

New business models for state companies in the oil industry

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Abstract. *In the scientific literature business models are defined as architecture of the value creation, profit formula, key processes and key resources. For the oil industry there is a need to develop new business models that have to describe the specificity of this industry and to take into consideration the new objectives after the global oil crisis. Although crude oil price has dropped dramatically since second quarter 2014, OPEC raised crude output to the its highest value in more than three years as it pressed on with a strategy to protect market share and pressure competing producers. The objective of this article is to identify and promote new business models for state companies in the oil industry. The research methodology is based on case studies that present and analyze the business models in two of the main oil producers Iran and Iraq, where the state companies are playing an important role in this industry. The subject is relevant because the business models for state companies in the oil industry have to be modified after the oil crisis and these are not real analysed in the scientific literature. Furthermore, the aspects discussed in the current article represent the main factors that will influence investment prospects of companies in the field in the next decade.*

Keywords: business model, national oil companies, upstream, crude oil price, IPC, market slow down

Please cite the article as follows: Tanțău, A.D. and Khorshidi, M. (2016), “New business models for state companies in the oil industry”, *Management & Marketing. Challenges for the Knowledge Society*, Vol. 11, No. 3, pp. 484-497. DOI: 10.1515/mmcks-2016-0011

Introduction

The international crude oil market is getting tighter and it is affecting the activity of National Oil Companies (NOCs) as crude oil is the main source of income for many countries and their budgets rely on these incomes. Producer countries are going to face liquidity problems which have a direct effect on their production process, so they must make a decision to find a solution and provide enough incentives for international oil and gas companies and financial organization to invest in their oil fields, especially European companies.

In the scientific literature, the business model as a concept and its structure is presented and analyzed in various publications (Chesbrough and Rosenbaum, 2000; Daum and Gruber, 2002; Morris, 2005; Shafer, 2005; Richter, 2011; Bruns, 2014).

Business models are defined as the architecture of the value creation, profit formula, key processes and key resources (Osterwalder et al., 2010). A detailed structure with nine main classes for a business model was developed by Osterwalder and Pigneur (2010). These main classes are: value proposition, revenue streams, customer segments, customer relationships, channels, cost structure, key resources, key activities and key partnerships. The model of Osterwalder and Pigneur (2010) was taken as referential from others specialists. As an example, Shafer (2005) classifies the elements of a business model into: strategic choices, value network, creating value and capturing value that contain the nine main class elements of Osterwalder and Pigneur (2010). Many authors as those that were mentioned describe similar components of business models but, the concept has not yet gained a general definition and remains an open subject for further debate and inquiry. A practical diagram that was used in 2010 by Osterwalder and Pigneur in order to design a new business model is the canvas structure. This structure presents in one visual sequence the main sectors being consumer, resources and activities. Here the consumer sector includes channels, customer relationship and revenue streams. This is one of the core elements of the model that describes the main income flow of the business. This segment is one-end of the business model and has a direct connection with the external environment of the business. It also gets feedback from the customer side by its customer relationship segment to have iteration on all the aspects related to the products and services of the business. Regarding the income flow of the business, an Accenture study analyzed the responses from 70 executives from 40 companies who were interviewed regarding their company's core logic for creating and capturing value. As a result, 62% of them had a difficult time succinctly describing how their own company made money (Shafer, 2005). The power of business models was not sufficiently recognized. The second main sector of the business model is the resources sector and it consists of the key resources, key partners and cost structure. This part also has a direct connection with the external environment of the business and has bulk cooperation with other business partners. The third main sector consists in the activity segment which includes value proposition and key activities. This segment has a vital role in the business model and customers may turn from one company to another based on the company's value proposition.

Regarding the oil industry, the debate on the business model is presented only by few publications. The main studies in this field are dedicated to the oil supply chain with the upstream segment. The study of Yusuf et al. (2014) analyzed the small and medium-sized enterprises (SMEs) that provide technology and services in order to support the operations of oil corporates. Additional studies are analyzing the administrative design of the oil industry. As an example the Norwegian Model refers specifically to an administrative design that separates commercial from policy and regulatory functions within the oil sector (Thurber et al., 2011).

This article is based on case studies that present and analyze the business models within two of the main oil producers, Iran and Iraq, where the state companies are playing an important role in this industry. The main actors in this field, the new National Iranian Oil Company, named Iran Petroleum Contract (IPC) and the Iraq National Oil Company are analyzed through a comparative analysis of their contractual methods.

The research methodology consists of field research and comparative case studies. Iran and Iraq are among first 10 largest oil and gas producers in the world and had the most increments of oil production during last 3 years based on OPEC annual report, 2015.

According to the International Energy Agency, Iran is ranking 7th in crude oil and 4th in natural gas production in the world. In the case of Iran, the global sanctions are going to be lifted, so Iran will enter the market again with consistent amounts of crude oil in terms of production. Although it will face the market with more surplus, this issue is one of the most important opportunities for International Oil Companies (IOCs) to start investing in Iran's oil fields. On the other hand, Iraq is ranked 10th in crude oil and 6th in natural gas production. Important key facts related to Iraq is that Iraq has experienced a slowdown in its crude oil production during the famous war within this country and had a successful return on the market after 2003 by experiencing an increase of almost 200% in its oil production from 1,308.25bpd in 2003 to 3110 bpd which has been reported recently by the OPEC 2015 annual report.

This comparison shows us that if Iran wants to have a successful return on the market, despite crude oil price issue, the Iraqi experience can become a benchmarking source for Iran in order to help it iterate its business model and types of contracts that may deliver better absorption for IOCs to enter in its market. Financial incentives, ownership, contract period and production warranty span represent our comparison parameters which we will deploy in this article after a brief explanation of the NOCs' business model.

Specific business models in national oil companies

In many countries, the upstream oil and gas industry is managed by the national oil companies (NOCs). There are studies that justify the direct state intervention in the oil and gas industry. The main reasons that are analyzed are the historical context of the decision, the great importance of the oil and gas industry and the political benefits of the state control, the potentially beneficial impact of the NOCs on sector-wide economic efficiency (Tordo et al., 2011).

National oil companies are defined as companies that hold the majority of petroleum reserves and produce the majority of the world's supply of crude oil. These companies hold exclusive rights to exploration and development of petroleum resources within the home country (Pirog, 2007).

NOCs can split into three segments which are global majors, technical services and contractors. Evaluating oil and gas market required more correlative context. The major aspects that have to be considered for oil and gas application according to Boscheck (2006) on assessing new upstream business models, are presented in the following order (Figure 1).

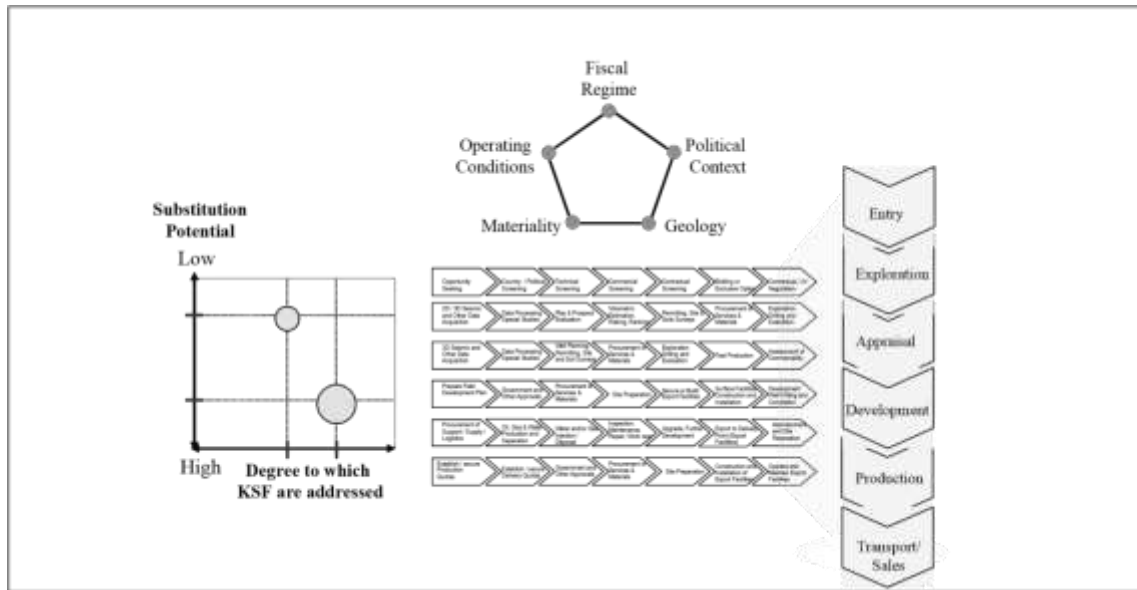


Figure 1. Upstream oil & gas: play characteristics and operational reference

Source: Boscheck, 2006.

The first major aspects taken into account according to Boscheck (2006) are the fiscal regime, the political context, the operating conditions, the geology and the materiality evaluation.

The fiscal regime includes all topics that relate to monetary issues, agreements and rights: royalty tax for countries with mineral rights, agreements for using the services of IOCs and production, shifting in title, share of government in cooperation, guarantees that the funds will not be used for other purposes than the main ones stated, and removing rights when the job is completed.

The political context is evaluated through the macroeconomic view.

The operating environment is normally related to the following aspects: oil field location such as on-shore and off-shore (which can be split into shallow water and deep water), restrictions which are country specific, seasonal conditions and how difficult we can extract field related information, the status of the infrastructure, drilling expenses and using different contractors by outsourcing.

Geology plays a role in handling the success, reservoir location and number of wells.

Materiality is related to a specific grade of products which will be extracted.

The second major aspect is focused on the operational role. In fact, outsourcing is considered to be proper when service providers and related operators tend to get involved in order to control the assigned tasks and liquidity. The previously mentioned conditions should assume the following considerations: field maturation, regulatory and technological conditions, commodity values, supplier and capital market context, finance portfolio and opportunity costs.

According to the third main aspect, there is no fact according to which a private owner or a state owner could affect the operation. In the oil market, the value proposition needs to use incentives, however explicit state direction, could be reduced by a suitable monetary and administrative system. Therefore, the NOCs might be used for non-commercials.

Comparative case study Iran Petroleum Contract versus Iraq National Oil Company

The research methodology for this article is based on case studies that present and analyze the business models of two of the main oil producers from Iran and Iraq, where state companies are playing an important role in this industry. The case studies also present specific aspects of political and regulatory standards that influence the business in these countries.

Our main objective is to identify and promote new business models for state companies in the oil industry based on the specific characteristics in oil industry in Iran and Iraq. The research also exploits the investment potential in these countries, in order to gain an insight into the current issues of both countries that are attributed mostly to legal supporting systems of the oil field.

We analyze the revenue and cost structures of business models closed to the financial situation that is very important for each business model (Glomsrød and Osmundsen, 2005).

The framework for this analysis in Iraq is based on Badra Development and Production Service Contract ("DPSC", 2009).

The new models for Iraq contracts include in the financial part three main chapters regarding contract expenditure, contractor revenue and its return on investment method, petroleum and supplementary costs and remuneration.

According to DPSC, all related costs for the following activities should be handled by the contractor within the appropriate time period:

- Study, research and assessment of various conditions, then apply initial development plan while elaborating the final development plan;
- Geological surveys and interpretation with three dimensional modeling, managing reservoir data and analyze it;
- Drilling explored fields and reservoirs, increasing production to reach plateau phase;
- Improve products by drilling deeper, directional drilling or fracturing existing wells;
- Study on reservoirs comprehensive data in laboratories and appraise some convenient methods for reservoirs to recap as final development plan.

These expenditure criteria indicate that all operational references which were presented (Figure 1: entry, exploration, appraisal, development and production) should be done by the contractor. Based on this assumption these key activities of contractor business model and also the NOCs business models will be delegated by outsourcing. The reason for this kind of outsourcing can be two-fold. One of them is lack of the NOC's budget. Although Iraq has great oil reserves, this country was involved in a war and has gone through big changes in its governmental reform, so they should compensate their required budget by finance and what is better than a finance with contractors that could involve in oil and gas production projects with minimum level of risk which its global market can guarantee its return on investment when contractors will be allowed to sell some percentages of the produced oil and gas. Contractors in DPSC should speculate the contract budget for three years when they get the approval of their preliminary development plan and spend it within the desired period of time. They should also have a parent company to guarantee their performance and fulfillment of their contractual and financial obligations. On the other hand, the Ministry Oil ought to provide a guarantee through a sustainability instrument to support the

performance of the state partner, Transporter, NOC, Iraq oil marketing company (SOMO), and any other Iraqi state entity in their fulfillment of their respective contractual and financial obligations under this contract based on Badra DPSC.

All costs like costs of exploration and extraction (petroleum cost), costs of other services than petroleum cost (supplementary cost) and remuneration cost should be paid by the contractor. When the initial production is done and the contractor begins to commercially produce petroleum, the NOC considers an operating account, and then the petroleum cost and supplementary cost will be transferred by the contractor to this account. However, the remuneration cost cannot be transferred to the operating account before the end of this phase.

The NOC will pay the operating account in the first season or quarter after the end of the first commercial production when the operating account has been due. Although the operating account is due, the NOC will only pay the amount of the operating account up to half the value of the products which were produced in the previous commercial production. The balance of the operating account will be settled in following quarters. The NOC will pay the operating account amount based on the amount of the petroleum cost, then remuneration cost and finally supplementary cost. There is no interest to be associated to the mentioned costs.

Iraq oil marketing company (SOMO) is responsible to market all the products and approve the final price of the products in any destination based on the market situation. If the contractor asks the NOC to receive their money which has already been due, by kind, the NOC is allowed to calculate the value of the product which is equal to the approved payment, by the discovered rate of product which was done by SOMO then NOC can give the contractor the related quantity of product at final destination.

The framework for the financial analysis in Iran is based on New Iran Petroleum Contract (IPC). In this contract model the involved operations are: exploration, development of the green fields, integrated exploration and development operation for new areas, development of the common fields with neighboring countries, enhancement of oil recovery of the brown fields (IOR&EOR), integrated exploration, development, production & IOR/EOR and exploration, development and production operation in the high risks areas and deep waters.

We can see, from the previously mentioned activity list that all operational references (Figure 1) include entry, exploration, appraisal, development and production that ought to be done by the contractor; it is a little bit different from the Iraqi approach and the business model is more detailed than the Iraqi contract. On the other hand, the Iraqi contract is an overall contract which asks contractors to participate in all required activities.

Although the Iranian IPC was more detailed, the IPC assigned all activity from R&D to production and also warranty period, to contractors because contractors should study, analyze, and give the NOC a production plan which cannot be altered within the next activity year, thus they should be very precise to obtain correct data to arrange as their annual activity plan. One of the most important issues which this criterion enforces within the contract is the financial issue. The reason is that the NOC will calculate the contractor activity based on their prediction which they have to report to the NOC before they start their activity in the upcoming year. It could be a risk of the contractors, but the Iranian NOC compensates it by a great advantage in comparison with the Iraqi contracts.

The IPC has a different cost division method from Iraq. All expenses which were paid by the contractors from beginning of project like field assessment costs, data gathering and field development costs to approach contractor to develop operation plan is Direct Capital Cost (DCC). These costs include the cost of the project up to the first production stage (FDCC) and costs which are entitled to contractors from the first production to the plateau. FDCC should be fixed by the contractor when the contractor prepares the development plan; conversely the NOC is allowed to change the cost of reaching the plateau if the contractor does any activity to improve production like EOR and IOR;

IPC has as innovation and incentive for the contractors to pay any indirect costs (IDC) such as tax, social securities, custom duties and related costs. All those costs will be paid by the NOC after the first production;

Money has cost everywhere and nowadays all contractors looking for a financial company to finance their activities if they have any delays in payment. IPC offers a kind of financial promotion to contractors that if they could compensate their costs in prior phases before the payment, the NOC will pay the cost of money which was paid from the beginning of the project. Libor +1% is the NOC's offer for DCC and also any late payments of IDC or any extra services which will be asked by the NOC;

The cost of money will be calculated from the beginning of project. All costs will be paid by the NOC in installments over 5 to 7 years after the first production.

Another specific dimension that has to be analyzed in order to develop a proper business model for NOCs is based on the ownership conditions. We further analyze the ownership conditions in Iraq and Iran.

The ownership of any products underneath any land is related to mineral rights, and it could be oil, gas, gold, coal and other metals and minerals. The extraction of these products is referred to these rights and could make a change in the terms and conditions of any extraction in various countries (Wolf, 2009). Generally most countries all over the world do not give any permission to land owners to own their land minerals. For instance, the Queen in the United Kingdom owns all rights of minerals in all the territory of the UK even onshore or offshore. The USA is an example of a few countries in the world which let land owners to own their mineral rights or transfer mineral rights to others. Iran and Iraq also do not transfer any rights of minerals to IOCs and own all rights of minerals underneath lands which are in the scope of any contracts in their countries. Therefore, they should arrange an additional part to their business model to handle the rest of phases after production such as selling, transportation, delivery and total customer segments and channels. The ownership conditions were analyzed by Al-Obaidan and Scully (1991) by estimating the efficiency differences between 44 international private and state-owned petroleum companies.

Despite mineral rights similarity, Iranian and Iraqi contracts display some differences in the ownership of the equipment which are under the terms of contracts.

In Iraq, according to Badra's contract, all equipment and assets which are used for the contract and petroleum operation will transfer to the Iraqi NOC except some assets which will temporarily be imported through the NOC's approval and can be re-exported. By this criterion, all the required tools and equipment which are compatible with each oil field will be the NOC's property and the NOC can

maintain them risk free after the contract period even though they will depreciate during this period.

In particular, in Iran the tools and equipment which will be used in contracts and all those rights belong to IOCs. Another advantage in Iran is that all these can be imported and are exempted from custom duties.

Our case study analyzed the different participation conditions in Iraq and Iran. Iraq handles participation in two phases. The first phase includes all the activities from exploration to production and reaching the plateau. The second phase is the phase of production operation or petroleum operation which will start when the field production will be stable (Table 1).

Table 1. *Badra development and production service contract*

Project Phase	Partnership	Supervision
Exploration, appraisal, development and production	The State Partner shall have twenty-five percent (25%) of the Contractor's total participating interest and the companies shall have the remaining seventy-five percent (75%) of Contractor's participating interest. Companies shall pay for the state partner's entire share of petroleum costs and supplementary costs during the term and any extension there to. The companies shall have entitlement to all petroleum costs and supplementary costs paid, while the state partner shall be entitled to receive twenty five percent (25%) of any remuneration paid.	The Joint Management Committee, NOC shall nominate four members, including the chairman. Contractor shall nominate four members, including the deputy chairman, the secretary, and a member from the State Partner.
Petroleum Operation	A Joint Operating Company shall be formed within twelve months after NOC's decision to form the JOC, and shall commence the conduct of petroleum operations on the date of transfer of operatorship. JOC shall be owned fifty percent (50%) by NOC and fifty percent (50%) by Contractor.	Board of director(BOD), This BOD shall consist of eight members, four to be designated by the NOC and four to be designated by the Contractor, including one member from the State Partner

Source: Badra Development and Production Service Contract ("DPSC") dated December 24, 2009.

In Iran the new type of contract based on IPC, includes as phases exploration and development and production with mentioned criteria of joint participation in each phase (Table 2). These criteria are establishing the basic conditions for technology transfer and also utilize domestic oil and gas industry technicians to improve their knowledge and inflate experienced indigenous staff after contract period.

Table 2. *Partnership and supervision methods according to IPC*

Project Phase	Partnership	Supervision
Exploration	Iranian competent companies subject to NIOC approval of their qualifications may be the partners to the operation. In that case they are also responsible proportionate to their shares in the joint venture, however participation of Iranian company will not absolve IOC of its overall responsibilities as the leader of operation.	Joint Exploration Committee (JEC). JEC consists of equal members of IOC/ JV and NIOC
Development and production	IOC will establish a joint venture with the Iranian competent company (s) acceptable to NIOC (Join Development and production	NOC

	Company" JV"). Shareholding ratio of each party in JV shall be agreed by the parties; however IOC's shares should not be more than 80% or less than 50 percent	
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Source: Iran Petroleum Contract ("IPC") dated December 24, 2009.

In both countries there is a need to redesign the business models in the oil industry. The process of business development is different in its place, scale, and exact path of development. Iran and Iraq are the examples of an unconventional situation which is unique in their case due to war and sanctions. Presently, the market slowdown is a sign that all NOCs need to rethink their business models.

Conoscenti (2011) considers that a business model in this field has to be developed in four stages: prove it, optimize it by trial and error, and standardize it and rethink it (Table 3).

Table 3. *Stages for developing a business model*

Stage	Definition	Major activities	Keys to overall success of play
Stage 1: Prove it	Primary stage with focus on geologic and reservoir potential, Funding is an important issue which should compensate for other assets as there is no chance of cash flow in this stage.	<ul style="list-style-type: none">▪ Geoscience and other work to determine technical properties and suitability for exploration▪ Land acquisition▪ Drilling of pilot and test wells, not for production but for information	<ul style="list-style-type: none">▪ Amount of relevant geotechnical and engineering information gathered per dollar spent▪ 1–3 technical "champions" with financial capabilities▪ Presence of service sector partners with science and experience
Stage 2: Optimize it by trial and error	Utilize all attempt by contractors to extract products and improve economics of well to an acceptable level then continue to optimize it. In this phase many wells may be uneconomic and high cost so keeping proper data is crucial for following phases to avoid any miss opportunity. Choosing an appropriate IOC as contractor which has deep knowledge and technical capabilities while could provide enough equipment and crew, is really crucial	<ul style="list-style-type: none">▪ Try everything▪ Interpretation of masses of data▪ Ramp drilling & create local operational and service sector hubs	<ul style="list-style-type: none">▪ Constantly raise well productivity▪ Constantly decrease costs▪ Rapidly integrate diverse data streams▪ Draw correct conclusions and apply learning to current and future drilling programs▪ Share information or engage in heavy scouting▪ Presence of multiple service sector partners with science and experience
Stage 3: Standardize it	This stage is less technical than previous stages, Contractors should be	<ul style="list-style-type: none">▪ Large, steady programs▪ Focus on above ground efficiencies	<ul style="list-style-type: none">▪ Standardization of everything grinds down unit costs▪ Effective coordination of chain of input

	<p>chosen correctly to fund activities and avoid any stop start.</p> <p>Decreasing idle time is the most important mission of this stage</p>		<ul style="list-style-type: none"> ▪ Efficiency gains ▪ Adequate and timely ancillary infrastructure such as midstream and transport ▪ No-frills approach ▪ Economies of scale and volume discounts ▪ Low cost of capital and adequate free cash flow at bottom of cycle ▪ Sequential unit cost reduction (opex and capex)
Stage 4: Rethink it	<p>This phase as final phase is facing with decreasing productivity and increasing cost due to saturation.</p> <p>All fields have a finite life, but that life can also occur in several cycles as technology progress and/or price increases create new ability and incentive to more fully exploit the resource</p>	<ul style="list-style-type: none"> ▪ Transfer of ownership which is not working in Iran and Iraq as all ownerships are belong to government ▪ Down space further ▪ Rework and refract ▪ Expansion 	<ul style="list-style-type: none"> ▪ Strong cost control ▪ Focus of the operators ▪ Leveraging of existing well bores, infrastructure, and field personnel ▪ Discovery of new zones ▪ Application of new technologies

Source: adapted from Conoscenti (2011).

New considerations for business models in NOCs in the oil industry

We consider the value proposition as a new approach for developing business models for NOCs in oil industry.

In Iraq, the value proposition and related innovation of its business model could be generated by the long term contract with considering guaranty for payment and its cost of money after due date which is the most important part of any business. Iraq contract is about 20 years and it could continue upon both side agreement. Although in Iraq contract, financial incentives are less than Iran contract, long term contract and keeping contractors in safe side regarding the time of investing, assume as its innovation and many IOC's started their projects in Iraq after projects announcement as Iraq production increased about 200% from 1,308.25 bpd in 2003 to 3110 bpd which has reported recently by OPEC 2015 annual report.

The value proposition in Iran is more focused on financial incentives while contract duration is like the Iraqi one, lasting for 20 years or more. Market slow-down and saturation with supply glut, forced Iran to propose more incentives than Iraq to join its projects. Iran is offering cost of money from the beginning day of project if it will be successful, tax exemption and avoid of paying custom duty are Iran's unique financial incentives as its innovation. Iran hope to absorb enough

investors and IOC's for oil and gas development and back to the market then achieves its previous market share.

New business models for NOCs in the oil industry present new stages.

For the NOCs in the oil industry in Iraq the four stages for developing the business model are presented below.

Stage 1: The most important thing in this stage is the financial ability as there is not enough cash flow in this stage and IOCs should compensate the cost of exploration from their other assets. It made Iraq ask for \$100,000,000.00 to IOC deposit into a bank account designated by the NOC to prove their financial ability in order to start working according to Badra DPSC. The NOC also asked for a joint company as mentioned earlier in Table1, with supervision by joint committee to observe all the joint company's activities.

Stage 2: Knowledge plays a major role in this phase that is why Iraq tried to join knowledge proven IOCs to this contract and joint venture to guarantee this stage outcome and cost management by precisely interpreting masses of data and raising wells' productivity. For instance, Gazprom and Petronas which are two giants in this industry are two partners of Badra according to Badra DPSC.

Stage 3: Iraq has already thought about this stage by choosing a well-known company with knowledge and financial ability while establishing a joint company by the NOC, the observation was made to avoid any miss opportunity and decrease idle time in this stage. The joint company should also provide enough equipment to constantly produce and decrease OPEX and CAPEX that is why the NOC decided to exempt those paying custom duties to facilitate importation procedure.

Stage 4: It is time to transfer the operations onto the NOC and the local companies. Therefore in the Badra contract, IOC should leave all equipment which was used as contract subject, in good condition for the NOC as NOC's assets. Although IOC will hand over the contract and all related knowledge will be transferred to the Iraqi engineers to continue operations and extract products from saturated wells by fracturing and any other new technologies which could be achieved during cooperation with IOC's engineers.

By comparing the business models for the NOCs in the oil industry in these two countries we present also four stages for business models in Iran.

Stage 1: Same as Iraq, Iran also asks for IOCs with good financial abilities which should be proven by international financial organizations, and then the IOC can join the tender. Moreover, by creating a joint company by one of the most well-known Iranian company with NOC's observation, Iran is trying to have better control during this critical stage. One more trigger is that Iran will not pay anything to the IOC if the exploration is not successful, so IOC should investigate well enough and precisely with good knowledge and only after that, it should join the tender, however Iran will also give all the obtained information of each field prior the tender. On the other hand if IOC is successful, Iran will pay the cost of money from the beginning of the contract which is the most important incentive to motivate knowledgeable IOCs with good financial background to enter the market.

Stage 2: Iran has to deal with all the prerequisites which should be considered to choose IOCs with great knowledge regarding exploration and its new technologies to be successful and also the NOC will observe them during the contract.

Stage 3: Iran could introduce financial incentives which are tax free activity and custom duties exemption while IOCs also will not think about the social duties

which will be paid by the NOC. Therefore IOCs are free to think about those challenging items and will focus on the main activity which is production.

Stage 4: establishing a joint company and using Iranian engineers which is one of the most important criterion of the contract, will cause all related knowledge to get transferred to the Iranian engineer and they continue production by then.

Conclusions

The business model that we have analyzed for the NOCs in the oil and gas industry in Iran and Iraq is developed under the assumption that these companies have as main operational activities entry, exploration, appraisal, development, production and finally sales and transport. The financial part is always the best part of each contract that can show us all the aspects of each contract and this through this specific comparison we can obtain enough information regarding the difference of business models between these two countries.

In our case study, we do not have any major differences between the Iranian and Iraqi operational part of the business model and both of them cover all aspects like entry, exploration, appraisal, development and production. On the other hand, sales and transport have different characteristics which cannot be assumed in the contract by the IPC. Iran and Iraq handle those activities by their internal department which is a part of the key activities of Osterwalder's business model canvas.

Although we can see some similarities, there are differences with regards to certain characteristics in this comparison. These differences can play a major role for the IOs while they are going to choose their target market. Iranian NOCs are offering better financial conditions than Iraq in three respects. One of them is cost of money which cannot be paid by Iraq, but Iran will pay to the IOC's after the first production in all kinds of cost even DCC and IDC. The second difference or advantages is compensation of tax, social and custom duties which is one the most important advantages and Iran had to offer it because of the market slow down situation and lack of liquidity among IOCs to persuade them to enter on the Iranian market after sanction. On the other hand, Iraq only exempts contractors from custom duties of importation of any machinery they want to use in projects and also exempts them while they want to re-export those machineries with NOC's approval. Third difference is time of due date. Iraq due date is the date of delivery of products to final destination while Iran due date is the date of first production which is earlier than Iraq.

Another aspect of the business model is value proposition. This aspect, as mentioned earlier, is the most important part of each business model which relies on innovation. Iran and Iraq both bring innovation by long term contracts and facilitate the terms and conditions of the contract. For this implementation, a new joint company is created, with the NOC owning some share of it to ease the NOC authorization while the IOC is leading the company. It is to be mentioned that the joint company will differ in each phase of the business model. In Iran in the exploration phase, the joint venture will not play an important role. The situation will change in the operational phase especially in the plateau situation where the NOC will play a major role and force the IOC to use Iranian engineers and train them for the following phases.

The external environment of the NOCs in the oil industry as market slowdown and lack of liquidity for the NOCs and even IOCs could force Iran to offer more incentives in their new contract and absorb more IOCs to enter their market and move forward this sector. Although Iran offers these important incentives, they still may have conflicts with their parliament and face important challenges. Some people believe this new types of contracts are a kind of sell over and the government should be aware of them and try to protect national resources. On the other hand, others believe that the market situation pushed Iran to make this decision and offer those incentives and in long term Iran could benefit from this contract because of attendance of the IOCs and the new technologies which must be localized during the contract.

Disclaimer

A shorter version of this article was presented during the 10th International Conference on Business Excellence in Energy, Climate Change and Sustainability (ICBE) in Bucharest, Romania, on the 3rd of March 2016, and published in the conference proceedings.

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