed individuals.

**Codification:** It is a process by which a message is sent from the shape of a concept and idea into signs. The signs (symbols) in use might be in form of words and numbers, images, hints and physical movements. The source of the message should be codified such that the recipient could discover it. In other words, the source and recipient should consider one meaning for the codified signs.

**Transfer:** Transfer is a process by which the signs which convey a message are sent for a recipient. Media is the canal or route of transfer. For example, in the face to face dialogues, the audio waves are intermediary. Media have a broad spectrum such that it starts from the communication between two persons such as conversation to mass media including a newspaper, journal or a T.V. program. Each media has its own specific capacity for the transfer of data.



**Detect (Decipher):** It is a process by which the recipient of the message interprets the meaning of the message. Using his own knowledge and experience, the recipient of the message interprets the signs of the message. In some cases, it is possible to refer to other sources such as dictionaries or decipher book. If the meaning received by the receipt of the message is different from that of the sender, the communication has failed and might even lead to misunderstanding.

**Recipient/Respondent:** The recipient of the message might be an individual, a group or a person as the representative of a group. Up to the stage of deciphering a message, the source of the message has been active and the recipient of the message has been passive. Now, it is the recipient of a message who decides to detect the message, grasp it and respond or react to it. In addition, it is possible that the recipient does not want or cannot receive the message.

**Feedback:** Feedback audit and confirms the message. In other words, it tells to the source that the message has been received and understood. Feedback might be only a simple telephone contact or a complex bill of indictment which is sent to a judge by a prosecutor.

**Parasite:** It is any kind of disorder in the communication process which interferes with the communications or causes its distortion. For example parasite in Radio or T.V. screen flakes (ibid).

In a communicative situation, the sender of the message merely sends the information and not the knowledge and it is the recipient who should receive the information as the input and converts them into knowledge. Using a common language is the precondition of an effective trend in establishing communication among the members. Moreover, common language is an important aspect in learning too (Von Krogh, 2000). Due to the presence of an intra-organizational language among the members, the mental model which exists at the back of words and terms is understood by others. The presence of intra-organizational cooperation among university, government and industry will be possible and effective when all individuals establish communication with each other through a common language (Davenport and Prusak, 1998).

### **3.3. Mutual Understanding with Self-Openness (Johari Window)**

According to Joseph Luft and Harrington Ingham (Robbines, 1998), known as Johari Window (Figure 1), and based on this model, the leaders have certain behaviors or tendencies which are aware of them themselves. In addition, there is a part of the character of the leader which is unknown to self. In other words, in some cases the leaders do not know how to treat with others. It is possible that their followers have not given any feedback or the leader has not been conscious enough to learn the verbal or non-verbal feedbacks.

In fact, Johari Window is a communicative model for the improvement of understanding of individuals from each other among different individuals of a team or among the groups. Of course, this model can be applied in the relation among organizations too. This model is based on self-assertion and feedback. Johari Window can also use to improve the intra-group relations and mutual understanding. There are two key ideas behind this instrument:

1. It creates trust among the members of the team through expressing some information about them.
2. It helps the individual to achieve a better understanding of themselves and come in terms with their personal problems better with the help of the feedback which they receive from the others.

With the description of Johari Window model for the members of a team, you help them to lean the value of self-statement. Encourage individuals to express and accept feedback. Do it in a



sensitive and delicate form this stage. This stage can help with the establishment of more reliable and sincere relations among the members of the team, settle down the problems and the team could activate in a more effective form.

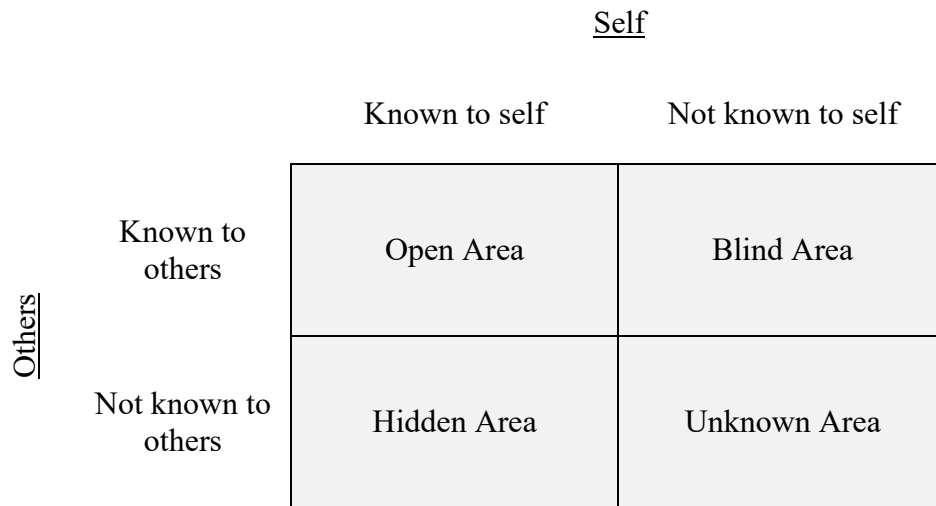


Figure1. Johari Window

The instrument of Johari Window is a network in form of a window with four main areas shown in the above figure. These four areas include:

1. Public area or open which shows some aspects of an individual's character which is known to self and others.
2. Blind area which shows some aspects of the individual's character known to others but unknown to the self.
3. Private or hidden area which shows some aspects of the individual's character known to the self but unknown to others.
4. Unknown area which shows some aspects of an individual's character neither known to the self nor to others.

#### 4. RESEARCH METHODOLOGY

Present research is of the basic research type from the viewpoint of objective and of the descriptive-survey type as far as the nature is concerned. Using the library method and scientific resources, this research has been conducted to review the theoretical and background foundations and the concepts as well. In this study, reviewing the theoretical bases of communications in particular Johari Window and its adaptation with the communication system or lack of link between industry and university, a suitable base has been prepared to understand and establish intra-organizational relations.

#### 5. FINDINGS

According to the model of Johari Window, to the extent that the public area of the individual become broader, to the same extent, their communicative relation, flexibility in their style of leadership and the states of self of them become broader. Because at this area, both sides have knowledge, the possibility of emerging a conflict is weak. So, for the purpose of the increase of

their own communicative power, individuals should expand their public area. Approaches to expand the public area include: divulge or self-openness and feedback.

Divulge or self- openness means that an individual disseminate information about himself. It is worth noting that the disclosure should be on time and mutual, i.e. if in the process of communication, only one party take action to disclosure and the other does not make it, the communication is not established. Disclosures cause the progress of public area in hidden area and downsize hidden. Feedback causes the expansion of pubic area in the blind area.

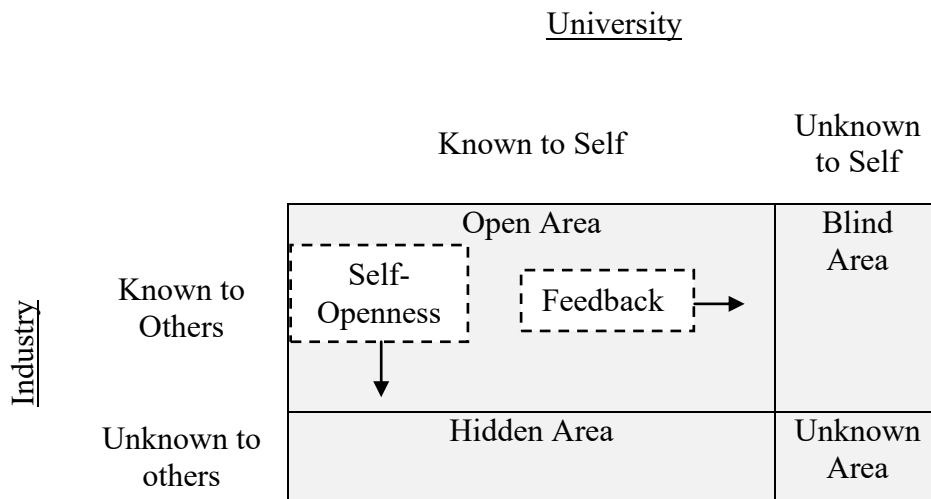


Figure2. Expansion of Public Area in Johari Window

As it was stated, one of the applications of the Johari Window is to express the type of intra-organizational relation. In this model, with the increase of the vivid area, to the extent that university and industry can have greater awareness from each other, to the same extent, they can emerge more constructive, productive and effective in interaction with each other.

The process of the expansion of the vivid area is practical with the self-openness between university and industry through sharing information for example by presenting the abilities of universities from the viewpoint of human force, technology, equipment and similar activities and researches performed or potential ones and this vertically will increase the vivid area and reduction of hidden part. In the same manner, in industry, with the presentation of feedback on what it needs, problems, innovation, technology, applied researches and many other subjects, the vivid part will increase horizontally and the level of blind spot will decrease. Thus, with the process of a reciprocal “self-openness” and “feedback” between university and industry, the level of trust gradually goes up and communications improve. The organizations which in Johari Window have a greater vivid part usually establish communication easily and accepted in a working team simply. Oppositely, the organizations which have a small vivid part establish link hardly. They cannot mostly work with other organizations well because they are not reliable and trusty. Thus, the inputs and outputs of every three sections are in a close relation with each other and share with each other based on the bed ground of trust (base of mutual understanding) with each other (Figure3).

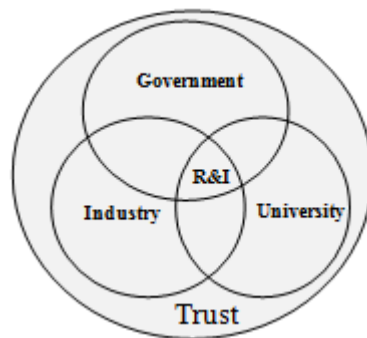


Figure3. The interactional model of government, industry and university based on the attitude of trust and mutual understanding

In this model, in the areas in which there is no possibility for investment in other sectors and will be followed with high risks, the government moves ahead and take effective measures in the rates such as basic research in national and transnational areas and also production of services, goods and new sciences including researches on food security in the country or at the world level in cooperation with international institutions or researches related with the reduction of poverty, inversion and etc. On this case, definitely, the scientific and administrative arm of the government will be the university and industry.

In the present model, in addition to education and research, university does the process of innovation and entrepreneurship and does not ignore economic activities. In addition to the consumption and employment of the knowledge produced in the universities, the industry help with its distribution and reproduction.

## 6. DISCUSSION AND CONCLUSION

The development of relation between industry and university has been noticed by the strategists, policy makers and university and industry planner due to its very positive effects in the creation of technological, economic and social changes since long time ago and many efforts have been made to create an effective link between industry and university. In the 21<sup>st</sup> century, the international economic competition is based on knowledge. Competition in today's technological market is in need of the integration of modern knowledge with industry. Also helping with the improvement of the quality of people's life and meeting the basic needs of industry and services to create competitive advantage and promoting the power of exports makes necessary the use of modern knowledge and new technologies and effective link between university and industry. Thought so far different actions have taken place for this purpose, but in order to complete the cycle of innovation and design in the country and to move the industry and service sectors towards the road of excellence, there is a need to the presence of an institution which could establish and correct the relation between university and industry. On the other side, today due to the reasons such as the daily increase of competition at international level and fast technological changes, government should try to have active cooperation with universities and industry in order to increase innovation, efficiency and produce wealth. In fact, if the cooperation between universities and industry could be managed correctly and efficiently, the resulting benefits will be maximized and it will be possible to have necessary opportunity in line with the increase of innovation, efficiency, wealth production, technological progress, reduction of costs and greater and deeper knowledge.

Of course, the purpose of this article is not to concentrate on proposals and usual solutions which are not practicable, but reviewing the views, models and existing models on relation between university and industry, it will be possible to restudy the nature of communications and cooperation between university and industry well. In comparing the results of this study and



previous researches, it can be admitted that all of them emphasize on the principle of mutual understanding progressively. In other words, all studies and proposals presented by researchers are based on the lack of a proper and effective communication between industry and university which has been dealt with through different viewpoints. As among the views stated on relation between industry and research centers, there are a few cases to deal with the subject of mutual understanding from the theoretical and basic viewpoint, so that the effective relation will be established if we could institutionalize the trust in the society and between two individuals or group or an organization. It is at this status that mutual understanding and good relation will be established between the parties and their heartfelt and unknown desires will become vivid to each other. In other words, for the development of the country, university should deal with the settlement of the problems of industry and consider their problems as its own problems. Moreover, industry should also refer its problems to the university and trust on them. Managers of universities and industries should know that the presence of intra-organizational cooperation among them should increase their powers and resources and will have a greater potential impact on the changes in the society and its growth and development.

## **7. SUGGESTIONS**

1. Cooperation between university and industry is in need of trust building and paying attention to the needs and nature of the activities of these two institutions. The creation of trust between academic community and industry and considering the benefits of each is of specific position. The relation between university and industry should take place in order to promote education and research, to improve facilities and equipment and to solve the problems of industry. This issue will cause the reduction of trust between these two institutions.
2. Legislating and imposing compulsory standards with high quality in industry in the side of government will increase the need of industries to the scientific methods (universities).
3. Compiling and approving the new and comprehensive law of intellectual properties.
4. Creating a suitable legal bed for the active presence of academicians in industry and industrial people in the university.
5. Developing the necessary infrastructures for commercialization of the results of university researches by creating and developing the companies for the development of technology, industrial estates, technological parks and incubators.
6. Promoting the scientific degree of faculty members based on their cooperation with the industry.
7. Contribution of industry in creating new and interdisciplinary university fields of study based on the needs of the labor market and industry.
8. Change in the course units and syllabuses of courses in agreement with the views of industry
9. Creating sabbatical leave opportunities for the managers of industry in different universities to make the managers of industry familiar with the latest scientific and technological consequences.
10. Introducing the capabilities of university to the industry formally or informally through propagation brochures, presenting seminars, inviting the managers of industries and encouraging the professors to spend their sabbatical leave in industry.
11. Familiarity of industry and university with the needs and abilities of each other and optimal use of mutual facilities.



12. Presence of the strategy for the industrial development for the orientation of industry and university towards the national development.
13. Encouraging the industry section in the establishment of research centers by creating facilities such as tax exemptions.
14. Selecting the subject of thesis /dissertations of Ph.D. students on the issues related to industry and enjoying the financial assistances of industry in this sector.
15. Making efforts towards making converting researchers into problem-oriented researches.
16. Offering fellowship or research grants to the university professors in order to select and orient the capable and elite students towards solving the specific problems of industry sector.

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Authenticity of the texts, honesty and fidelity has been observed.

### **AUTHOR CONTRIBUTIONS**

Planning and writing of the manuscript was done by the authors.

### **CONFLICT OF INTEREST**

Author/s confirmed no conflict of interest.

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