

**Exploitation and exploration learning and the development of organizational capabilities: A cross-case analysis of the Russian oil industry**

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## **Exploitation and exploration learning and the development of organizational capabilities: A cross-case analysis of the Russian oil industry**

### **Abstract**

We use a cross-case analysis of four Russian oil majors to develop a framework explaining the relationship between exploitation and exploration learning, and the development of organizational capabilities in transition economies. Our research explains how the changing top management style influences organizational learning over time. In the first stage of organizational transformation an authoritarian management style initiates a break with the administrative heritage of the organization to facilitate exploitation learning and the development of operational capabilities. These are required for survival in the new conditions of a market economy. In the second stage a more participatory management style fosters exploration learning and the development of strategic flexibility, required for sustainable competitive advantage. We demonstrate that exploitation and exploration learning do not coexist in the initial stages of transformation but are sequential.

We found that the Western-derived constructs of OL add to our understanding of the process of organizational transformation in a transition context. Our study of the Russian oil industry also provides new ways to think about the processes of OL in Western companies, particularly large bureaucratic ones, anchored in their administrative heritage and needing to undergo organizational transformation.

## ***Introduction***

The institutional upheaval in transition economies after the collapse of central planning systems has provided fertile ground for organization studies, in particular with respect to processes of organizational transformation (Soulsby & Clark, 1996; Whitley & Czaban, 1998; Newman, 2000). Many state-owned enterprises have been privatized, yet they largely failed to adapt to the new conditions of a market economy. Only few succeeded in creating viable new operations (Uhlenbruck et al., 2003). This raises the question: how do organizations faced with radical external change learn how to survive and prosper under a new set of circumstances?

A call to link the study of organizational change with learning theory (Hendry, 1996) has been answered by studies utilizing organizational learning (OL) perspectives to explore this question in both joint ventures (for instance, Lyles & Salk, 1996) and domestically-owned firms (Newman, 2000; Uhlenbruck et al., 2003). Suggested causes of lack of learning include weak 'absorptive capacity' (Lyles & Salk, 1996), lack of managerial knowledge (Child & Czegledy, 1996), organizational cultures that inhibit knowledge sharing (Michailova & Husted, 2003) and cognitive barriers to recognizing and implementing new organizational routines (Newman, 2000). However, we still lack a detailed understanding of the processes by which organizational learning leads to the development of organizational capabilities.

We investigate these issues in the Russian oil industry, which provides a quasi-experimental setting (Cook & Campbell, 1979; Meyer & Peng, 2005) in that four firms started from similar positions in the mid 1990s, but followed different paths over the next decade. Some Russian oil companies have transformed themselves rapidly and are beginning

to compare themselves with the Western oil majors (Khartukov, 2001; Grace, 2005), while others have remained almost unchanged since Soviet times. This study explores these variations and their causes, focusing on learning processes and the development of new capabilities. On this basis, we propose a theoretical framework explaining a two-stage process of organizational transformation, the first stage being the development of operational capabilities via exploitation learning and the second stage being the development of strategic flexibility via exploration learning.

OL represents the process of improving actions through better knowledge and understanding (Fiol & Lyles, 1985) and occurs through organizational routines that are repeated and modified (Levitt & March, 1988). It is a mechanism by which firms build new organizational capabilities that enable survival and prosperity in new and volatile contexts. The concepts of *exploitation* and *exploration* learning (March, 1991) have emerged as key concepts underpinning organizational adaptation research (Gupta et al., 2006). *Exploitation* learning comprises refinement, choice, production efficiency, selection, implementation and execution; whilst *exploration* learning includes search, variation, risk taking, experimentation, play, flexibility, discovery and innovation (March, 1991). Exploitation learning thus leads to improvements of existing organizational routines, while exploration learning develops entirely new routines.

However, OL is constrained by an organization's *administrative heritage*, defined as its existing organizational attributes, its configuration of assets and capabilities, its distribution of managerial responsibilities and influence, and its ongoing set of relationships (Bartlett & Ghoshal, 1989). This administrative heritage is a particular concern in companies descending from state-owned firms in transition economies, because they typically have a

rigid organizational culture, and their resources and routines are not adapted to the needs of a market economy. These organizations have no related prior knowledge that enables them to interpret and apply new information in the context of their own organization (Filatotchev et al., 2003). However, OL depends on the organization's *absorptive* capacity - its ability to value, assimilate and apply new knowledge (Cohen & Levinthal, 1990). More specifically, the administrative heritage of an organization can either positively or negatively affect its absorptive capacity. Those organizations whose administrative heritage includes a significant proportion of related prior knowledge are likely to have a higher absorptive capacity than those which, as in the case of transition economies, have low levels of relevant knowledge, or structural impediments to learning and change. For the latter organizations absorptive capacity is low and thus constrains OL.

Our qualitative longitudinal case studies of four privatized Russian oil companies lead us to propose a theoretical framework that explains how breaking with administrative heritage, the creation of absorptive capacity, and exploitation and exploration learning interact and contribute to the development of organizational capabilities. The rapid pace of change in the Russian oil industry provides insights about how large and bureaucratic companies anchored in a rigid administrative heritage may achieve rapid change, also in other contexts. In particular, we explain how the characteristics and leadership styles of the top management team (TMT) critically influence OL at different stages of transformation, starting with an authoritarian style to break administrative heritage, yet progressing to a participatory style to encourage exploration learning.

In the next section we explore how the theoretical concepts advanced in the OL literature may help explain enterprise transformation in transition economies. On the basis of

this literature and our grounded case analysis we propose a theoretical framework for OL in organizations facing major external change. We then explain our methodology and describe the research context. Next we use the case study findings to elaborate the framework using a cross-case analysis. We conclude by considering the implications for organization theory and practice, the relevance for other change contexts, and avenues for further research.

### **Organizational learning in transition economies**

The concepts of OL and their interrelationships are the starting point for our empirical analysis. *Absorptive capacity* is often seen as a precondition for OL, yet it may be constrained by the *administrative heritage* of an organization. OL takes place in two forms - *exploitation* and *exploration learning* - and leads to organizational capabilities of various types as the desired outcome. Our theoretical discussion focuses on the relevance of these concepts and processes in a transition context.

#### *Absorptive capacity constrained by administrative heritage*

What an organization knows how to do today is a function of what was learned yesterday (Pisano, 2000). Its ability to build new capabilities therefore depends on its administrative heritage (Bartlett & Ghoshal, 1989). OL is limited by existing organizational structures and hierarchy, by organizational cultures that frequently encourage anti-learning values and routines, and by shared structures of organizational cognition (Salaman, 2001). In particular the administrative heritage of firms originating in the planned economy presents a major obstacle to learning and change since it includes routines developed for an economic system that is no longer in operation (Newman, 2000; Peng, 2000; Meyer, 2001). Existing knowledge, that can no longer accommodate events in the environment, must be altered, and new understanding of the environment developed for effective organizational adaptation

(Ellis & Shpielberg, 2003). This process is however constrained by the inertial nature of inherited resources and by cultural traits in Russian culture that inhibit change and knowledge sharing (Vlachoutsicos & Lawrence, 1996; Michailova & Husted, 2003). Socialist societies discouraged experimentation, innovation and change (Kornai, 1992; Kogut & Zander, 2000).

An organizational culture that inhibits knowledge sharing can undermine OL and cement existing routines. Thus the inherited resources, structures and cultures reinforce each other and weaken the organization's *absorptive capacity*, which is a function of prior learning and a set of learning skills provided by similar learning experiences (Cohen & Levinthal, 1990). For an organization to learn, it must be able to reconstruct and adapt its knowledge base, in so doing, creatively destroy outmoded practices and attitudes (Pettigrew & Whipp, 1991). Since firms in transition economies were organized fundamentally differently, they had to change even the inner logic from plan target fulfillment to profitability and efficiency (Meyer & Møller, 1998; Newman, 2000). New systems and procedures have to be adopted and the learner not only has to unlearn acquired routines and replace them with new ones, but also to reassess attitudes and value systems underlying behavior under the old and new regimes (Lyles & Salk, 1996; Meyer & Møller, 1998; Lane et al., 2001). Thus the knowledge gap concerns skills that can only partially be transferred through active interaction between teacher and recipient but require intensive learning by doing. Many firms in transition economies do not have learning experiences similar to those of potential partners operating in a market economy (Hitt et al., 2000) and the cognitive ability of managers and employees to envisage major change and to identify and implement radically different routines is limited (Lyles & Salk, 1996; Newman, 2000; Lane et al., 2001).

Although the challenge of an administrative heritage with low absorptive capacity has been identified in transition economies, little empirical research has been conducted on this topic. Recent studies point to systems of corporate governance (Filatotchev et al., 2003) and partnering with foreign investors (Lane et al., 2001) as possible avenues for overcoming administrative heritage to initiate and implement change. However, little is known about how managerial practices may increase absorptive capacity and help diffuse knowledge inside the firm (Minbaeva et al., 2003). We thus explore in our case studies how the TMT can break with administrative heritage such as to enhance absorptive capacity.

#### *Exploitation and exploration learning*

An organization's absorptive capacity determines its ability to learn i.e. to assimilate and apply new knowledge in order to adapt to new conditions. Exploitation and exploration learning (March, 1991) have emerged as two OL concepts underpinning organizational adaptation (Gupta et al., 2006). They resemble Senge's (1992) description of adaptive (survival) and generative learning. Adaptive learning is about coping i.e. exploiting. Generative learning, on the other hand, enhances creativity and corresponds to exploration learning. March (1991) maintained that organizational change requires both exploitation and exploration 'to achieve persistent success' (1991:205). However there is a debate as to whether it is possible to simultaneously engage in both types of learning: the issue of ambidexterity versus punctuated equilibrium (Gupta et al., 2006). Authors suggesting a balance between the two – an ambidextrous organization - include Benner and Tushman (2003) and He and Wong (2004). Burgelman (2002), on the other hand, concluded from his longitudinal study of Intel that exploitation and exploration learning were temporally differentiated in a process of punctuated equilibrium. In other words a long period of



exploitation learning is followed by a burst of exploration learning. By studying processes of OL over time our study contributes to this debate.

Most OL is exploitation learning, i.e. incremental change in routines within the existing schema (Newman, 2000). But incremental change would not suffice to accomplish the radical changes required in a transition context. Newman (2000) has suggested that firms undergoing change in transition economies need to primarily engage in exploration learning to accomplish radical changes to existing schema. However, there is a lack of empirical support showing how they would achieve this. Furthermore there is a lack of consensus in the OL literature as to whether exploitation refers to using past knowledge or whether it also refers to seeking and acquiring new knowledge ‘albeit of a kind different from that associated with exploration’ (Gupta et al., 2006: 693). We thus investigate to what extent firms engage in both forms of learning and what outcomes result.

#### *Outcomes: Organizational Capabilities*

Firms undergoing organizational transformation undertake OL in order to develop the organizational capabilities which are required for survival and success in the new context. Organizational capabilities represent ‘the ability of an organization to perform a coordinated set of activities utilizing organizational resources, for the purpose of achieving a particular end result.’ (Helfat & Peteraf, 2003: 999). Organizations in transition economies need to develop two types of organizational capabilities. First, they need to develop the basic *operational capabilities* required for survival in a market economy, but missing in a centrally planned economy, for instance marketing, finance, HR and information sharing (Puffer, 1994; Hitt et al., 2000; Peng, 2000; Filatotchev et al., 2003). Second, since the institutional environment in transition economies is unstable, they need to develop the capability to

respond quickly to changing competitive conditions, described as *strategic flexibility* by Hitt et al. (1998). Most studies of firms in transition economies focus on the development of operational capabilities (for instance, Hitt et al., 2000). An exception is provided by Newman (2000) who refers to the positive effect of strategic flexibility on organizational transformation in conditions of institutional upheaval. We contribute to the literature by analyzing the linkages between the different types of learning – exploitation and exploration - and the different types of outcomes - operational capabilities and strategic flexibility.

### **A framework for organizational learning in transition economies**

On the basis of iteration between the literature and our grounded case studies (presented below) we develop a new framework for OL in transition economies (Figure 1). The role of the TMT varies at different stages of enterprise transformation. In the first stage of transformation into an *exploitation* learning organization, an authoritarian approach forces a break with the administrative heritage. Exploitation learning leads to the development of *operational capabilities* for survival in a market economy. In the second stage of transformation into an *exploration* learning organization, a more participatory leadership style fosters experimentation and risk taking. Exploration learning facilitates *strategic flexibility* permitting development of new indigenous capabilities that support sustained competitive advantage.

Three crucial additions to the OL literature are as follows. First, we incorporate the influence of the TMT and leadership style in the analysis of OL processes *over time*. Vera and Crossan (2004) identified the importance of CEO and TMT leadership styles and practices for OL and empirical evidence in Russia suggests that transformational leadership is directly and positively related to organizational performance (Elenkov, 2002). Various

authors point to entrepreneurs or TMTs as crucial in influencing transformation processes in transition economies (Fey et al., 2001; Uhlenbruck et al., 2003; Clark & Soulsby, 2005). Yet exactly how TMTs influence OL in companies in transition economies is not well understood. Our framework suggests that the role and leadership style of the TMT changes between the early, and later stages of the organizational transformation.

Second, we contribute to the debate on ambidexterity versus punctuated equilibrium by showing that exploitation and exploration learning do not coexist in the initial stages of organizational transformation, but that exploitation learning is required first, for the development of basic operational capabilities. Exploration learning, if it is achieved at all, occurs only after prolonged exploitation learning, intensive interfaces with advanced players, and changes in the leadership style. This suggests the punctuated equilibrium model of organizational learning (Burgelman, 2002).

Third, our case studies and theoretical framework help to explain what exploration and exploitation actually mean (Gupta et al., 2006). We ascertain that exploitation learning refers to the pursuit and acquisition of knowledge, that is new for the companies in a transition economy, but already in existence in the West. Exploration learning is the creation of new knowledge to develop strategic flexibility, leading to sustainable competitive advantage. The link between exploitation learning and the development of operational capabilities and between exploration learning and the development of strategic flexibility adds to understanding of these concepts.

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INSERT FIGURE 1 ABOUT HERE

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## **Methodology**

### *Research design*

The study is based on longitudinal and cross-sectional case studies (Yin, 2003) of four Russian oil companies covering a ten-year period from full privatization of the oil industry in 1995 to 2005. Interviews were conducted from 2001 to 2005 and respondents were asked to talk about organizational change since privatization. A longitudinal and qualitative approach is one most often used for research into organizational change (Pettigrew et al., 2001; Dawson, 2003). Choosing a period of rapid change allowed us to conduct a processual analysis of change (Pettigrew, 1997; Dawson, 2003) over a relatively short period of time. The novelty and complexity of processes in a transition economy suggested the use of an interpretive approach, which is appropriate where the phenomena to be investigated are complex and not well understood (Ritchie, 2003). The objective was to explain the process of OL and its influence on the development of organizational capability and to identify how and why the process differed between the companies. Two companies, Yukos and TNK (later TNK/BP), were selected on the basis that they seemed to be changing most rapidly towards a Western model. This permitted *literal replication* between the two cases (where similar results are predicted) (Yin, 2003). The other two companies, Lukoil and Surgutneftegaz, were demonstrating a slower pace of change and would thus permit *theoretical replication*, where different results are obtained but for predictable reasons. The four companies were selected since they represented *prima facie* two extremes of organizational transformation.

### *Data gathering*

Semi-structured interviews were conducted as it was essential to gain an in-depth knowledge and understanding of the organizations and their processes (Rouse & Daellenbach, 1999). Respondents included managers at different levels (top, senior and middle managers), representing different functions (e.g. strategy, PR, HR, finance, manufacturing and production) at two types of location (head office and regional subsidiaries). External experts with knowledge and experience of the case companies were also interviewed to gain a triangulated view of the general context of the industry. This triangulation of source data avoided over-reliance on perspectives of senior managers who might present events in a favorable light, which has been a characteristic of much OL research (Easterby-Smith, 1997). Seventy-one interviews were conducted in which seventy-four respondents were involved. (Eight of the respondents had worked in two of the companies). In 2003, while the research was still being conducted, two important events happened: TNK merged with BP to form a fifty/fifty international joint venture (JV); and the CEO of Yukos, Mikhail Khodorkovsky, was jailed for alleged tax crimes. The subsequent partial dismantling of Yukos meant that several employees transferred from Yukos to the new TNK-BP JV providing a good source of comparative data.

The interviews were conducted in Russian or English, according to respondent wishes, and lasted around one hour. They took place mainly in Moscow but also in the regions (for example Siberia for oil production and European Russia for oil refining). Respondents were encouraged to talk freely about organizational change. The interviews were taped and transcribed.

### *Data Analysis*

The data analysis process broadly followed the recommendations of Miles and Huberman (1994) for data display and Strauss and Corbin (1998) for coding, and was facilitated by computer aided qualitative data analysis (CAQDAS) – Atlas-ti. The interviews were imported into Atlas-ti in the original (Russian or English), but the coding was done in English. This had the advantage of retaining the original nuance and enabling a mental recreation of the scene. Extensive use was made of Atlas-ti facilities to theorize about codes and their relationships, to conceptualize the data and to develop a more integrated understanding of events, processes and interactions in the cases.

Initially an open coding approach was taken. Then pattern codes (Strauss & Corbin, 1998) were developed e.g. management style ranged from top-down and centralized to open and empowering. As patterns began to emerge, the codes were clustered into groups (for example OL, administrative heritage) which formed categories. Once a category was identified (e.g. OL), it could be further differentiated explained by breaking it down into its subcategories (e.g. exploration learning, exploitation learning). Associative analysis was conducted to find links or connections between two or more phenomena (Ritchie et al., 2003). This was facilitated by the network functionality within Atlas-ti which was used to display relationships and patterns in the data. The paradigm approach (Strauss & Corbin, 1998) was used to sort out and organize the emerging connections. This approach is illustrated in Table 1 for the example of exploitation learning. The results of the data analysis were used to develop the theoretical framework. This was then compared with the literature in the method described as ‘enfolding literature’ (Eisenhardt, 1989: 544) .

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INSERT TABLE 1 ABOUT HERE

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## **Research context**

The external context is important for organizational processes (Johns, 2001)(Meyer, 2007). Our data suggest that the context evolved in four distinct phases as illustrated in Figure 2. The ‘time of troubles’ was the chaotic period immediately after the collapse of the Soviet Union during which the privatization process started. This was followed by asset grabbing and the rise of the oligarchs, who have been described as men with both wealth and power (Hoffman, 2002). Oil production had been in steep decline since the late eighties and crude oil production had fallen from 11.3 million b/d in 1986 to 5.04 in 1996 (Lane, 1999). The 1998 financial crisis in Russia provided the impetus for the oil companies to think about cost efficiencies and increasing oil production. This heralded the move to the market. At this stage many of the operational capabilities of the companies were developed. The final stage was the re-exertion of state influence, which was initiated with the imprisonment of Mikhail Khodorkovsky, CEO of Yukos, in 2003 and the confiscation of Yukos’ assets.

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These macro-environmental stages of development formed the backdrop to the process of OL in four of the Russian oil majors: Yukos, TNK (later TNK-BP), Lukoil and Surgutneftegaz. For simplicity we use the term ‘Soviet-style’ for Surgutneftegaz and Lukoil and ‘Western-style’ for Yukos and TNK/TNK-BP. They represent the two extremes of companies which emerged after the privatization. All respondents across the case studies identified a clear distinction between the former, which have retained much of their Soviet heritage, and the latter which have transformed towards a Western model. Table 2 provides basic data on the four oil companies and illustrates that Yukos was the leading company in 2002 in terms of growth in oil production, production costs and market capitalization. The production and financial indicators for the other Western-style company – TNK – lagged the other companies, partly due to the later privatization of this company and their inheriting the

rump assets. As we shall argue below, however, OL within this company and its transformation towards a Western model clearly distinguished it from its Soviet-style counterparts. Indeed, by the end of 2004, it had gained the leading position in the industry in terms of oil production growth.

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## **Findings**

Following the framework in Figure 1 the process of OL is described in three sections: the break with administrative heritage, exploitation learning and exploration learning. The data display in Table 3 provides a cross-case comparison of the four companies.

### *Break with administrative heritage and creation of absorptive capacity*

The characteristics of the TMTs of the Western-style and Soviet-style companies are quite distinct. The former are characterized by an entrepreneurial orientation, a predominance of ‘outsiders’ and heterogeneity. The latter are largely homogenous, insiders and experienced only in the Soviet oil industry. The Western-style TMTs could see the need for the introduction of Western management techniques: ‘These people [TNK TMT]...realized that they needed to be thinking...West.’ (*Middle Manager, TNK-BP, Russian*). The Soviet-style companies were less inclined to change: ‘[Surgutneftegaz and Lukoil] Simply people had always done things that way, and they were not used to doing things in a new way’ (*Senior Manager, Russian Oil Company, Russian*). Due to their heterogeneity and experience outside the oil industry, the TMTs of the Western-style companies had a broader set of experiences on which to draw to recognize, interpret and internalize new knowledge, creating a stronger absorptive capacity. The role of an ‘enlightened’ top management was key to overcoming the lack of experience and knowledge



of operating in a market economy. The absorptive capacity of the TMTs was high, facilitating the emergence of a new dominant logic within the organization – the market-oriented logic: ‘[TNK] have no history...They have no traditions...they view problems with a fresh approach.’ (*Middle Manager, TNK-BP, Russian*). The role of these TMTs was therefore akin to the one described by Cohen and Levinthal (1990) for conditions of rapid and uncertain change, where absorptive capacity is a function of the individual standing at the interface of the firm and the external environment. By mediating the influences of the external environment the TMTs were thus able to circumvent the constraints of history, existing structure, power and politics within their organizations (Pettigrew, 1987; Pettigrew et al., 2001). Past experience became irrelevant and the capability of people to think, analyze and make decisions was fostered.

The Western-style companies used an authoritarian management style to break with the administrative heritage: ‘The buy-in in TNK was an executive order. That’s the Russian style, more a military style, and very much TNK style.’ (*Senior Manager, TNK-BP, ex Lukoil, Russian/Western*). Managers whose views were not aligned with the objectives of the new TMT were replaced. In the Soviet-style companies the managers were themselves a part of the administrative heritage of the oil companies. They were unable to foster the absorptive capacity of the organization: ‘If that’s the type of profile you have at the top [oilmen], instilling ...change is very difficult because even realizing that ... change is needed will take a lot of effort.’ (*Headhunter, Western*) The managers of these companies had been successful under the old system – therefore they saw no need to change. Thus the tendency of the Soviet-style companies was to promote traditional Soviet ways, and only very slowly to start introducing new Western management concepts.

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INSERT TABLE 3 ABOUT HERE

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*Exploitation learning*

For the Western-style organizations, developing the absorptive capacity of the organization by breaking with the administrative heritage prepared the ground for the first stage of OL – exploitation learning. (See Table 2 for a data display of exploitation learning in Yukos). Exploitation learning involved the acquisition of Western knowledge to increase production and efficiency. Expatriates were a key source of knowledge. Basic Western petroleum engineering principles, acquired via an alliance with a Western oil services company, enabled Yukos to ‘catch a lot of low hanging fruit’ in terms of a rapid increase in oil production. (*Senior Manager, TNK-BP, ex Yukos, Western*).

Training was important in both Western-styles companies. ‘Right from the beginning, Khodorkovsky (CEO, Yukos) set the target – one hundred percent training’ (*Middle Manager, TNK-BP, ex Yukos, Russian*). Khodorkovsky encouraged employees to select and exploit Western management practices: ‘When we looked at all the Western methods we selected the best, and also the ones which could be implemented in the company.’ (*Middle Manager, TNK-BP, ex Yukos, Russian*). Relationships were established with leading Western business schools and a Masters program in petroleum engineering, co-organized by Heriot Watt University, was set up in Tomsk, Siberia. The young specialists graduating from this course, the so-called ‘Heriot Watt-ers’, completed their training in the Yukos technical centre in Moscow and were then sent out to the regions in senior positions. On the collapse of Yukos many of these young managers were recruited by TNK-BP. TNK-BP had the additional advantage of many expatriates and BP secondees providing expertise.

In contrast, Surgutneftegaz had little interest in learning about Western management techniques. They employed no expatriates and did not utilize Western oil service companies. However they did send their specialists to the US to learn about technology, then developed a 'me too' version themselves. Yet, this approach did not create the direct interfaces that would be required to effectively transfer tacit knowledge.

Lukoil engaged in the acquisition of both technology and Western management techniques. Of all the Russian oil companies Lukoil was the most active internationally and 20% of their assets were located abroad, however respondents believed this was more for status reasons than for learning. They did not perceive the need to employ expatriates: 'To be honest I just don't understand what they are doing in Yukos and TNK, when the top managers are foreigners... I do not approve of this.' (*Senior Manager, Lukoil, Russian*). However the Lukoil leadership recognized that some managers were too fixed in their ways to change and needed to be replaced: 'It is not always easy to move them onto the track of market thinking. It is necessary to gradually replace them with new managers.' (*Senior Manager, Lukoil, Russian*). Some Lukoil managers were sent on business training courses, but concern was voiced about the extent to which any newly trained managers would be accepted back into suitable positions in the organization. However a manager from head office was of the view that 'all bright individuals who work well...all progress, they are in demand, regardless of their rank. (*Middle Manager, Lukoil, Russian*). The reality was probably that parts of the organization (e.g. head office) were much more amenable to young managers with Western training than others (e.g. the regions).

Thus, the two Soviet-style oil companies differed in their approach to learning. Lukoil was more open to Western management skills than Surgutneftegaz, but still lagged far

behind the Western-style companies. Surgutneftegaz, and to a lesser extent Lukoil, failed to create conditions that would lead to unlearning of existing routines, which would be a precondition for learning new practices (Newman, 2000). The primary cause was the inability of the TMT envisage major change or to identify and implement radically different routines.

Learning by doing was important in Yukos and TNK/TNK-BP for internalization of knowledge. For instance, when a new system of strategic planning was implemented, the issue was discussed, the broad outline taken from the BP approach and then it was: 'learn as you go....various people got involved and they try to understand what exactly they were supposed to be doing in their section of work.' (*Senior Manager, TNK-BP, Russian*). In Yukos there was a policy of job rotation so that managers could gain experience in different environments. Demonstrable success from the application of Western techniques was another key way for specialists to internalize knowledge: 'If I'm doing it one way and you can't demonstrate to me how ... you're proposing it's going to be better, why should I change.' (*Top Manager, TNK-BP, Regional, Western*).

The different methods of knowledge internalization in the Western-style companies helped employees to overcome the lack of organizational and technical skills required for survival in the different context of the market economy (Swaan, 1997). Learning by doing was a way of acquiring some of the tacit knowledge associated with these capabilities (Meyer & Møller, 1998).

The spread of exploitation learning into the regions presented problems for all companies due to geographic spread and multiple entities. Yukos employed 100,000 people over a large geographical area from European Russia and the Baltics to Eastern Siberia. The

problems were magnified by the existence of organizational silos: ‘one of the features of Yukos is in every function, in every department, people have a rather narrow perspective.’ (*Top Manager, Yukos, Western*). One way of breaking down these barriers and transferring knowledge was to encourage a culture where communication and open discussion became a part of life: ‘if you have a set of common goals ... and the culture of discussing things, then I think it works towards just trying to work out mutual acceptable solutions.’ ( *Middle Manager, Yukos, Russian*). In Yukos there was a policy of rotating directors’ meetings around different sites. And in TNK-BP so called ‘masterclasses’ were organized at centers of excellence: ‘but it is not direct training, but indirect learning, more like professional networking, linked with the implementation of innovations’ (*Middle Manager, TNK-BP, Russian*). Change agents, such as the Heriot Watt-ers in Yukos, were also used to disseminate new ideas. In TNK-BP six technology working groups were set up and given substantial support. The Corrosion working group made a case for, and received, \$1 billion over five years for a corrosion management project. Similar working groups were used in functions such as HR and planning.

In Lukoil there were various ways of disseminating best practice. Professional skills competitions were held in different locations. Senior management meetings were held every quarter, visiting factories and discussing problems across the different business divisions. Knowledge was also shared via cross-functional working groups. However corporate silos were a strong break on knowledge sharing across the company. The powerful regional companies – the ‘fiefdoms’ - resisted sharing information. The process of knowledge dissemination was therefore slow and painful.

OL in the Western-style companies was exploitation learning (March, 1991) since it involved refinement, choice, production efficiency, selection, implementation and execution in relation to business techniques and processes which were already in existence in Western companies. The effect of this exploitation learning was a significant improvement in operational capabilities. Yukos, in particular, developed many of the basic operational capabilities required for success in a market economy. Russian competitors readily acknowledged that Yukos were ahead of their peers in developing Western capabilities: 'Everyone agrees that they [Yukos] made a significant breakthrough from the point of view of establishing a normal ...corporation by Western standards.' (*Top Manager, TNK-BP, Russian*). TNK had also made significant strides in production capability, PR and marketing. A strong retail brand was developed and Western-style petrol stations began to appear.

The Soviet-style companies had made significantly less progress in developing operational capabilities, which was consistent with their reduced level of exploitation learning. Lukoil had started to make improvements in some of the functional areas, particularly in finance and business planning. However progress was slow. The technical skills of Surgutneftegaz were respected by the Western community but there was no evidence of the introduction of any Western processes relating to HR, finance, marketing, PR or HSE. Surgutneftegaz increased their oil production, yet this output growth was achieved by drilling more oil wells, rather than improvements in efficiency. Thus, their growth path resembles more closely 'extensive growth' strategies employed in the early days of the Soviet Union than the 'intensive growth' employed by resource-scarce market economies (Lavigne, 1999).

### *Exploration learning*

The operational capabilities created by exploitation learning would enable survival in the market economy, yet they would not equip the companies to attain sustainable

competitive advantage in a volatile environment. This requires higher levels of learning, namely exploration learning. In the time period under study, the main focus for the companies was on developing the operational capabilities for survival in a market economy. This section describes some of the early signs of exploration learning in the Western-style companies, however there was much less evidence of this type of learning. Nevertheless both Western-style companies had started to make progress in developing exploration learning by changing internal structures and cultures such as to encourage experimentation.

Yukos' predominantly authoritarian management style used to break with administrative heritage and introduce exploitation learning, nevertheless imposed restrictions on the ability of the organization to develop its own unique capabilities rather than just copying best practice from elsewhere. This, *prima facie*, would appear to confirm the incompatibility of exploitation and exploration learning (March, 1991). However, there was some evidence that Yukos was moving towards a more participatory management style, encouraging risk-taking and innovation. Some employees were trusted and supported: 'I was given total and absolute support.' (*Middle Manager, TNK-BP, ex Yukos, Russian*). An example of successful innovation in Yukos was the establishment of a new data base which could prioritize wells for maintenance. This innovation was a contributing factor to the dramatic growth in oil production. One expatriate in the organization was, however, rather scathing about the innovation capacity of the organization: 'There weren't many ideas coming up - creativity and innovation has been killed by the former system.' (*Top Manager, Yukos, Western*). Although Yukos fostered innovation, there was some doubt about how successful they were at encouraging people to come up with breakthrough ideas: 'that really does just happen at the top.' (*Investment Bank, Western*)

With the creation of TNK-BP in 2003 the large numbers of expatriates and Russians with Western experience contributed to a critical mass of knowledge and experience within the organization. One significant contribution of BP in terms of organizational processes and systems was the idea that a looser system of control could be more effective than a strict authoritarian system. Establishing boundary conditions and then allowing people the freedom to innovate within those conditions was important for exploration learning. In Yukos, too, there was an environment which encouraged innovation: ‘management put absolutely no brake, absolutely none, on any innovations’. (*Middle Manager, TNK-BP, ex Yukos, Russian*). Employees were encouraged to come up with new ideas and projects. Even mistakes were permitted if some learning derived from them, which presented a radical departure from the blame culture of the Soviet system where knowledge sharing was discouraged (Vlachoutsicos & Lawrence, 1996).

Since TNK had lagged Yukos in the development of operational capabilities, the main focus of TNK-BP was on bringing the company up to Western operating standards. However several respondents recognized the considerable innovation potential of Russian managers. Additionally, BP had experience of operating in many different countries, adapting to political and social changes. They were used to delegating authority down through the organization, enabling decision making at all levels. Thus BP’s experience and leadership style encouraged exploration learning. Sustainable competitive advantage would depend on BP succeeding in pushing through changes in terms of empowering the organization and encouraging strategic flexibility: ‘I’ve got to try to create capability where they think for themselves...A sustainable future is only from trying to unlock that natural capability.’ (*Top Manager, TNK-BP, Western*)



The Western-style companies were both moving towards an early stage of exploration learning, which was needed for the development of strategic flexibility to adapt to changes in the environment. The gradual change from the authoritarian management style which had originally prevailed in Yukos and TNK, to a more participatory style, encouraged innovation and experimentation. In contrast, there was no evidence of exploration learning in the Soviet-style companies, which were either still in the early stages of exploitation learning (Lukoil) or not engaging in OL at all (Surgutneftegaz).

## **Discussion**

The cross-case analysis of the Western-style companies (Yukos and TNK/BP) shows that TMTs play a pivotal role in OL processes. Top managers who came from *outside* the organization were able to break with the administrative heritage, which was characterized on the one hand by rigid hierarchy, lack of innovation, and a blame culture, and on the other by an antipathy to Western business methods and a lack of focus on profitability. Top managers located *outside* this heritage were able to overcome path dependency. They did not have vested interests tied to existing structures and they were not affected by cognitive inertia. Their entrepreneurial approach enabled them to do things differently. These characteristics resemble features observed in other turbulent contexts, which show that short-tenure and heterogeneity of the TMT assist organizational change (Lawrence, 1997; Clark & Soulsby, 2005) and improve organizational performance in turbulent environments (Keck, 1997).

The role of the TMT varies at different stages of enterprise transformation. In the first stage the TMTs in the Western companies largely used an authoritarian approach to overcome the dominant logic of the organization. Acceptance of the changes was assisted by the fact that the general characteristic of managers in the Soviet planned economy was one of

‘servility and a heads-down mentality’ (Kornai, 1992: 121). The break with the administrative heritage, enforced by the TMT, provided the necessary conditions to initiate OL. Without the impetus from a management with radically differing skills and mindsets from the ‘dominant logic’ of the organization, the organization would not be capable of absorbing and utilizing knowledge, simply because members would not recognize the relevance of that knowledge. The TMT were aware of the need to adapt to a changing environment and they were able to diffuse that understanding down through the organization. This confirms Filatotchev et al.’s (2003) proposition that organizations privatized through sale to strategic investors (‘outsiders’) are more likely to have higher learning and absorptive capacity.

In the first stage of OL the emphasis was on exploitation learning (March, 1991) or adaptive (survival) learning (Senge, 1990). This was required to ‘cope’ with the new conditions of a market economy. Knowledge was acquired, assimilated and disseminated throughout the organization. The scope of acquisition and implementation of new routines was extensive and the change involved was radical. However, unlike Newman (2000), who suggested this was exploration learning, we maintain that, although change was radical, this learning was still at the level of exploitation learning, since it involved the acquisition and implementation of operational capabilities already in existence in Western companies.

In the second stage of OL there were signs in both Western-style organizations of a move towards exploration learning (March, 1991). This was facilitated by a change in the management style of the TMT. By the end of 2002 the Yukos TMT was beginning to mature towards a more participatory style of leadership, encouraging innovation, risk-taking and decision-making and fostering a climate for exploration learning. TNK at that time was not so

far advanced as Yukos in the development of operational capabilities, having come later to the privatization process. The main focus for the new TNK/BP JV, formed in 2003, was on exploitation learning to achieve Western operating standards. However, BP's participatory management style and encouragement of innovation and risk-taking implied that exploration learning would gradually be developed. This transition from exploitation to exploration learning in the Western-style companies could be considered to be an example of punctuated equilibrium, whereby a long period of exploitation learning is followed by a short burst of exploration learning (see Burgelman's empirical study of Intel 2002). This would imply that the sought after balance between the two type of learning for organizational success (March 1991) is achieved via the sequential allocation of attention rather than by a simultaneous ambidextrous approach (See Gupta et al., 2006 for a discussion of this issue).

Whereas the break with administrative heritage had created moderate absorptive capacity enabling OL to take place in the first place, subsequent exploitation learning further increased the absorptive capacity of the organizations. Strong absorptive capacity, fostered also by the encouragement of experimentation, seemed likely to enable the development of entirely new capabilities such as to provide the strategic flexibility (Hitt et al 1998) to adapt to the turbulent conditions of a transition economy. This is important for such companies because of the need for new business models appropriate for emerging economy contexts (London & Hart, 2004; Prahalad, 2004).

The Soviet-style companies provide a sharp contrast (theoretical replication). Surgutneftegaz developed technical capabilities, but neglected business capabilities. It continued to operate Soviet-style and exhibited no organizational transformation. In Lukoil there was some evidence of exploitation learning and the development of operational

capabilities, but the process was constrained by a homogenous, traditional TMT that did not tackle the Soviet administrative heritage. The characteristics of the TMT and their ability to break with the administrative heritage therefore determine whether or not, and at what pace, OL takes place.

## **Conclusions**

### *Implications for organization theory and practice*

The rapid pace of change in some of the Russian oil companies permitted processual analysis of OL over a ten year period. We derive a theoretical framework that explains how breaking with administrative heritage to create absorptive capacity and the initiation of exploitation and exploration learning contribute to organizational transformation in transition economies. Furthermore, we show how the powerful intervention of the top managers accelerates change. This suggests key insights into how large, conservative and bureaucratic companies in the West, anchored in their own administrative heritage, may apply exploitation and exploration learning to achieve change more rapidly.

The theoretical framework for OL in transition economies (Figure 1) contributes to OL theory in explaining the changing role of the TMT for OL *over time*. At the first stage, an authoritarian management style enables the break with administrative heritage and thus increases the absorptive capacity of the organization. This facilitates exploitation learning and the development of operational capabilities for survival in a market economy. At a second stage, the TMT adopts a more participatory style, promoting experimentation. This enables exploration learning and the development of strategic flexibility, thereby facilitating the creation of entirely new capabilities that can be a basis for sustainable competitive advantage, even when the environment keeps changing.

Moreover, we have shown that exploitation and exploration learning *do not coexist* in the initial stages of organizational transformation in transition economies. Rather, exploitation learning is required first, for the development of basic operational capabilities. Only later, once they have acquired the threshold operational capabilities for survival in a

market economy, can organizations start to engage in exploration learning and develop strategic flexibility. This contributes to the ambidexterity versus punctuated equilibrium debate (Gupta et al. 2006), indicating that in the context of organizational transformation in transition economies the process is one of punctuated equilibrium. The first stage of exploitation learning with an authoritarian management style corresponds to the ‘induced (variation reducing)’ strategy described by Burgelman (2002:354), whereas the second stage of exploration with a participatory management style corresponds to the ‘autonomous (variation increasing)’ strategy (ibid.:354).

Our case studies and theoretical framework contribute to *defining* exploitation and exploration learning (Gupta et al. 2006). We demonstrated the linkages between exploitation learning and the development of operational capabilities for survival in a market economy, and between exploration learning and the development of strategic flexibility for sustainable competitive advantage. So long as the capabilities being acquired are in existence already, albeit in other organizations, then the learning involves exploitation, not exploration - however radical the organizational transformation. Exploitation learning thus involves the acquisition and assimilation of new knowledge, but it is a different kind of new knowledge to that which is *created* in exploration learning. The latter is the source of competitive advantage, whereas the former secures survival.

Tsang (1997) has highlighted that academic studies of OL have largely failed to generate useful implications for practitioners. The use of rich case study data and the cross-case analysis, whilst not prescribing how OL should be managed, nevertheless illustrates the process of OL in two companies that were successful in organizational transformation, thus providing guidelines for practicing managers in transition economies.

### *Limitations and Suggestions for Further Research*

The selection of the Russian oil industry for this study has certain disadvantages deriving from its notoriety in the business press, which largely reports on organisational transformation from the perspectives of privatization, corruption and political machinations. Nevertheless this research provides a different account of changes and problems, examining the internal processes of transformation. Such a contrast in approaches may help the reader better understand the problems of transition in Russia in general.

As for all case-based research, we acknowledge limitations to generalizing the findings. For example, the speed and extent of the organizational transformation of our case companies was due in no small part to their access to valuable resources. Oil is an export commodity in high demand. This meant that the Western-style companies could afford costly expatriates and training programs to increase the pace of OL. Conversely, the valuable resource base allowed Surgutneftegaz to continue its old strategy of extensive growth even when faced with a changing economic environment. This is not the case for many other organizations in transition economies. This study could, therefore, usefully be extended by investigating whether the theoretical framework reflects OL processes in organizations in other industry sectors or in other transition economies that are affected by a rigid administrative heritage. Additionally a large-scale survey of privatized companies within Russia and the former Soviet Union would contribute to generalization.

Moreover, we believe that the conceptual framework of OL could also apply to large bureaucratic companies in the West undergoing change. This, it would be interesting to test and further refine it in a variety of different contexts. Such replication research would also

allow to investigate the claim that OL processes are strongly moderated by the contextual peculiarities of economic transition (Meyer, 2007).

Our research has identified linkages between exploitation/exploration learning and different types of organizational capabilities. However, exploration learning was still at an early stage in the Western-style companies and practically non-existent in the Soviet-style companies. Further research on the progress of exploration learning in TNK-BP would increase our understanding of the linkage between exploration learning and strategic flexibility. Furthermore, in our research we have not addressed the growing literature distinguishing operational and dynamic capabilities (Helfat & Peteraf, 2003; Winter, 2003). It would be worthwhile to investigate how the different type of learning relate to these different types of capabilities (Helfat et al., 2006).

This paper has elaborated the theory of OL and applied it in transition economies based on empirical research of the Russian oil industry. We have found that Western-derived constructs of OL add to our understanding of the process of organizational transformation in this context. Our study of the Russian oil industry has helped us to enhance OL theory and we believe that our insights, moreover, provide new ways to think about the processes of OL in Western companies, particularly large bureaucratic ones, anchored in their administrative heritage and needing to undergo organizational transformation.



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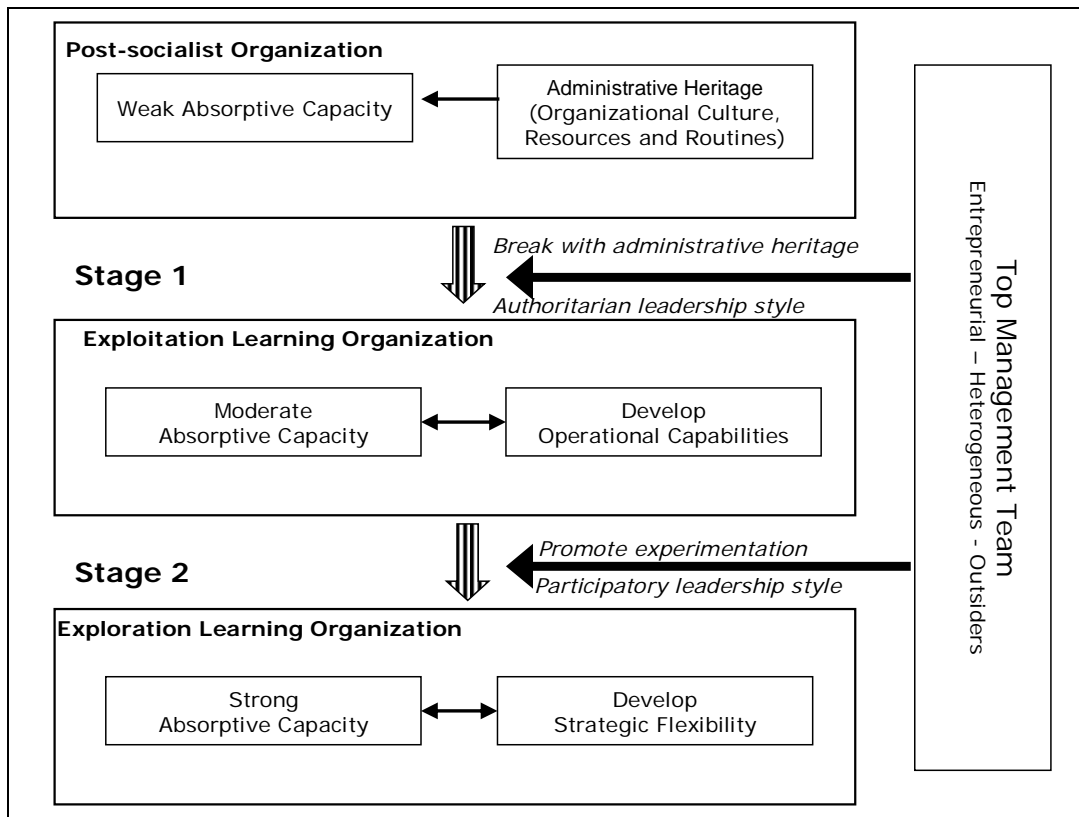
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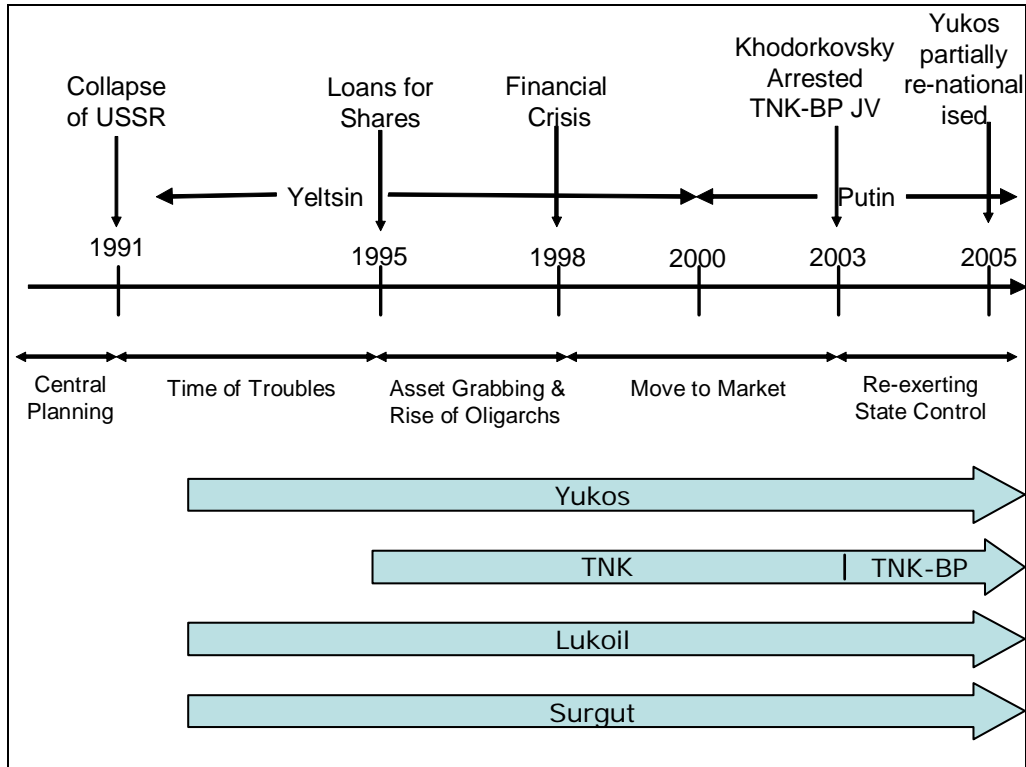
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**Figure 1 A Framework for Organizational Learning in Transition Economies**



**Figure 2 External context since the collapse of the USSR**



**Table 1 Data Display of Exploitation Learning - Yukos**

Paradigm	Findings	Examples
<p><b>Conditions</b></p>	<p><b>1998-2003 Move To Market</b>                      Low oil production and 1998 financial crisis in Russia provides impetus for OL</p> <p><b>TMT</b> heterogeneous, entrepreneurial, outsiders. Top-down management style.</p> <p><b>Break with administrative heritage</b>                      Replace blockers; new managers with CEO support; strategic alliances; training; quick successes; learn by mistakes; project teams; incentives.</p> <p><b>Increase absorptive capacity.</b> TMT drive; top-down management; promote innovation versus experience; early successes; crisis stabilization</p>	<p>‘The Russian oil industry now is very, very different from what it was a decade ago ... There’s no question that they are basically now quite commercially focused ... There’s also been a number of policy changes that have allowed that supplier response to occur, like the devaluation of the rouble, certain kinds of tax reform, ... legal reforms and so forth ... it’s been sufficient to allow the industry to completely change and revolutionize itself already’ (<i>Energy Consultancy, Western</i>).</p> <p>‘Khodorkovsky was lucky with his management team. They are a team of people with great professionalism, motivated not only by money, but with a huge desire for learning and self-development’ (<i>Middle Manager, Yukos, Russian</i>)</p> <p>‘I came here, aged 26, and became deputy to the head geologist. This had never happened before. Probably in the whole history of Russia there hadn’t been this kind of thing where the senior geologist was 26 years old’ (<i>Senior Manager, Yukos, Regional, Russian</i>)</p> <p>‘Khodorkovsky ... advocated innovations ... he promoted the ‘Western’ direction of development. And if he had not propounded and created this culture, Yukos would not have changed – I can say that unequivocally’ (<i>Top Manager, Yukos, Russian</i>).</p>
<p><b>Actions/ Interactions</b></p>	<p><b>Exploitation learning</b> – Western expertise via alliances; expatriates; Russians with Western experience; visit Western companies; training in Russia and abroad; learn by doing, job rotation, project teams, break down silos</p>	<p>‘The brilliant thing was Khodorkovsky, he hired maybe... two dozen ..expats. Let’s say he pays them \$1 million a year cash compensation, that’s 25 million a year. And the technology that they brought, I mean there was so many multiples of that. I mean he just got it at a steal. (<i>Investment Bank, Western</i>)</p> <p>‘ In Yukos we divided personal development into 5 areas: development on the job, development through business projects, development through learning from others etc. So development was a broad process. And training courses they are the least important, because training courses are not the most developmental. The most developmental are business projects.’ (<i>Middle Manager, TNK-BP, ex Yukos, Russian.</i>)</p>
<p><b>Consequences</b></p>	<p><b>Operational capabilities</b> developed e.g. HR, finance, production</p>	<p>‘We are growing about 2 times faster than the industry as a whole... We succeeded in 2 - 3 years in building a new management system and a new technological system....We began to change, earlier than others, the system which used to exist in Soviet times’ (<i>Senior Manager, Yukos, Russian</i>)</p>



**Table 2 Basic Data on Four Russian Integrated Oil Majors**

	<b>Yukos</b>	<b>TNK</b>	<b>Lukoil</b>	<b>Surgutneftegaz</b>
CEO <sup>1</sup>	Mikhail Khodorkovsky	Simon Kukes (German Khan Viktor Vekselberg) <sup>7</sup>	Vagit Alekperov	Vladimir Bogdanov
Ownership/control <sup>2</sup>	Mikhail Khodorkovsky  Oligarch Entrepreneur Major shareholder	Viktor Vekselberg Peter Aven Mikhail Friedman German Khan  Oligarchs Entrepreneurs Major shareholders	Vagit Alekperov  Oligarch Industry bureaucrat Major shareholder	Vladimir Bogdanov  Oligarch Industry bureaucrat Controls most shares
Head office <sup>1</sup>	Moscow	Moscow	Moscow	Surgut
Oil production kb/day 2002 <sup>3</sup>	1,392	753	1,515	987
Oil production growth 2002 <sup>4</sup>	20.3%	9.1%	1.5%	11.7% <sup>9</sup>
Refinery throughput, kb/day 2002 <sup>3</sup>	623	284	681	298
Production cost 2001 <sup>5</sup>	\$1.76/bbl	\$3.63/bbl <sup>8</sup>	\$2.50/bbl	\$2.50/bbl
Market value 31 Dec. 2002 (World ranking – PFC 500) <sup>6</sup>	\$ 21 billion (No. 15)	n/a	\$13.1 billion (No. 33)	\$13.2 billion (No. 31)

Notes and sources: <sup>1</sup> Company data. <sup>2</sup> (Grace, 2005) <sup>3</sup> (Petromarket Research, 2003) <sup>4</sup> (IEA, 2004) <sup>5</sup> (Landes et al., 2004) Compare Exxonmobil \$3.38/bbl (2001). <sup>6</sup> (PFC Energy, 2003) Compare ExxonMobil, \$235.1 billion (No. 1). <sup>7</sup> Kukes was CEO, Khan and Vekselberg were key decision-makers. <sup>8</sup> TNK came late to the privatisation process and inherited the rump assets <sup>9</sup> Surgutneftegaz increased production by excessive and inefficient drilling.

**Table 3 Cross-case Comparison of Organizational Learning and the Development of Organizational Capabilities**

	<b>Yukos</b>	<b>TNK (TNK-BP)</b>	<b>Lukoil</b>	<b>Surgutneftegaz</b>
<b>TMT</b>	Heterogeneous, outsiders, young, inexperienced, entrepreneurial, Russian/Western	TNK: heterogeneous, outsiders, young, inexperienced, entrepreneurial, Russian/Western. BP: conservatism, experience	Homogeneous, insiders, older, oil industry experience, Russian	Homogeneous (one man), insiders, oil industry experience, Russian
<b>Break Admin Heritage</b>	Replace blockers; new managers with CEO support; strategic alliances; training; quick successes; learn by mistakes; project teams; incentives	TNK: Replace blockers; new managers; centralized management. TNK-BP: Open communications; incentives; move to empowerment; working groups; lead by example.	Very little	None
<b>Absorptive Capacity</b>	Stage 1: TMT drive; top-down management; promote innovation versus experience; early successes; crisis stabilization (1995-2001) Stage 2: move to participatory leadership; empower; encourage innovation.(2002-2003)	Stage 1 (TNK): TMT drive; top-down management; early successes; crisis stabilization (1995-2003) Stage 2 (TNK-BP): train to think out of the box; empower; encourage innovation (2003-2005)	Little; constrained by tradition, oil background and pride. Few Western employees.	None; constrained by tradition, oil background and pride; Soviet-style management; no Western employees
<b>Exploitation Learning</b>	Western expertise via alliances; expatriates; Russians with Western experience; visit Western companies; training in Russia and abroad; learn by doing, job rotation, project teams, break down silos (1998-2003)	TNK: Western expertise via alliances; expatriates; Russians with Western experience; training (1998-2003) TNK-BP: many expatriates; access to BP knowledge; training; mutual secondees; rotating regional master-classes; learn by doing, job rotation, project teams, working groups (2003-2005)	Acquire foreign assets; few Western employees (none on TMT); Western consultants; management training; cross-functional working groups; BUT silos and resistance to info sharing.	No Western employees; technical training in West; copy Western technology; no alliances; no Western management techniques
<b>Operational Capabilities</b>	HR; finance; technology; production; marketing; corporate governance; PR & investor relations; planning; business processes (1998-2003)	TNK: Finance; technology; production; PR; marketing. TNK-BP: HR; planning; project management; HSE; corporate governance; business processes (1998-2003)	In process of implementation: finance; planning; project evaluation; business processes . Limited HR.	No Western functional capabilities; technology based; Soviet-style social support
<b>Exploration Learning</b>	Learn by mistakes; encourage innovation; begin to delegate decision-making (2002-2003)	TNK-BP - learn by doing; project teams; job rotation; learning by mistakes; working groups; change agents; encourage participation and innovation (2003-2005)	Not applicable	Not applicable
<b>Strategic Flexibility</b>	Evidence of innovation in oil production. Still largely vested in TMT, but CEO failed to adapt to new political environment (2003)	In process of development – focus still on exploitation learning. (2003-2005)	Not applicable	Not applicable