

Commercialization Management of National Commodities for Oil and Gas Industry in Iran*

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This article shows a side segment of efforts toward finding ways to successfully commercialize a high tech product in Iran. During last decades, sanctions against importing petrochemical most used and needed utilities caused difficulties for Iranian petrochemical production chain. Inconveniences provoked Iranian specialists to achieve technical knowledge toward finding new ways of local producing. Attempting(s) had been encompassed to complete the whole chain of production and consumption inside of the country. Concepts implicate that during recent years, Iranian specialists have taken special steps toward localizing needed catalysts as an example of important commodities. Considerable amount of analyses have been made by Iranian petrochemical community probing the problems and obstacles associated with successful producing and what it really takes for a successful commercialization. Thematic analysis has been implicated as the research method to evaluate concepts represented as interviewees' analyzed declarations. Themes are analyzed toward mapping a successful merging with parties involved along with focusing on national commercializing streamline. Findings show that the idea of executing venture capital agencies as a new sector in the sequence of Iranian governmental and private petrochemical network has been appraised. Also, evaluating network management between parties involved and ways of policy making by the expert individuals are considered as the foremost factors to converse. Benchmarking feels as a necessary aspect as well to consider in the merging process. It has been concluded vital for Iranian companies to assess their own efficiency with accepted international standards, while on the other hand, they can take benchmark as a coming out opportunity when they commercialize in new intact market cooperating with renowned foreign companies.

Keywords: commercialization management, policy making, Iranian oil and gas network, benchmarking

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Introduction

The objectives of this research have been conducted due to evaluating regional and international market of catalyst commercializing inside of Iran which is internationally recognized for owning remarkable oil and gas resources. Crude petroleum is a mixture of hundreds of chemical compounds and needs to be treated to generate products. Catalysts and absorbents are foremost commodities largely applied in petroleum industry including oil and gas refining and petrochemicals producing, they play essential roles in fractionating columns for distillation of petroleum in petrochemical industry and in Iran it has been detected to be crucial to produce needed catalysts nationally inside of petrochemical sites. With an overview of history in last decades, it can be foretold that Iranian petrochemical industry has passed several stages of predicament. Departure of foreign technicians, war and sanctions during last decades made some barriers against this industry to be naturally hitting the road of regional independency in Iran. Iranian technicians have been making a very good maintenance during inconveniences. They make movements toward technological development and manufacturing in petroleum refineries. Dominant national experts believe that the major initial steps toward producing catalyst precursors took in the 2000s. Iranian universities, academic centers and research institutes, connected to gather and provide data. Refineries, private sectors and major public performers such as National Iranian Oil Refining and Distribution Company, Iranian Research Institute of Petroleum and Petrochemical Research and Technology Company in a sequence of their matter, are involved in the process. Possibilities for operations have been evaluated and initial precursors have been synthesized. Evaluating commercializing possibilities for petrochemical commodities, catalysts in particular, considered by venture capital at Iranian Nanotechnology Initiative Council and that project led to this article. The motivation of doing this research is to represent data about the subject from modern administration points of view and to analyze the circle of producing and commercialization inside of Iran. How much managerial elements such as benchmarking, personal policies, and network cooperation do matter when it comes to commercialize high tech products like catalyst(s) in Iran? The contribution of this article is to add new knowledge by evaluating discussed elements inside of the country's bazaar which is in progress to join the international market. Visiting refineries, gathering data from private and governmental sections, and researching about literature was found satisfactory to collect data. Results have collected from interviews between Iranian petrochemical experts who make movements toward technological development and manufacturing in petroleum refineries. Also, this article is pioneer to offer an unbiased new spectacular about commercialization in developing countries. By analyzing the themes and organizing the gained concepts, the necessity of circling vital strategies has been explained between policy makers and network managers whereas eyes should be kept on benchmarking. Literature has been reviewed to monitor whether or not is there a research implicating mentioned aspects all in once. Related theories in management have been referenced to support and explain this article's research question.

Literature Review

Dautzenberg and Angevine (2004) discussed that Catalysis plays a critical role in virtually every industry. They mentioned that it is often the key to making an entirely new technology or breathing new life into an otherwise, mature technology. They put that in addition to the continued needs for productivity improvements, environmental drives and heightened industrial safety add a new aspect to the importance of catalytic innovation.

Armor (2011) discussed that the development of petroleum fuels led to a vast petrochemicals business which in turn fed a growth in specialty and performance chemicals. He put that new drivers in the 20th century from the transportation and the environmental business sectors provided market pull to bring about more catalytic solutions for more industries. Also, he discussed that these materials achieve very high turnovers, indeed industrial chemicals and petroleum refining are interconnected with industrial catalysis and catalysts impact a sizable fraction of any nation's gross domestic product.

It has been reported in American Chemical Society Report (1996) that the impact of catalysis and catalysts is substantial. Over 90% of all industrial chemicals are produced with the aid of catalysts.

Roth (1991) reported that in 1991, it was estimated the total value of fuels and chemicals derived from catalysts exceeded \$900 billion/year. Also, Coons (2009) reported that world catalyst demand was forecasted to grow to \$16.3 billion through 2012. Armor (2011) discussed this way: as we move forward into the new century, we continue to see market pull from growing interests in biomass, sustainability, emissions control, and energy.

Rostrup-Nielsen (2015) put that challenge to industrial catalysis is multidisciplinary activity and it involves input from reaction kinetics, surface science, technologies involved in the manufacture of catalysts and decisive factor of reactor modeling and designing. Also, he mentioned that the process of bringing science to business and marketing is complex and it is important not to work with a linear process having basic research or applied research and development following each other with the R&D making the results available before starting engineering and marketing. He emphasized that it is important to manage the linkages between overlapping phases, because typically "strategic marketing" should start when there is a "proof of concept". On the other hand, he emphasized that fundamental research may continue long after these activities to understand better the key problems and to prepare for new solutions. The key challenge for responsive research is to establish a balance and to avoid making the innovation process too bureaucratic and making sure that each scientist has a room for initiative.

Ziamou (2002) showed that successful commercialization of new technologies is the riskiest and most rewarding form of new product development activity. He put that new technologies are often commercialized using innovative interfaces that determine how consumers interact with a new product to obtain its functionality.

Debruyne, Moenaert, Griffin, Hart, Hultink, and Robben (2002) stated that occurrence of competitive reactions was significantly influenced by the launch strategy that was implemented by the innovating company. Thus, the strategic decisions managers make concerning a new product launch already instigate future reactions by competitors. They put that consequently, the likelihood of competitive reaction may deliberately be directed by the innovating firm through the choices they make in the launch strategy.

Wonglimpiyarat (2007) mentioned that venture capital (VC) improves the nation's innovative capacity by making investments in early stage businesses that offer high potential but high risk.

Samila and Sorenson (2010) conducted that venture capital most likely serves as a catalyst for commercialization because it helps to develop the pool of entrepreneurial talent in an area. They stated that federal research grants generally fund academic research - the creation of ideas - whereas venture capital supports the development of these ideas and helps to train and encourage a community of entrepreneurs capable of bringing those ideas to market.

Crow (2010) discussed that policy entrepreneurs can influence policy changes and decisions. They invest their time, knowledge, and skills into promoting policies with which they agree. Policy entrepreneurs were influential to policy change, but the most important actors were expert entrepreneurs who hold expertise in petrochemical utilities matters.

Hodgkinson (2015) mentioned that recent developments in social network analysis have put researchers in a better position to first characterize the morphology of discrete collectives of organizations and then to structurally locate particular actors within them, as a precursor to the comparative analysis of the structure and content of mental models of competition.

Slob and de Vries (2002) discussed that standardization is the activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context. It is difficult to measure the success, mainly because of difficulty in measuring the real usage of a standard. To develop a good method to measure success, it must be looked at several possibilities to benchmark the companies. Main benchmark for “best” in “best practice” is the success of the company standard. A company standard is successful when it is used and appears to solve the problem for which it was developed. By using score cards, each individual producer can benchmark its performance against the others.

Research Method

Thematic analysis is a qualitative method for discovering, assessing, and analyzing the concealed themes of the data. In this method, data have neatly been organized in the shapes of concepts, themes, and subthemes. From a wider point of view, a researcher can interpret the aspects of the data from angles so versatile (Azimi, 2014). It felt inevitable to obtain inner knowledge of each individual Iranian expert in the petrochemical networking. Through thematic analysis, 40 semi-structured interviews were arranged and done in a friendly and open environment to gain the gist of technical and managerial prospective(s). Interviewees were chosen from variable divisions, from top and middle managers in refinery petrochemicals, retired managers of governmental institutes, well-known professors active in academic petrochemical fields to salesmen in private sectors. Also, in the case of gaining opinions of a petrochemical refinery manager who did not intent to interview, a questionnaire was fetched. Interviews were written down for collecting themes and concepts via thematic analysis. Reliability of research findings was examined by checking out the consistency of items in selected interviews. For preventing from getting familiar to the codes and also for avoiding probable personal judgments/interpretation of the interviewer, a Ph.D. student majoring public administration checked out on a subdivision in interval timing. Through that acceptable percentage of reliability was yielded. For providing a strong validity of the presented aspects, collecting data was meticulously taken cared of from the very first steps in this research through following expected criteria of what is needed for doing a thematic analysis such as interviewing experts who have known best for their reliable reputation in oil and gas industry. Validity relies on reality and knowledge and to gain that theoretical basics were precisely assessed first. Topic and the path of the research were designed in a way to contribute new knowledge. Analysis of recognized concepts and themes was checked out over and over for representing professionally.

Results and Discussion

Interaction is a process that takes place between actors, which means that no business actor has the resources or freedom to develop or implement strategy independently and none can unilaterally control the direction of its dealings with others. Chang, Chiang, and Pai (2012) mentioned that the interactive process of business is not restricted simply to just communication or negotiation, but it is a continuing process and calls for a long-term approach to management. It stretches beyond individual transactions and consists of multiple actions, reactions and re-reactions by counterpart companies as each adapts to its own and its counterparts' requirements and to the evolution of the wider network. On the other hand, business interaction involves all actors in trade-offs between their own and their counterparts' short and long-term costs and benefits. In this article, effectible interactions between individual experts and network system based on the concepts and themes collected in the interviews have been discussed. Strategies as the necessary adhesive factor need to be set between each individual expert, considered as the policy entrepreneur, and networking cluster in petroleum industry for coordinated commercialization. Also, the importance of applying policies and strategies based on benchmarking as a needed element for national commercialization can be found through the discussion.

Considering Each Individual Expert as a Policy Entrepreneur

Experts can be defined as policy entrepreneurs, because they can be the policy innovators and can establish new policies in so many opportunities that come up along with commercializing new national goods for Iranian oil and gas network. The idea of considering individual experts as policy entrepreneurs came to discussion when these proactive experts declared their firm technical viewpoints about petrochemical industry and the role they can play in governmental output policies. Windows open in policy systems. Kingdon (2014) mentioned in his book that policy windows, the opportunities for action on given initiatives, present themselves and stay open for only short periods. If the participants cannot or do not take advantage of these opportunities, they must bide their time until the next opportunity comes along. Oborn and Exworthy (2011) discussed that policy entrepreneurs can be re-defining problems, forging alliances across interest groups, and developing policy proposals. Cohen and Amorós (2014) conducted a research in order to put that technology-based firms would be wise to pay attention to the evolution of government policy and to collaborate with municipalities in developing demand-side policies to exploit opportunities at different stages of the technology lifecycle. From concepts collected in this article, experts in petrochemical networking can be considered as policy entrepreneurs from different points of view. They are the ones to technically verify the policy contents and this is what hubs and public agencies need to establish for applicable petrochemical new policies. These experts as policy entrepreneurs can declare specific technical and managerial policies. To create a successful networking strategy, experts need to be clear about their prospective. Also, individual experts can update the politics of policy repeatedly with probing the common obstacles. This will give authorities the opportunity of simultaneously adjusting the policy contents. Data gathered from interviewees were summed up in Table 1 and it shows that each individual petrochemical expert has so much to offer in interactions when it comes to deal with policy implementations. They collect knowledge during years that can be documented and lawfully recognized as vital national commercializing aspects. Here are selected opinions stated by interviewees about the role of experts in order to propose new policies for managing petro-industrial production and commercialization:

A technical manager working in a pioneer firm described the importance of establishing technical knowledge of catalyst production in this manner:

Unfortunately policy of requisite technical knowledge mainly has been based on laboratory scale standards. Those must have been re-evaluated. Although laboratory synthesizing of any kind of catalyst can be an initiation toward industrial producing, the major factor about gaining technical knowledge must be focused on how a firm can scale up its facilities according to necessary industrial factors.

Also, a company executive summed up the ongoing policy of money allocating by governmental hubs for commercializing this way:

Governmental agencies must know that the budget they allocate for catalyst producing is so limited. There is something wrong with the picture of having a technical project applied in industrial producing. They need to get a wider image when it comes to allocate monetary plans. When you look to recognized international companies, the devoted budget for only R&D is much more than what is considered for the whole circle of producing in our country. Government must reconsider policies toward monetary status in this field.

An illustrative comment is made by a technical manager who was in charge of re-loading a refinery reactor with a national made catalyst. He reprimands public petrochemical authorities for lack of policies toward making coordination between academic areas and industrial refineries in this regard:

Chemists in universities write papers accepted in high impact journals, professors attend the very recognized international conferences every now and then. When there is a call for meetings about how to produce needed catalysts, academia come up with brilliant, up-to-date and scientific ideas. But they know so little about industrial commercialization and what is exactly taking place inside of the refineries. In another way around, here in refineries we can share so little about true obstacles in the way of loading our reactors with national made catalysts. The government is responsible to set policies to join these sections in a lawful recognition way.

These and other concepts gathered from interviewees have been listed in Table 1. As it shows, there are many obvious facts about how to apply these experts' viewpoints as the preliminary data for setting applicable policies in the way of national commercialization.

Successful Petrochemical Networking Between Parties Involved

Aaboen, Dubois, and Lind (2013) discussed that over time and in interaction with customers and other actors, the companies have changed their ideas about how to strategize in light of their relationships and network. The new venture is always a part of network in interaction with other actors. Networking refers to the conscious attempts of an actor to change or develop the process of interaction or the structure of relationships in which it is directly or indirectly involved networking that is at the core of management in the business landscape. In a nutshell, Bankvall, Dubois, and Lind (2017) assumed that interaction shapes relationships over time and every emerging business model sets new conditions for interaction between the parties involved. Ford and Mouzas (2013) mentioned that interaction is likely to include teaching, learning, coercion, and concession by all participants at particular times and for particular issues and it involves all actors in trade-offs between their own and their counterparts' long- and short-term costs and benefits. In this article, networking cluster has been conceptualized according to petrochemical experts as what it should be functioned for running a successful national catalyst commercialization. From the viewpoints of interviewees, it was concluded that governmental evaluators should identify and join up potential groups from investigating parts to industrial centers. They should vertically integrate refineries and keep them inter activated with

engaging diverse private firms and companies. Along with diverse petrochemical institutions supporting the network, strong emphasis should be on start-ups that lead these institutions to the essential parts of the refineries. Petroleum Ministry should involve all partners. Open communications and sharing decision-making through consensus is a vital movement that would prevent bribes. Governmental leaders should seek commitment from partners to participate actively as the network in national commercialization. This commitment can be gained and sustained if core partners such as refineries and private sectors lead the network with consistency and integrity toward associating with Iranian innovators instead of following outside of the country's tender notices. Hodgkinson (2015) mentioned that market boundaries are more fuzzy and multidimensional than they were in those early days. In terms of the origins of macro cultural innovation, it would appear that the field can learn much from the activities of influential outliers—those network outsiders who, paradoxically, are often at the heart of industry innovation. These are some selected quotes of interviewees in this regard. A Catalyst Superior Documenting Function Group's authority stated:

There are so many firms and corporations that declare they are capable of producing typical kind of catalysts. Our function group has experts from both academia and industrial parts and they meticulously evaluate received technical claims and test results. There are qualified research groups in academia sections. Our job as the governmental evaluator is to join up potential groups from investigating parts to industrial centers. Our committee follows high standards to detect real producers and introduce them to refineries for capitalization.

Also, a technical manager from a private investigating and producing company stated:

Public centers such as National Iranian Oil Refining and Distribution Company, Iranian Research Institute of Petroleum and Petrochemical Research and Technology Company are in charge of giving the official reputation and the admissible certificates to producers. They can build serious bonds between private innovators and refineries. Unfortunately efforts of these governmental performers are sporadic. They need to come up with a new brand, coordinated program for making parties involved come along.

An industrial executive said:

There is very little coordination for the synthesized samples brought up to the refineries for reactor testing. There must be some hubs for selecting real capable producers. Technical staff in refineries usually hesitate to test every brought up sample in semi-industrial pilot. Lack of data about producing and the process of production sometimes ends up with the lack of truth and reliability.

Concepts and themes about major factors in this regard to reach a successful commercialization have been summed up in Table 1.

Benchmarking Plays a Significant Role in Successful Commercialization

By benchmarking with sensible criteria, petrochemical networking will be able to obtain insights about factors that really drew distinct lines between the top and poor performers. The gist of interview themes and concepts shows that comparable information about high-quality new products, the best driven way of the processes, performances and making decision points, distinguished certificate and characteristics of product definition, and flexibility through international market are the factors that need to be considered in an acceptable benchmarking. Cooper and Edgett (2012) discussed that benchmarking studies may include having a product innovation and technology strategy to guide development efforts, fostering the right climate and culture for innovation, implementing effective ideation practices, putting the necessary resources in place and investing in the right projects/portfolio management.

The role of new product strategy in the business unit in a forward orientation from each individual refinery, private sector or academic unit to petrochemical network cluster would be tied to introduce a new product performance. R&D(s) plays a significant role in designing quality for business unit’s new product performance. Important essentials of probable benchmarking retrieved from Iranian petrochemical approaches so far have been conceptualized in Table 2. Option 1 represents the simple and fast way of providing refineries, feeding reactors with purchasing catalysts produced by well-known companies. This option is still found inevitable to apply because of the refineries’ under licence circumstances, but the whole movement during recent years is to get independent from this kind of importation. Option 2 is a one-sided approach as well. According to experts’ knowledge, it seems applicable in theory, but it will not work as a pragmatic agenda, because for successful commercializing performances companies must meet programs step by step checking international criteria in order to get eligible to apply every new phase. Option 3 founded the most suitable option with the majority of experts. It emphasizes building national infrastructures to commercialize along with checking for necessary international benchmarking. The purpose of this kind of benchmarking requirements is to ensure that merging with foreign companies will bring new technology entries and multiple prior awards to make progress towards commercializing. As the hub of launching, Iranian refinery companies are prone to cooperate with recognized international catalyst producers and investors. Terms and conditions proposed by Iranian petroleum ministry will start merging with those foreign companies that look for ingenious petro chemistry market to parade. Option 4 did not catch any attention and has been ignored with most of the Iranian petrochemical experts, because it will not bring significant merits in the way of national commercialization and also has been set aside from what is reconsidering for national industrial protocols during recent decades. The gist has been listed (see Table 1).

Table 1

Semi-structured Interview Ingredients, Themes, Subthemes, and Concepts Gathered for Representing the Gist of Perceptions About Networking, Policy Making and Benchmarking

Themes	Subthemes	Concepts
Co-operation	Successful network managing between parties involved	<ol style="list-style-type: none"> 1. Collaborations should lawfully define the roles and responsibilities of the petrochemical agencies, industrial partners, academic committees, private facilitators, and refinery clusters. 2. Governmental evaluators should identify and join up potential groups from investigating parts to industrial centers. They should vertically integrate refineries and keep them inter activated with engaging diverse private firms and companies. 3. Along with diverse petrochemical institutions supporting the network, strong emphasis should be on start-ups that lead these institutions to the essential parts of the refineries. 4. Business structures and networks of Ministry of Industry, Mine & Trade are too complex. Industrial innovators find the network too complicated and they complain about lingering when it comes to receive funds in order to produce officially approved catalysts in industrial tonnages. The Ministry should remove parts that re-measure skills required for commercializing new catalysts. 5. Petroleum Ministry should involve all partners. Open communications and sharing decision-making through consensus is a vital movement that would prevent briberies. 6. Governmental leaders should seek commitment from partners to participate actively as the network in national commercialization. This commitment can be gained and sustained if core partners such as refineries and private sectors lead the network with consistency and integrity toward national innovators instead of prioritizing outside of the country’s options and tenders. 7. Governmental petrochemical agencies should acknowledge, credit, and support partners. Rewarding and encouraging catalyst innovators and private companies is vital to the success of collaborative initiative. 8. Making a solid agreement by authorities and declaring a lawful alliance make all industrial partners continually follow the rules and share their contributions toward the goal of the entire refinery clusters.

(Table 1 continued)

Themes	Subthemes	Concepts
Policy	Considering individual experts as policy entrepreneurs	<ol style="list-style-type: none"> 1. Defining and articulating roles and responsibilities of each individual as an expert will give close data to the authorities. 2. Experts in refineries, academia centers, and private industrial firms evaluate the tangible situation and this fact can play a main role in down to up policy movement. 3. Experts are policy entrepreneurs because they introduce innovation and implementation of new ideas into the public sector. 4. Experts can open wider policy windows, because they can formulate policy to solve problems and this gives public agencies new visions. 5. Experts as policy entrepreneurs from different parts are the ones to technically verify the policy contents and this is what hubs and public agencies need to establish for applicable petrochemical policies. 6. Individual experts can update the politics of policy repeatedly with probing the common obstacles. This will give authorities the opportunity of simultaneously adjusting the content.
Benchmarking	Standardization through international criteria	<ol style="list-style-type: none"> 1. It is important to emphasize national commercialization, but along with that, national petrochemical commodities should be in touch with international standards. 2. Experts emphasize building national infrastructures along with checking for necessary international benchmarks. The purpose of these benchmark requirements is to ensure that merging with foreign companies will bring new technology entries and multiple prior awards to make progress towards commercializing. 3. As the hub of launching technical products, Iranian refinery companies make deals to achieve standardizing merits with recognized international investors and catalyst producers. 4. Terms and conditions proposed by Iranian petroleum ministry will start new merging with those foreign companies that look for ingenious petro chemistry market to parade.

Table 2

Conceptualizing Different Levels of Benchmarking vs. Different Levels of Emphasized National Approaches as What Iranian Petrochemical Experts Perceive

	Foreign accommodation	National implementation
	1	2
No benchmarking One-sided approach	* Import necessary catalysts to consume * No technology incoming	* Emphasis is on national agenda from idea to launch * National specific ways of commercialization
	4	3
Benchmarking	* Import necessary catalysts to consume * No technology incoming * Limited benchmarking for assembly and montage facilities	* Emphasis is on national construction of the infrastructures along with checking the process with constant international benchmarking * Technology entries

Conclusions, Limitation, and Future Research Direction

Although every feature of any different industry has its own characteristics, petrochemical industry is almost one of the very important parts in Iranian business infrastructures, and it plays important roles in trading everyday life. The results of this study are based on a case study of a specific kind of catalyst national commercialization. Thematic analysis of interviews between Iranian experts has been answered the research question of in which ways technical ideas, network cooperation and setting benchmark strategies will successfully drive catalyst commercializing for petrochemical industry. To keep the analysis definite, the main analysis concentrates on these three, indeed they are the key elements detected as themes in majority of interviewees' theoretical discussions. Discussed factors and results contribute new knowledge for Iranian petrochemicals industry managers. Iran is a large hub of oil and gas and Iranian petrochemical networking is an

ingenious market to start new trading(s). According to gathered concepts, Iranian specialists including researchers, inventors, and business bodies do have deliberate intents to start new catalysts commercialization nationally. They can offer new policies to make genuine associations regarding potential horizontal network of oil and gas partners. These specialists emphasize on structuring new foundations inside of the country and they offer new strategies for networking connections. Compared to other oil and gas hubs in the Middle East area, Iranian petrochemical companies have taken new innovating steps toward self-commercialization. Data of interviews in here clearly demonstrate that Iranian specialists have very considerable capabilities toward formulating new strategies in this regard. To support this, gathered concepts from convincing number of seminars, discussions, meetings at different construction sites show that human resources in refineries can play a significant role in posing new policies when it comes to pragmatically commercialize a national commodity for the first time. As undertaken in preliminary discussions, these specialists can be considered as policy entrepreneurs. The offered policies from individuals can be reconsidered and redefined by governmental agencies to set motivating and pragmatic strategies for expanding the petrochemical network through an aggregate grouping. Some interviewed private inventors did not declare satisfying comments about the public assistance focusing on contractual options in order to protect them toward commercializing their products. National inventors feel fragile in the market when it comes to boosting their financial circumstances in order to get involved in long-term business activities. According to the interviews, one of the main barriers for private inventors is the lack of regular and lawful supports by the public sector. Government must focus on preparing a transparent environment along with implementing national commercializing and in such situation do private inventors and investors dare to cooperate. The give and take between private investors and inventors can be arranged under supervision of governmental agencies. According to Hanna (2005), the concept of international customary law of transparency and security for international investors under bilateral and multilateral investment treaties is familiar to international commercial arbitrators. Iranian refineries look for defining dynamic national strategies for catalyst commercialization and widening through associations for importing new technologies. Benchmarking is the key to standardize this national potential in the field of international marketing. Benchmarking will fasten the road of upcoming technologies as well, distinguished catalyst producers such as Universal Oil Products (UOP) or German Badische Anilin- und Soda-Fabrik (BASF) will get the angle of seeing what Iranian specialists look for in petrochemical market to incline, invest, and merge. Limitations to this study would be reckoned in two distinct directions: first, limitations regarding the interpretation of experts inside of Iran and second, limitations regarding the results verification abroad. Interpretation will be varied among Iranian petrochemical networking, since the research is qualitative and experts in Iran still are used to relying on tangible quantitative and statistic data. So, it is very well expected if corresponded readers ask for ways of applying these new leading approaches for launching a successful national commercialization. Also, this research is based on analyzing managerial approaches for accelerating the production movements inside of Iran which is not in an advanced shape yet. This may be recognized either over-analyzed or too local for applying by developer producers. One theme for further investigations is to deepen the industrial analysis focusing on corporate strategists and how network with those international incorporations which a successful merge could be achieved. This paper accentuates on priorities and essentials inside of the country's items for successful national commercialization. Along with this, being in touch with international market should be addressed in future researches.

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Appendix

Questions asked of petrochemical experts in refineries, governmental agencies, private firms, companies, academic/technical research centers and laboratories are as follows:

1. How do you define national commercialization? What efforts have been taken so far?
2. How has the process of setting strategies become for commercializing national commodities over last decades?
3. What data do you collect to measure the performance of your company in national commercialization?

4. Who are the key individuals you have to network with in order to accomplish your company's goals toward commercialization? What type of communication is involved in such networking?
5. How would sanctions improve the process of national producing?
6. Could you describe policy making? What is the so-called absence of any kind of needed policies in the network?
7. How much time do you usually spend dealing with the petroleum community?
8. What are the impediments to successful benchmarking?
9. In your role as oil and gas authorities, how important is educating firms about the potential value of national producing? Why do you feel it is vital or non-significant?
10. Could you describe the difference in networking policies between parties involved?
11. What is your opinion regarding funding catalyst innovators?
12. How do you measure the potential for commercializing a new industrial commodity to be successful in the international market?
13. Do you have suggestions for improving negotiations between expert individuals and network of petrochemicals?
14. What is the most common reason for termination and failure in benchmarking when it comes to national commercialization?