

**Working Paper No. 12/08**

**The impact of leadership development upon  
exchange and combination of knowledge**

by

**Bjarne Espedal  
Atle Jordahl**

SNF Project No. 6308

Tools and Techniques for Global Leadership Development in Norwegian MNEs

The project is financed by the Research Council of Norway

AFF Stiftelse

Rieber & Søn ASA

Veidekke ASA

Yara AS

INSTITUTE FOR RESEARCH IN ECONOMICS AND BUSINESS ADMINISTRATION

Bergen, May 2009

ISSN 1503-2140

© Dette eksemplar er fremstilt etter avtale  
med KOPINOR, Stenergate 1, 0050 Oslo.  
Ytterligere eksemplarfremstilling uten avtale  
og i strid med åndsverkloven er straffbart  
og kan medføre erstatningsansvar.



CONTENTS

Introduction ..... 1

Program description: LEAD – Leadership assessment and development..... 4

The impact of LEAD upon exchange and combination of knowledge: Theory ..... 9

The impact of LEAD upon exchange and combination of knowledge: Findings ..... 22

Exchange and combination of knowledge: Concluding discussion ..... 37

References ..... 42

Notes..... 44



## **The impact of leadership development upon exchange and combination of knowledge**

### **Introduction**

Yara International ASA is a Norwegian multinational chemical company which converts energy and nitrogen from the air into vital products for farmers and industrial customers. The company is the world's largest supplier of mineral fertilizers, it is a large supplier of gases and nitrogen based chemicals, and it has a strong sales and marketing presence in every part of world. The company's main markets are in Europe and in South, Central and North America. By the end of 2007 Yara had 8200 employees.

As a multinational company, Yara has a structure that is characterized more by power to local units than by corporate governance, reporting and control; i.e. the company has small central staffs compared to many other global companies. Yara's business is organized in three segments:

- *The Upstream* segment includes Yara's large-scale ammonia and fertilizer production plants.
- *The Downstream* segment offers differentiated products and services to many different market segments, covering both commodity and high-value crop segments. Yara's downstream segment is unique in the fertilizer industry. That is, the combination of production and sale is unique and creates competitive advantages.
- *The Industrial* segment creates value by developing and selling chemical products and industrial gases to non-fertilizer market segments.

Yara's leadership, business development and performance are subject to global trends and organizational challenges (Espedal & Jordahl, 2008). One challenge is leadership requirements as a consequence of organizational growth in the global context. From this

perspective, Yara's management claims that the company needs to identify and cultivate *future* leaders who have the *potential* to excel in critical leadership roles in the organization. Yara needs leaders who can be a force for coherence and unity, and who can contribute to efficiency and adaptiveness – associated with exploitative and explorative organizational learning. This paper focuses on the organizational learning process and investigates how, and to what extent, leadership development affects exchange and combination of knowledge.

In 2006, Yara launched a new leadership development program, LEAD<sup>1</sup>, to prepare for the company's future leadership requirements. This program was supposed to be beneficial for the individual leader as well as for the company:

- LEAD would give potential leaders better insight into their own leadership strengths and future development needs
- LEAD would strengthen Yara's leadership competencies and capabilities – which were crucial for Yara's growth strategy

LEAD was about leadership selection and development<sup>2</sup> in a global company which had experienced organizational growth, and which also expected further growth. The main goal of the program was to map potential leaders and to train and develop these leaders – aligned with Yara's business challenges<sup>3</sup>. This aim was linked to *learning*<sup>4</sup>: a) individual learning, b) learning between leaders, and c) learning within and between units in the organization. This paper focuses on learning at the dyadic-, group- and organizational levels; i.e., the focus is on learning associated with social ties. The purpose is to study how, and to what extent, LEAD created organizational capabilities that enabled exchange and combination of knowledge. In other words, the focus is on organizational capabilities that may be beneficial for creating, transferring, retaining, and using knowledge. Thus, the purpose of the study is not to evaluate

LEAD – regarding how and to what extent the program cultivated individual leadership competencies<sup>5</sup>.

In the following, we will first describe the reasons behind the LEAD program, and how these reasons formed the program's goals, structure and content. Based on data from interviews conducted with 22 informants, we will then discuss how, and to what extent, the program was beneficial for exchange and combination of knowledge in Yara.

### **The data**

Aspects related to the research question were mapped through archival data (program description, reports, Yara on internet) and semi-structured interviews conducted with 22 informants from three groups:

- Twelve informants who participated in the assessment and the leadership development parts of the LEAD program (31 % of the participants in the leadership development part of the program). These twelve informants will in the following be called *participants*.
- Five informants who only participated in the assessment part of the program or who were not nominated; and two informants who did not participate in the assessment activities. These seven informants will in the following be called *nonparticipants*.
- Three key informants: two from Yara's management and one from the consulting company that executed the LEAD program.

The interviews with the informants focused on a) the LEAD program (goals, structure, stages, and outcomes), and b) individual and organizational conditions for learning and knowledge sharing in Yara. Each interview took one to one and a half hours and was carried out at the office of the informant being interviewed.

## **Program description: LEAD – Leadership assessment and development**

### *The reasons behind LEAD*

Yara's management had reasons for the LEAD initiative, and those reasons revealed both the management's choices and their justification of their choices – concerning selection and development issues. There were three main reasons behind the LEAD program<sup>6</sup>. Firstly, Yara's top leadership believed that strengthening Yara's leadership competence was crucial to the company's growth strategy. Thus, leadership development was assumed to play a key role in achieving the company's business ambitions, and the aim was to improve Yara's performance and adaptiveness by cultivating leaders. Secondly, LEAD would introduce a common and objective measurement which would enable Yara to identify leadership talent (leaders who had the potential to excel in critical roles in the organization). Thirdly, Yara would gain information that would enable rational decisions regarding recruitment, training, placement, and succession. As a conclusion, Yara's top leadership believed in leadership development through cooperation in a way that would align leaders' self-interests with the interests of the organization. From this view, LEAD provided an opportunity for potential leaders to demonstrate their talents and ambitions, while gaining insight into strengths (and weaknesses); and the opportunity to discuss future developing needs with their boss – in ways that would be beneficial for the individual leader as well as for Yara's growth strategy.

### *Nomination of candidates*

The nomination of candidates was an outcome of two processes. The first was *pre-nomination*. Yara's management selected 400 candidates who would take part in the assessment program. The second process was *self-nomination*<sup>7</sup>. In order to create an opportunity for new leadership talent to become *visible*, Yara encouraged all employees with



a strong motivation to excel in key leadership roles to nominate themselves<sup>8</sup>. About 250 employees made use of this democratic<sup>9</sup> opportunity.

### *Assessment*<sup>10</sup>

The 650 nominated candidates went through an assessment process that consisted of three elements:

- *Talent View*: an on-line questionnaire to be filled in by the participants, his/her leader and direct reports/peers (self-evaluation and 360 degree feedback)
- *Global Personality Inventory (GPI)*: an on-line leadership and work-style questionnaire to be filled in by the participant
- *Raven's test*: a non-verbal cognitive ability measurement to be filled in by the participant, and administered manually by HR

### *Feedback*

After the Assessment, each participant received a report titled “TalentView of Performance Feedback Report.” This document included information about the participant’s work performance and capabilities. Each participant also received verbal feedback. The intention was that the feedback should be helpful in identifying and understanding the individual participant’s strengths and development needs – in a discussion with their boss.

### *Assessment Center*

Based on an evaluation of the reports, Yara’s management selected 100 participants who should participate in an extended assessment. This Assessment was carried out at an Assessment Center in Brussels. After each assessment activity during this assessment process, participants received direct individual feedback from the consultants and from observers from Yara. Finally, based on observed actions and performance during the

assessment activities, each participant received a report and personal feedback. The participants could use this information when discussing and creating development plans, and when making career decisions. A set of management reports<sup>11</sup> were also created. The management reports consisted of information about each participant and this information was intended to give the management the opportunity to compare individuals objectively.

### *Information*

The assessment process generated a lot of information, and this information should be treated confidentially<sup>12</sup> and according to legislation in the different countries. The generated information should be used for two purposes: a) It should be used for gap analysis and planning regarding development, succession and recruitment of leaders in Yara; and b) It should be used for decision-making regarding participation in the new management development program. Concerning selection of candidates to the management development program, however; information from the assessment should be combined with other information: a) recent performance appraisal data, leader's recommendation, interviews, reference checks and other job-relevant information; and b) Yara's business needs. Thus, decision regarding participation in the new management development program should be based on three types of premises:

- Information from tests and assessment activities
- Information about individual actions, interactions and performance in the daily work situation (information that formed or constructed reputation)
- Yara's business needs (what profile the company needed for the future, for balance between segments, and for diversity)

## *Management development*

Based on the available information, Yara's management selected 38 participants<sup>13</sup> for the LEAD<sup>14</sup> program. The program's main objective was to develop these participants in a direction that corresponded with Yara's business ambitions. See Figure 1 below<sup>15</sup>.

**LEAD OBJECTIVE**

To develop a group of world-class Leaders that we can deploy as we grow Yara globally?

- **Bench Strength Readiness** - ensure candidates with appropriate fit and readiness for Key Roles
- **Retention** – keep a talented generation and motivate them
- **Development** - close the Leadership capability gaps identified through PDI analysis
- **Industry Shaper** - Create a group of Change Agents who can drive Yara forward

YARA logo and four grey circles at the bottom.

*Figure 1. LEAD objective*

The structure of the new leadership development program consisted of three 5-day seminars, spread over 8 months, with between-seminar (team-based) home-work as an integrated part. The first seminar was held in the UK, the second in Brazil, and the last one was conducted in Qatar.

Each of the three seminars focused on issues related to leadership, strategy and Yara's business challenges. See Figure 2 below<sup>16</sup>. The main focus was to cultivate competent leaders who could be ready to fill key leadership roles in the organization<sup>17</sup>. A competent leader was assumed to be a person who had acquired knowledge and a set of shared values and beliefs that represented, in a sense, a notion of what good leaders in Yara were expected to do

common cognitive social capital. These expectations were related to Yara’s business ambitions, team-work, integration, adaptiveness, and change. Thus, Yara wanted leaders (integrators and change agents) who had the potential to excel in key leadership roles, and whose interests were aligned with the interests of the organization.

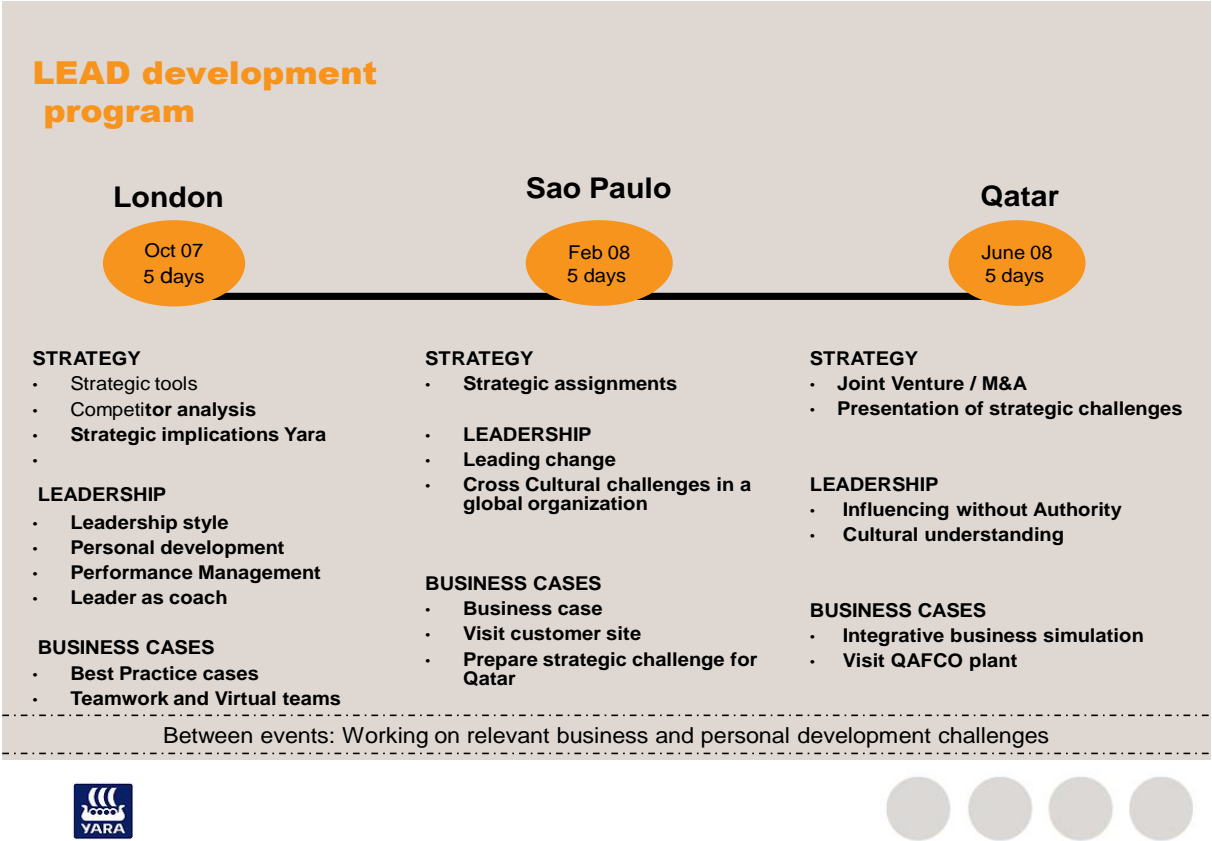


Figure 2. The structure of LEAD

*Coaching*

After the LEAD development program, all participants were offered a six months coaching program. Two of the participants did not take this opportunity for further development. The intention was to provide support and advice to the individual participants; and the coach could use inquiry, reflection, requests and discussion to help the individual to identify personal

and/or business and/or relationship goals, develop strategies, relationships and action plans intended to achieve those goals.

### **The impact of LEAD upon exchange and combination of knowledge: Theory**

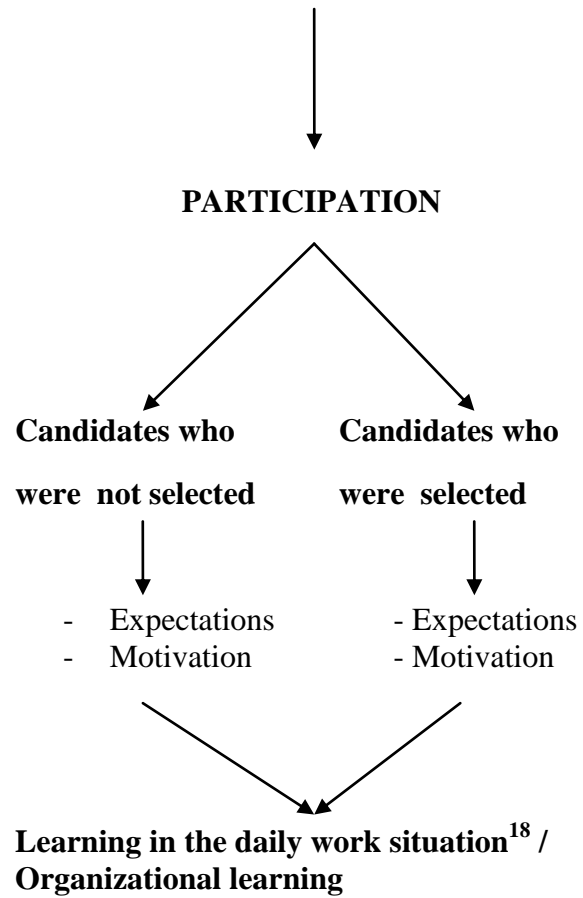
Figure 3 below, illustrates the research design or the model that is used in the analysis of the data and in the interpretation of the findings. Related to this model, we will first describe our basic assumptions and the reasoning behind the model. We will then discuss a handful of issues in reflecting on conditions for exchange and combination of knowledge in organizations. See Figure 3 below.

The analysis of the impact of LEAD upon exchange and combination of knowledge in Yara is based on three assumptions:

- Leadership development might create organizational capabilities in terms of structural, relational and cognitive social capital
- Organizational capabilities (social capital) might facilitate creating, transferring, retaining, and using knowledge
- The development of social capital, which again affects exchange and combination of knowledge, is embedded in an organizational and cultural context. Thus, the processes, associated with organizational learning, are affected by aspects which are related to:
  - a) the actors' participation in the assessment and section process
  - b) the actors' acting and learning in their daily working situation
  - c) organizational characteristics.

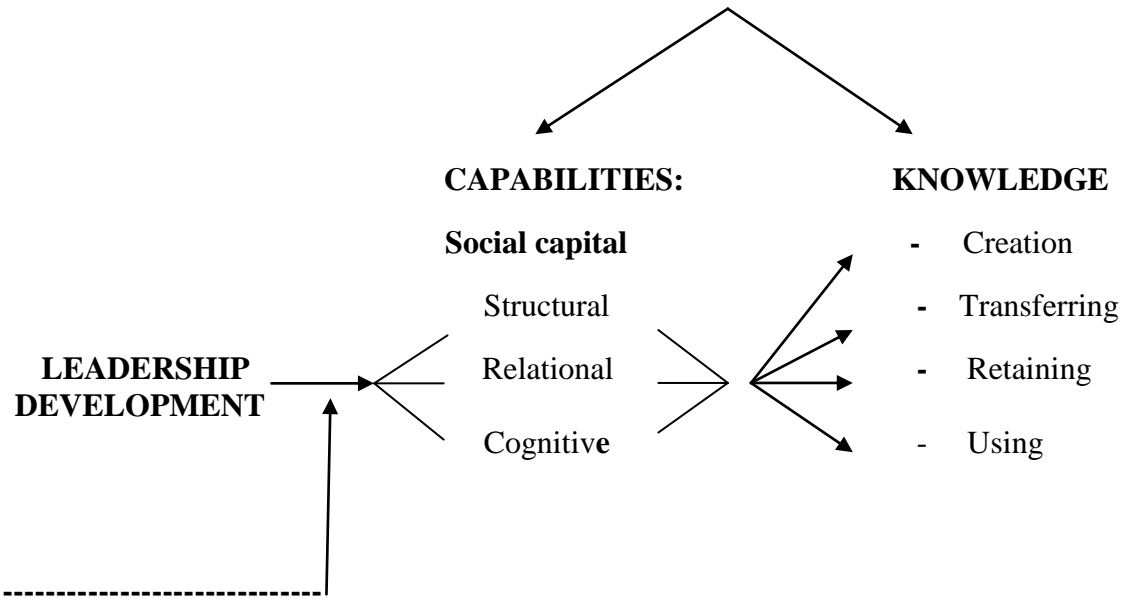
**Mapping leadership talent in Yara:**

**Leadership assessment**



**Yara: Organizational characteristics**

- Maneuvering space for acting and learning
- Leadership views
- Cultural norms
- Organizational routines



*Figure 3. The impact of LEAD upon exchange and combination of knowledge in Yara: The research design*

### *The reasoning behind the model*

The process started with the mapping and assessment of potential leaders who could fill key leadership roles in Yara. This process, which was associated with participation, led to two categories or groups of employees: a) persons who were selected to participate in the LEAD program, and b) persons who were not selected. We expect that these different outcomes might affect job motivation and expectations about consequences concerning further development and career opportunities in Yara. That is, those who were selected might increase their motivation and expectations, and those who were not selected might decrease their motivation and expectations. On the one hand, an increase in motivation and expectations might have positive effects on participation and learning in the management development program, and in the daily work situation. On the other hand, a decrease in motivation and expectations might have negative effects on participation and learning in the daily work situation.

A leadership development program might give rise to increased interaction and interdependence among leaders in an organization, and this again might create organizational capabilities, or develop social capital in terms of networks (ties), social relationships (trust, cooperation), and commitment to common values, norms and beliefs. Social capital, however, might also be an outcome of learning in the daily work situation, or an outcome of organizational learning. Organizational capabilities, in terms of social capital, might represent a determinant of intra-organizational knowledge flow, but some important aspects remain overlooked. One aspect is the role of individual motivation and expectations (Foss et al., 2009). Another aspect is the organizational context that form or shape the learning process (Argyris, 1999). Organizational characteristics that might affect both organizational

capabilities and the exchange and combination of knowledge are: a) the role of maneuvering space for acting and learning, b) the role of leadership views, c) the role of cultural norms, and d) the role of organizational routines in terms of formal rules and procedures.

### *Central issues in thinking about exchange and combination of knowledge*

Our elaboration of knowledge, and of conditions that enable exchange and combination of knowledge, takes the central elements and relationships in Figure 3 as its point of departure. First, we discuss organizational capabilities for exchange and combination of knowledge. Second, we discuss key aspects related to exchange and combination of knowledge. And third, we discuss some contextual aspects and their relationships to exchange and combination of knowledge.

### *Organizational capabilities*

Nahapiet & Ghoshal (1998) argue that social capital is a condition for exchange and combination of knowledge in organizations. That is, if individuals within an organization are capable of empathy, confidence, trust, goodwill, shared norms, and bonds of cohesion, they are able to interact heedfully in ways that enable exchange and combination of knowledge. Nahapiet & Ghoshal distinguish three dimensions of social capital: the structural, the relational, and the cognitive. The *structural* dimension refers to the presence of specific networks or social interaction ties across, and between, individuals, groups, and organizations. Related to such interaction ties, (Putnam, 2002) makes a distinction between “bonding” and “bridging.” Bonding refers to strong, cohesive ties within or between homogenous groups. Thus, bonding affects the relational dimension and may promote reciprocity and facilitate the



transfer of “know what”, “know how”, private information, and tacit knowledge at the dyadic level. In this way, bonding is positive for exploitation but can create cognitive and social traps that prevent exploration<sup>19</sup>. Bridging refers to bridging ties within or between groups or units (networks and connection ties among different kinds of people/different professionals). Thus, bridging is associated with diversity and weak social ties which might provide new information (“know what”) and facilitate exploration. Both bonding and bridging are beneficial for integration, but there are also differences. Bonding is geared towards enabling efficiency, and bridging is oriented toward moving ahead, development, and growth.

Related to bonding and bridging, the *relational* dimension refers to such facets of personal relationships as: trust, reciprocity, obligations, respect and friendship which facilitate the sharing of both explicit and tacit knowledge, and both knowledge of “know what” and “know how.” In organizations with an emphasis on distributed knowledge processes and distributed cognition, the relational dimension is very important. In such organizations, the members are ideally viewed as active participants in teams premised on dialogue and commitment - where the voluntary transfer of experience and information is an act of trust. In organizations where relationships are high in trust, leaders, as multiple actors, are more willing to be open and to engage in social exchange (Kramer & Tyler, 1996). Trust also increases the cooperators’ potential for coping with complexity, diversity and uncertainty - factors known to be important for creativity, improvisation, and exploration (March, 1991).

The relational social capital is associated with what Weick & Roberts (1993) call heedful interacting; the disposition to act carefully, willfully and purposefully with regard to the joint

situation. Heedful interacting does not mean that people think alike (shared cognition); rather that they interrelate in a common, heedful manner (style of action). An actor will interrelate heedfully if he/she understands the actions of others and their relationships; if he/she can anticipate responses of others; and if he/she knows that the others also have knowledge about the joint situation.

The *cognitive* dimension refers to shared interpretations and systems of meaning, and shared language and codes to enable communication. Shared interpretations and codes might be a force for coherence in organizations, as contributing to integration, and can lead to effective organizational communication and action by eliminating contradictions and preventing confusion. From this view, joint reasoning, common argumentation, and interpretations are seen as necessary conditions for open cooperation, conflict resolution, and organizational identity and order. However, organizations have to make trade-offs between unity and diversity, and between integration and variety. On the one hand, organizations want to mold leaders into a common culture – associated with a unity of harmonious purpose and commitment. On the other hand, organizations want to stimulate and nurturing diversity as a source of learning and organizational strength that impacts the balance between efficiency and adaptiveness, and between exploitation and exploration. Sometimes organizations advocate decentralization and diversity, and sometimes they sing the praises of unity and centralization.

#### *Exchange and combination of knowledge*

Sub-processes through which exchange and combination of knowledge occur are: creating, transferring, retaining, and using knowledge (Argote & Ingram, 2000). *Creating* knowledge

refers to the development of new or emergent knowledge within organizations. For example, as project members gain experience through working together, they might develop new knowledge or understandings that no member possessed at the start of their interaction; they might combine their previous knowledge in new ways to create new, collective knowledge; they might combine old experience with new experience, or they might combine experience with a new idea. In another example, rotation of leaders in organizations might stimulate the creation of new knowledge. Rotation can promote distribution of knowledge (best practices which other can imitate), and it can bring in new knowledge (ideas) that can be combined with existing knowledge within an organizational unit or a community of practices. However, these learning processes depend on individual and organizational capabilities - associated with playfulness, trust, openness, and absorptive capacity.

*Transferring* knowledge is the process through which individuals or organizational units learn from the experience of others, learn from best practices, etc. In transferring knowledge, individuals or units are exposed to knowledge that does “fit” or that does not “fit” into existing knowledge. There are at least two types of “fit”: fit as similarity and fit as complementarity. Fit as similarity can be found in the transfer of explicit knowledge across units which have the same technology and the same organizational routines. For example, transfer of knowledge within Yara’s Upstream segment is imitation of practices that have previously produced positive outcomes for others. The goal is to increase integration and efficiency. Fit as complementarity implies that different organizational components or units process different types of knowledge that fill out or complete each other as, for example, the transfer of knowledge between Yara’s Upstream and Downstream segments. The creation of new knowledge (exploration) is supposed to be enhanced by information components that do

not fit to each other (learning associated with diversity and variety). From this view, heterogeneous groups, where members have different backgrounds and information, have been found to be more creative than homogeneous groups where members are similar to each other. By contrast, the transfer of knowledge is enhanced by organizational components that are congruent with each other. Thus, (explicit) knowledge is more likely to transfer across units that fit to each other.

*Retaining* knowledge refers to the embedding of knowledge in various repositories so that it exhibits some persistence over time (storing of knowledge). For example, tacit knowledge resides in practices, situated activities, cultural norms, and beliefs as well as individuals. Explicit knowledge resides in organizational routines, technologies, and best practices as well as individuals.

*Using* knowledge refers to how knowledge is exploited and explored in processes related to developing, modifying, or changing of structures, systems, routines, tools, techniques, etc. Using refers to performance, but learning within organizations can also manifest itself through changes in understandings, beliefs, logics, etc.

#### *Exchange and combination of knowledge: Contextual issues*

This paper makes the argument that central aspects related to creation, transferring, retaining, and using knowledge are affected by a) maneuvering space for acting and learning, b) leadership views, c) cultural norms, and d) organizational routines.

*Maneuvering space for acting and learning* in the daily working situation can be viewed as an organizational arena where the individual organizational actor has formal authority, where the actor has elbowroom, discretionary power, and legitimacy to make decisions and to act from authority or mandate (Espedal, 2009). Such an arena can be tied to top leadership roles or to leadership teams in organizations. Stewart (1989) defines this type of arena using three elements: *demands, constraints, and choice*. From this view, leaders have little room to maneuver if most of the leadership functions are built into organizational routines – associated with demands and constraints. Therefore, room for maneuvering means that choice can be interpreted, constraints can be negotiated and demands can be tested. Those who master uncertainty obtain authority; those who give new interpretations of rules create a new understanding of reality; those who renegotiate power can obtain greater power; those who demonstrate proficiency in one field can obtain credibility in other areas; and those who undertake new initiatives can show that constraints are an old bad habit. In this way, leaders can expand their own maneuvering space, but they can also create conditions for a development that increases others discretionary power. One such condition is confidence that jobs will be completed, and with the understanding of the job requirements of others.

Any kind of organizational long-term adaptive or learning process requires a balance between exploitation and exploration (March, 1991). Exploitation is associated with improving organizational practices that are already known. That is, learning from experience is used to improve acting, modify organizational routines, and increase efficiency. However, if leaders engage in such additive learning alone, they might find themselves trapped in some sub-optimal state and fail to discover the intelligence of a new idea (new best practice), or to develop competence in it. Exploration is associated with the changing of mindsets and

routines that are known, and experimentation with what is not known but might become known. That is, learning from one's own experience and the experience of others are used to challenge existing perspectives, routines, and practices, and to develop new perspectives on the future. However, if leaders engage in such developmental learning alone, they might find themselves trapped in some sub-optimal state (impatience, unexamined enthusiasm, underdeveloped ideas, and unrealized dreams); and they are failing to stick to a new idea (best practice) long enough to determine its true value, or failing to gain the full benefits of mastering practices related to the idea (Levitt & March, 1988). Therefore, balancing is required to manage the need for certainty, consistency and efficiency on the one hand, and the necessity for experimentation, progress, and adaptiveness on the other hand.

The discussion reveals that maneuvering space for acting and learning is important for balancing exploitation and exploration – which again is related to creating, transferring and using knowledge. Thus, leaders who have maneuvering space are supposed to have capability (opportunities, freedom and discretionary power) to explore, create and exploit knowledge.

Within organizational contexts that provide room for maneuvering, March & Weil (2005) draw a dividing line between two types of leaders. The first type is leaders who act out of their own interests, and who assume that others do the same. They are calculating and use complex strategies to conquer resistance, and to achieve their aims. The other type is leaders who have a sense of cultural belonging. They act according to the institutionalized practices of collectivity and mutual understanding of what is true, reasonable, natural, and right in organizations. The first type of leader acts from the *logic of consequences*: leadership choice

is a conscious, consequence-driven action and the leader's motivation is self-interest. This logic tends to see leaders as interacting autonomous, self-interested, maximizers. They are also supposed to be sensitive to incentive instruments, which mean that the way to steer the motivation of leaders is to align their self-interests with the interests of the organization. The other type of leader acts from the *logic of appropriateness*: leadership choice is based on what is appropriate in relation to organizational rules and cultural norms associated with the leader's own identity, and the leader's motivation is commitment to this sense of self. This logic is related to self-knowledge (what type of leader am I?), and the capability to act from this insight. Leaders conduct themselves according to duties and to that which means something within a cultural and social context. One of the major instruments for motivating leaders to use the logic of appropriateness is *accountability*<sup>20</sup>. To make leaders accountable is to make them more careful in the definition of the situation, and more sensitive to social pressures and standards of appropriate behavior associated with their roles. Another major instrument is adaptiveness through *experiential learning*. For this to happen, accountability must be linked to accounts from which leaders can learn (for example, what went wrong and why) and which will be remembered; necessitating investing in records and intelligent retrieval. In addition, the information must be enriched by the experience of others.

In their pursuit of instrumental rationality, leaders are assumed to be capable of using judgment informed by experience and analysis; that is; instrumental rationality requires a mixture of knowledge gleaned from an intimate awareness of the fine details of the specific organizational context and knowledge gleaned from general analytical thinking. Such knowledge cannot be collected by a single mind (Tsoukas, 2005). This is because the knowledge of the circumstances in which the leadership must act never exists in a

concentrated or integrated form, but solely as the dispersed pieces of incomplete knowledge that separate the leadership process; i.e., persons in leadership roles hold related and relevant knowledge in different locations. Thus, leaders need to collaborate in order to process diverse information. The following questions then arise: Can strategic opportunistic leaders maximize the creation of value at the same time as they lessen the unfortunate effects of conflict? Can a team of self-oriented leaders be organized so that they work together in a productive way? Is it possible to have confidence in an “invisible hand” to guide and control competition between opportunistic individuals to a satisfactory social outcome? Regarding these questions, many authors claim that the degree to which the leaders’ self interests affect their behavior will lead to more control, less sharing of experience, and less cooperation (Ghoshal & Moran, 1996).

In order to restrict opportunism and to prevent the intrusion of myopia into a long-term plan, the leadership must have ways of stabilizing a current logic against frame switch. The notion of such stabilizing or binding is consistent with the logic of appropriateness. Leaders follow rules, and discipline themselves through a sense of self that allows them to achieve a desired end that might otherwise be attainable only with difficulty. Organizational practice reflects this notion. When there is a decision to develop an organizational culture, it is to bring about belongingness and to create identity as a framework for choice, action and interaction. The more the codes of rights and duties are internalized, the stronger the effect the culture has on leadership action. From this view, leaders can be cultural architects who develop and support norms that promote exchange and combination of knowledge in ways that increase creativity and new thought. One such norm is leadership cooperation (Espedal, 2009). Leadership cooperation as a norm is to a high degree supported by a “soft”, social logic of appropriateness: the voluntary transfer of information is an act of trust that resides in identity



and reciprocity. Leadership cooperation as a norm is to a low degree supported by a “hard”, rational logic of command-and-control which sees leaders, and their relationships, as motivated by self-interest: leaders exchange and combine information because they are commanded and paid to do so.

The discussion reveals that leadership views, or logics of action, affect creating, transferring and using knowledge in organizations. This is especially so regarding transferring. Different logics of action create different conditions for transferring.

*Routines* are a central characteristic of organizations: Organizational routines in terms of formal rules, standard operating procedures, and practices guide behaviors, and exist for the sake of achieving specific goals (Scott & Davis, 2007). Routines give order (stability) and a basis for action, but they can also limit flexibility. Experience-based knowledge (learning from one’s own and others’ experience) can unleash the dilemma between stability and flexibility. Routines contain insight and understanding that have been created through previous experience, and are improved or changed on the basis of new experience (Levitt & March, 1988). By the translation of experience into routines, conditions that form leadership and organizational action change. In this way, routines become an organization’s cumulative repository of learning. Such a development depends on the interactions among learners, and interaction depends on the learners’ motivation. Therefore, interpersonal skills are not a luxury; they are a necessity. These skills enable leaders to represent and subordinate themselves to communities of practice (Brown & Duguid, 1991). Thus, exchange and

combination of knowledge are accomplished by routines, but routines also retain knowledge (routines represent best practice - developed over time)

The discussion reveals that organizational routines are especially important for retaining knowledge in organizations.

### **The impact of LEAD upon exchange and combination of knowledge: Findings**

The presentation of the findings from the investigation is structured by the model that is presented in Figure 3. The findings from the study are illustrated using “quotations” that show typical observations. This is to say that the quotations illustrate typical opinions or socially constructed utterances that were advanced by at least *half of the informants* within a group of informants, and they are meant *exclusively* as illustrations of issues that have been raised in the theoretical discussion in this paper. The quotations illustrate how the informants *perceived* and *legitimized* issues and conditions related to exchange and combination of knowledge, but what organizational actors perceive and legitimize do not necessarily lead to acting (Meyer & Rowan, 1977; Mintzberg, 1973). In the following we will operate with three groups of informants: a) *participants* in the leadership development program, b) *nonparticipants*, and c) both participants and nonparticipants

#### *Participation*

The LEAD-program facilitated democratic participation in the assessment process, and all of the informants (both participants and nonparticipants) evaluated the democratic opportunity for self-nomination as valuable. It created an opportunity for motivated, potential to become

visible<sup>21</sup>; it signaled that Yara was a company which transformed a vision about high employee involvement and participation into reality; it signaled that equality was a central value in the organization (all motivated candidates had equal opportunities), and it indicated that fairness was an important norm. All of the informants also agreed that the mapping of potential leadership talent was crucial to Yara's ambitions and growth strategy: "Potential leadership candidates are a scare resource which we have to map and develop."

### *Feedback*

The nominated candidates who went through the assessment process (the first phase of the selection process) received a lot of feedback. All of the informants (participants and non participants) experienced this feedback as valuable. It was very helpful in identifying and understanding personal strengths and weaknesses as a leader. However, none of the informants had used this information in discussions with his/her superior<sup>22</sup>.

Regarding experiences from the assessment center activities, the opinions were much more diverse. For some, the assessment center activities were a good experience, but for others it was a bad experience. Some claimed that the activities were designed for sales people, and for people who had an MBA. Participants without sales experience had a handicap. Others claimed that the performance feedback was direct, tough and demanding in ways that was not helpful.

### *Selection*

All of the informants (the participants and nonparticipants) experienced the selection process as unclear and ambiguous. The participants, who were selected to the Assessment Center, and later on to LEAD, did not know why they were selected, and participants who were not selected did not know why they were not selected. All reported that they had received no information about the premises for the decisions that were made<sup>23</sup>. It was also unclear and ambiguous when the selection process ended. All of the informants who participated in LEAD thought that the selection process was finished when they were accepted as participants in the program; i.e., they had expectations of great consequences<sup>24</sup>, or they were candidates who could expect a leadership career in Yara.

The evaluation of good and motivated leadership candidates continued during participation in the leadership development program. The LEAD-participants were observed<sup>25</sup>, but the participants were not aware of this evaluation. The “clever”, “positive”, “engaged”, “active”, “creative”, “team-oriented” participant in the leadership development setting came to be seen as the prototype of a leader who would excel in critical leadership roles in the organization. From this view, LEAD was an arena that could allow playfulness, which provided experience with possible new acting and interacting; and in these ways provided experience and reasons that could make development and change possible. That is, Yara’s management tried to create opinions about why one participant was better than another, and why one participant would do well and another would not succeed. As a consequence, some of the participants increased, and some of them decreased, their career opportunities as a top leader<sup>26</sup>. Thus, LEAD represented an arena in which the participants’ reputation as a leader was formed or socially constructed in a process which involved several observers.

The informants' perceived lack of information had negative consequences. It led to speculation and opened up for different (free) interpretations of: a) the process (regarding selection criteria), b) the outcomes (regarding career opportunities), and c) for reasons why the participants were not informed. One interpretation was that open information about who were selected and who were not selected went against equality as a norm in the organization: "We created an 'A-division' and a 'B-division' of potential new leaders, but I recognize a tension between such differentiation and equality." A related interpretation was that the Yara management had capacity to give information, but the appreciation of leadership candidates was an issue that was difficult to talk about – caused by the equality norm. On the one hand, Yaras culture emphasized values associated with participation, equality, and cooperation. On the other hand, the LEAD program represented, over time, a development in which competition, individualism, and independence became realistic and appealing alternatives.

### *Expectations and motivation*

The selection process affected the participants' expectations and motivation. Those who were selected to LEAD developed expectations about positive outcomes – which again affected motivation. The participations saw two kinds of positive outcomes. One outcome (which most of them could see): "I have an opportunity and it is up to me to use and exploit this opportunity – LEAD represents no guarantee regarding a leadership career." The other outcome: "I am selected and I expect that Yara has a plan that provides career opportunities." This expectation was based on an assumption that LEAD was an integrated part of the organization's career planning<sup>27</sup>. However, several informants had observed that participating in LEAD was not necessarily a condition when Yara recruited to key leadership jobs. This

observation<sup>28</sup> could de-motivate participants who believed in external guidance and motivation.

The nonparticipants reported that those who were nominated but not selected to the LEAD program became more or less de-motivated (for a while). The informants who only participated in the assessment part of the program, or who were not nominated, stated: “I became disappointed, but I expect that there will be new opportunities later on.” These informants had also observed that the LEAD program was not necessarily a condition when Yara recruited to key leadership jobs, and this observation created job motivation. The informants argued: “Regarding recruitment of key leaders, Yara’s management has discretionary power and freedom of choice, and to decide the premises for their choice.... The management evaluates potential leaders, and assesses their reputation .... Reputation is a social construct negotiated among many stakeholders and observers.... Conditions for success in Yara are visibility, communication skills, and good luck.... A leadership development program might be important, but reputation from the daily work situation is also important.” Some of the six informants had leadership ambitions, but not all: “My identity is much more related to a specialist role than to a leadership role.”

#### *Organizational capabilities: Development of social capital*

Social capital is seen as a condition for exchange and combination of knowledge in organizations. From this perspective, the LEAD program was supposed to develop social capital in terms of relational channels, trust, openness, cooperation, and common mindsets. However, there were challenges. First, the informants pointed out that social capital is not

equally available to all employees in Yara as a global company. Geographic and organizational aspects may limit the access to social capital as an organizational resource. As an answer to this problem, LEAD represented an attempt to create equal access to the resource. Second, not all aspects (dimensions) of social capital are created equally. One example, the informants (participants) observed that LEAD created dyadic, weak ties, but LEAD did not develop strong (and more coherent) relational ties.

### *Structural social capital*

LEAD did not develop structural social capital in terms of strong, cohesive ties (networks beyond dyadic relationships). The informants gave several reasons: “Networks within an organizational setting do not emerge without a common task which serves a purpose... Networks emerge within an organizational and cultural context which is demanding, which set constraints, but which also opens up for choices. LEAD did not represent such a context.” However, the program developed egocentric, personal (dyadic) networks which were characterized by weak ties: “Career development in Yara implies rotation of leaders. From this point of view, it is important to know people I later on can contact in order to get relevant information.” That is, it was seen as important that new information could come from sources that the individual participant did not frequently interacted with.

### *Relational social capital*

The LEAD program did, to some degree, develop relational capital. That is, trust and openness emerged to some degree from embeddedness in dyadic relationships which gradually developed as an outcome of participation in LEAD. The creation of dyadic

relationships was especially important for participants who from the head office: “I am working through others. So I need to know others, and to develop strong ties in order to influence.” The program did not develop trust embedded in a network characterized by cohesive ties. The informants argued that learning from experience had shown them that strong ties could only be created in task-networks, or in professional networks; i.e., strong, cohesive social ties were associated with common tasks, commitment, belonging, and identification. They also claimed that common identities evolved from the practice of expert cooperation around specific tasks (expertise and specialized knowledge is especially important within the Upstream segment): “The concept of expertise stimulates associations and collaborations that recognize unit boundaries but tend to subordinate them to shared professional concerns... networks of experts define problems, construct conceptions of causal knowledge, and create frames of reference for action that integrate across units.... Their activities and associations lead to bonds that develop into common identities.... As contacts among experts become more dense and specialized, these linkages contribute to definitions of problems as organizational in scope, and of identities and meaning as cutting across unit boundaries.” The resulting order is characterized by a functional network of people organized around representatives of “sister units”. Within these networks, “the coordination is accomplished by the flow of signals and information so that people know what is going on, by anticipation of individuals, and by redundancy.”

### *Cognitive social capital*

According to the informants, the LEAD program developed cognitive social capital only to a small degree. The informants’ (more or less) commitment to central values and norms was an outcome of learning in the daily work situation (through socialization and internalization):



“We have some common core values<sup>29</sup>, but these are something we take for granted.... Common values and norms are formed by socialization where obligations, responsibilities and commitment are learned and followed.... We have espoused cultural norms and values, and we have professional norms and values - these do, more or less, form our identity as a leader.” We work well “when we take pride in our work and in the company... when we have a sense of shared destiny, mutual trust, and collective identity.”

Most of the cognitive social capital in Yara is probably associated with beliefs and logics which are related to the existing structural context - related to tasks, techniques, networks, relationships, norms. The informants pointed out that experiential learning in the daily working situation tended to focus attention, energy, and resources to the relative familiar and established ground of existing or closely related organizational practices. Thus, there is a need for cognitive social capital that concerns business challenges, the growth strategy, and integration. In other words, there is a need of arenas that can enable development of cognitive social capital associated with adaptiveness, novelty, and unity. A leadership development program (LEAD) might be an arena that allows learning that is not supported in the daily business; i.e., it might be an arena that allows discussion about changes which suggests a shift to new logics and a new set of practices. In this way, participation in a leadership development program can provide reasons for new thinking and new logics of action.

### *Yara: Organizational characteristics*

Aspects in Yara's organizational and cultural context may shape and influence exchange and combination of knowledge. Such aspects are: a) *maneuvering space for acting and learning*, b) *leadership views*, c) *cultural norms*, and d) *organizational routines*.

### *Maneuvering space for acting and learning*

All of informants (participants and nonparticipants) stated that they, to a high degree, had maneuvering space for acting and learning in Yara. From this view, maneuvering space represented an organizational capability which provided opportunities for possible new acting and interacting, and which again provided reasons that could make development and change possible. The informants experienced that they had freedom to take initiative and to "experiment", and they could learn from experience. Thus, maneuvering space created individual capabilities for acting – without necessarily specifying what appropriate acting might be, or without necessarily specifying what to do with the capabilities. That is, they could learn something which they could use or exploit later on. In these ways, maneuvering space created motivation, identification, and commitment. The informants claimed that the opportunity for maneuvering space was the *main* reason for why they took pride in their work and in the organization. As a consequence, they developed an identity and identification with the organization.

The informants argued that organizational leadership is associated with both maneuvering space and with organizational routines<sup>30</sup>. On the one hand, leaders follow routines and their behaviors are bounded by the standard of knowledge, and legality of the time. On the other

hand, leaders try to escape the routines and the standard to implement new knowledge and legality.

### *Leadership views*

Yara's business strategy is associated with the logic of consequences. Organizational performance is seen as the result of intentions and actions of leaders, and action is seen as intentional, driven by an evaluation of its expected consequences. It is a consequence-driven action that had a rule-oriented stamp, however. Yara has clear and strong rules<sup>31</sup> in relation to health, safety, quality, food, ethics, environments, professionalism, etc. There is a focus on vision, goals and strategy, but there is an equal focus on rules and routines<sup>32</sup>. In other words, what Yara defines as appropriate rules and norms are supposed to be *reflected* in behavior and in business conduct. Thus, in most situations and occasions, leaders in Yara are assumed to act according to rules, cultural norms, professional standards, and codes of conduct<sup>33</sup>: "We have norms and rules that create elements of order and predictability in our organizational life, have durable and independent effects, and some robustness toward individual interests."

Rule-driven action is associated with the logic of appropriateness. This logic places greater weight on expressions such as duty, responsibility, and cultural norms, rather than on expressions such as preferences and interests. Leaders seek to fulfill the obligations encapsulated in their identities associated with leadership roles. They follow internalized, cultural prescriptions of what is defined as true and right. Rules are followed because they are seen as natural, righteous, expected and legitimate.

### *Appropriate cultural norms*

There seems to be some norms that are appropriate within Yara's cultural context. That is, leaders seek to fulfill some obligations encapsulated in their identities associated with leadership roles; or they conduct themselves according to duties, and to that which means something within the cultural and social context. One type of duty can be bound to institutionalized demands that are visible to leaders such as clear, important and stable values and norms. Another type of obligation can be tied to learning-based, common understandings and perceptions about what appropriate leadership is, and should be, in Yara. The informants described *four* such common demands or understandings<sup>34</sup>.

### *The first understanding: the consultative leadership style is a style of acting*

Power is both central to leadership and a complication for it. As a result, it is a tension between hierarchy and participation, between power and equality, and between control and autonomy. From this view, Yara's leadership culture seems to be characterized more by participation, equality, and autonomy than by hierarchy and control. That is, low power distance. Low power distance means that people relate to one another more as equals regardless of formal positions (Hofstede & Hofstede, 2005).

All of the informants (participants and nonparticipants) reported that there is low power distance in Yara: It is easy to get access to leaders who occupy key leadership roles; the top leadership is available, supportive, cooperative, and show interest in the employees – concerning problems, challenges, suggestions, ideas, etc.,. The informants also thought that the consultative leadership style was a valuable, organizational resource that affected trust in

leadership, commitment and effectiveness. Thus, the informants expected and accepted power relations that were consultative or democratic; i.e., low power distance was a norm of appropriateness.

*The second understanding: knowledge sharing is a style of acting*

The informants reported that it is easy to contact competent people in Yara, and they *always* got relevant and appropriate answers: “We have many experienced and competent people, and they are available, open-minded, helpful and supportive when I ask for help.” From such a point of view, leaders might be committed to appropriate social *norms* such as: a) leaders offer information and ideas with no guarantee that they will get anything specific in return, b) leaders have useful competence and knowledge that will help in their joint effort, and c) leaders are motivated to help each other in order to contribute to the joint effort. However, there are some problems: “My job-experience as a newcomer was very frustrating.... When I tried to act and to anticipate the contributions of others, many mistakes happened.... I had to learn about heedful interdependence, and I had to develop a task-related network.... I had to develop a professional network allowing for new ideas to diffuse rapidly.... It takes time to learn who can help you with ‘know-what’, ‘know-how’ and ‘know-why’.... It takes time to develop a task-related network....It takes time to develop a professional network... .. We need routines which can support and help the interaction between newcomers and insiders.... We need routines/backup/manuals that can retain knowledge (organizational memory).”

*The third understanding: collaboration is a style of leadership acting*

Teamwork is a core value in Yara. Informants, who strongly intended to occupy key leadership roles, claimed that collaboration, associated with teamwork, was an appropriate style of acting<sup>35</sup>. Thus, most of the informants saw leadership cooperation as a cultural norm of appropriateness, and commitment to this norm was seen as a condition for a leadership career in Yara. Commitment to this norm was also appreciated in LEAD: “the good leader” was a LEAD participant who was team-oriented, cooperative, etc. From this view, leaders in key leadership roles were ideally viewed as active participants in teams premised on trust, dialogue and commitment.

Teamwork, as a core value, implies that leaders engage in mutual interaction and act coherently from the point of view of some common objectives. The goals of the leaders are positively related to each other, or their various beliefs and actions fit together in ways that make sense, and are consistent. All of the informants (from Yara) were involved in teamwork. From their experiences, they did not see conflict as a serious problem, but various issues of communication and coordination remained as problems. All of the informants were also involved in networking in which there was a flow of information and signals so that people knew what is going on.

*The fourth understanding: facing differences with an open mind is a style of acting*

Diversity is increasingly a fact of organizational life in Yara as a global company. From this perspective, Kostova et al. (2008, 997) emphasize that global companies are substantially different from domestic firms: global companies have “complex internal environments, with

spatial, cultural, and organizational distance; language barriers; interunit power struggles; and possible inconsistencies and conflict among the interests, values, practices, and routines used in the various parts of the organization”. Yara’s management claims that differences should be faced with an open mind<sup>36</sup>: “We believe in building *diverse* teams to secure complementary skills, experiences and mindsets.” All of the informants agreed with this espoused norm. That is, openness to the experience of others in order to increase learning (exploration) was valuable. However, diversity might be a “double-edged sword” (Milliken & Martines, 1996). On the one hand, diversity has potential value for teams because diverse teams generally possess more (diverse) information and knowledge, which may enhance learning and performance. On the other hand, diversity may disrupt team processes and performance due to the potential emergence of misunderstanding, conflict and opportunism may hinder the exchange and combination of available information. Related to diversity, the informants claimed: “Differences of opinion themselves do not promote learning and common understanding, and do not enhance performance. Diversity must be well managed to be constructive ... Cooperative relationships are the foundation upon which controversies are discussed open-mindedly.” Heedful interrelation did not imply that the informants thought alike (shared cognition); rather that they had a common style of interacting.

### *Organizational routines*

All of the informants (participants and nonparticipants) claimed that they had maneuvering space for acting and learning. To the extent this is the case, it implies that much knowledge is embedded in individuals. When knowledge is embedded in individual organizational members, their turnover, rotation and daily bustle might impact the retaining of knowledge in organizations or in organizational units. For example, high turnover is not beneficial for the

organizational memory. That is, the organization might lose “know-what” and “know-how” that are retained in individuals.

Organizational performance requires that employees have knowledge about “know-what”, “know-how”, and “know-why.” However, performance also requires knowledge about who in the organization “know-what”, “know-how”, and “know-why.” Thus, organizations need routines that can help:

- the employees to know what they are to do ,with whom, and how, which enable them to work together
- newcomers to interact with insiders retaining knowledge (organizational memory)

In Yara, a lot of knowledge is embedded in organizational routines which make the organization less vulnerable of individual participation; i.e., the knowledge embedded in routines is less likely to be affected by interruptions or depreciate than knowledge embedded in individuals. However, there are differences between the organizational units. The informants pointed out that the Upstream segment, more than the Downstream segment, retained knowledge through formal, organizational routines. Much of the behaviors within the Upstream segment are based on organizational routines. On the one hand, the rule-based action was a consequence of the pursuit of rationality and efficiency. On the other hand, it was a consequence of adaption to external demands regarding safety, health, environment, etc.

Yara’s rules and routines are modified and changed through problem solving, experiential learning and external pressure. The informants (participants and nonparticipants) argued that



if organizational performance targets are not met, Yara will increase searching, looking for ways to restore performance to an acceptable level. Yara would also substitute new rules for old ones on the basis of learning from experience (diffusion and imitation of best practices that had either been adopted by other organizational units or that had previously produced positive outcomes for other units). Lastly, the informants pointed out that rules adapted to pressure from external stakeholders. External demands (concerning the environment, technology, ethics, etc.) would pressure Yara's management to become more ingenious, innovative and responsible in developing and changing organizational routines. This was especially so within the Upstream segment.

Knowledge in Yara is also embedded in the organization's task-networks or professional networks. The informants (participants and nonparticipants) stated: "When I as a member of such networks gain experience, I learn who "know-what", "know-how" and "know-why", and we learn to assign tasks to the qualified member." However, it takes time and resources to build networks, and this was especially a problem for newcomers. To the extent individuals rotate in the organization, they might increasingly become "newcomers" in new settings.

### **Exchange and combination of knowledge: Concluding discussion**

This paper has investigated conditions for exchange and combination of knowledge - related to a new leadership development program in Yara. Clearly, it is an incomplete exploration. The theoretical discussion revealed fundamental aspects for understanding exchange and combination of knowledge (organizational learning). Data from the case study illustrated some of these aspects; however, the limitation of the empirical data invites the usual caution

in interpreting the generalizability of the results. However, as an introduction to an issue that requires more attention in the future, the study revealed some interesting findings that might prove to be robust as organizational characteristics. Thus, the findings might suggest a few fundamentals for understanding mechanisms for exchange and combination of knowledge in Yara.

The social capital theory assumes that organizational capabilities facilitate creating, transferring, retaining, and the using of knowledge. From this perspective, the findings emerging from the study of the LEAD program in Yara illustrate some mechanisms that might enable exchange and combination of knowledge.

A *first* organizational characteristic, the development of social capital, seems to be embedded in the organizational and cultural context rather than in a leader/leadership development processes. Thus, the findings suggest that development of organizational capabilities, in terms of structural, relational and cognitive social capital, is an outcome of learning in the daily work situation rather than learning in a leader/leadership development program.

A *second* organizational characteristic, the findings suggest that leader/leadership development is beneficial for development of egocentric, dyadic networks which are characterized by weak ties. Such networks might be beneficial regarding the rotation of leaders - which again might enable exchange and combination of knowledge.

A *third* organizational characteristic, the findings suggest that leaders in Yara have maneuvering space for acting and learning - which again strongly affects their motivation and their organizational commitment and identification. Thus, maneuvering space might be beneficial both for the using of knowledge (exploitation) and for the creation of knowledge (exploration).

A *fourth* organizational characteristic, the findings suggest that a consultative (collaborative) leadership style was a logic of appropriateness. This leadership style and was beneficial for participation, heedfulness and openness – which again might enable exchange and combination of knowledge.

A *fifth* organizational characteristic, Yara has organizational routines which retain knowledge, and these routines adapt to new knowledge through learning, problem solving and external pressures. However, this characteristic portrays the upstream segment to a higher degree than the downstream segment.

A *sixth* organizational characteristic, the findings suggest a lack of organizational routines that can help newcomers to interact heedfully with insiders. Such routines might be beneficial regarding rotation of leaders - which again might enable exchange and combination of knowledge.

This report did take two assumptions as its point of departure:

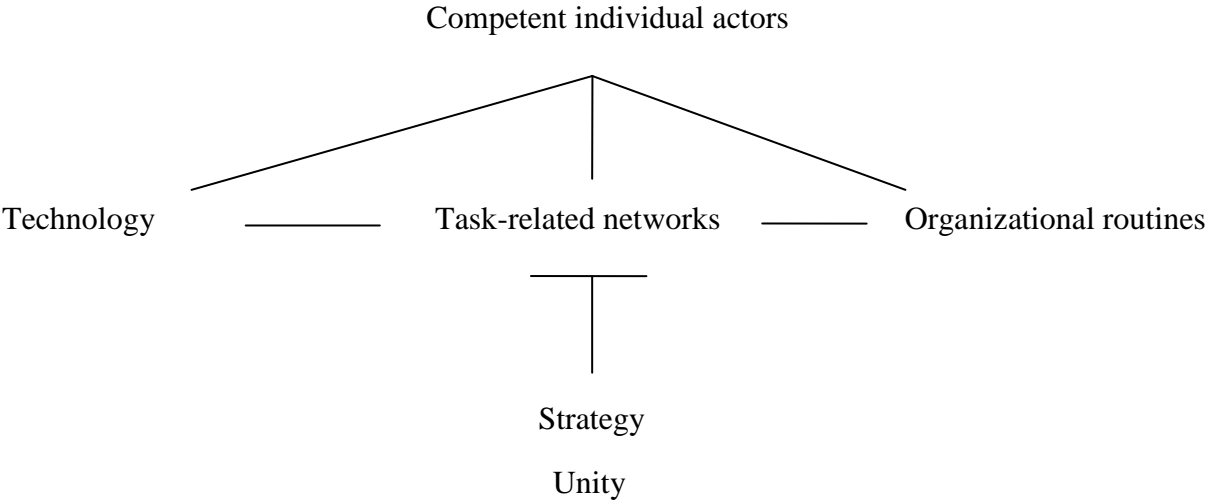
- Leadership development might create organizational capabilities in terms of structural, relational and cognitive social capital
- Organizational capabilities (social capital) might facilitate creating, transferring, retaining, and using knowledge

Concerning the first assumption, the program intended to develop social capital in terms of beliefs and norms that could shape individual action and maintain assumptions that should underlie the organization. However, the findings revealed that the LEAD program developed social capital only to a small degree. The findings showed that the selection and the development processes were designed in ways that facilitated individualism rather than

collectivism. Thus, to the extent the LEAD program developed social capital; it was a bi-product of leader development.

Regarding the second assumption, Yara seems to be an organization which had developed social capital (to a relative high degree) - based on social interaction in the daily work situation. This organizational capability affected exchange and combination of knowledge. That is, task- or professional networks facilitated sharing of knowledge that was embedded in competent individuals. However, exchange and combination of knowledge in Yara was not only related to social interaction. The competent actors interacted also with the technology and with organizational routines; they learned from experience and became more competent; exchange; and combination of experience was an outcome of social interaction. The task-related networks embedded explicit knowledge about “know-what” and “know-how” but also tacit knowledge – related to integration and coordination. However, these networks did not enable exchange and combination of knowledge related to strategy, integration, and organizational unity. Thus, it seems to be a need for arenas where people from different interests and perspectives can engage in sensemaking processes to generate representations of how the overall system works or should work. Such sensemaking might emerge when there are organizational arenas which facilitate ongoing negotiations across boundaries. Controversies resulting from conflicting interpretations of strategic needs might be resolved as the different interests confront one other – in ways that create a structure of local knowledge bases with overlaps; i.e., justifications across boundaries may create interlaced knowledge. From this view, leadership development might create an arena that enables development of interlaced knowledge. See Figure 4 below, regarding the dominant structure of exchange and combination of knowledge in Yara. This figure illustrates a) that exchange

and combination of knowledge are embedded in social interaction as well as in interaction with the technology and the organizational routines; and b) that existing task-related networks enabled exchange and combination of local and explicit knowledge which facilitated efficiency and exploitation. Thus, Yara needs networks that might facilitate exploration and adaptiveness – associated with strategy and unity. Leadership development may create such networks.



*Figure 4. The dominant structure of exchange and combination of knowledge in Yara*

Finally, the discussion reveals that interaction between agency and structure is a central issue in Yara. On the one hand, individual motivation, identification, and commitment are related to maneuvering space for action and learning in ways that enable adaptiveness (agency). On the other hand, Yara needs organizational routines that enable efficiency (structure). Every organization wants to achieve both efficiency and adaptiveness. Each is essential to the other, but each is also the enemy of the other.

## References

- Argote, L. and Ingram, P. (2000). Knowledge transfer in organizations: A basis for competitive advantages in firms. *Organizational Behavior and Human Decision Processes*, 82:150-169.
- Argyris, C. (1999). *On Organizational Learning*, 2<sup>nd</sup> ed. Oxford: Blackwell.
- Brown, J.S. & Duguid, P. (1991). Organizational learning and communities-of- practice: Toward a unified view of working, learning, and innovation. *Organizational Science*, 2: 40-57.
- Day, D.V. (2000). Leadership development: A review in context. *Leadership Quarterly*, 11: 581-613.
- DiMaggio, P.J. (1988). Interests and agency in institutional theory. In L. Zucker (ed.) *Institutional patterns and organizations: Cultures and environment*: 3-21. Cambridge, MA: Ballinger.
- Espedal, B. (2009). Maneuvering space for leadership. *Journal of Leadership and Organizational Studies* (forthcoming).
- Espedal, B. and Jordahl, A. (2008). *Strive for better Yield – Yara AS*. Bergen: SNF- rapport no.10/08.
- Foss, N.J., Husted, K. and Michailova, S. (2009). Governing Knowledge Sharing in Organizations: Levels of Analysis, Governance Mechanisms, and Research Directions. *Journal of Management Studies* (forthcoming).
- Ghoshal, S. and Moran, P. (1996). Bad for practice: A critique of the transaction cost theory. *Academy of Management Review*, 21: 13-47.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Cambridge, UK: Polity Press.
- Hofstede, G. and Hofstede, G. J. (2005). *Cultures and organizations: software of the mind* (2<sup>nd</sup> ed.). New York: McGraw-Hill.
- Levitt, B. and March, J.G. (1988). Organizational Learning. *Annual Review of Sociology*, 14: 318-40.
- Kostova, T., Roth, K. and Dacin, M.T. (2008). Institutional theory in the study of multinational corporations. *Academy of Management Review*, 33: 994-1006.
- Kramer, R.M. and Tyler, T.R. (1996),(ed.). *Trust in Organizations*. London: Sage.
- March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2: 71-87.
- March, J.G. and Weil, T. (2005). *On Leadership*. Cambridge, UK: Blackwell Publishing.

- Meyer, J.W. and Rowan, B. (1977). Institutionalized organizations. Formal structure as myth and ceremony. *American Journal of Sociology*, 83: 340-363.
- Milliken, F.J and Martin, L.L. (1996). Searching for common trends: Understanding the multiple effects of diversity in organizational groups. *Academy of management Review*, 21: 402-433.
- Mintzberg, H. (1973). *The Nature of Managerial Work*. New York: Harper and Row.
- Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review*, 23: 242-266.
- Putnam, R.D. (2002), (ed.). *Democracies in Flux: The Evolution of Social Capital in Contemporary Society*. New York: Oxford University Press.
- Scott, R.W. and Davis, G.F. (2007). *Organizations and Organizing: Rational, Natural and Open Systems Perspectives*. New York: Prentice-Hall.
- Stewart, R. (1989). Studies of managerial jobs and behaviour: The way forward. *Journal of Management Studies*: 26, 1-10.
- Tsoukas, H. (2005). *Complex Knowledge: Studies in Organizational Epistemology*. New York: Oxford University Press.

## Notes

- 
- <sup>1</sup> See the description of the LEAD program: [http://www.yara.com/library/attachments/en/LEAD\\_eng.pdf](http://www.yara.com/library/attachments/en/LEAD_eng.pdf)
- <sup>2</sup> LEAD was about leadership development, but it was probably more about leader development. The main goal was to cultivate potential leaders. At the core of the difference between leader development and leadership development is an orientation toward developing human capital (leader development) as compared with social capital (leadership development). Orientation toward human capital emphasizes the development of individual capabilities, and orientation toward social capital emphasizes the development of reciprocal obligations and commitments. Leader development is based on a traditional, individualistic conceptualization of leadership. The underlying assumption is that more effective leadership occurs through the development of individual leaders. On the other hand, leadership development assumes that leadership is a function of the social resources and capabilities that are embedded in heedful relationships. Thus, leadership development focus on integration associated with a process where leaders are invited to remember some identities and common ties, and to forget identities that tend to create cleavages and conflict. See Day (2000).
- <sup>3</sup> "Identifying how we need to develop, as individuals and as a corporate whole, is the starting point for maintaining a sustainable competitive advantage, as well as ensuring operation efficiency."  
Source: [http://www.yara.com/en/sustaining\\_growth/employees\\_matter/employee\\_development/index.html](http://www.yara.com/en/sustaining_growth/employees_matter/employee_development/index.html)
- <sup>4</sup> Some of the informants pointed out that Yara's management was ambiguous regarding learning. Some believed in learning and development through management development (program) while other belied in development through learning from experience in the daily work situation (on the job training). Some believed in coaching while other believed in mentoring. This ambiguity created uncertainty: "Does Yara's management really believe in LEAD?"
- <sup>5</sup> The informants (participants) seemed to be satisfied with program, or at least: they were satisfied with a part of the program. There were great differences in opinions. What one could evaluate as the best experience, was related to an activity which another could evaluate as the worst experience.
- <sup>6</sup> See the description of the LEAD program.
- <sup>7</sup> Employees from all geographical locations and levels were encouraged to participate in the nomination process. The intention was to make potential leaders *visible*, and to create an *equal* opportunity for all employees (participation, equality and fairness were seen as important norms).
- <sup>8</sup> Employees could nominate themselves through a link on Yara Intranet, under Development & Opportunities; LEAD.
- <sup>9</sup> Democracy, participation and trust in the leadership (low power distance) are aspects which are strongly associated with social capital. See Putnam (2002).
- <sup>10</sup> The assessment process engaged a lot of people i Yara: 1) the participants and 2) people who participated in the 360 degree feedback activity. Yara's consulting partner in the assessment process was *Personnel Decision International*.
- <sup>11</sup> These reports gave overviews of all individual results, but they addressed different levels.  
Yara management / Yara HR /Segment HR: Reports on all levels  
Respective Segment management: Reports on segment and lower levels  
Report on Business units, plant or equal and lower levels: Respective BU management, plant management, equal and HR
- <sup>12</sup> The information should be treated confidentially, but several of the informants were very skeptical regarding the potential use of the information. One of them claimed that he / she would never participate again in activities that produced such information.
- <sup>13</sup> The total group of 38 participants included representatives from 20 different nationalities, two thirds of



---

whom were working outside their home country and 23 % of whom were women. The selected group also included participants who were self-nominated.

Source: ([http://citizenship.yara.com/en/performance/social\\_performance/people\\_development/index.html](http://citizenship.yara.com/en/performance/social_performance/people_development/index.html)).

- <sup>14</sup> Yara's consulting partner in the leadership development program was *Ashridge Consulting*, a large and well repudiated consulting firm that is located in London ([www.ashridge.org.uk](http://www.ashridge.org.uk)).
- <sup>15</sup> Figure 1 is from Yara's management presentation of LEAD
- <sup>16</sup> Figure 2 is from Yara's management presentation of LEAD
- <sup>17</sup> When LEAD was finished, the participants got individual coaching from Ashridge Consulting.
- <sup>18</sup> "Development of employee skills at Yara, primarily takes place through on-the-job training, rotation and coaching...."
- Source: [http://www.yara.com/en/sustaining\\_growth/employees\\_matter/employee\\_development/index.html](http://www.yara.com/en/sustaining_growth/employees_matter/employee_development/index.html)
- <sup>19</sup> Bonding may have negative consequences. It might put restrictions on individual freedom; and bonding might represent cognitive and emotional circumstances that can confine individual in traps that affect what they see, like, understand and trust.
- <sup>20</sup> The informants reported that accountability is a central norm in Yara.
- <sup>21</sup> Some of the respondents said that visibility in the organization is a function of the distance to Yara's head office.
- <sup>22</sup> Most of the respondents had expected that their superior would have used this information in a discussion about development, career, etc.
- <sup>23</sup> The informants could answer: I do not know why I was selected to LEAD? Was it premised on performance in the assessment process, or was it premised on reputation in the daily work situation? I do not know who contributed to the social process by which reputation was shaped.
- <sup>24</sup> "The participants thought that LEAD granted them 'licence to become key leaders'".  
"The participants were satisfied with the selection process, and they expected that the program should make them happy. Happiness was not related to playfulness, however."
- <sup>25</sup> Yara had observers at the seminars and Yaras management asked the organizer about how he evaluated the participants.
- <sup>26</sup> "Some of the participants were very passive.... Some of the participants were not team-oriented; they did not act heedfully; what was defined as teamwork became interpreted as individual works.... It was too little playfulness and too little care about others in the program - as a consequence, the participants did not develop networks." Such statements did ask a question about the selection to the program: Did Yara select the right people to the program? Was the selection an outcome of a process in which Yara's management had to take into account conflicting considerations?
- <sup>27</sup> Yara's management claims that the continuing process of employee growth as a joint effort by employees and the company: "All employees are responsible for their own development, but this takes place using the systems, tools and support that Yara provides."  
Source: [http://www.yara.com/en/sustaining\\_growth/employees\\_matter/employee\\_development/index.html](http://www.yara.com/en/sustaining_growth/employees_matter/employee_development/index.html)
- <sup>28</sup> The observation created uncertainty and speculation about Yara's ambiguity concerning leadership development
- <sup>29</sup> Yara's core values are *ambition*, *trust*, *accountability* and *teamwork*. In terms of company culture and behavior, the values are supposed to encourage employees to ensure high and inspiring standards of performance, be fair and honest, treating people with respect, take full responsibility for getting the job

---

done and to set clear goals and strive for improvement. Yara work constantly to develop a culture based on our values that recognizes and promotes high performance.

Source: [http://www.yara.com/en/sustaining\\_growth/commitment\\_to\\_cr/industry\\_shaper/vision/index.html](http://www.yara.com/en/sustaining_growth/commitment_to_cr/industry_shaper/vision/index.html)

<sup>30</sup> Leadership behaviours could be seen as an outcome of agency. However, it was agency associated with a logic of appropriateness. That is, leadership represented interplay between agency and organizational structure. The leaders acted and interacted within an organizational and cultural context, and they adapted to demands, routines, norms, beliefs, etc. See Giddens (1984), DiMaggio (1988).

<sup>31</sup> See: [http://citizenship.yara.com/en/shaping\\_issues/index.html](http://citizenship.yara.com/en/shaping_issues/index.html)

<sup>32</sup> The activities and processes in the Upstream segment is much more driven by routines than in the Downstream segment.

<sup>33</sup> Yara seeks to ensure that all Yara's employees act in a consistent manner in line with its core values, codes of conducts, quality standards and business needs. Thus, appropriate rules and norms are supposed to be *reflected* in behavior and in business conduct.

Source:

[http://www.yara.com/en/sustaining\\_growth/commitment\\_to\\_cr/industry\\_shaper/vision/index.html](http://www.yara.com/en/sustaining_growth/commitment_to_cr/industry_shaper/vision/index.html)

[http://www.yara.com/library/attachments/en/investor\\_relations/updated\\_code\\_of\\_conduct\\_080405.pdf](http://www.yara.com/library/attachments/en/investor_relations/updated_code_of_conduct_080405.pdf)

<sup>34</sup> These demands and understandings refer to the informants perceptions and meanings, but meanings might be associated with an espoused theory rather than with the theory-in-use (Aryris, 1999).

<sup>35</sup> The informants argued that "collaboration as a norm of appropriateness" was embedded in Yara's culture (path dependent) and structure (the demand for team work).

<sup>36</sup> Yara's philosophy on *diversity* is based on respect for one another and a clear business need (learning).

Source:

[http://www.yara.com/en/sustaining\\_growth/commitment\\_to\\_cr/industry\\_shaper/vision/index.html](http://www.yara.com/en/sustaining_growth/commitment_to_cr/industry_shaper/vision/index.html)