UNIVERSITY OF LIVERPOOL

Organizational Learning in KCA Deutag Azerbaijan: Barriers to Double Loop Learning

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By

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ABSTRACT

This thesis examines organizational learning and particular existence of barriers to Double Loop Learning within the KCA Deutag Azerbaijan Business Unit. The barriers of leadership, politics, and communication are taken into consideration for the research following Soft System Methodology in Action Research practice of gathering actionable knowledge that is framed within the scholar-practitioner framework. This review is the initial organizational context in which I engage in this research. Furthermore, I examine the opportunity to confirm the existence of barriers to double-loop learning (Argyris, 2002) in the shape of the applied leadership style of top management (Goleman, 2017). Besides establish existing political pressures from in/outside the organization, and potential reduction in communication levels that is restricting organizational learning (Argyris, 1994; Argyris, 2002). I explore how the existing leadership of top management is supporting the organizational learning of a single loop learning level in the context of the literature whilst implementing action research aimed to confirm the existence of leadership as a barrier and potential 'way out' out towards the double-loop learning. Furthermore, I explore three different directions of politics (Internal organizational, Azerbaijan government, and client-British Petrol) that are affecting the organizational decision-making process by top management within the organization. Finally, I explore if the organization restrict the flow of communication in a way that can influence the organizational learning process.

The research commences with seven steps of a Soft System Methodology (SSM) from thinking about the organizational issues, framing the research using SSM, applying tools for collecting data (Rich Picture and Focus Group), developing conceptual models, and finalizing with collected data analysis (Checkland and Scholes, 1989; Wilson, 2001) and presenting findings to the top management of the company. The objective of this research is (1) to explore existing barriers to double-loop learning in KCA Deutag Azerbaijan, (2) to increase management's awareness of detected barriers, (3) to evaluate Soft Systems Methodology for practical use within a live situation. Working with a team of sixteen managers, six action research cycles incorporating three sessions of data collection (Introductory Rich Picture, Rich Picture, and Focus Group), developing dedicated conceptual models, and reconceptualization of existing leadership practice as a 'way out' is recommended for consideration by the organization. The contextual setting is in KCA Deutag Azerbaijan offshore drilling service company that is supporting single loop organizational learning. The research limitations and opportunity for further development are available for who may wish to expand on my research findings further. The research concludes with my brief reflection and synthesis of my personal change throughout the whole process of the research.

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LIST OF ABBREVIATIONS

AR	Action Research
OL	Organizational Learning
SLL	Single Loop Learning
DLL	Double Loop Learning
SSM	Soft System Methodology
RP	Rich Picture
RD	Root Definition
FG	Focus group
CM	Conceptual Model
KCAD	KCADeutag Azerbaijan
BP	British petrol
CEO	Chief Executive Officer
GM	General Manager
OPM	Operations Manager
RM	Rig Manager
CA	Central Azeri
LTI	Lost Time Incident
NPT	Non-productive Time
KPI	Key Performance Indicators
LL	Lessons Learned
AAR	After Action Review
DWOP	Drilling Well On Paper
CWOP	Completing Well On Paper

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Chapter 01 Introduction

1.0 Introduction

The purpose of this thesis is to explore the barriers to Double Loop Learning (DLL) (Argyris, 1977) in my organization, KCADeutag Azerbaijan. Based upon my experience as a senior manager in charge of four oil rigs, where it is my responsibility to manage operations in a strict, rules-based culture, I present an evidence-based argument for a change of management style in the higher echelons of the company. The company's recent history points to poor management decision-making, whereby quality has fallen due to an incessant focus upon short term profit. This has resulted in our client BP, canceling important contracts for procurement and storage of spare parts, engineering design, and the execution of works. Although we still provide the core services of drilling oil and gas wells and providing their maintenance, there is the general feeling that our client is losing confidence in KCADeutag, and its ability to adopt newer and improved methods focussing upon human behavior, innovation, and flexible patterns of working.

All of the above is happening when the company's external environment is in some turmoil. Our client is changing its management approach towards a 'transformative' style, partly to cope with changing global patterns of oil and gas usage. Additionally, here in Azerbaijan, there is a plan for the nationalization of KCADeutag’s workers, which further emphasizes the need to acquire new knowledge and retain existing ones using the latest knowledge management methods.

DLL is an integral process within the 'Learning Organisation' (Senge, 1981) which recognizes the importance of knowledge and ways to recognize create, adapt, and use it such that it becomes a business advantage. This is especially so given that today's business environment is extremely dynamic and requires a constant focus on continuous improvement of current ways of working to adopt new, more advanced ones that will ensure the organization's future sustainability.

This doctoral thesis is my contribution to clarifying the organizational and business environment in which KCADeutag Azerbaijan operates.

1.1 Research Context

This section outlines the general context; where the research will be conducted (KCA Deutag Azerbaijan business unit); the focus of the research (Organizational learning (OL)) within the KCA Deutag Azerbaijan; the methods used, and how my position as a senior manager within the organization may impact upon the research. Soft System Methodology (SSM) was adopted as an epistemological approach in conjunction with Action Research to generate Double Loop Learning (DLL) amongst participants. DLL is a deeper level of learning which explores governing variables (Argyris, 1982) that are hidden behind the decision-making process at every level, individual or organization, and where awareness about social elements of the problem and individuals concerned are brought to the surface. To generate DLL participants need to be equipped with relevant tools i.e. Rich Pictures, Focus Group, and Conceptual modeling. By combining SSM and Action Research the researcher can explore the barriers that exist in the organization that may be suppressing deeper levels of inquiry into problems. The intention is to begin to shift participants away from low-cost solutions and fear and start to change behaviors. This represents the start of a process of freeing communication at all levels, generating trust between employees and management, and bringing new solutions to old organizational problems. This new approach is in line with our client's expectations and one of the main requirements to sustain our operations and service in Azerbaijan.

1.1.1 KCADeutag Organizational Context

KCA Deutag (KCAD) is an international company that is offering On/Offshore drilling service to the major Oil companies around the world (Shell, British Petrol (BP), Exxon Mobile, Chevron, etc.). KCAD is a company with more than 125 years of drilling history on all continents of the world. Presently KCAD operates in eleven countries, supporting On and Offshore drilling operations with around 100 drilling units and employing more than 5000 employees. KCAD Azerbaijan operation is consists of seven offshore drilling platforms operating for BP/SOCAR Azerbaijan and employing 720 employees (126 Experts and 594 Azerbaijani nationals). Whilst my company does not possess any fixed assets such as oil platforms) its major resource is its skilled labor, which provides expertise in operating and maintaining client-drilling equipment. The Azerbaijan operation started in 1997 and is still ongoing with the plan to end in 2049. I joined KCAD in 2006 and have worked for the company in different countries (Oman, Qatar, Saudi Arabia, and Libya) until 2011 when I joined offshore KCAD Azerbaijan operations as Rig Manager (RM) for the Central Azeri (CA) platform and finally in 2017 I was promoted to Operations Manager (OPM). My overall responsibility as OPM is to support or manage the offshore drilling team in day-to-day activities supporting both

drilling and equipment maintenance activities. My daily job is to communicate with my Offshore team and my counterpart Well Superintendent BP, to ensure that we (KCAD) will fulfill planned operations agreed with our client (BP/SOCAR). When we measure our performance vis-à-vis our client's expectation, we use worldwide industries' accepted Key Performance Indicators (KPI's). Of those, the KPI's most often used are 'Safety Record Lost Time Incidents' (LTI's) and 'Non-Productive Time' (NPT). In terms of these KPI's, between 1997 and 2018 KCAD Azerbaijan achieved one of the best performance records in the industry worldwide and the best in our company. By examining those numbers from the outside, all looks desirable and good, but concerns arise when considering the declining contractual relationship with BP and the general external environment outlined above. Additionally, an examination of incidents and trends in human behavior within the company indicates that high KPI's are not enough and that the company needs to learn to improve in a wider sense.

From my perspective within the company, it appears that several major occurrences have affected our OL and the way we are conducting our business operations. At the beginning of my appointment managers were willing to explore a deeper level of learning i.e. Double-loop, by looking in-depth at how to deploy different actions, which would potentially generate different OL and outcomes. When, between 2013 and 2017, changes occurred at the top of the business unit, General Managers (GM) were replaced, there has been a trend towards an authoritarian leadership style, adversely affecting trust between top management and employees. This 'top-down' way of leading the business, where simple human error was punished by summary sackings from the organization, evoked feelings of fear throughout, and employees started to put their survival over that of their teams' performance. Simultaneously, middle managers began to reduce their active participation in open discussions, deciding not to bring their point of view to the table, the result being that both organizationally and individually, learning stagnated at the level of 'single-loop learning'. Also, as internal frustrations grew amongst managers because they were not able to get their points across during different meetings, Incident investigations, Incident reviews, After-action reviews, lessons learned meetings, etc, they began to feel disempowered.

An additional moment of stress on our business occurred when our main drilling and maintenance contract was extended in 2015. This coincided with the global crisis in the oil industry and the drop in the price of oil in 2015 which resulted in many employees across the oil industry losing their jobs. A feeling arose that top management used these events as an opportunity to induce an even more significant level of fear among employees. Further stress was added when BP, as the primary oil operator in Azerbaijan, media publicly exposed their failure in delivering a predicted rate of oil production to the Azerbaijan Government, one of the

leading newspapers and local news said that the organizational loss of production was in the value of $6 bn. Each of the above leadership, political, and communication factors harming OL processes within KCAD. This situation even became visible to the client, and they expressed concern that the long-term sustainability for this operation might be jeopardized for both KCAD and BP if the present practice of managing or leading in KCAD was to continue.

In summary, both internal and external factors shaped KCAD's way of learning and doing business. Internally, it was the selection of the general managers, and their leadership styles and top-down methods of communication that served to increase the fear factor and generation of frustration amongst employees. Externally, the extension of our service contract for BP, the reduction in oil price that started in 2015, and political pressures between BP and the Azerbaijan government affected, and continue to affect our business. Although it is evident that external and internal factors are linked in many ways, as GMs come under external pressures for both governments and clients, the spiral of decline in non-KPI driven performance and employee morale must be brought to a stop, hence the objective of improving Organisational Learning to bring about positive change. Because I was part of that team, I was deeply aware of the gravity of the situation and the frustration that was growing. The general feeling was that the main reason why managers were still working in Azerbaijan was the fact the global oil market was in recession since 2015. However, it is not difficult to depict the situation in the future when the oil market recovers, and new job opportunities will arise that individual knowledge, learning, and experience will disappear with those employees that will leave KCAD.

1.1.2 The context of Organisational learning practice in KCADeutag Azerbaijan

It was vital for me to see how relevant scholars define OL and further to define what is OL process in my organization. There are more than a few ideas of what can be considered as OL. (Nicolini et al., 2003; 2008; 2011) define OL as the discursive, cognitive material process where members of the organization aimed at expanding their current capabilities. It means that OL does not necessarily mean a rational and deliberate process.

> *It argues that the meaningful, purposive, and consistent nature of human conduct derives from participating in practices and not from the deployment of rules, goals, and mental contents, as in the traditional rationalist and functionalist view. Practices, from this view, become primitive and foundational. They are not, therefore, just mere descriptions of what people do; they are meaning-making,*

> *identity-forming, order-producing activities, and part of 'knowing in practice - Nicolini et al., 2011, p.602*

According to (Nicolini et al., 2003; Orlikowski, 2002), the process of OL may not produce immediate and visible results but would assist in exposing matters of organizational power, politics, and trust, and any neglect of fundamental dimensions.

> *These include the extent to which organizational learning might be conceived as a combination of cognitive and social processes; how formal organizational structures may influence the location of learning; and the interaction of power and politics with organizational learning processes*'- *Nicolini et al., 2011, p.602*

These three dimensions (politics; organizational structure (leadership), and cognitive and social processes (communication)) were taken into the consideration for my research and used to define the learning process in my organization. Frequent misuse of leadership power, politics, and communication were potentially the contributing factors that shaped OL in Azerbaijan. As explained above these processes changed.

1.1.3 My position within the organization

Even though the most exciting period for my research was 2015-2018, I started to look into operational problems going back to 2011. Building my career as a drilling manager, spending twenty years working in ten different countries and with fifteen different General and Operations managers, I manage to develop a wide range of experience working with different multinational teams in an international business environment. Those multinational teams were combined from thirty-six different nationalities giving me more insights into human behavior of different nationalities — the majority of them were open to share and build knowledge through different ways of learning.

By me coming from Libya and joining the Azerbaijan business unit, I became aware that I had joined a more structured part of the organization with vast learning opportunities. By learning how to improve and sustain operations in Azerbaijan and, at the same time attending the Liverpool DBA program, I became aware of the importance of learning processes and people's participation in it. That new view developing in my mind mirrored the concept of 'sustainability', where the prevailing literature of organizational strategies was based around maximizing shareholders' value with support of all three pillars of the triple bottom line (business, environment, and people) and thus sustainability (Norman and MacDonald, 2004). Both the

academy and business sides attempt to define what is a triple bottom line. Norman and MacDonald are using the following statement

> *a valuable management tool – that is, an early warning tool that allows you to react faster to changes in stakeholders' behavior, and incorporate the changes into the strategy before they hit the [real?] bottom line - Norman and MacDonald, 2004, p.3*

Following decades of virtually unrelenting growth and the acceptance of the norms surrounding its sustainability, the Oil Industry began to examine its directives at the end of last millennium, when thoughts about the next step-change in strategies were set in the mind of shareholders, and the process of sustainability supporting the human part of the triple bottom line was ignited. The first two pillars (Business and Environment) although very well established, came under scrutiny as a result of the dawning realization that climate change was occurring, although this issue was largely put on the 'back-burner' and remained there until relatively recently. The third pillar (Human/Social) also remained underdeveloped as evidenced by the practices of sending employees just to the basic necessary training and development courses and applying top-down leadership. I was puzzled as to how my organization was creating knowledge in the first place, and with how this situation was generated and supported within the organization. The answer was found in modern business schools that are focused on knowledge creation, as more businesses supported research to find the answers on current contemporary business issues. The tendency at the time was for organizations to lose their focus from 'human relevance' (Huff and Huff, 2001) or culture, and build historical fast solutions toward financially and Key Performance Indicators (KPI's) driven performance.

I extracted important ideas about where 'sharing/transfer of knowledge' (Nonaka, 1994) was seen as a main contributing factor to successful knowledge creation in teams and organizations (Damodaran and Olphert, 2010). I realized the possibility that knowledge sharing, in my organization, is not at an acceptable level and at the same time does not consider tacit or 'hidden knowledge (on an ontological level) (Sun and Scott, 2005).

1.1.4 Confirming organizational context using three examples

I present the following three short case studies to clarify and explain the situation facing workers and management at KCA Deutag:

a) *Example No.1 'Dropped 28" Riser pipe'* – On the night of 16th April 2015, the night crew was lifting a 28" conductor pipe using a riser running tool from horizontal to a vertical position. The conductor pipe is a 12m long pipe with an outside diameter of 28" and weight of 5T, together with its running tool (weight of the running tool is 1.5T) (see Fig.1) connected to the conductor pipe from within the pipe. The total weight of the assembly is 6.5T. At the moment when the riser pipe was lifted and reached a vertical position, the running tool disengaged allowing the riser to topple over coming to rest against the derrick structure (see Fig.2).

Figure 1. Riser Running Tool

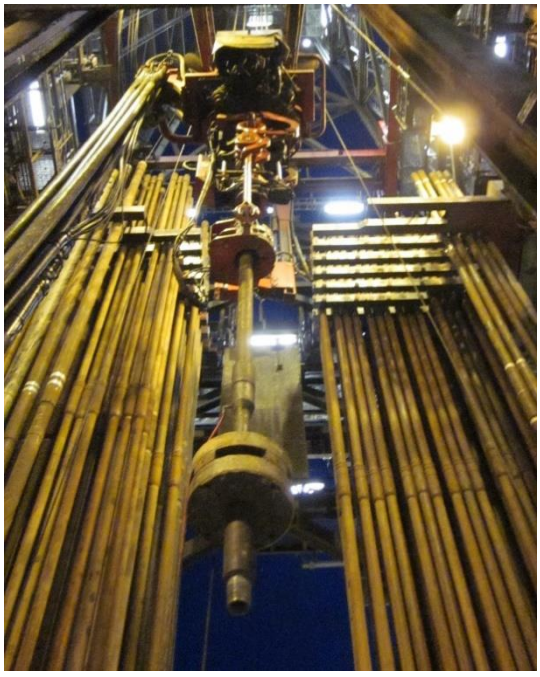


Figure 2. Riser Pipe Resting against Derrick

During that incident, no one was injured and the riser and running tool were not damaged. The impact of this incident was solely in lost time with no additional penalties for KCAD or its client. On the other hand, the people responsible for the job: the night crew, supervised by night Shift Supervisor (SS) who was managing this operation, and making sure that Work Guideline (WG) *ACG-3-001 'Nipping up / down Diverter and Low-Pressure Riser*' was followed.

The investigation was conducted, and two root causes (Violation/Behaviour and Leadership/Management) and ten actions were identified. All actions were fitted into the same three groups of actions (i) changing or updating operational procedures (Work Guidelines) and sharing updates within the organization; (ii) using different engineering fixes to secure that those incidents from happening again (various barriers in shape of additional physical bumper

bars, changes in operating software for the fifth generation cyber equipment, etc.); (iii) identifying 'human error'. Deviation from the management expectation was sanctioned by overusing the 'employee consequence matrix'. Misusing the consequence matrix as evidenced by the fact that matrix allows every employee to do the first mistake, and to keep their job (taking into account that the consequence matrix allows for an employee to lose his job on his first offense only for particular actions like malicious planned acts, terrorist attacks, etc). But even though the design of the matrix was fair, its implementation was misused, and more than four people lost their jobs with the first offense. The outcome of this particular incident investigation was that SS lost his job, even though that was the first incident for him in 25 years working for KCAD. KCAD's consequence matrix is designed to recognize the first offense and allows the employee to learn from his mistake. In this case, that was not taken into consideration and the employee was released from the company on his first offense. Whole operation management department was against that decision but KCAD GM was persistent to release the employee, which eventually happened.

In this particular case, the reason for my concern was a conference call for all KCAD office management and SS responsible for the incident from the offshore side as part of the incident investigation. During that call, SS expressed his concern that he was not able to manage his nightshift in a way that was expected from him. The reason being is that he had eleven different WG's to read and apply for eleven different jobs that were planned for the night where this SS was responsible to supervise. He expressed his concern about KCAD expectations that he read thoroughly each WG before each job was starting. In this case that was including eleven WG's, each of 3-12 pages long (total of 67 pages), and each with 15-32 attachments, what in total was adding close to 300 pages. I emphasize this stated fact to the GM and ask for a more profound investigation, but that was not allowed and the decision was justified by following GM statement "*They need to manage offshore."* This incident was purely accepted as a 'human error' not exploring deeper what was the driving force behind the applied Human behavior. Notably, the rest of the managers which were present during the call never raised any concern toward the GM's decision.

This Incident investigation offered us an opportunity to inquire deeper into the systems within the organization that allowed 'human error' to happen. At first sight, this appeared to be just one of the localized operational issues that could be dealt with appropriately at the local level, but by going beneath the surface it became clear that this example is merely symptomatic of a lack of strategic OL. This deficiency is manifested in several areas of management practice like building a strong blame culture and the reactive management towards an organizational issue, but for this case, the relevant issue is seen in the potential existence of the barrier of top-down Leadership style applied, using position power to get ideas and decisions though.

b) *Example No.2 'Employee tripped over the hose and fell'* – During the night of 08th May 2014 the employee with the Green helmet (with less than six months experience) was walking around the platform using the dedicated walkway. When he came close to the walkway over a ramp he tripped and fell on his elbow (see Fig.3). After the incident, the employee did not feel pain and that was the reason why he continued working and did not report the incident. In our line of business, every incident is reportable. After a few hours, the employee started to feel the pain and reported the incident to the platform medic.

Figure 3. Injured Person

As in the first example, this incident was investigated and its root cause is defined as 'human error'. Thus, applied actions were covering the same three areas of our organizational concern (i) changing or updating operational procedures or Work Guidelines and sharing updates inside the organization; (ii) using engineering fixes to reroute the hoses to go above the walkway; (iii) identifying 'human error'. That was a first offense for the employee, but he was released from the company anyway due to the same justification 'human error', without applying a deeper level of inquiry in human behavior, systems that allowed 'human error' to happen and looking for an opportunity to learn more from the incident. Again the manager responsible for the project was against the decision to release the employee, but he was overruled by GM using top-down leadership and position power. In this case, the relevant

issue is seen in the potential existence of the barrier of Politics when our GM was called by the client and asked to make the responsible employee redundant.

c) Example No.3 'Wrong line up during preparation of cement mixing water' – This incident happened on 28th March 2014 when an employee operated the wrong set of valves for transferring cement mixing water from one tank to the other. During the operation 1100bbl of cement- mixing water was contaminated and was not suitable for further use. The operation was suspended for an additional 12h and new cement mixing water was mixed. During the investigation, two root causes were identified: one was not following the WG/procedure and the other was a human error by an employee operating the wrong set of valves which led to the contamination of the mixed cement water. The actionable part of the investigation report generated four actions to ensure that lessons are captured by issuing a 'lessons learned' bulletin report and to distribute it to all our operations. A further investigation of human behavior and why the employee chose to operate the wrong valves was not conducted, and the employee was released from the company on his first offense. This deficiency of strategic OL is manifested in several areas of management practice like applied Leadership style supporting the top-down decision-making process, using the power of GM position given to him by the organization, and one that is generated by this case is silence and lack of trust where the relevant issue is seen in the potential existence of the barrier of top-down communication.

Those three examples were just a few of many that can be listed where a deeper level of investigation on human factors and organizational systems was not conducted. The preference was to find a fast solution to the problem and continue operations.

> *Fixing' individual people and replacing isolated components provides an apparent low-cost solution to provide safety rather than addressing the issues that need to be addressed - Lukic et al, 2010, p. 436*

Even KCAD employees raised concerns to the management that in every investigation or generated Lesson Learned (LL) for the organization, only simple Single-loop learning (SLL) was captured and applied. Furthermore, employees openly expressed their incapability in fulfilling management expectations in day-to-day operations and finally they expressed their concern about not taking into consideration human factors influenced by organizations and social aspects and different organizational systems.

> *Planning learning from incidents requires a good understanding of human factors in safety and their social and organizational aspects. Therefore, it is important to take into consideration the social nature of the problem and individuals'*

perspectives to engage relevant stakeholders, which is the central facet of double-loop learning - Lukic et al, 2010, p. 441

1.2 Research Problem

Since 2011, I was attending many meetings (Incident Investigations, Lessons Learned (LL), After Action Reviews (AAR), Drilling Well on Paper (DWOP), Completion Well on Paper (CWOP), etc.) and it became obvious to me that a lot of frustration was generated amongst managers by applying just SLL, and focusing solely on the same pattern of investigation outcomes actions (i) changing or updating operational procedures and work guidelines, and sharing them inside the organization; (ii) using different engineering fixes to secure that those incidents will not happen again (various barriers in shape of additional physical bumper bars, Changes in operating software for the fifth generation cyber equipment, etc.); (iii) identifying 'human error'. It became clear that these examples are merely symptomatic of a lack of strategic OL. '*What this also implies is that single-loop learning represents technical rationality's colonization of reflective practice.*' (Richardson (1995) through Greenwood, 1998, p. 1051)

This deficiency is manifested in several areas of management practice as follows:

1) Leadership style applied using top-down position power to get GM ideas and decisions through
2) Position Power and Politics manifested by the fear of our GM
3) Silence and lack of trust by mid-management
4) Building a strong Blame culture

Finally, I was part of that same management team for the observed period and frustration and concern became part of my day to day life. The unspoken truth was that all senior management on the platforms and in the office had in their mind the following statement: 'It is not questioned if I will lose my job, it is just matter of when this will happen!'. Under this level of induced stress managers were just looking for a way out and to find another job. When the oil market recovers, this shift will become part of KCAD reality and inevitable safety and operational performance will suffer negative consequences, and the most essential point is that organizational learning will encounter losses too. The desire to research this organizational position and induce possible action and change to the situation was my trigger point for my action research.

1.3 Research Question

My research question is supporting OL process in KCA Deutag Azerbaijan Business unit and is trying to look for the reasons why double-loop learning (DLL) was never developed inside the organization. My research question *is 'How can we develop double-loop learning in KCA Deutag Azerbaijan?'*

1.4. Objectives of the Study

(1) To explore existing barriers to double-loop learning in KCA Deutag Azerbaijan

(2) To increase management's awareness of detected barriers

(3) To evaluate Soft Systems Methodology for practical use within a live situation

The first step will be to examine literature in the topic, and that which is relevant to the research situation. The following steps will explain my research methodology and methods prior to data collection and analysis. Soft Systems Methodology (SSM) is chosen, using seven steps to Design Action inside SSM, using the Rich picture (RP) and Focus Group (FG) as data collection methods, following by Conceptual modeling (CM) and finally data analysis and presentation.

1.5 The Action Research Approach

Action Research - 'Action Research is an approach which is developing people in organizations, which are taking tasks, as a vehicle for learning.' (Coghlan and Brannick, 2014, p.47).

Following Coghlan and Brannick's definition, I chose Action Research (AR) to help define problems, generate individual and organizational learning, and act upon them. Historically, the academic body of knowledge was developed by observing organizations from the outside, preventing the researcher from being part of the observed organization (Coghlan and Brannick, 2014).

My situation is different, where I am within the organization as a research-practitioner, both developing AR inside the organization and at the same time as the part of the same organization. Learning about my organization from within is what the practitioner is all about. as Coghlan and Brannick (2014) explain, the practitioner is an integrated part of the organization - an insider who is responsible for defining the organizational issue by being able to access organizational processes of knowing and learning through "experience, understanding, and judgment" (p. 22). For me to achieve this level of organizational integration, I need to remain a 'complete member' of the organization throughout the whole

AR process and beyond, servicing 'dual role' as manager and researcher who is capable of gaining authorization to access different organizational levels, and supporting individual and organizational learning development (Coghlan and Brannick, 2014).

On the other hand, to be a practitioner who wants to develop individual, organizational and academic knowledge can be, and in many cases is, an inherently political and problematic process because balancing both roles can harm knowledge acquisition and flow of information. Political functionality or dysfunctionality and social constraints add complexity to the whole process of AR (Ndung'u and Muathe, 2012). Moore (2007) warns against taking a subjective approach, as it would not secure a better understanding of the organizational issue and processes connected to it.

Recently AR became a widely used research tool among inside researchers as a preferred paradigm to support a different range of research outputs and promote discussion about theory development. AR in my organization will be conducted on a live organizational issue and in real-time. For my AR, I have chosen an important organizational issue that will be a suitable base for actionable research and will generate learning for both me as an individual and the whole organization through the theory development and acknowledgment of what is going on in my organization (Coghlan, 2007).

1.6 Structure of the Thesis

My thesis consists of seven chapters that are covering the full scope of the thesis research project:

Chapter 01 – The introductory chapter outlines three primary contexts of my research using three examples of organizational learning relating to incident investigations. Further, the research problem was identified, and the research question was constructed. The objectives of the study are defined together with the methodology and methods employed.

Chapter 2 – In line with research objectives, the thesis continues with a review of relevant literature covering the following topics:

1) Organizational Learning and DLL
2) Exploring Barriers to Double-loop learning

Chapter 3 – Covers Soft System methodology and methods where I set out my rationale for the methods, I intend to use in my field research. This inquiry uses Action Research (AR) to understand the existing organizational mechanisms, power, and behaviors hidden beneath

the experienced organizational reality. An important factor in this process is my position as an insider-researcher.

Chapter 4 – In this chapter, I explain how the action steps from the previous chapter were applied on mid-management level employees in my organization who are responsible for the day-to-day operational and maintenance activity. The action taken will apply the SSM framework developed in the previous chapter and apply the following seven steps:

1) Recognizing Organization Problematic situation
2) Problem identification
3) Designing dedicated RP and RD
4) Designing dedicated CM that is incorporating relevant organizational problems
5) Comparison between the identified problem and designed CM
6) Selecting appropriate changes
7) Taking action

Chapter 5 – In this chapter, the barriers to double-loop learning in the KCA Deutag Azerbaijan Business Unit are presented according with the seven SSM steps above.

Chapter 6 – In the penultimate chapter, I summarize key findings and how these were used to build individual and organizational actionable knowledge. In addition, I present an evaluation of SSM as used in this study as a contribution to knowledge for future research-practitioners.

Chapter 7 – This chapter will offer a reflection on my contribution to this action research.

2.0 Literature Review

This chapter explains the conceptual, theoretical, and empirical literature relating to Organizational learning (OL) and DLL regarding leadership, politics, and communication within social and cultural frameworks. Further, the literature review recognizes the importance of change and its influence on OL. Furthermore, the review reveals the importance of leadership influence on knowledge management and OL, emphasizing transformational leadership style as preferred and supportive of OL. This action research thesis is my attempt to surface and expose barriers towards a deeper level of OL (DLL) in my organization and at the same time to trigger awareness amongst managers of potentially how the 'way out' looks like in the sense of choosing certain actions that can potentially shift OL towards DLL within KCADeutag Azerbaijan Business Unit. The literature review highlights research concepts on the subject by authors such as Crossan, Bass, Argyris, Lave and Wenger, Senge, Tsoukas, and Nonaka. The chapter is aimed at placing the research methodology in the right theoretical framework.

2.1 The Nature of Organizational Learning

Although interest in the process of learning in the organization has existed for more than 50 years (Cangelosi and Dill, 1965), OL grew up almost anonymously until late 1980 when interest for the OL exploded (Easterby-Smith et al., 2000). OL has been used in different domains (Crossan et al., 1999). (Nonaka and Takeuchi, 1995) were using OL in the domain of product innovations and (March and Olsen, 1975) in the domain of cognitive limitations that affect manager is learning capability (Crossan et al., 1999), which is also relevant for my case of KCAD managers and their capability to improve their own and OL. It is where these domains converge that differing OL frameworks emerge. (Senge et al., 2013), defines OL as a company's facilitative method that allows its members to learn and develop their skills leading to continuous transformation. Such organizations have learning environments that are part of the organizational goals. Creativity is nurtured, and individual aspirations and expressions are encouraged by organizational management. This leads to the realization of new expansive patterns in the entity (Senge, 1992). Senge later ties the efficiency of OL to good knowledge management and emphasizes that dimensions such as systems thinking, personal mastery, team learning and building a shared vision be implemented as part of enhancing the efficiency of an entity's OL (Senge et al., 2013). OL leads to corporate capabilities such as reduce employee turnover since the employees are more content and perform optimally, increased productivity and increased profitability. OL creates their futures in competitive niches by encouraging creative processes and for its employees. In this way, OL allows them to develop, adapt and transform with emerging trends both within and beyond the entity.

Research by (Staber and Sydow, 2002) showed that the business environment is full of complexity, extreme turmoil, and uncertainty in an intensified competition, similar to the oil business environment where KCAD is operating. Besides, the complex environment is characterized by shorter business cycles and heightened media attention that brings organizations' practices to the public. In such an environment, organizations have no otherwise but to devise strategies that emphasize learning, cooperation, and innovation (Staber and Sydow, 2002). The ability to consistently create new knowledge and disseminate it to all areas of its operation creates a competitive advantage; unlike material aspects, knowledge expands with use and breeds new ideas. An organization that depends on traditional competitiveness such as brand name and technology, may find it challenging to compete in the current business environment. The modern business environment requires increasingly large numbers of employees to be knowledgeable because it is only through their skills that improvements and innovation can arise. With the right organizational learning, the organization can deal with the environmental challenges highlighted by Staber and Sydow. Feldman and Orlikowski contend that an organization that supports positive approaches to OL creates significant opportunities for employees. According to Easterby-Smith et al. (2000), organizational learning might be conceived as "... a combination of cognitive and social processes; how formal organizational structures may influence the location of learning; and the interaction of power and politics with organizational learning processes" (p.788). Research by Cangelosi and Dill established a direct relationship between the environment and what individuals learn. To them, OL is the direct adaptation to the things happening at the personal, group and organizational level and it takes place as a result of what Cangelosi and Dill called the process of adaptation to the three kinds of stresses that stimulate the learning process in the systems making up the organization. As individuals in an organization adapt to the environment, they can control learning in the organization by producing divergent and conflicting behavioral patterns. March and Olsen (1975) took a similar approach as that of Cangelosi and Dill on the impact of individual understanding of the external environment. According to them, people in organizations are responsible for interpreting the surrounding environment and establishing beliefs in the face of organizational changes. Traditionally, more emphasis was placed on the individuals, where (Fiol and Lyles, 1985) analyzed the relationship between cognition - as learning change, and behavior - as adaptation change, under the influence of organizational systems, structures and procedures. Although there is a consensus that OL begins with an individual, the value of repetitive actions in OL has often been neglected in favor of systematic studies on major interventions. An organization learns through its members' day-to-day activities; working and learning how to respond to different conditions; gain skills by working as a team and enhance effectiveness through mutual understanding. Although OL is happening on an individual level, it is not right to conclude that

OL is not more than just the sum of individual learnings because, whilst individuals and leadership can change, organizational behaviors, values, and norms are preserved (Hedberg, 1981). (Nicolini et al., 2003; 2008; 2011) define OL as the discursive, cognitive material process where members of the organization aimed to expand their current capabilities. This means that OL is not necessarily a rational and deliberate process:

> *…but that the meaningful, purposive, and consistent nature of human conduct derives from participating in practices, rather than from the deployment of rules, goals, and mental contents, as the traditional rationalist and functionalist view postulates. Practices, from this view, become primitive and foundational. They are not, therefore, just mere descriptions of what people do; they are meaning-making, identity-forming, order-producing activities, and part of 'knowing in practice. (p.602*).

According to Nicolini et al. (2003) and Orlikowski (2002), OL may not produce immediate and visible results.

They conceptualized OL as a debate for exposing power, politics and trust, and neglecting fundamental dimensions. I have adopted this idea to help me understand the learning process in my organization. Frequent misuse of power, politics, and trust were the ones that shaped OL in Azerbaijan heavily in the past five years under transactional leadership. (Popper and Lipshitz, 2000) see OL as 'organizations that manage to embed institutionalized learning mechanisms within learning culture' (p.181).

Knowledge management and knowledge sharing are part of the OL's dynamic. According to (Tsoukas, 2003), knowledge management is a process that an organization identifies to leverage collective knowledge. Knowledge management allows an entity to transform, articulate and amplify new knowledge, discovered by individuals for the organization's benefit. Knowledge management deals with four main dimensions. These are the creation, retrieval, transfer and application of tacit and explicit knowledge (Tsoukas, 2003). (Nonaka, 1994) was using the four-point framework to suggest the distribution of the acquired knowledge, through the product and routines of a company's repository, as the best means of sharing the information and transforming individual knowledge into a company's knowledge. To encourage information sharing, companies should incorporate incentives, such as the compensation of highly creative individuals who contribute to organizational knowledge, to encourage employees to be more innovative and willing to share individual knowledge. Emerging IT technology and communication channels have served to enhance knowledge

management and knowledge sharing in organizations. Previous literature on organization learning (March and Olsen, 1975; Senge, 1990; Huber, 1991; Nonaka and Takeuchi, 1995), indicates that it is important to distinguish the four dimensions of OL; content, process, context, and outcome and how they interact with concepts such as knowledge management and knowledge sharing to promote holistic entity development.

The content of OL refers to suggested particular lessons and solutions. OL content may be of managerial, technical or cultural nature; For example, an organization can choose internal procedures as the solution to be learned. The practice taken by members of the organization to find a solution is called the 'OL process' (Feldman and Orikowski, 2010). How the learning takes place is answered by investigating the learning process. An analysis of the learning process brings to light the type of activities undertaken by the members, the structure of these activities, the actors involved and the roles and responsibilities of all the involved individuals. Cangelosi and Dill (1965), in their work of researching OL, envisaged the learning process as one which enables Distinguishing the growing insights and successive restructurings of the problem as it appears to the humans dealing with it reflect themselves in the structural elements of the organization itself.

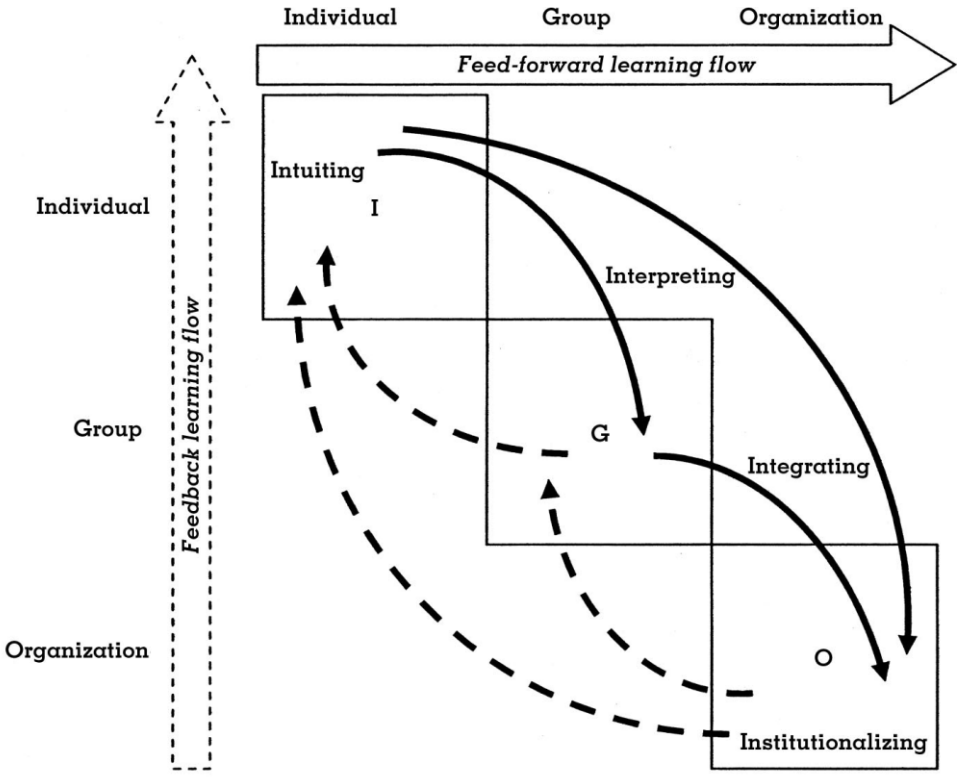
Context refers to the conditions and factors affecting the OL process. According to (Lawrence et al., 2005), context refers to the structural, political, cultural and material factors that are likely to facilitate or inhibit the learning process. Lastly, OL outcome refers to the desired result emerging from content, process, and context (the first three dimensions), and these learning outcomes can be both intended and unintended. Distinguishing the four dimensions of OL is the first step towards analysis and theorizing OL in context. The distinction is important in avoiding confusion due to the mixing of the dimensions.

OL has been seen as the process of adapting to the business environment. For many authors, adaptation and learning are synonymous, although OL will differ according to how individuals perceive their business environments. (Cangelosi and Dill, 1965) described that learning in the organization is '*sporadic and stepwise rather than continuous and gradual and that learning of preferences and goals goes hand in hand with learning how to achieve them'* (Cangelosi and Dill, 1965, p.203). Further, when we search for the place where learning is happening in the organization as a unit, Cangelosi and Dill pointed out that it is happening on two levels, individual and subgroup, as one level, and organization as the second one. In a dynamic sense, OL is a dynamic process of interactions (feedforward – application of new knowledge and feedback – application of old knowledge) between cognition (knowledge, understanding, and beliefs) and action (behavior) (Crossan et al., 1999). Crossan further

proposed the OL framework in terms of a renewal four-step process (4I's = intuiting, interpreting, integrating and institutionalizing) linked between individuals, groups, and organizations.

FIGURE 4.

4I Framework of Organizational Learning



I **Individual learning stock:** Individual competence, capability, and motivation to undertake the required tasks

G **Group learning stock:** Group dynamics and the development of shared understanding

O **Organizational learning stock:** Alignment between the nonhuman storehouses of learning, including systems, structures, strategy, procedures, and culture, given the competitive environment

Feed-forward learning flow: Whether and how individual learning feeds forward into group learning and learning at the organizational level (e.g., changes to structure, systems, products, strategy, procedures, culture)

Feedback learning flow: Whether and how learning that is embedded in the organization (e.g., systems, structure, strategy) affects individual and group learning

Adapted from Crossan et al., 1999, p.532

(Crossan et al., 1999) contended that, despite the individual's capability to interpret matters of relevance, it is only by integrating and institutionalizing this understanding that co-learning will occur. Learning will not occur only from the pure transfer of data, information or knowledge, it will be part of a larger OL. Further, they saw the importance of finding out what and how defines the interaction between domains in the wider frame of OL taking into account applied management style that will shape organizational collaboration and distinguish the difference between interdependence and independence (Draft and Lewin, 1993). Draft and Lewin went further to emphasize the differences between the old and new ways of managing organizations as contributing factors for developing OL and at the same time, it is representing the way on how KCAD should develop its OL. Whereas previously, managers had responsibility for specific functions, nowadays the emphasis is upon the management of relationships. Managers are required to shape the flow of energy within the organizational space governed by different processes. These ideas of the 'old and the new', of 'flow ', 'energy' and 'relationships', appear relevant and useful to assist KCAD's efforts to modernize its management practices.

Individual understanding is a driver for intuiting and interpreting learning, where group understanding is visible in integrating all individual levels of intuition and interpretation (see Fig. 5). The last step is based on the OL level where institutionalizing is defined as a mix of individual and group learning framed by organizational formalized interactions and communications.

FIGURE 5.

Learning/Renewal in Organizations: Four Processes Through Three Levels

Level	Process	Inputs/Outcomes
Individual	Intuiting	Experiences Images Metaphors
	Interpreting	Language Cognitive map Conversation/dialogue
Group	Integrating	Shared understandings Mutual adjustment Interactive systems
Organization	Institutionalizing	Routines Diagnostic systems Rules and procedures

Crossan et al., 1999, p.525

In applying OL, KCAD managers should understand that the shift in organizational management is an ongoing process. The trend is to shift from the present organizational structure of mass production, hierarchical organization with bureaucratic structure, governed by directive or transactional leadership (Goleman, 2013; Meindl, 1990) and centrally controlled, toward the new organizational structure of smaller teams governed by leadership that is sharing vision, culture, values, and information to set leadership without control (Daft and Lewin, 1993).

2.2 Approaches to Knowledge management and knowledge sharing

Organizations that are keen to develop and sustain their learning, will need to manage and share knowledge or learnings among individuals, teams, and organizations. The knowledge management system in KCAD is existing and is serving its purpose with procedures, processes, guidelines, and standards. However, by knowing that system is good as the people that are using it, I went one step further and observed to define the people with the most influence on the system and learning in the organization and how they behave. Following Crossan's (1999) terminology and 4I's process of OL, I focused on how leadership and management contribute to OL. There is no doubt that KCAD is an organization driven by a directive or transactional leadership style (Goleman, 2013; Meindl, 1990) that has proved to be a barrier for expanding OL from single-loop to double-loop learning (Argyris, 2000).

According to (Keskin, 2005), knowledge sharing refers to the process of combining description, facts, skills, and information that are learned through practice and experience. Knowledge encompasses tacit and explicit knowledge that workers in the organization learn when they combine a practical understanding of the workplace experience, routine, and insight, which all contribute to personal and group action. - a continuous process that occurs through the asking of questions, suggesting potential solutions, adoption of new behavior patterns and the sharing of new ideas; it involves interpersonal interactions among the employees. He observes that the secret behind successful knowledge sharing in the organization personal commitment and employees' sense of identity in the organization.

Knowledge sharing in the organization should be encouraged because it fuels innovation and ensures there is knowledge diffusion. This means the employees come to know and learn the things they never knew before through interaction with colleagues. Individuals hold much of the knowledge in the organization, and unless the organization develops a mechanism to tap

it, the knowledge is gone when the individual leaves the organization. However, continuous knowledge sharing ensures the knowledge is permanently held in the organization's memory. Keskin (2005), contends that knowledge-sharing helps an organization to make the most use of available facilities and resources through the transfer of best practices from one individual to another, from one department to another, or from one project to another. It not only reduces costs but also contributes to the ultimate success of the organization. When knowledge in the organization is shared, it accumulates and embeds in the processes, products, and services, making it more effective and efficient (see also Yi, 2009) (Ramizes, Garcia, and Rojas, 2011) sum up that studies on knowledge sharing are still incomplete; they are ongoing.

Chie and Tsai (2012), argue that accumulating resources in the organization is not enough for it to create a sustainable competitive advantage: the organization should reconfigure them into dynamic capabilities for there to be a competitive advantage; this is what successful organizations do.

(Yi, 2009) notes that different scholars have used different taxonomies in a bid to operationalize knowledge sharing in the organization by placing know-how from expertise, experience, education and training and other forms of learning from colleagues or obtained informally. The study by (Bock and Kim, 2002) agrees with (Nonaka, 1994) that organizational, written reports enhance the sharing of explicit forms of knowledge. Reports are easily traceable, evaluated, and processed and transmitted by computers from one person to another, and the competitive knowledge arising from it is easy to imitate. Yi, (2009) asserts that tacit knowledge in the organization can be shared through meetings, seminars, workshops and other organizational forms of communication. It is rooted in experience, actions, values, ideas, and emotions to mention a few. Converting tacit knowledge into numbers or words easily understood by everyone is essential for it to be shared successfully. Free and informal communication in the organization creates avenues for sharing tacit knowledge: the goal is to innovate and ‘unlearn' whilst also achieving organizational objectives through teamwork and a shared vision.

Additionally, (Dalkir, 2005) observes that the internet has provided unlimited sources of information and knowledge which facilitates knowledge sharing. The shared database in the organization has created forums where employees cooperate and coordinate with each other. Walker contends that online sharing of information improves interpersonal relationships between employees and enables them to create and transfer knowledge. The internet assists in tracking individuals with certain expertise and enhance knowledge sharing with these individuals.

Organizations, which are keen to develop and sustain their learning, will need to manage and share knowledge or learnings among individuals, teams, and organizations. The knowledge management in my organization is important because of a few factors that are influencing the future sustainability of our operations in Azerbaijan. These factors are the transactional leadership style applied, which is supporting top-down communication, suppressing different options, views, and experiences relevant for the team and organization. Further, this transactional leadership style generated frustration amongst managers and barriers towards open communication and knowledge sharing, where managers took a stand of shutting down communication to the bare minimum. Reason is to avoid GM threats and open humiliation. Furthermore, the next factor is the plan for nationalizing of our workforce to 90% (from present 84%), which for the result will substitute the experienced expert workforce with the less experienced national workforce. This plan is part of Azerbaijan national regulation and souch is an external political barrier towards sustaining and developing our organizational knowledge. There is an opportunity to challenge this national plan with an optional extension of this target from 2022 to 2024. But despite this opportune, the present leadership style of GM is not taking this into the consideration, giving justification that the plan is achievable. If the plan is not achieved, GM is losing a huge portion of his yearly bonus.

The knowledge management system in KCADeutag exists and serves its purpose with procedures, processes, guidelines, and standards. However, by knowing that system is good as people that are using it, I went one step further and observed to define the people with the most influence on the system and learning in the organization and how they behave.

Knowledge management and knowledge sharing are part of the OL's dynamic. According to (Tsoukas, 2003), knowledge management is the process through which an organization identifies and leverages collective knowledge. It is created through the interaction of tacit and explicit knowledge. Knowledge management allows an entity to transform, articulate, and amplify new knowledge, discovered by individuals, in majority cases for the good of the entity. Knowledge management deals with four main dimensions. These are; the creation, retrieval process, transferring, and application of both tacit and explicit knowledge (Tsoukas, 2003). (Nonaka, 1994) was using the four-point framework to suggest the distribution of the acquired knowledge, through the product and routines of a company's repository, as the best means of sharing the information and transforming individual knowledge into a company's knowledge. To encourage information sharing, companies must incorporate incentives, such as the compensation of highly creative individuals who contribute to organizational knowledge, to encourage employees to be more innovative and willing to share individual knowledge. Here

it is important to mention that in KCAD Azerbaijan all incentives of that type that are supporting knowledge sharing and generation are dismissed. Emerging technological aids, such as those that enhance communication channels have served greatly in enhancing knowledge management and knowledge sharing in organizations today. Previous literature on organization learning (March and Olsen, 1975; Senge, 1990; Huber, 1991; Nonaka and Takeuchi, 1995), indicates that it is important to distinguish the four dimensions of OL; content, process, context, and outcome and how they interact with concepts such as knowledge management and knowledge sharing to promote holistic entity development.

The following four dimensions of OL in my organization are:

- Content - in Work Guidelines (WG) as our main organization KM vehicle
- Process – WG is updated based on different investigations outcomes and operational lessons learned
- Context – is always seen in applying just three types of actions as investigation or lessons learned outcomes (WG update, engineering fix, which will add one more physical barrier between equipment and humans, and consequence matrix toward employees, with predominantly dismissal of people involved into the incident).
- Outcome – development of frustration and fear factor, and reduced communication and knowledge sharing

According to Keskin (2005), knowledge sharing refers to the process of combining description, facts, skills, and information that are learned through practice and experience. Knowledge encompasses tacit and explicit knowledge that workers in the organization learn when they combine a practical understanding of the workplace experience, routine, and insight, which all contribute to personal and group action. Nonaka (1994) adds that knowledge in the organization is created through the interaction of people having different contents of knowledge. Nonaka (1994) observes that the secret behind successful knowledge sharing in the organization's commitment and employees' sense of identity in the organization. Knowledge sharing in the organization creates the ability for the employees to exchange knowledge, ideas, experience, and information amongst each other.

Similarly, Nonaka (1994) contends that knowledge sharing in the organization is a continuous process that can occur through the asking of questions, suggesting potential solutions, adoption of new behaviour patterns, and the sharing of new ideas; it involves interpersonal interactions among the employees. Knowledge sharing in the organization should be encouraged because it fuels innovation and ensures there is knowledge diffusion. This means the employees come to know and learn the things they never knew before through the interaction with colleagues. Individuals hold much of the knowledge in the organization, and

unless the organization develops a mechanism to tap it, the knowledge is gone when the individual leaves the organization. This point is seen of high importance for my research to find out what barriers in the form of leadership, reduced communication, and different politics existing in my organization. However, continuous knowledge sharing ensures the knowledge is permanently held in the organization's memory. Impliedly, it can be used for capturing, organizing, reusing, and for transferring of experience-based knowledge from the senior employees to the new entrants and ensure the knowledge stays long after the departure of the employee.

Keskin (2005) and Yi (2009) admit that knowledge sharing in the organization helps it to make the most use of available facilities and resources through the transfer of best practices from one individual to another, from one department to another, or from one project to another. It does not only reduce costs but also contributes to the ultimate success of the organization. Today competitive advantage hinges on knowledge management in the organization because knowledge sharing aims at integrating individual knowledge with the organizational strategy, which is the essential requirement for future survival (Nonaka, 1994). When knowledge in the organization is shared, it accumulates and embeds in the processes, products, and services, and this makes it more effective and efficient. Ramizes, Garcia, and Rojas (2011) sum up that studies on knowledge sharing are still incomplete; they are ongoing.

Chie and Tsai (2012) argue that knowledge sharing in the organization enhances the ability to reconfigure and integrate knowledge resources and improve the overall performance. Implicitly, knowledge as a resource is a dynamic capability that can assist the organization to integrate ideas, expertise, skills, and experience in line with the changing environmental needs. Accumulation of resources in the organization is not enough for it to create a sustainable competitive advantage, the organization should reconfigure them into dynamic capabilities for there to be a competitive advantage; this is what successful organizations do. Following their observation, it is obvious that my organization with applied GM leadership style does not support this positive knowledge sharing dynamics.

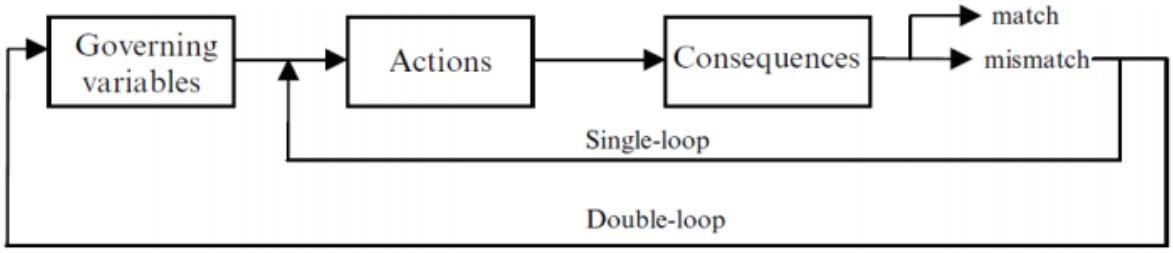
Yi (2009) asserts that tacit knowledge in the organization can be shared through meetings, seminars, workshops, and other organizational forms of communication. It is rooted in experience, actions, values, ideas, and emotions, to mention a few. It is crucial to converting tacit knowledge into numbers or words that are easily understood by everyone for it to be shared successfully. And communication in the organization is what creates avenues for sharing tacit knowledge. Yi (2009) adds that it is about innovation and unlearning and it is shared as a way of achieving organizational objectives through teamwork and a shared vision.

Argyris and Schön (1974) argued that humans enclose mental maps that enable organizations to plan, implement, and examine their actions. Thus, humans are more predisposed to use these maps and not the theories they espouse meaning that individuals will be more split between theory and operation. For example, the approach of action combines three elements that explain the processes involved in Organizational Learning (OL). As illustrated in Figure six governing variables are the dimensions that individuals attempt to keep inside acceptable limits. Secondly, action strategies are the approaches that people use to keep guiding values inside an acceptable range while consequences are the results of an activity.

2.2.1 Single and Double Loop Learning

Learning is a continuous process and includes the reflection and correction of errors. In this case, errors are disparities between the anticipated and actual outcomes of action regardless of whether the response was personal or organizational. Thus, learning is the result of analyzing these mismatches and revising the work to create proposed results. As Figure 6 illustrates, the three elements depict how feedback activates modification of one or more essentials.

Figure 6. - Single and double-loop learning distinction - (Derived from Argyris, 1982)



2.2.1.1 Single-Loop Learning (SLL)

Single-loop learning is defined as the situation where people or organizations act then get feedback from the environment on whether the objective has been attained. As a result, organizations can learn to adjust action strategies in reaction to the input. Perhaps the best example of a learning organization to illustrate single-loop learning is the military organization. According to Morgan,

> *Single loop learning rests in the ability to detect and correct error concerning a given set of operating norms - Morgan, 2006, p.85*

Looking into the three described examples of incident investigations in Chapter 1:

1. Example No.1 ‘Dropped 28” Riser pipe’
2. Example No.2 ‘Employee tripped over the hose and fell’
3. Example No.3 ‘Wrong line up during preparation of cement mixing water’

The above examples supporting Morgan’s (2006) assertion that SLL is solely supporting detection of systemic norm malfunctions that are in all three cases concluded with three set of actions:

1. WG updating and distributing
2. Engineering fixes to design physical barrier between employee and equipment
3. Human error and miss use of Fair Consequence Matrix (where all involved parties were released from the company)

These three sets of actions were always pointing out the same learnings that were governed by the GM’s transactional leadership style applied, which at the end never allowed deeper level of investigations and reflection that is depicting some behavioral mistakes that are routed in different values and norms of the individuals and organization.

2.2.1.2 Double-Loop Learning (DLL)

As earlier described, SLL works not only for the military but for other personal and business organizations. However, situations can change, and new factors can be introduced, resulting in changes that might not only be unpleasant but result in the death of a company or person. When elements change, so must the "action strategies" as well as "governing values". Therefore, if the (outcomes) of a single loop cannot be sufficient or fail to attain a comfortable environment DLL must be initiated. While unique loop learning creates a first-order modification and invention, second loop learning is about change and transformation. Generally, DLL is a paradigm shift that changes the underlying, prevailing principles that delineate organizations (Tagg, 2010). Morgan asserts that “*double-loop learning depends on being able to take a double look at the situation by questioning the relevance and operating norms*” (Morgan, 2006, p.85). DLL rests on the ability of individuals, groups, and organizations to re-learn and change their mental models; to encompass transformative behaviors, rather than by reacting only to feedback. DLL changes how people conduct decision making. Ultimately, DLL for this research will encompass research that assesses OL as transformative, thought changing and high-level knowledge.

Following case No1 *‘Dropped 28” Riser pipe’* described in Chapter 1, it is possible to see luck of deeper level of investigation, where decision making process of Senior supervisor (SS)

responsible for the job and incident was not questioned enough. During investigation, SS expressed his concern and disability to follow all company instructions during the night, where he even described this particular situation and explain that company expectation for him is to read three hundred pages of job instructions every time during job preparation. This point offered to our organization to reflect on mental models and decision-making processes that led to the incident, but GM did not allow this investigation to go deeper and concluded it is Human error of not following procedures. By doing that, GM did not allow deeper level of transformation to be defined and applied, and he kept our organization at SLL level with existing mental models of transactional leadership.

Before highlighting the barriers to OL and DLL it is imperative to note the importance of the challenges that necessitate continuous learning. Organizations face numerous challenges, from their competitors, new technologies and the expectations of thier young employees to mention just a few. Further, companies must produce goods and generate services over shorter time periods and at higher quality, owing to changes in tastes and customer preferences. These changes mean that customers have increased buying powers and thus, companies must produce not at the current economies of scale but according to customers' needs. These contemporary changes to the market also require new methods; new channels of distribution and most importantly new customer relationship management models.

Companies not only need to change how they do business, but organizational structures have to adapt to encompass more creative and innovative strategies that can produce better product development and overall organizational effectiveness. As such, DLL is imperative for increasing output and ensuring the long-term competitiveness of a company. Therefore, OL is important in daily operations to create sustained success by detecting errors and using DLL to modify and transform the organization into desired outcomes (Argyris, 2002).

2.3 Barriers to Double-Loop Learning

The Oxford Dictionaries (2019) define barriers as “things that prevent access and obstacles that create problems due to lack of shared experiences in different cultures which may or not be conscious or intentional”. According to research, OL is ambiguous and does not repeatedly occur because unlearning the old knowledge is difficult. In a discourse on OL Hedberg, (1981) asserted that ‘unlearning’ is a procedure that comprises discarding obsolete and misleading experiences that may disrupt the implementation of change. Thus, unique expertise in the organization could be considered as an enemy to change or continuous learning.

According to Hedberg, budgets and management controls in place in almost all organizations support single-loop learning. Key Performance Indicators (KPIs) are extensively used to monitor and control expenditure, sales, profits and other performance indicators, to ensure departments remain within pre-set, acceptable limits. Even advanced technology may foster similar ideals of maintaining the single-loop control making double learning elusive. Thus, this discourse will aim to explore the general barriers to DLL due to prevailing organizational politics, leadership practices, and communications. When we examine the barriers to learning, Crossan's 4I's - intuiting, interpreting, integrating, and institutionalizing process gave a good overview of different levels of OL and it took into consideration individual, organizational and environmental forms of barriers. The gap in knowledge is predominantly caused by overly focusing research on the intuiting and institutionalizing processes within inside organizations at the expense of the interpreting and integrating processes which concentrated more on the live business environment.

My research is takes into consideration three barriers to DLL: applied transactional top-down leadership style, which restricts communication, and organizational reaction to different political influences. Those three barriers are examined through the processes of interpretation and integration. The organizational reality of KCAD Azerbaijan is driven by a GM transactional top-down leadership style that generates an organizational culture of fear and silence amongst managers. The different elements of KCAD Azerbaijan organizational reality are defined in terms of Schilling & Klugs, (2009) *Interpretation* process:

- Individual barriers (lack of motivation and anxiety on the part of group members; fear of loss of ownership and control of knowledge; and lack of political and social skills on part of individual)
- Organizational barriers (organizational silence; failure-avoidance norms of the group; ego-defenses of a strong collective identity; divergent objectives, values and hidden agendas in the group)
- Environmental (knowledge incompatible with existing mind-sets)

and process of *Integration*:

- Individual barriers (fear of disadvantages for the team benefit; lack of recognition/punishment for the new ideas; lack of top management support; top managers desire to retain a positive self-image; defensive routines of other departments; lack of participation and communication/forced top-down change)
- Organizational barriers (low turnover in top management; inadequate communication between units, power structure, and relations; ineffective resource allocation; lack of learning-oriented values in the organization)

- Environmental (Delay in organizational action to adapt to new environmental demands, failure trap).

To affirm how difficult it is to maintain double-loop learning it is crucial to note that budgets and management controls in place in almost all organizations support single-loop learning. To encapsulate these trends, organizations monitor expenditures, sales, profits, and other performance indicators (KPI's) to ensure that the KPI's remain in acceptable limits. Even advanced technology fosters similar ideals of maintaining the single-loop control making double learning elusive. Thus, this discourse will aim to explore general barriers to DLL pertaining to the restrictions of learning in the realms of leadership, communication, and organizational politics.

2.3.1 Leadership

Grint (2005) maintains that organizational leadership is a highly contested concept. It should not be considered as an independent entity, but as being contingent on prevailing conditions in the organization's environment. Two highly contrasting forms of leadership, the 'Transactional' and the 'Transformative' are often compared for their relative preferability or suitability; i.e. from either the human relations perspective or that of organizational performance. Situated at polar ends of the leadership 'spectrum', the transactional style conforms with authoritarianism, whereas transformational leadership is, by nature, democratic. It is generally accepted that the transactional style is more suited for dealing with 'critical' problems, such as when an Oil Refinery is at risk of exploding. Here there is virtually no uncertainty about what needs to be done – at least in the behavior of the Leader/Commander, whose role is to take the required decisive action – that is to provide the answer to the problem, not to engage processes (management) or ask questions (leadership).

Transformational leadership is more suited to situations that require the use of 'Soft' power by asking the right questions rather than to provide the right answers because the answers may not be self-evident and will require a collaborative process to make any kind of progress. Such 'wicked' problems cannot be removed from their environment; solved and returned without affecting the environment. Moreover, there is no clear relationship between cause and effect.

A third, so-called 'tame' problem, lying somewhere in between the two above, may be complicated but is resolvable through unilinear acts and it is likely to have occurred before. In such cases, calculative or management power sets in motion methods to analyze and calculate 'best' outcomes to a complicated problem, using models and statistics (PESTEL,

ROI, etc.). In other words, there is only a limited degree of uncertainty and thus it is associated with ‘management’ rather than ‘leadership’.

Bass (1985) coined the term 'Transformational Leadership', identifying four separate elements that make up a Transformational Leader, which became known as the 4 I's as follows:
Idealized Influence (II)
Intellectual Stimulation (IS)
Inspirational Motivation (IM)
Individualized Consideration (IC).

These 4 elements, in Bass's view, are crucial if a leader wished to inspire, nurture and develop their followers. They would be used to create an open, communicative and diverse culture, allowing followers to freely share ideas and therefore, to empower them on an individual level. By contrast, Transactional leadership focuses on supervision, organization, or performance; being a leadership style used to promote compliance by followers through both rewards and punishments. Through a rewards and punishments system, transactional leaders can keep followers motivated for the short-term. Unlike transformational leaders, those using the transactional approach are not necessarily looking to change the future (Kuhnert and Lewis, 1987).

Transformational leadership is a somewhat idealized style in a modern organization. Teams can flourish and innovate efficiently, but that depends on a leader's ability to create idealized influence and endorse a "shared vision"; enabling employees to commit to the general strategy rather than to their self-interests and defensive patterns. Transformative leaders help the workforce to determine similar aims and objectives according to the strategy, organization resources, and ethics. (Raj and Srivastava, 2016) affirm that there is a correlation between transformational leadership with organizational learning and innovation and leaders who champion transformational leadership create an organization where individuals shift from self-interests towards self-actualization for the organization. Ultimately, transactional leadership tends to maintain mental models while transformational leadership can transform and change the paradigm of learning.

Leadership is inherently linked to an organization's political communication style with the leader having direct power to influence both. Together, leadership politics and communication style influence individual and organizational learning. It should be noted that, as Grint advocates, "…leader, the noun, and leading, the verb, are to be treated differently from the construct leadership. Shifting the focus from noun to verb facilitates the reintroduction of the

proactive role of leadership in the construction of context, not in the sense that individual leaders are independent agents, able to manipulate the world at will, as in Carlyle's 'Great Man' theory, but in the sense that the context is not independent of human agency, and cannot be objectively assessed in a scientific form" (Grint, 2005b, pp. 1470-1471). What Grint means here is that leaders can change their approach from the transactional to the transformative (as well as the calculative) depending on the nature of the problem being faced. For a leader to be able to make these changes requires sensitivity and skill – some of which can be taught and some of which learned by experience. A leader's character and personality, however, cannot be changed so easily. It, therefore, becomes the responsibility of the recruitment team to select leaders with the 'right' blend of empathy, command, intelligence and all-round interpersonal skills to carry off the multiple roles demanded of him or her (Hogan and Kaiser, 2005).

2.3.1.1 Resistance to change

The term ‘resistance to change’ refers to a situation that endorses the maintenance of conventional mental models, and is a byproduct of various elements including anxiety, as well as additional psychological aspects that are created by changing (Appelbaum et al., 2015). Resistance to change is also used pejoratively used against the workforce rather than its management. The nature of this thesis, however, points towards resistance at top management/leadership levels. Its causes are common throughout humanity, irrespective of rank: including an attitude to change which includes a person's commitment, perceived benefits, as well as their involvement in the change. Muganda and Pillay (2013) point out that many factors prevent leaders from remaining effective, including denying skilled workers their autonomy or being unable to master or understand the complexities of their jobs. As a result, leaders often delay in taking adequate actions when problems arise resulting in employees becoming conflicted and confused and leading to bad cultures such as bullying and corruption. It has been shown that, within the Oil Industry, human and environmental disasters have resulted from leadership faults.

In my company the general manager displays resistance to a new way of working in fast changing business environment, and regularly sticks to the decision-making process based on old mental models following a top down directive way of leading the organization, and being reluctant to accept negative feedback. Thus, single loop learning concerns the organization’s ability to use the available processes to provide the best outcomes, and those does require a change of mental models towards transformative processes to ensure its effectiveness.

Changing mental models is painful and can lead to a company's failure because change often means that an organization must change the status quo and many leaders are not willing to go through that process and hence resist change. My general manager confirmed his resistance to change when he stated that ‘he will not change anything’. As a manager with 40 years’ experience in the oil industry, he feels that he knows his job well enough not to change, but in so doing drives a general resistance to change inside organization. Resistance to change is inevitable, and all employees are prone to this behaviour, and hence it becomes a severe barrier for him to overcome when he feels that the status quo is threatened. Indeed, the level of resistance varied depending on the degree of change and how it impacts on the organizational culture. Another significant factor that determines strength is an attitude to change which includes a person's commitment, perceived benefits, as well as change involvement.

Understanding that KCAD Azerbaijan is the organization with a general manger who is openly showing resistance to change; it is very easy to fall into the trap of the ‘we know the best’. Knowing how important is to accept changes and lead transformation within the organization, our company is on the path of potential loss of business within the Azerbaijan because of practicing same mental models that in the past generate success but are not supporting future operational sustainability.

Before discussing how leadership can be a barrier to organizational learning, it is important to establish that good leaders are essential in organizations because they can influence how the workforce interacts with customers, suppliers, and competitors. Recognizing transformational or transactional leadership style as two predominant styles of leadership, it is easy to detect that in my company the GM uses a transactional leadership style that generates a culture of goal-oriented, KPI oriented/fast fix solutions by using contingent rewards and negative feedback (Hater & Bass, 1998). On the other hand, transformational leadership is responsible for organizational performance ‘beyond management expectations’ because these leaders transmit sens of the mission, stimulating learning experience, and generates new ways of thinking (Hater & Bass, 1998). Furthermore, in KCADeutag Azerbaijan there is a strong emphasis on top-down directive ways of communicating with employees. That is easily recognized during different internal and external meetings and different levels of investigations where GM directly influenced the decision-making process that always supporting low-cost, fast fixes and in many cases bridged procedural compliance.

The barriers to organizational learning and DLL is, therefore most striking, with the GM sets the tone of the organizational culture that further will shape different levels and forms of

communication, influence employee motivation, and decide on power distribution. My GM openly giving stated that he is the one that needs to be informed about everything that is happening in our organization, and from there he will be the one to make or change the majority of the decisions, and that every decision will need to be acceptable to him. If mid-managers attempt to make any decision without informing the GM, he is exposed to shouting, humiliation, and threats of job dismissal if something like that will happen again. However, it is important to notice that the GM's style of leadership further negatively influenced communication and motivation, by showing his power to the rest of the management team and employees and taking all decision-making processes into his hands.

Transformational leadership is valued because leaders that integrate this style are 'stewards' and 'teachers' to their followers. Because of transformational leadership, there is an essence of what Senge referred to as "shared vision." The main elements of transformational leadership include the ability for leaders to offer idealized influence, inspire motivation as well as give individualized consideration along with offering intellectual stimulation to help employees change their models of thinking (Atwood, Mora & Kaplan, 2010). Thus, noting the role of transformational leadership, can help underscore the barriers organizations face in the domain of organizational leadership. 'Idealized influence' is an essential attribute of transformative leadership because leaders commit to enabling employees to realign values with leaders' objectives and vision. Therefore, transformative leaders help the workforce to determine similar aims and objectives according to the strategy, organization resources, and ethics. Raj and Srivastava (2016) affirm that there is a correlation between transformational leadership with organizational learning and innovation and leaders who champion transformational leadership create an organization where individuals shift from self-interests towards self-actualization for the organization.

It is important to reiterate that leadership is crucial, if not central, aspect of the organization and administration, due to its capacity to facilitate continuous organizational learning and in this case transformative learning based for DLL. I introduced the challenges that organizations face earlier: firstly, the business exists in a more disruptive environment that requires organizations to become more adaptive and proactive. Senge's (1990) concept of a learning organization asserts that leaders must motivate and expedite learning to create a transformation that enables effectiveness in a radically changing business environment. The concept of learning helps the workforce and management to face challenges and pursue goals and objectives while still adapting to change. Following Senge, it is evident that in my organization under transactional leadership motivation and expedite learning are restricted if not suspended.

Leadership is outstanding because it can learn as Senge notes that individual learning (personal mastery) is imperative, and may create norms and cultures desired in an organization. Leadership fits into intimate knowledge because a leader's role is to inspire and motivate employees to learn, but an ineffective leader can inhibit learning from the mental models that limit double-loop learning. The purpose of the leader is dependent on the style of leadership exposed within an organization. Passive leaders are less likely to endorse knowledge where transformation cannot occur in an environment without new patterns of thought and challenged mental models. Equally, transactional leadership may create an environment where creativity, calculated risks, and openness is common and hence transformed ideas and thinking that is inherent in double-loop learning. Cultures with negative leadership cannot create risk-taking behaviours that employ little or no opportunities for learning.

2.3.1.2 Lack of Transformational Leadership

The KCAD Azerbaijan general manager made the decision not to take the stance of transformational leadership and instead ascribe to use of existing mental models of transactional leadership. By not embracing the needed change, the lack of transformational leadership has had a severe impact on the organization. Among the factors which have caused him to lose his effectiveness is that he gave some employees their autonomy but knew little of the job complexities of others. As a result, he often causes delay in taking adequate actions when problems arise and, when it comes to rewarding or punishing employees. As a result, employees have become conflicted and confused which had led to a blame culture, where responsibility for autonomous decision-making is not welcomed and every failure is blamed on the managers. The only vision that is shared by the GM is the financial benefit accruing to the company.

However, to stimulate knowledge development and sharing as part of organizational learning, transformational leaders must create idealized influence, stimulate motivation and self-confidence, and most importantly encourage intellectuality and inventiveness Bernard Bass (1985). As a result, leaders can help employees move from single loop learning to transformative way of thinking that stimulates relearning and changing mental models.

Perhaps the most crucial aspect of transformative leadership is how leaders involve employees in decision-making and thus help in creating horizontal leadership to ultimately

increase levels of trust and work independence necessary for creativity (Muganda & Pillay, 2013). Finally, it is clear that using only directive top down, vertical decision-making models, KCAD Azerbaijan is lacking Transformative leadership to be engaged in double loop learning.

2.3.1.3 Team success

Some organizations create cultures where leaders get all the adoration and promotions, and thus the corporate cultures sink to negative mindsets that do not celebrate team accomplishments. It is crucial to note that teams are the spaces in which employees push their mental models, learn new ideas, and become better through knowledge and information. Therefore, team success is imperative to enhance learning and especially transformative learning using DLL. Teams must be viewed not as a means to an end but as valuable concepts that drive success and organizational learning. When leaders do not encourage groups, then teams might not adopt innovation. Furthermore, employees perceive that the organization has relevance for innovation then learning becomes inhibited.

Equally, research by Morgan (2006) and Dodgson (1993) shows that teams can also limit change because departments focus on the members as opposed to the overall organizational issues and thus decentralization may become detrimental to innovation. Thus, in KCAD, the decision-making process in Azerbaijan is vertically oriented, creating a culture of fear and a focus on individuals, unlike teams, which is ultimately a distraction to the foundations of team spirit and success.

2.3.1.4 Lack of management skills

A lack of essential management skills, mentioned in earlier paragraphs of this chapter, can result in failing organizations because unlike in transformative leadership where leaders are engaging transactional leadership is non-performing and destructive to motivation and shared vision. Thus, lack of management skills inhibits double-loop learning because transactional leaders may refuse to correct mistakes or provide mentorship, teaching, and idealized influenced crucial for double-loop learning. Beer and Eisenstat (2000) non-transformational leaders think that innovation is intrinsic and inherent and will automatically occur in organizations. Lacking transformative leadership styles ascribe to no personal involvement and can be destructive and cause inconsistent results in organizational learning resulting in inefficiencies and loss of output. Furthermore, there are gaps in strategy, systems, rules, and practice to execute innovations successfully. Hence, the lack of management skills may

increase maintaining of mental models that inhibit change and transformation necessary for learning.

As well, lack of management skills also results in other issues such as having a short-term focus that is when organizations do not look into the "big picture" when assessing strategy. Following the practice of my organization, the issue of the short term focuses highly correlates with single-loop learning because organizations in this learning activity for a purpose get feedback from the environment and assess if the target has been attained (Argyris, 2002). Thus, short-term goals are barriers to learning because they involve just receiving feedback and evaluating outcomes as opposed to DLL that includes changing mental models and incorporating ideas that can result in ensuring competitiveness. Most importantly, lack of skills may also endorse a lack of learning and valuing learning that may be problematic in helping followers embrace learning. Essentially, the lack of knowledge is vital because the only experience can help organizations change their mental models and assimilate new tactics.

2.3.1.5 Summarizing leadership barriers

Transformational leadership must be the ideal leadership style in a modern organization. However, research also notes the importance of transactional leadership in achieving organizational learning. Nevertheless, barriers to leadership focus on transformational leadership and passive leadership in assessing and resisting behavioral change. It may be crucial to note the importance of the lack of management skills and the detrimental effects it has on learning. Teams can operate and innovate effectively, but this depends on the leader's ability to create an idealized impact and to support a "shared vision" by allowing employees to focus on an overall strategy as opposed to personal interests and defensive patterns. Finally, transactional leadership can maintain mental models while transformational leadership can transform and change the learning paradigm. Finally, leadership as a barrier to organizational learning and deeper double-loop learning is alive and functional in my organization, making space for two other barriers to be erected (communication and politics).

2.3.2 Communication

The '4I' model conceptualized by (Crossan et al., 1999) (Figure 4) shows the processes needed within an organization for effective communications to flourish. The model depicts a systematic method towards OL as a strategic renewal by integrating individuals, teams, and organizations as a vital component in appreciating communication barriers.

Crossan et al. (1999) affirm that the first process is mostly personal and occurs because of creating new insights and ideas. The second process occurs when people explain their concepts through verbal and non-verbal means while integrating occurs when people in the firm internalize the translated information to enable coherent, collective action. Lastly, institutions can take on the shared ideas and implement the notions into the firm's process, systems and approaches. It is crucial to note that Crossan, Lane, and White did not formulate barriers to organizational learning, but for this research, the model is imperative because communication barriers will become evident as concerns with the stages of the OL process.
Individuals encompass knowledge that can be used to provide DLL in the organization. Knowledge is embedded in an organization's processes, values and documents (Kransdorff, 1998), in other words, it can be implicit or explicit. 'Knowledge', in this case, refers to the framed experiences, belief systems as well as intuition that uses a framework for appreciating new ideas. Kransdorff argues that Intuited data is predisposed to become tacit and not explicit because it consists of a person's values and perceptions. Organizations also need data that is codified, storable and identifiable to provide a stable form of communication. As knowledge moves to the interpretation phase, tacit elements may be lost, and more so as it moves to further integration and institutionalizing stages. For this reason, knowledge with the implicit details becomes ‘sticky’ or problematic when attempting to transfer it. DLL must encompass both tacit and explicit forms. Using only explicit knowledge can make OL sporadic and limit changing mental models. Because the focus of this paper is on the barriers, and not methods of gaining experience, general data takes precedence, and thus data might be verbal, non-verbal, documents, social media data among others.

As knowledge is transferred it is open to interpretation or misinterpretation by the receiver(s). Argyris noted the likelihood for data to be “distant, ambiguous, unreliable, and incongruent”. The importance of understanding culture and how it would impact interpretation is crucial because

> *People tend to use unilateral behavioral strategies such as advocating positions and simultaneously controlling others to win that position, controlling the tasks, and secretly deciding how much to tell people and how much is to be distorted, usually to save somebody's face - Argyris, 1977, Pg. 118*

Organization and politics have already underscored the importance of transformative thinking to overcome defensive systems and destructive cultures that inhibit learning to SLL.

Employees embrace biases and deficiencies when they act as sensors for the organization, meaning that individuals would be most likely to use the experience that helps to reinforce individual notions, as opposed to contradicting them, and hence lack the proper knowledge to pass on to other employees (Huber, 1991). As such, this barrier can reinforce 'superstitious learning'; an experience that is caused when people perceive the firm's success in light of management's actions (Miller, Droge and Vickery, 1997). The result of this is that employees may over-report success and under-report failures causing severe gaps in learning. When leaders display authoritarian tendencies, employees may become afraid and inhibited about what they tell the boss. DLL is affected by this barrier in that several. Whenever communication blockages such as this occur, DLL will suffer, as will innovation and high-level knowledge. Instead, employees will be stuck in a single loop pattern of assessing the feedback from the environment only to evaluate if immediate short-term goals are being met.

Being stuck in this loop means that communication preserves the same mental models and 're-learning' using DLL never occurs. Because the interpretation process relies upon interpersonal relationships, communication may transmit useful knowledge depending on individual identity, as well as other social cognition aspects including perceived status, credibility, liking and disliking, conflicting interactions, acceptance of ideas and motivation (Miller, Droge and Vickery, 1997). These aspects are vital in communication because these are entrenched in the firm's espoused culture. Learning organizations encompass cultures that motivate, encourage and have leaders with sharing vision traits. Equally, single learning loops can incorporate failure-avoidance, organizational silence, hidden agendas, or self-interest that promote communication barriers, and hence constrain learning. Information technology has created a space where there is so much information, and while modern databases keep record retrieval straightforward, there is still a problem of accessing the right knowledge for all situations. As a result, organizations may interpret the wrong data and create similar single learning loops that do not encompass high-level learning.

When knowledge becomes institutionalized in Corssan's '4I' model, communication is comprehensive, but the organization can fail to capture the knowledge adequately due to the bureaucratic nature of institutions. If an institution is over- bound by bureaucracy it is to use codified forms of knowledge as templates for carrying out processes, measuring standards as well as setting decision criteria (Schulz, 1998). Whereas tacit knowledge may be needed for the company to assess problems from past events - and thus be helpful when communicating future goals – it is likely to be decrypting it is not straightforward and replicating these types of communication can be problematic. As a result, transformative learning may not occur and limit the firm to conventional mental models that use a single loop as opposed to DLL.

Research has shown that when different skill sets exist in an organization, it can lead to the inadequate transference of knowledge between employees. Whilst skilled employees may have the ability to utilize new experiences by integrating them into their learned repertoire, some, perhaps younger or less skilled employees will have a limited ability to absorb new knowledge. In this way, learning can become inhibited. (Cohen and Leventhal, 1990) state that the degree to which an organization can assimilate further information depends on an organization's 'absorptive' capabilities. It seems that for a company to initiate new learning, it must continuously invest in training and activities that motivate learning or else risk severe gaps appearing in its knowledge.

2.3.2.1 Summarizing Communication barriers

Leaders can affirm, praise and rectify behavior. They can objectively communicate goals and help employees move from defensive patterns and destructive cultures in what this research encapsulated as self-interest motivations. However, DLL cannot occur in a space that cannot communicate blended, codified knowledge with richer, tacit knowledge. If communication is intuited as vague and ambiguous, counter-intuitive, self-serving or entirely subjective, its recipients will seek to find their own ways of working things out.

2.3.3 Organizational Politics

The joint forces of power, influence and politics, have a considerable impact on the accomplishment or failure of essential learning processes (Lawrence, Mauws, Dyck and Kleysen, 2005). Some of the forces that can prevent organizations from learning include the systems, power pyramids, procedures, organizational cultures, defensive patterns, power associations, as well as psychic setups. DLL may fail because of four main sociopolitical processes that occur in organizations and can include influence, force, discipline, and domination (see also 'Transactional Leadership' below).

2.3.3.1 Hierarchies

Organizational failures may result from bureaucratized firms whose underlying organizing standards regularly function in a method that can hinder DLL. For instance, bureaucracies generate disjointed assumptions principally concerning hierarchy and horizontal divisions where data and knowledge rarely freely flow (Senge, 1990). Thus, diverse departments within

the organization may form competing priorities or interpret situations differently and as a result employee in multiple departments may create subunit goals from these interpretations.

Senge (1990) asserts that DLL, or ‘high-level learning, questions the acceptability of goals while SLL encompasses a continuous improvement of existing behavior. These organizational divisions can cause significant damage because different subunits, when not in unison, create political systems that create further barriers to DLL. The rational, yet restricted characteristics of a bureaucracy hence produce limitations because most organizations compensate the workforce for occupying ‘predestined places’. Only when guidelines and functioning principles are defied that performance becomes outstanding (as opposed to acceptable).

The significance of hierarchies is vital in understanding how organizations view leadership. How formal authority and status are administered in an organization can determine the success or failure of DLL. Innovative ideas, although imperative, may not be accepted because the proposer is not trusted. For example, a new employee with fresh ideas may join an organization, but due to the company's hierarchy, not receive recognition. In this case, new employees do not understand the authorities that allow acceptance because they may not have earned the confidence and status of the group (Tucker, Edmondson and Spear, 2002). For a group to accept and trust a new person, they must be trusted, yet newcomers do not have this value in most cases. As a result, learning is inhibited as the workforce may lack the motivation to use double-loop learning despite the benefits it may present.

2.3.3.2 Defensive Patterns

Argyris and Schon (1974), coined the term ‘defensive patterns’, to describe a barrier to DLL that occurs as a result of bureaucratic accountability or leadership practices which enforce processes and systems that reward or punish employees. Defensive systems are processes that individuals use to protect themselves and co-workers, from embarrassing and threatening situations. (Milsom, 2014; Stavropoulou et al., 2015). When the workforce perceives susceptibility or weakness, they inherently participate in "defensive patterns” designed to safeguard individuals as well as co-workers. These self-protective systems become entrenched within in corporate cultures, creating collective customs and arrangements of "groupthink", which prevent the workforce from deliberating on the realities and issues facing the organization.

2.3.3.3 Organizational Culture

(Schein, 2010) defined organizational culture as the total sum of beliefs and values espoused by a group of people. Corporate culture has firm importance in organizations because it can help foster and reinforce behaviors. Equally, organizational culture can be very destructive since bad cultures do not allow for the integration of norms and values that would enable learning to occur. Cultures encompass the collective identity of clusters and can include informative or negative norms and the quality of the culture can be risk aversion and denying bad news on progress. As a result of such a cultures employee can develop what (Brown, Starkey, Rothman, and Friedman, 2003) defined as protective obstacles which are what culture does when faced with a threat and the desire to protect identities when faced with caution.

Other researchers have noted that an unfavorable culture introduces ambiguous cluster conditions that can create different objectives, principles and hidden agendas that have the likelihood of hindering learning in an organization (Brown and Starkey, 2000). Thus, the degree of collectiveness in a group can either accept or hinder learning. Therefore, for moderate knowledge, there would be an acceptance of learning as long as it does not interfere with the culture's belief system. When new learning and ideas are introduced to a culture and might threaten the group, it is unlikely that the group's formal and informal leaders will accept it unless there is a crisis.

2.3.3.4 Power Relations

Organizations are built on the principles of authority and power, and hence it is crucial to delineate corporations as systems of government based on the partisan tactics utilized between the workforce and leaders. Some of the operations of power that political governments rely on include democracy or authoritarianism. By understanding such models of control then it is easy to identify how power relations can significantly, limit high level and continuous learning. As well, institutions are filled with wheeling and dealing, and the political aspect is alive and can hinder learning if politics allow for rival political differences.

Businesses operated by owner’s incline to family interests and conventions and tend to be dictatorial tendencies and characteristics. Therefore, autocracies may hinder learning behaviors because of the nature of totalitarianism where power is held by one or a few individuals making the leader limit learning if learning would disrupt power relations.

Because companies integrate more than one type of rule, companies that embrace democracy or technocracy with representative democracy or bureaucracy are more successful than companies that ascribe to autocracy and bureaucracy because employees in an autocratic system can create defensive policies that limit DLL due to the need to protect clusters of people who may face threats. Autocracy can also generate defensive practices and bad cultures due to the control few people have over the whole organization, and thus the company's survival can become limited. According to (Trim and Upton, 2016), organizational learning starts at the top and the ability for leaders to use the right organizational structure and embed the right attitude among employees. Thus, it is crucial to note autocracy as opposed to democracy, where everyone is involved in decisions making and where the workforce has the power that might mitigate DLL (Caldwell, 2012). The research reinforced assessed Senge's debate on organizational learning to affirm that learning can be enhanced in a workplace that endorses human agency and independence within the workplace. Caldwell thus integrates the significance of distributed leadership for strengthening high-level learning (DLL).

2.3.3.5 Summarizing organization and political barriers

Organization and politics have severe impacts on how learning develops in the organization. Perhaps defensive patterns in the domain of this subtopic are the most imperative because they influence all aspects of the organization. Because DLL is hard and is often dismissed for SLL there should be a favorable environment that enables the creation of learning cultures and not cultures that endorse protective patterns and hidden agendas that limit transformative learning inherent in DLL. Most importantly hierarchies must not be limiting or encourage top management to limit innovative ideas because matrix or lean structures might foster and promote DLL while administrative structures may limit DLL.

2.4 Future Focus of the Research

From the many themes, which affect organisational learning and the pursuit of DLL, several were chosen that fall within the scope of this thesis and my capacity to influence change. Thus, my literature focused upon the OL processes engaging individual, group and organisation influences (e.g. Cangelosi and Dill, 1965; Crossan, 1999), the role of leadership (Bass, 1985; Hater & Bass, 1998; Beer & Eisenstat, 2000; Goleman, 2013; Raj & Srivastava, 2016), Communication (Kransdorff, 1998; Y, 2009) Politics (Lawrence et. al.; 2005) and barriers to communication (Crossan, 1991). DLL is examined in the literature primarily as an advanced

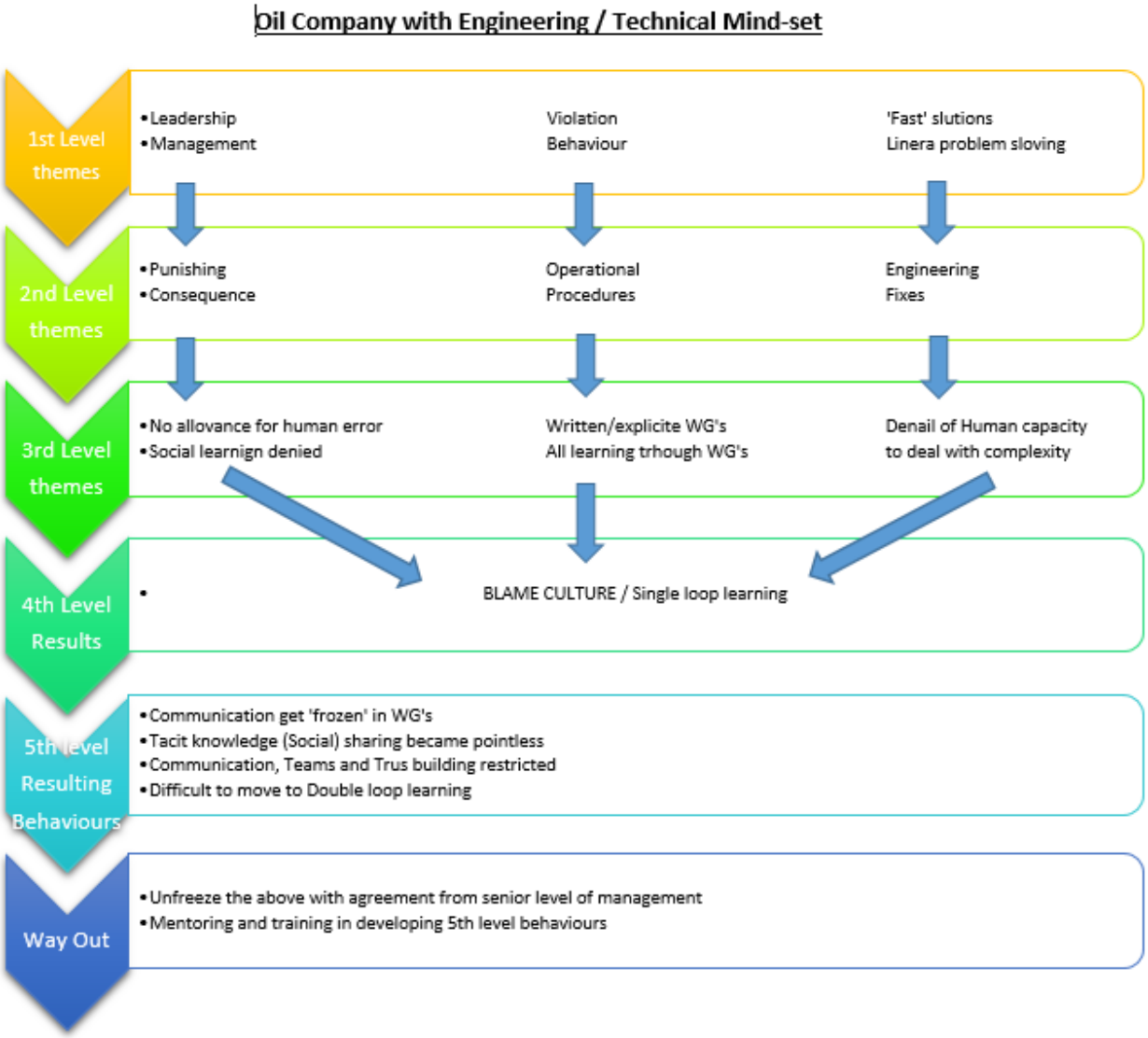
and improved form of learning compared to SLL, but moreover as a concept, that encompasses complex changes to patterns of working, communicating and leading in organisations, with each of these operating as interactive sub-systems. It was important for me to recognize that these topics should not be presented or described as discrete topics, but as dynamic entities with a system, in this case, KCADeutag Azerbaijan. As I show below (Fig 7), the systems in place at my company each create their own outcomes in terms of human behaviours, beliefs and attitudes, which in turn create or reify systemic pattern of rules, events and reactions which I have related throughout this thesis. Whilst the concept 'Organisational Culture', embodies behaviours, beliefs and attitudes, I took care in treating it with a light touch, partly because it embodies a whole range of other topics (see below) and also because it is often overused as a sweeping term rather than as a complex entity (Traphagan, 2015).

Dissecting complex systems is a difficult undertaking. According to Weick 2001 (Karl and Weick, 2001) involves 'sense-making'. "*Sense-making involves coming up with a plausible understanding a map of a shifting world; testing this map with others through data collection, action, and conversation; and then refining, or abandoning, the map depending on how credible it is*". (Ancona, 2012; p.3).

In seeking to make sense of this system, I prioritized Leadership as a place to start, because in my opinion the pervasive leadership style within my section of the company is too directive and which in turn, uses, or results in, single loop learning, which causes many of the problems outlined.

A number of other themes were considered, such as human agency and independence within the workplace (Caldwell, 2012), specific forms of organisation encompassing bureaucracy, democracy, autocracy, or technocracy (Schilling and Kluge, 2009) and the notion of 'psychic traps' (Morgan, 2006). Each of these, however, were considered too complex or peripheral to this research and were dropped. In the final chapter, I suggest they could be useful areas for further research in relation to organisational knowledge and learning.

Figure 7


Oil Company with Engineering / Technical Mind-set
1st Level themes
•Leadership
•Management
Violation Behaviour
'Fast' slutions Linera problem sloving
2nd Level themes
•Punishing
•Consequence
Operational Procedures
Engineering Fixes
3rd Level themes
•No allovance for human error
•Social learnign denied
Written/explicite WG's All learning trhough WG's
Denail of Human capacity to deal with complexity
4th Level Results
•
BLAME CULTURE / Single loop learning
5th Level Resulting Behaviours
•Communication get 'frozen' in WG's
•Tacit knowledge (Social) sharing became pointless
•Communication, Teams and Trus building restricted
•Difficult to move to Double loop learning
Way Out
•Unfreeze the above with agreement from senior level of management
•Mentoring and training in developing 5th level behaviours

Chapter 03 Methodology

3.0 Introduction

This chapter describes and justifies the choice of the Action Research approach, tools, and techniques used as part of my applied methodology, and provides details of the research and learning cycles. I carried out seven SSM steps to generate new learning of my own (Murray, 2002). By adopting an Action Research (AR) approach, I was able to generate knowledge through reflective thinking before, during and after each step, regarding the connections between various organizational parameters under scrutiny.

3.1 Action Research

Aligned with OL, Action Research involves scholar experimentation and fact-finding for solving practical problems in an organization. AR requires the cooperation and collaboration of practitioners and scholars (Greenwood and Lewin, 2006). This can be done through a systematic data collection on an ongoing system or behavior in an organization, relative to some identified problems or objectives. The collected data are fed back to the system so that actions may be adjusted by the scholar-practitioner, by altering certain variables in the system to take into consideration revealed findings, and the outcome of the actions is evaluated through the collection of a new set of information. The desired outcome of the process can be seen as the immediate solution to the current problem and a basis for a scientific model that can be used to make necessary changes in an organization.

Notably, according to (Herr and Anderson, 2014), in action research, the scholar-practitioner works directly with members of the organization on essential problems or organizational issues that are affecting them and actions are taken based on certain interventions; therefore, action research can rightfully be described as both research and action-oriented circle. This method directly generates desired alternatives to the current situation and consequently enhances learning at the level of organizational and personal values and norms, stimulating 'double-loop learning' (Argyris, 2000, p. 116) through 'sense-making' (Gioia and Chittipeddi, 1991, p. 433) dialogue and a collaborated search for a suitable solution to the problems that contribute to understanding the organizational complexity. Action research can be used in the context of improving OL by looking at the factors that hinder effective OL by involving all the organization members through scientific methods in finding solutions to the status quo (Brydon-Miller et al., 2003).

3.1.1 Action Research development and overview through the history

Various people have looked at Action Research development and overview through history, among them is (Maksimović, 2010). Maksimović in a study on the historical development of

action research in social science notes that modern action research has its prehistory and history. According to the author, the history of action research is traceable back to (Dewey, 1910) who worked on the benefits of experiences as a continuous interaction and transaction between the members of an organization. Human beings are not isolated individuals trying to connect with their surroundings. They are continuously connected to their surroundings (Dewey, 1910). This philosophical idea, fronted by Dewey, criticizing the separation of action and knowledge, was considered important in the development of action research (McTaggart, 1997; as cited by Maksimović, 2010). Even though Dewey did not specifically front the concept of action research and the need to link science and practice, his work greatly contributed to the use of experimental approaches to OL, which later opened doors for the use of action research in OL. Koinig and Zedler (2001), traced the term 'Action Research' back to Lewin (1947), who argued that it was impossible to comprehend a system without changing it.

Sol Tax, an American anthropologist, is arguably among the true founders of action research. Tax first used the term 'action research' in 1951 (Maksimović, 2010). Tax is known for his "Fox Project" aimed at connecting a tribe, and the approaches used in the project are more or less the same as those used in modern action research. As well as observing the project, Tax tried to influence reality (a key principle in action research) by applying anthropological aspects of action and fieldwork under the sign of learning from different groups. Currently, Action Research is considered a 'critical lever' for improving professionalism in an organization (Maksimović, 2010).

3.1.2 Learning, sense-making, and action research

The goal of action science is to generate knowledge through sense-making of current problems and generating action alternatives. The interactive characteristics of action research are particularly important, since an organization is, per se, a 'communication activity' (Weick, 1995). This means that if the communication activities stop, it leads to the disappearance of the organization. If the communication activity is full of confusion, malfunctions in an organization are witnessed. Continuous communication is essential for developing and maintaining exchanges, and for interpreting inter-subjectivity and shared understandings; it is these shared understandings that lead to future actions. Sense-making is both social and retrospective and involves several short periods between actions and reflections. Actions that are followed by reflections make it possible to understand the reasoning that informed the actions. In practice, action research dwells on problem setting and the means and reasoning. Thus, two approaches are often used. The first approach is SLL, and it is the initial approach used in action science, where management science is used. The second approach, DLL,

occurs when individuals involved start questioning their interpretation of their underlying assumptions regards the situation as a part of the interpretative approach.

According to Social Constructionist Theory, individuals construct reality based on their experiences (Brydon-Miller et al., 2003). This subjective reality is what makes them understand and able to explain certain organizational situations. Often, individuals in an organization are confused by the complexity of situations. Because of this, sharing images of reality and stimulating communication between members is central to action research. Experiences gained can lead to the development of new action patterns that contribute to organizational changes in a cyclical way. However, this cannot happen when there is no mutual understanding where different forms, ongoing interaction and multiple voices allow individuals to assign meanings to their thinking, action, and organizational problems.

Social Constructivism allows for individuals within an organization to derive meaning from the objects within the environment of the organization and to combine them with the meaning derived from social interaction, what in the end will not mean that multiple organizational realities are around us at the same time, it means that each member of the organization will have his unique constructed version of reality. On the contrary, Social Constructionism does not accept any other construction of meaning except derivate from the social activities (Kim, 2001). My research will take the Constructivism approach because it is not just social interaction or activity that can generate knowledge within the Action Research, it is also the capability of research participants to construct their reality on how they see the problem. This capability gives organizations the possibility to induce double-loop learning, respecting different worldviews of the same organizational issue.

3.1.3 Action research and practitioners

At the heart of my Action Research inside of my organization is me as a practitioner. The primary goal of any practitioner in an organization is to enhance its effectiveness. Therefore, the major role of a practitioner in an organization is to create helping relationships in the organization to achieve the desired objectives in problem-solving and the way the problem is acted upon largely depends on the nature of the activities to be performed. Action Research can assist practitioners in making the desired changes to an organization by learning about the current situation, identifying organizational problems and initiating actions to influence behaviors and activities positively. Sometimes the practitioner plays several roles, including guiding the change team, designing the process, partnering in key decision-making and providing methodological leadership.

AR has consistently proven to be an effective approach that practitioners can use to solve organizational challenges, including improving OL in a company like KCAD. According to

McNiff (2010), AR encourages practitioners to take control of the process by intervening where necessary. McNiff writes that the methodology of AR means the practitioner has to evaluate what he or she is doing and constantly check to ensure that it is being done in the right way. This awareness shows the willingness of the practitioners to accept responsibility. Action research assists practitioners in formalize their work and provide a justified account of their work.

3.1.4 Action research and inquiry

Action research can be described as an inquiry process where the practitioners evaluate and reflect on the implemented strategies or actions. The researcher works harmoniously with the practitioner in carrying out the inquiry, with a commitment to improving some aspects of the organization. (Chevalier and Buckles, 2013) noted that sometimes individuals take both the work of a participant practitioner and researcher, thereby becoming an inside research or scholar-practitioner. Alternatively, the two roles are taken by different people who work closely to influence change in an organization. This means AR cannot be successful without inquiry. However, there is a slight difference between inquiry and action research. AR is considered as an inquiry but based on a theoretical body of knowledge, and it intends to contribute back to the same body of knowledge; the same cannot be said for inquiry. Given that AR simultaneously focuses on several outcomes: it has experienced a degree of criticism towards its methodological rigor (Davison et al., 2004). A new avenue is pointing towards Canonical Action Research that "has a unique potential to be both rigorous and relevant" (Davison et al., 2004, p.83)

3.1.5 Validity problems

According to Eden and Hexham (1996), the justification for using action research is hard when the aim can adequately be satisfied by other methods such as surveys; by demonstrating a link between data and outcome transparently. There are different methods of collecting data in action research (Eden and Hexham, 1996). For empirical action research, the actor collects information by having a detailed record of the actions done and the effects of those actions. The difficulty with empirical action research is that sometimes the researcher encounters many irrelevant experiences making it hard to generalize. Also, sometimes the actor lacks objectivity, and this makes it hard to act both as an agent and a researcher at the same time. However, in Participatory Action Research (PAR), both the researcher and the key individuals get involved in the process.

Eden and Hexham outlined the essential characteristics of AR as far as design and validity are concerned. According to them, the validity of action research can be looked at when the research question is approached from several possible angles. They add theory should drive

that action research and be focused on organizational changes through intervention on the collected information and data. Moreover, the aim of action research should be the production of knowledge that is optimally unutilized and can be applied to many situations, if possible. Importantly, in action research knowledge should be obtained from the practice used for testing the same knowledge and therefore, it is impossible to distinguish the context of discovery and justification sharply.

Although action research provides practical solutions towards the positive changes in an organization, it has flaws. A guide written by (Herr and Anderson, 2014) for students reveals that when action research is left unchecked, the outcome is likely to be burdened with subjectivity. Herr and Anderson agree that there is a tendency of over-involvement of researchers in action research to the extent of allowing personal biases to come into play while analyzing the findings. Similarly, (Kemmis et al., 2014) observe that often, researchers are subordinates in the organization and therefore, power differentials and relations complicate the whole thing. Sometimes, researchers are pressured to alter the findings to suit certain individuals in an organization. Besides, the cyclical research process in action research aims at reaching an understanding and initiating actions. Often, the initial research question is rough and general, and adjustments are needed. These re-adjustments take time, making the entire process not only exhaustive but also complex and time-consuming. In fact, (Herr and Anderson, 2014), notes that there is no clear indication on when to stop the process and normally, action research ends the moment the problem is solved. The objective of 'Double Loop Learning' mentioned above leads naturally to the topic of 'Organizational Learning' which explains learning as a collective process, relating to organizational methods and procedures, which can be instigated through Action Research.

3.2 Organizational learning

The description of OL in Section 2.1 shows that although an organization learns quite naturally willingly and unwillingly with learning being seen as a continuous and inherent process, the specific actions and processes comprising this form of learning have often received little attention if any. Traditionally, more emphasis was placed on the individuals, the management, or the organization as the units of analysis, but although there is a consensus that OL begins with an individual, the value of repetitive actions in OL has often been neglected in favour of systematic studies on major interventions. OL researchers are encouraged to concentrate on the uncommon events to spot learning and be less taken by large-scale campaigns and transformational programs. Instead, researchers should pay attention to the learning 'moments' in an organization. These 'moments' relate to its members' activities, as they learn

how to deal with different situations at work, gain skills by working as a team, and enhance their effectiveness through understanding.

3.3 Methodology

For my AR, I am using Soft System Methodology (SSM) qualitative design to capture and examine different situations and worldviews (Checkland and Scholes, 1990). The apparent complexity guided me to use qualitative method design, which generates a deeper level of inquiry, incorporates individual and organizational knowledge, and allows capturing all formed insights relevant to the phenomenon being studied (Nolan and Crowe, 2010). It took much effort to design my research proposal using the right blend of SSM tools and techniques, to take into consideration my previously acquired knowledge and related biases, allowing them to merge and form a pathway for my research giving me the option to expand my knowledge and contribute to organizational change. SSM is about defining guidelines or 'a structured approach' that will generate my intellectual process of analysis. Following (Wilson, 2001) guidance on analysis, he stated

To make progress in this type of analysis, it is "...necessary to make and to maintain a distinction between 'the real world' which is complex, messy and contains people, and the intellectual process of 'thinking about the real world' which can be simple, precise and defensible" (Wilson, 2001, p. 4). Thinking about, how to think-about, organizational issues or problems can lead analysts to apply a wide range of intellectual tools available.

Within the organizational 'reality' there are still managers and leaders who see this way of thinking as too 'academic' and not practical to apply in their environment. Managers' fears are rooted in the complex analyses of data, used to capture the main elements of social actions and how they are interconnected. This tendency was apparent in my organization too, with all management at all levels reluctant to dive deeper into analyzing how we think as an organization. SSM provides an opportunity and stimulates individuals to see their organizational world differently. This tendency among managers leads me to believe that adopting the single-loop approach is the 'easiest' way of dealing with OL and at the same time, securing organizational 'alignment' in 'one way, one vision'.

Checkland and Scholes (1990) and Nolan and Crowe (2010) offer two possible approaches to SSM by defining ‘Mode 1' and 'Mode 2' versions. 'Mode 1' SSM was focussed on system concerns and functionality; on how to achieve chosen objectives supporting the status quo when used in conjunction with Action Research as follows:

1. Define the problem

2. Assemble the appropriate techniques iteration

3. Use techniques to derive possible solutions

4. Select the most cost/effective solution

5. Implement the solution

Defining the problem means carefully choosing an objective, which is the starting point of any engineering system or system analysis. This may prove adequate when the exact problem is known and we understand what we are trying to achieve. In almost all cases within the organizational 'reality' involving its members, culture, artifacts, and so on, this is not the case. Organizational complexity, combined with 'messy' problems requires a different approach, that enables the research-practitioner to concurrently think about the problem and the organizational culture shaping the human behaviors, to generate a deeper level of inquiry.

Accordingly, 'Mode 2' SSM was developed to accord with AR's aim for organizational change. Within this Mode, individual and group reflection on organizational issues, and conflicting worldviews, is encouraged (Flood and Romm, 1997).

The 'Mode 2' approach firstly considers who defined the problem, and how it has been subjectively framed by that person.

The following steps describe the 'Mode 2' approach to SSM,

1. Define the problem as framed

2. Express the situation (top mapping, rich picture, etc.)

3. Select concepts that may be relevant

4. Assemble concepts into an intellectual structure

5. Use this structure to explore the situation

6. Define changes to the situation (i.e. problems to be tacked)

7. Implement change processes.

'Mode 2' approach in SSM enables individual and collective reflection, underlying personal, organizational and social motives behind embedded attitudes and dominant behaviors, and generates healthy discussion in the process of trying to solve the problem. In this way, 'Mode 2' can be used as a process that will accommodate both inquiry and transformation (Nolan and Crowe, 2010), and as such, was adopted as my research methodology.

My epistemological position will be defined by my choice of research methods that will embody and verify assumptions about the knowledge, and methods of collecting generated knowledge and assumptions about the process of how knowledge was investigated (Morgan and Smircich, 1980). The epistemology debate about science dates back to Plato and Aristotle and today is still shaping the main discussion between positivist and Action research traditions (Checkland and Holwell, 1998).

The main characteristic of the positivist approach is the process of verifying the hypothesis, a model of 'reality' to harvest scientific knowledge by making sure that observer is separated from observed, subject from the object and knower from the known (Johnson and Duberley, 2000), using different methods like measurement, observations, experimentation, making sure that acquired explicit knowledge is repeatable.

In an attempt to define SSM within the AR approach, scientists formulated a methodology based on 'learning by doing', which bridges theory and practice and action.

The step that makes AR rigorous, is defined by Peter Checklands' Soft System Methodology (SSM) and is represented by 'recoverability' of knowledge. By understanding that AR is research concerned with action and not the research of the action, where the researcher is involved in the research, it is hard not to acquire some 'feelings' from the research, that allows the researcher to know the difference between the real world and what they felt. The AR researcher gains this deep learning by engaging with tacit and explicit knowledge, by his involvement through repetitive cycles of action within the research. It is what is makes SSM within the AR 'actual'. (Winter and Giddings, 2001) are place AR as a process of inquiry that seeks to understand existing reality in the form of power mechanisms, and perceptions of our experienced world.

My choice of research methodology aligns with a form of social inquiry that seeks to explain the forces within the organizational reality, seen in terms of different organizational systems. By choosing my epistemological position, this debate between positivist and AR inquiry is not finished yet, it is wider than I have presented here, but it provides the main framework for my further thesis development.

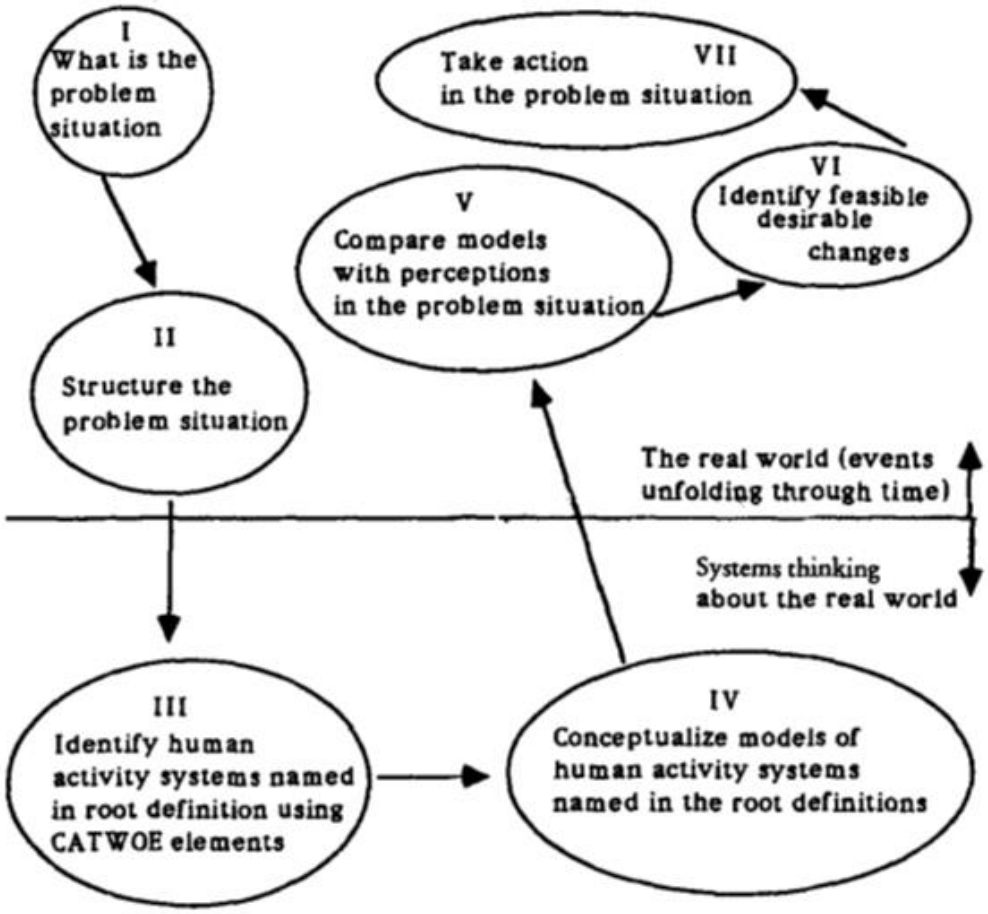


Figure 8. SSM Framework (Checkland, 1989)

3.3.1 Soft System Methodology tools

Rich Pictures

The RP is an Organizational Learning (OL) tool that explores, acknowledges, and defines situations in an organization and defines these situations through the diagram to create a preliminary mental model (Berg, 2015). The model can be used in the discussion that leads to a wider understanding of the situation. RPs are a method for making a tacit-understanding of organizational climate explicit. They depict detailed maps of an organization: its structures, processes, politics, hierarchies, and other 'soft' issues critical to its members.

Checkland first developed the RP as part of SSM (Checkland, 1991, p. 10) and its development consists of two stages. The first stage is the description of the issue to be addressed, followed by the development of an unstructured description of the situation containing the problem.

According to Checkland, a situation can be an initiative or other related terms used in the evaluation, and the description of this situation should be provided as a picture using symbols, diagrams, words, and cartoons, what can be done electronically or by hand; However, Checkland warns that it is important for the picture not to structure the issue; the whole point of the picture should be to reflect as much as possible on the issue without a predetermined or presumed point of view.

For my action research, the intent is to use RP as a tool for visualizing what group participants can see as 'the problem' relevant for their day to day OL processes (LL, Incident investigations, etc.) and potential barriers for the process of learning, and finally to identify what can be real 'Messy Problem' (Lyles, 2014, p.7). Furthermore, it is important to capture the understanding of attitudes and behaviors among stakeholders. Following Bell and Morse's assertion: "Stakeholder participation within sustainable development has been accepted as not just desirable but a central requirement of any project" (2013, p.2).

It is a crucial requirement for managers to learn to participate in the RP sessions, to identify the problem for choosing actions for improving individual and organizational learning. Historically they were forced to focus solely on the shallow problems (puzzle) that can be dealt with applying SLL, not allowing them to find solutions to more complex problems (messy problems) that can be dealt with applying DLL, what at the end will not allow managers to learn a different approach to different problems.

The reason why I want to use RP is also in the rationales behind the process. First is that a stakeholder or manager has a fundamental right to participate in the sessions and participate in discussions about relevant organizational issues. Second is that their voice will be heard and their opinions will be exposed to the group with the potential to affect the problem-solving process and became part of OL and knowledge (Bell and Morse, 2013). Furthermore, if managers will be involved in the process of SSM, they will be keener to apply agreed steps of action, as they were considered to be 'change agents' rather than just to follow 'vertical' or 'top-down' decisions given to them by a higher level of management.

In this sense, the change comes from the 'inside out', rather than being imposed from the 'outside-in', and participants have a sense of 'ownership'. Change is, therefore, a deeply held product of the community's self-interest and self-promoting to that community - Bell and Morse (2013, p.2). Furthermore, if managers are involved in SSM, they will be more willing to apply agreed actions in their role as 'change agents' rather than just to follow 'vertical' or 'top-down' decisions given to them by a higher level of management.

As recommended by Howard and Monk (1998), I introduced a professional drawing person into the RP sessions to work closely with the managers that participated in my research so that the captured picture is not from the perspective of the drawer but the managers. They note that if properly done, the RP can be used to communicate, reason, record, and often negotiate critical matters as they arise. They also concluded that RPs combined with other techniques can be used for effective communication with the organization.

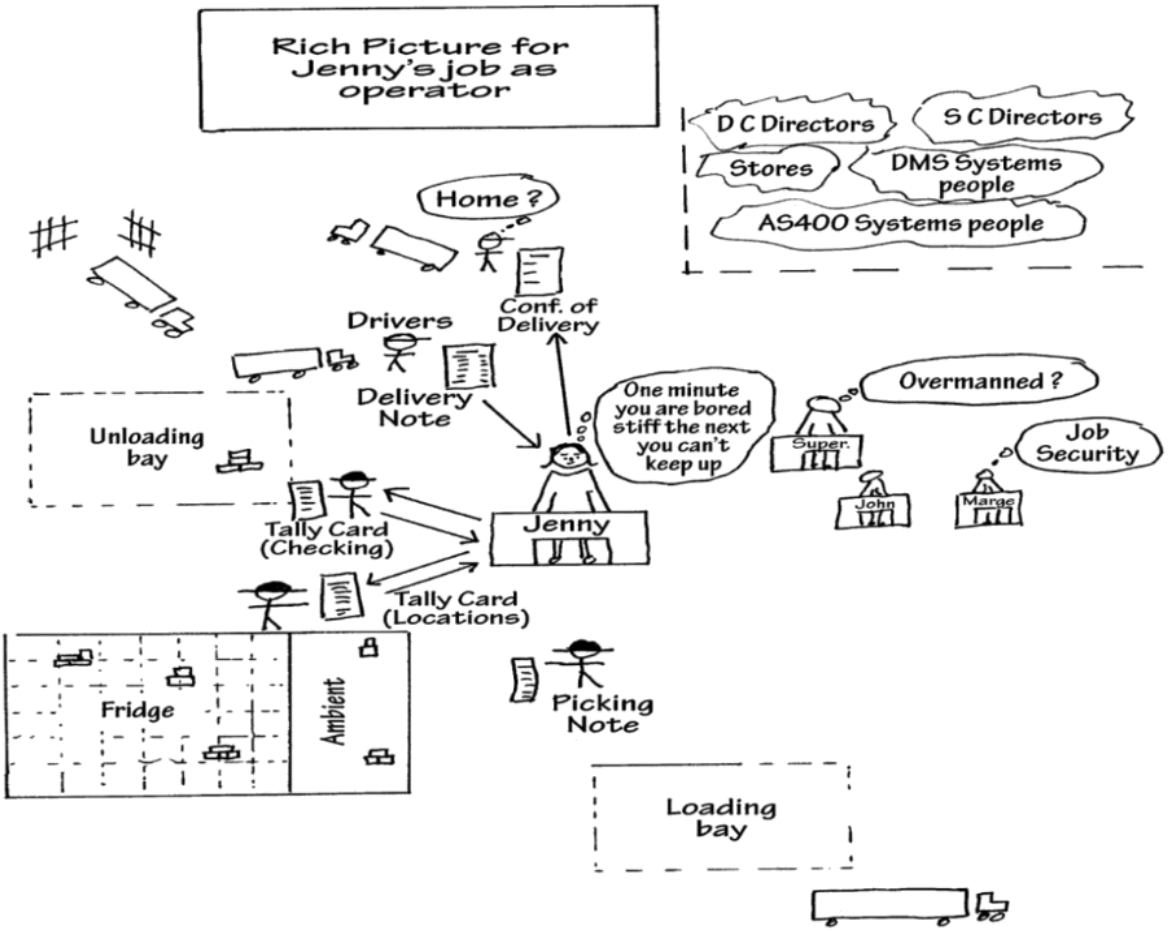


Figure 9. Rich Picture One (Monk and Howard, 1998, p.27)

The RP can help a practitioner understand the problems facing the organization since it includes all the factors that can influence the OL directly and indirectly. Practitioners can remove these elements from the system to determine the primary cause of ineffective OL.

The RP is useful since it is less costly, and brings out all the facts that could otherwise not have been picked by other formal methods. Specifically, the model can be used when adding new features to the organization as it integrates the new features with the old. These features can be represented by an organizational attempt to include and observe future ways of managing the organization at levels. Besides, the RP can be utilized by the practitioners to demonstrate the type of requirements needed and the primary tasks involved in these requirements (Berg, 2014).

Root Definitions (RDs)

In this stage of the research, the final RP will be developed with dedicated Root Definitions (RDs). RD's attempt to summarise the core components of a system, by incorporating its activities as undertaken by human action and expressed using verbs that depict dependence between different organizational activities (Wilson, 2001). 'In practice, however, it does not matter which label is used as long as the underlying concept is understood.' (Wilson, 2001, p.13).

According to Checkland (1989), " Nowadays we would always try to include amongst the relevant systems not only some 'primary task' definitions expressing official, declared, tasks but also 'issue-based' definitions which lead to systems not likely to be institutionalized in the real world (p. 283).

Focus Groups

A focus group, according to (Raibee, 2004), is a technique using in-depth group interviews, with purposely-chosen participants selected from the specific population, to discuss a given topic. Participants are selected using different criteria like age, gender, etc. and their capability to talk in front of the group. FG discussions can generate different information about a range of individual and group ideas and feelings about a certain organizational issue. Same time, FG is generating a large number of valuable data in a relatively short period, which can be in the later stage of the research presented in an uncomplicated way using lay terminology supported by quotations from the participants Raibee (2004). The richness of collected data will depend hugely on the participants' capacity to freely talk within the group supporting each other through engagement and developing group trust. The facilitator's role is to manage relationships among participants, creating an environment where trust will generate open and honest discussion, which for me as a first-time facilitator will be challenging.

Some authors suggest three to four participants (Burrow and Kendall, 1997), and others six to ten (Krueger and Casey, 2000). However, generally, the number of participants needs to be manageable and large enough to stimulate data and small enough not to become disorderly

or fragmented (Raibee, 2004). I expect that due to pressures of work, many participants will absent themselves from sessions, thus affecting the quality of data collected. To overcome this issue the recommendation is to over-recruit 10-25% of the targeted number of participants. An average FG session should last 1-2 hours to allow the group to go through important discussions and at the same time not to get too exhausted by the longevity of the session. It is also ethical and good practice to warn participants about the planned duration of the FG so that they can commit to the session.

Lastly, FG qualitative data collection process is about bringing meaning to the observed organizational issue rather than searching for the truth focused on by quantitative research Raibee (2004). However, I am acknowledging that there will be an extent of subjectivity in choosing participants for the session and analyzing the collected data.

“It is important to acknowledge that regardless of the type of research (qualitative or quantitative) an extent of subjectivity exists” (Raibee, 2004, p.657).

CATWOE

The CATWOE mnemonic is the test of structure and words chosen in RD's. This is the approach that I used in my research following the CATWOE mnemonic philosophy of testing each RD by asking for transformation processes, actors, owners, and their interdependence.

One of the major contributions made by the mnemonic CATWOE is that, if used properly, it provides a mechanism for testing the RD and ensuring that the words chosen are as precise as possible and that they represent the best choice for the meaning captured by them - Wilson, 2001, p.23

CATWOE and the elements can be defined as follows:

C—Customer (the recipient of the output of the transformation process, either the victim or the beneficiary)

A—Actors (those individuals who would do the activities in the resultant conceptual model if they were to map onto reality)

T—transformation process (described either as an input-output conversion or the process itself)

W—Weltanschauung (practically interpreted as the statement of belief within the RD)

O—Owner (a wider-system decision taker with authority over the system defined, with a concern for the performance of the system)

E—Environmental constraints (those features external to the system defined, which are taken to be significant)

Conceptual Modelling

The rising demand for developing simple models highlights the importance of designing conceptual models. Requirements for conceptual modeling provides a guide if the developed model is appropriate. However, it is not describing how the end-user may develop his model in a simulation study. Using available literature on how to develop CM, it is evident that authors are mainly using a three-step basic approach: principles of modeling; methods of simplification; modeling framework (Robinson et. al, 2010). Principles of modeling are providing the user with a set of guidelines on how to develop CM. Using (Pidd, 1999) model of 'Model simple; think complicated' is the approach, from six offered by Pidd, that was used for my research model taking into consideration the participant's level of understanding the organization and my research requirements. The idea of simplification is driven by attempts to remove scope and details from the model while maintaining a sufficient level of accuracy. Finally, the CM framework is to describe how an organization 'operates' different systems within, using participants discourse to build awareness 'on the paper' taking into consideration developed RD. This scenario is compared with the participant's experience working for KCAD and knowing how our organization is dealing with the problem situations. Thus, I planned to design two CM's where the first one was to capture participants different worldviews on levels of responsibility across different organizational systems, and the second one designed through participants discourse about the real organizational world, visible or obvious to the managers and system thinking world where sometimes not all systems and knowledge from there are visible and known to the managers.

Chapter 04 Taking Action

4.1. Action Research Cycle 1

4.1.1 Pre-Step Planning

This first cycle was the longest one as it containes my working history of more than four years, since the beginning of my DBA study and was using Lewin's (1947) model which is following the basic rule of Plan, Act, and Observe in repetition, forming a cyclical path. With each cycle repetition, new knowledge was added to both my individual and organizational level, allowing me to adjust my new plan and generate new actions. Action Research Cycle 1, Framing the research question, is based on my effort to build my research using following steps; developing an action research proposal with a clear picture of what my research question will be, developing participants Consent and Ethical approval forms, create an overall schedule of planned actions, and finally gaining approvals from University of Liverpool, KCADeutag, and each research participant to commence my research. Based on the situation in my organization my research question is focusing to explore the reasons or barriers to the development of double-loop learning in KCAdeutag Azerbaijan business unit. Looking back to the beginning of my Doctorate of Business Administration (DBA) journey, I saw a clear picture that every module I took, was the brick in a wall of my knowledge that was build and gave my foundation to start developing my action research dissertation process.

Having made the decision to conduct research in my organization, I started to think about my research question going back to the beginning of my DBA journey. There were many different ideas about possible research questions throughout the past five years, but one that strikes me the most is way how we, as an organization, are learning and affecting our operational sustainability in Azerbaijan. Two areas that influenced the choice of my research question were recognizing the organizational problem of relevance for conducting my research, and my position in the research.

One area was an organizational problem that was chosen for my research was driven by my participation in many safety, operational and maintenance investigations, where I recognized a huge level of generated stress and anxiety among each team member individually. At the beginning was just a matter of making progress and dealing with initial issues in the new more structured and managed way. However, as time was passing and solutions to the different organizational issues were always the same, same issues start to repeat itself again and

again. This particular issue of repetition/application of the same actions is reflected in my way of thinking about the research question and exploring deeper on what are the main constraints or barriers to the development of a deeper level double-loop organizational learning.

The issue is strategically positioned as KCADeutag effort to sustain business in Azerbaijan and same time client's (British Petroleum (BP)) expectation of securing their business sustainability with Azerbaijan Government, became more in the focus of both organizations. Understanding the issue as one that is affecting KCADeutag business but ultimately clients, too, it is obvious that without improving organizational learning my organization will eventually put business sustainability in Azerbaijan under threat. For me, it was interesting to take research from the perspective of middle management that is under the influence of stress generated by a single loop learning, and consequences of applying the same actions to the different organizational issues.

Another area that influenced the choice of my research question was my position within the organization, as a member of the management team and at the same time, person who will conduct research within this same organization. The opportunity to learn about my organization from within is what the practitioner is all about. The practitioner is an integrated part of the organization, insider, that is responsible for defining the organizational issue by being able to access organizational processes of knowing and learning through 'Experience, Understanding, and Judgement' (Coghlan & Brannick, 2014, p. 22). For me to achieve this level of organizational integration, I need to become 'complete member' Coghlan & Brannick (2014) which will remain in the organisation throughout the whole research process and beyond, servicing 'dual role' as manager and researcher who is capable of gaining authorisation to access different organisational levels, and supporting individual and organisational learning development.

Since joining the Azerbaijan business unit, I realized that on too many occasions, our managers were leaving meetings feeling frustrated and engaging in strong discussion outside the meeting room and after the meeting ended. As a member of that group, it became clear that change needed to happen to gain something positive from this situation. Some time ago, our client BP, began to examine how behavioral factors within their own and their contractor's organizations affected the day-to-day business. The reason for this is that BP decided to take a new route and improve their OL. In the meantime, my company was experiencing their own frustrations from operating according to 'old world', directive top-down leadership, and our client started to ask questions as to how this was shaping our performance. It was clear that

our adopted organizational approach to OL does not question how information is used or incorporated into daily practice.

To change, I realized KCAD managers needed to grasp that they must first of all enter into a deeper level of investigation, involving double-loop learning. By preventing reflection and critical examination, effective OL will not be achieved. The unspoken truth was that theory in practice was dissonant with written theory. That was the point where managers needed help, and I saw the opportunity to launch my research. Based on that situation, my research explores reasons or barriers, to the development of DLL in the KCA Deutag Azerbaijan business unit. This first cycle was the longest one as it was congesting my working history of more than four years, since the beginning of my DBA study and was using (Lewin, 1947) model which is following the basic rule of Plan, Act, and Observe in repetition, forming a cyclical path.

This was the first time that this type of research had been conducted in KCAD, with participants and top management curious about its format and aims. It was not an easy task to explain and convince top management that their participation or 'interference' in the research was not expected or even wanted at his stage. After a few attempts, I managed to convince them that my Action Research (AR) process was focused on mid-management only.

On the other hand, being a practitioner in inside research that wants to develop individual, organizational and academic knowledge can be, and in many cases is, inherently political and problematic process, because balancing both of them can have a negative effect of knowledge acquisition and flow of information. Political functionality or dysfunctionality and social constraints are adding complexity to the whole process of the research (Ndung'u & Muathe, 2012), but on the other hand, purely subjective approach will not secure a better understanding of the organizational issue and processes connected to it Moore (2007). Frequent misuse of power, politics, and trust were potentially the contributing factors that shaped OL in my organization. At the beginning of my appointment in Azerbaijan, managers were willing to explore deeper and different levels of applied organizational actions, but due to some barriers within the organization; they were suppressed not to expand further. Furthermore, after a short period, managers became frustrated, and their interaction dropped down. Because I was part of that team, I was deeply aware of the gravity of the situation and frustration that was growing. This situation even became visible to the client, and they expressed concern that long-term sustainability for this operation can be jeopardized for both KCADeutag and BP. Everyone knew that change is needed but the initial step will be to conduct research that will define *'How*

can we develop Double loop learning in KCADeutag Azerbaijan?'

The action, in the sense of constructing my research question, was to take into consideration all relevant contributing or shaping factors that are influencing my organization reality, and furthermore to gain some academic view on what kind of research can be conducted that will expose reasons and barriers to a deeper level of learning by inducing double-loop learning in my organization. The initial step was to comply with rules and regulations of the University of Liverpool in preparing and conducting my action research, by taking the following steps:

- Developing an action research proposal with a clear picture of what my research question will be. Furthermore developing study schedule, researchers participation schedule, and approval from my top management to conduct my research inside KCADeutag Azerbaijan business unit.
- Developing the list of participants for the research and preparing their written consent that they are willing to freely participate in the research, with their approval for me to freely use collected data throughout the research for my further academic publishing purposes.
- Development of document portfolio that will be submitted to the University of Liverpool (UoL) to obtain final UoL's approval to start my research.

The next action step was to obtain Top management consent from my organization after I presented to my Chief Executive Officer (CEO) and my General Manager (GM) what is my research all about, and what are the potential benefits for the organization. After finishing this stage of the action, all documents were given to my primary supervisor for review and feedback, before I do my submission to the UoL. After getting positive feedback from my primary supervisor, and applying suggested changes, I final approach to the step was of submitting document portfolio to the UoL and waiting for their final approval of my Research and Thesis action plan. After initial feedback of UoL, I was asked to do some minor changes to the portfolio and final approval for starting my research and writing my thesis was given.

4.1.2 Evaluation

The University of Liverpool seconded to me my thesis primary and secondary supervisors that were playing a pivotal role in evaluating my research question. The initial intent for my research was to talk about leadership style applied by my top managers, but knowing the organizational politics and generated level of organizational fear, my research question shifted toward the Organizational learning and potential barriers that are standing on the path of

improving the way how KCADeutag and each individual employee are learning in double loop. Double loop learning counts on the ability for individuals, groups, and organizations to relearn and change their mental models and encompass behaviors that are transformative as opposed to just assessing feedback of activities and evaluating their effectiveness. Double loop learning changes how people conduct decision making. Ultimately, double loop learning for this research encompasses research that assesses OL as transformative, thought to change towards high-level knowledge acquisition.

Taking all in an account that was agreed with my primary supervisor, I took a step forward and decide to attend a DBA student residency at the University of Liverpool. That residency was one additional evaluation segments for my research question, what at the end showed a huge benefit to me. The benefit was recognized in initial feedback from the students and university supervisors that my research question about OL and tools for its improvement was directed towards the improvement of its self, not focusing on the organizational problem of why managers in KCAD Azerbaijan Business Unit are not capable to develop more advanced patterns of thoughts because they are challenged by existing mental models. Furthermore, residency feedback was for me to focus directly onto the organizational problem, rather than trying to improve something that I just assume is the problem. That was a major step towards formulating my final research question which will target directly organizational problem. In my case that was exploring the barriers towards double loop learning.

I envisaged my AR as the start of a knowledge-sharing process in the organization, following Nonaka's (1991) contention that it is a continuous process that can occur through asking questions, suggesting potential solutions, adopting new behavior patterns and sharing new ideas; it involves interpersonal interactions among the employees. Knowledge sharing in the organization should be encouraged because it fuels innovation and ensures there is knowledge diffusion. This means the employees come to know and learn the things they never knew before through the interaction with colleagues. Individuals hold much of the knowledge in the organization, and unless the organization develops a mechanism to tap it, the knowledge is gone when the individuals leave the organization. But continuous knowledge sharing ensures the knowledge is permanently held in the organization's memory. Knowledge, in either tacit and explicit forms, can be captured, organized, re-used and transferred between senior employees and new entrants to ensure the knowledge stays long after ex-employees had left.

The first step of my action was to determine how many participants or managers will be available to participate in my research and to define session groups. For these sessions Rig

Managers (RM's) and Maintenance Superintendents (MSD's), were considered suitable due to their seniority, thus giving me the option to gather seventeen managers in total. Taking into consideration that managers have a busy daily schedule and the possibility for them to cancel last-minute agreed meetings, I decided to make a schedule that would allow few optional sessions that can at the end cover my targeted five to six participants for the research.

I approached each manager for their agreement to participate by signing the Ethical Approval and Participant Consent forms (see Appendix A). During the process, I spent the time to talk to each manager individually and explain what my research would consist of and why I was doing it in the first place. I also explained to them why they were chosen to participate in my research and what was expected from them throughout the whole process.

My RP actionable part of the research was designed to take the following three steps:

1. Action Research Introductory Session A
2. Action Research Introductory Session B
3. Action Research Rich Picture Session No1

4.1.3 - Introductory Sessions A & B

Table 1. Introductory Sessions A & B

Method	Description	Overview	Outcome
Qualitative	Introductory Session A&B	This session was planned to last 2h. All eighteen participants (Rig Managers (RM's) and Maintenance Superintendents (MSD's)) were invited to the session. Participants that accepted the invitation and participate in the session were 11. This initial session was used to explain each step of my research methodology (Rich Picture and Focus Groups) and what will be the whole	1. Participant's familiarization with the RP and FG tools. 2. OL and what kind of learnings exists. 3. Identifying Organizational Problems and what they can be. 4. Instruction on how to develop initial RP for each participant before the next

		process of my action research in the KCA Deutag office. Professional cartoon drawing person was present during the session to give a basic overview of how RP can be developed and what can be used in the RP process.	session (utilizing professional drawing person).

These sessions were designed to give detailed information about each step of the process to the managers making sure that they felt comfortable throughout the whole process of taking action. All seventeen managers that agreed to participate in the research were divided into two groups, for attending Introductory session A (nine participants attended the session) or Introductory session B (eight participants attended the session). Following the Introductory sessions, managers had time to develop their drawings by accepting help from a professional cartoon drawing person. There were four sessions altogether when the professional drawing person was available to help managers develop their RP's.

Table 2. Rich Picture Drawing sessions

Participants	Drawing session 1	Drawing session 2	Drawing session 3	Drawing session 4
Manager #1	30th May 2018			
Manager #2	30th May 2018			
Manager #3	30th May 2018			
Manager #4	30th May 2018			
Manager #5		01st Jun 2018		
Manager #6		01st Jun 2018		
Manager #7		01st Jun 2018		
Manager #8		01st Jun 2018		
Manager #9			08th Jun 2018	
Manager #10			08th Jun 2018	
Manager #11			08th Jun 2018	
Manager #12			08th Jun 2018	
Manager #13				12th Jun 2018
Manager #14				12th Jun 2018

Of the initial seventeen managers, fourteen of them managed to find the time and develop their RP's. Finally, participants for the Rich Picture session No1 were chosen from amongst the fourteen, based upon their time and willingness to continue.

At this stage, a Powerpoint presentation was developed to cover all aspects of the research and give a visual presentation to the participants. The first question was 'Why do we need to change and accept new ways of learning at all levels: individual, team and organizational?' (Argyris, 1994). Justification for the question was given by examples of constant changes that are happening in the field of industry These included new technologies, rules, and regulations, including those occurring in our client British Petrol (BP)), human approach (emotional intelligence and Human Behaviours that KCAD is implementing throughout the whole worldwide operations) and society (new rules and regulations) Argyris (1994). Furthermore, I expanded OL through (March and Olsen, 1975) to the domain of cognitive limitations that affect managers' learning capability Crossan (1999). I considered these to be relevant with regards to KCAD managers and their capability to improve their own and OL. I cited some theoretical perspectives from Senge et al., (2013), who defined OL as *"A company's facilitative method which allows its members to learn and develop their skills leading to continuous transformation. Such organizations have learning environments that are part of the organizational goals. Creativity is nurtured, and individual aspirations and expressions are encouraged by organizational management. This leads to the realization of new expansive patterns in the entity." (p.43).*

Senge further ties the efficiency of OL to good knowledge management emphasizing that dimensions such as systems thinking, personal mastery, team learning and building a shared vision be implemented as part of enhancing the efficiency of an entity's of OL (Senge et al., 2013). OL leads to corporate efficiencies such as reduce employee turnover, and since the employees are more content and perform optimally, it increases productivity and increased profitability. OL creates their futures in competitive niches by encouraging creative processes and for its employees. In this way, OL allows them to develop, adapt and transform with emerging trends both within and beyond the entity (March, 1991).

A further step in my presentation was to explain to the managers how the problem can be defined and the difference between 'normal' problems and 'Wicked Problems' (Grint, 2005; p.1473), focusing on different levels of organization problems due to their complexity:

> *"…to turn puzzles, problems, and curiosities into cycles of inquiry—meaning evolving processes incorporating appropriate, and repeated, movements between action and reflection—which will allow me to take them further and explore them in practice."* Marshall (1999, p.159).

Whereas a '*Messy Problem'* is complex, rather than just complicated, they often appear intractable with no unilinear solution. Moreover, there is no 'stopping' point in a messy problem, it is novel and any apparent 'solution' often generates other 'problems'. Further, there is no 'right' or 'wrong' answer, but there are better or worse alternatives. In other words, there is a huge degree of uncertainty involved, and thus it is associated with *Leadership*. The leader's role with a Messy Problem is to ask the right *questions* rather than provide the right *answers* because the answers may not be self-evident and will require a collaborative process to make any kind of progress (Lyles, 2014, p.7). KCAD managers are exposed to wicked problems by working in a worldwide multicultural organization that is constantly changing. The scenarios they face do not demand or offer simple, permanent solutions, but rather complex and temporary solutions that will allow our organization to progress until a future barrier is encountered.

I explained that OL consists of individual, group and organizational learning levels (Crossan et al., 1999). Further, I gave an example of managers been part of the problem and problem is part of them, I posed the rhetorical question, 'how do other stakeholders see the situation and what will be the impact of it on them? The idea behind these points was to motivate participants to engage in deep exploration of each problem and shared or varying cognitions.

During the introductory session, I did not expose my research question to the managers, as I wanted them to present their own versions of the problems and challenges within the company. The intent was to use those different views for the RP session No1, where I would expose my research question and then allow managers to choose which individual problem is relevant for my research. The plan is to define root definitions for two chosen issues and test them using CATWOE mnemonic.

The next step was to give a detailed timetable of all sessions until the end of the research:

1. Introductory Session A (28 May 2018)
2. Introductory Session B (7th Jun 2018)
3. Rich Picture Session No1 (15th Jun 2018)
4. Focus Group Session (3rd Dec 2018)

4.2 Action Research Cycle 2 – Rich Picture (RP) Session

4.2.1 Pre Work for Rich Picture Session 1

The RP was introduced to the Managers as a tool for group problem identification and action research planning, for group participants to identify a shared vision on matters of common concern. In using RPs in my research I hope to uncover through analysis, 'hidden' messages, ideas and impressions not consciously realized by the group. Participants will need to develop the ability to discern different levels within problems, keeping in mind that a 'Messy Problem' (Lyles, 2014, p.7), does not offer obvious solutions from the outset. Only by further examination will they find directions to take which will lead them to the new and previously unknown knowledge.

> *By understanding the group mind as represented in the picture, the authors begin to make a deeper understanding of the group's own potential to use and exploit information of all kinds and to move towards a deeper Sustainable Group Mind, and more focused means to problem-solve – Bell and Morse, 2013, p.1*

Whereas previously, they were forced to apply solutions driven by SLL mental models, the next step was to induce group conversation and reflection on the individual elements of a problem, using individual participant's personal values to generate a deeper level (double loop) discussion. I explained to them that, by allowing them to enter the process of a deeper level of knowledge creation, they will be able to reevaluate the already gather knowledge and a way of how they think and learn daily. This is the area where I see an opportunity for better individual and organizational knowledge creation which will help managers to define final RP with its RD.

Managers developed their RP's by making draft sketches and then expanded the drawings to a higher level with the aid of a professional cartoonist, who was able to build participants' confidence in the technique. He also made sure that the drawings truly reflected their issues and concerns and emphasize the more important factors whilst 'reducing' those areas that were of lesser importance to them. As stated earlier, the RPs proved to a suitable method for overcoming any limitations to the participants' levels of individual education or participation in academic research. I was aware of the potential bias that a professional drawing person might bring into the research. I, therefore, took the following steps to overcome any such bias:

a) each manager first was asked to draw a sketch Rich Picture which was then given to a professional drawing person to make a final replicate into a 'final' version.

b) During the process of replication, the manager gave the drawing person directions

on how the final RP should look.

c) If necessary, drawings were discarded, and a new one was made until the manager was satisfied, taking into consideration characters, colors, sizes and dynamics of the RP.

This process of making RP took on an average of one hour per drawing. Twelve of the fourteen managers used a one-page drawing, and two managers used more the one page to make their drawing and to depict the process of the issue. I took finished drawings and made a scan of them for my file and preparation on the Rich Picture Session No1.

From an initial seventeen managers that agreed to participate in my research, fourteen of them managed to draw their RP's and three of them did, due to operational reasons. Although though fourteen managers made their RP's, I planned to reduce this number down to a group of six participants for Rich picture session No1. The reason being is that with more than six participants the session would extend beyond the planned three hours, whilst also jeopardizing the managers' commitment to allocate the time needed to continue their participation in the research.

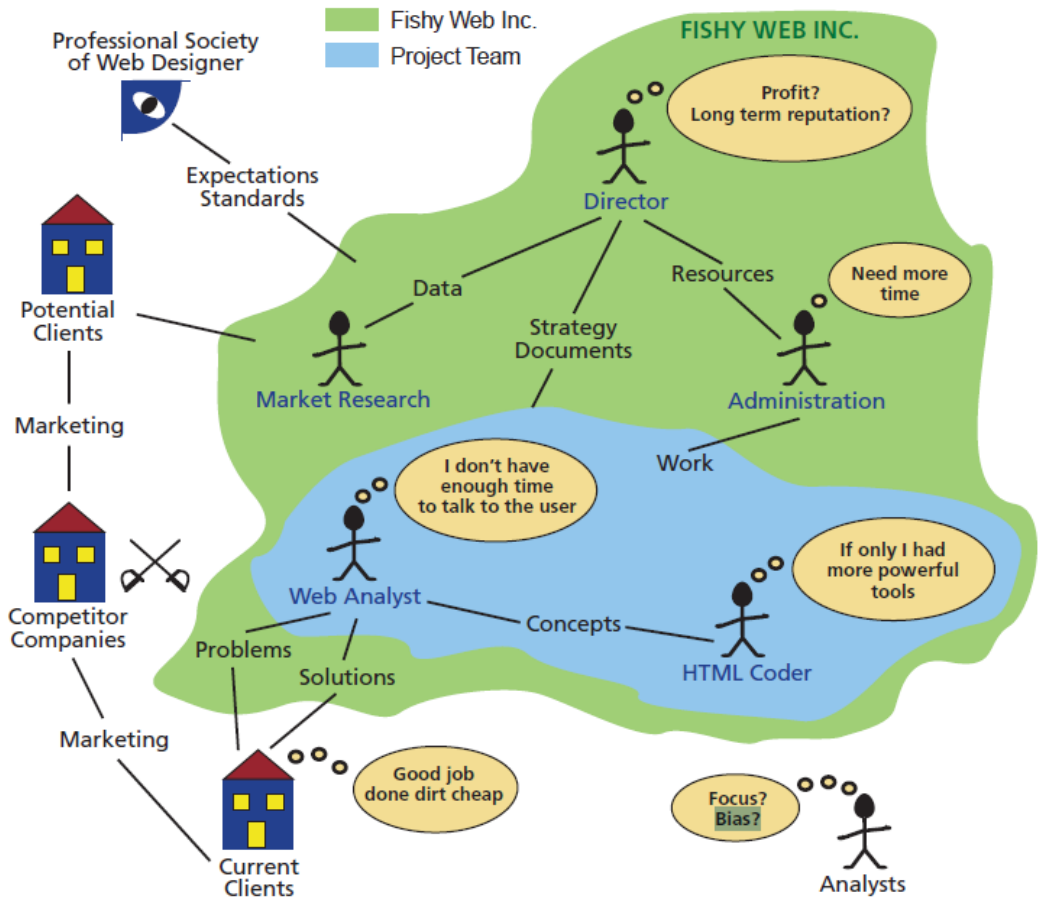


Figure 10. – Rich Picture Two – Monk and Howard, 1998, p.25

4.2.2. Rich Picture Session No 1

Table 3. Rich Picture Session No1 Overview

Method	Description	Overview	Outcome
Qualitative	Rich Picture Session No1	This session was planned to last 3h. Nine participants RM's and MSD's were invited to the session. Participants that accepted the invitation and participate in the session were six. Participants brought with them initial RP's that they developed with the help of professional cartoon drawing person prior to the session. Those RP's were developed since our introductory session. I introduced my research question and asked participants to choose RP's that they think are relevant as Barriers to our OL. Participants introduced two chosen RP's and developed dedicated Root Definition's (RD's) relevant to those RP's. The final step was the development of final RP, with related RD and applying CATWOE analysis as a frame for identifying stakeholders, their	1. Exposing my research question to the group '*How can we develop double loop learning in KCA Deutag Azerbaijan?*' 2. Development of one final RP with correspondent RD. 3. Defining CATWOE mnemonic analysis that is relevant for participants where they need to embed it selves as being personally involved in the story: C – Customer A – Actors T – Transformation process W – Weltanschauung O – Owner E – Environmental Constraints

		connections/influences, and processes relevant for my research.	

One group of six managers was formed from the fourteen who had created initial RPs. They were self-selecting because they could spare the time from their operational duties. Again their RP's were completed with the help of a professional drawing person in one of four sessions that were arranged between the Introductory and Rich Picture Sessions. The same process was used as described in pp. 5& 6 with each manager spending on average 30-60 minutes to develop his RP. I was not present during the time of those four sessions, as I wanted to reduce any bias from me being present and potentially giving ideas on how managers should develop their drawings, or with other advice that might dilute the managers' points of view.

The six managers then presented their RP's, defining the relevant problem that each RP depicted.

The group then chose two RP's out of the six presented, which they considered the most relevant to my research question, 'what are the barriers to double-loop learning?'. The two participants then described their drawings to the group and participated in the reflection process with the group.

They chose RP developed by Manager #1 RD:'Old Ways' (see Fig.10) and Manager #2: 'Nationalization' (see Fig.11). The 'old way' RP represented different Leadership styles applied in KCAD and how managers are following 'old ways' or applying old styles of leadership.

The following step was to define dedicated RD's for the two RP's in terms of the CATWOE mnemonic. Throughout the process of defining RD's and testing them by CATWOE mnemonic managers were able to "… hear their voice, and their opinions that were exposed to the group with the potential to affect the process of forming RD's and became part of OL and knowledge." (Bell and Morse, 2013).

The two RDs were defined as:

RD – ' Old Ways' *A system where the General Manager leadership style affects the operational department by sacrificing trust for self-protection in drilling the wells for BP.*

The ‘Nationalization’ RP was representing how fear is influencing manager’s day-to-day life and operations and how the process of nationalization is limiting communication that is contributing to a growing fear of losing the job. Following RD was defined:

RD – *A system of nationalizing operations department and diluting operational knowledge for drilling the wells for BP.*

4.2.3 CATWOE Analysis

Development of the first group RP & CATWOE analysis –the intent was to generate a reflection process amongst managers and allow them to expand the initial level of thinking of a ‘single-loop’ and try to enter into a more complex level of ‘double-loop’ learning. The group was questioning different manager’s perspectives and ways of viewing the problem. But at the same time, they allow themselves to review conclusions by looking more deeper into the contributing factors that shaping the exposed problem. This reflection/discussion process-based on the two RPs previously selected (’old ways’ and ‘nationalization’) took around 30 minutes for each chosen RP what gave them enough time to explore who were the actors, customer, what is the process that is shaping the whole changing system, owners of the problem and constraints using CATWOE mnemonic. In essence that was the process that managers brought to the deeper level of inquiry to explore new avenues of expanding the chosen problem statements in the form of RD.

The following set of questions was used as trigger questions for the development of the deeper level of discussion:

- What do you recognize in this story and can you connect this with your own experiences?
- What do you not understand in this story, what surprises you or seems odd?
- What do you miss in this story and what would you add to it by your own experiences?
- How do you like to see the situation?

4.2.4 Final Rich Picture

The next step in this session, was for managers to leave the RP’s, take a new piece of paper and collectively draw a group RP, that would be used to answer my research question - the barriers to DLL – with specific reference to relate to leadership, politics, and communication. This was the crucial stage in this session. I was following the agenda that was developed in

the Methodology chapter of my thesis to run Rich Picture Session No1 and oversee the managers throughout most of the process.

Throughout the process of developing or drawing the final group RP, managers discussed among themselves the barriers that hindered DLL and which were more or less relevant to our organizational situation.

The group identified four barriers with the following given names:

1) Leadership
2) Communication
3) Nationalization
4) Change

The next step in the session was to define what will be RD that will describe the presented organizational picture. At the beginning of the session, the group was trying to defend different points of view, but with a deeper level of reflection (triggered by other managers questioning), one change was accepted as an improvement to the problem definition and same time allowed managers to learn something new about their problem. The identified barrier of Change was taken out of further research and group discourse because the group accepted Change as an integral part of the everyday life of every organization. The second reasoning behind not including the barrier of Change in further research analysis is that barrier of Change seats outside of my research boundary and is not part of my research objectives. That was one of the intents of the session to allow managers to expand on their view of problems that they are facing during daily operations. Following RD was developed:

RD #3 – A system where top leaders directing style of leadership, following contract obligations for nationalization, affects fast decision making which stifles communication and restricts knowledge for drilling the wells for BP.

Using CATWOE mnemonic (C-customer; A-actors; T-transformations process; W-Weltanschauung; O-owner; E-environmental constraints) to test defined RD's:

C – Customer: *BP Azerbaijan*

A – Actors: *top leaders*

T – Transformations process: *Drilling the wells for BP*

W – Weltanschauung: *fast decision making which stifles communication and restricts drilling knowledge*

O – Owner: *KCAD General Manager*

E – Environment constraints: n/a Nationalisation? KPI's? Safety culture?

The group discussion was something new to them taking into consideration that usually managers are discussing issues among themselves and top management, which is not allowing them to be engaged in open and 'fear' free discussion.

4.2.5 Evaluation

This step of SSM allowed me to initiate, form and review the organizational problem of reducing OL by three barriers that are potentially existing within the organization (leadership, politics, and communication) visually. Visualization gave a good foundation for the discussion among managers when discussing the organizational problem of barriers to OL. Preparation and execution of this step took the longest period of time but on the other hand, gave me huge satisfaction when seeing managers operating and discussing tacit knowledge that they possess within them. The OL is represented in RD as a nationalization process where managers need to develop a system where national employees will be able to gain competence and experience to take over the job execution from an expert workforce. This issue of developing an adequate system of transferring knowledge to the national workforce will be discussed in depth in the FG session.

4.3 Action Research Cycle 3 – Focus Group (FG) and Conceptual Modeling (CM)

4.3.1 Focus Groups (FG)

The actionable part of FG was to establish the date, place, and time for the FG, following invitations to the participants. The FG was set to take place on 03rd of December 2018 in KCAD office, 14th Floor ISR Plaza, 69 Nizami Street, AZ1000 Baku, Azerbaijan in a meeting room 2. All six participants from the RP session were invited to participate in the FG session, and from six participants four of them manage to attend the session. The planned duration of the session was 2h, and it took 1hour and 50minutes to finish the following planned and schedule program for the session.

Table 4. Focus Group and Conceptual Modeling Session

Method	Description	Overview	Outcome
Qualitative	Focus Group & Conceptual Modelling	This session was planned to Last for 2h. Four managers participated in the focus group where we were using one	1. Detecting emerging Themes during group discussions.

		example from organizational history of Incident Investigations and RD that emerged during the development of a final RP in the previous session, as an initiation process of developing the dialogue between managers. The intent of this part of the Focus group discussion was to detect who is the owner of the problem and what barriers and dedicated behaviors are shaping existing organizational situation of a single loop learning. Conceptual models were developed to analyse data collected from RP's, Conversations, RD's, and FG. Models are capturing respective worldviews based on participants understanding of the expressed organizational issue warring from personal, interpersonal, organizational, national and international concerns.	2. Identifying Resulting organizational behaviors that are relevant for OL. 3. Discussion about 'way out', as an understanding of the group where they want to be in order to shift OL. 4. Development of Conceptual models that are taking into consideration individual participant views about different levels of system /organization.

This step for the participants was not surprised as they were already informed about my plan to call them to participate in my last step of data collection, by participating in this FG. The recording of the session was explained and confirmation with acceptance from all participants was obtained. The short personal introduction was stepped over because participants already attended previous sessions.

This step intended to make visible to the participants throughout the whole FG session my research question '*How can we develop double-loop learning in KCA Deutag Azerbaijan?'* and remind the group about our last RP session and agreed RD that was accepted by all participants: *RD - A system where top leaders directing style of leadership, following contract obligations for nationalization, affects fast decision making which stifles communication and restricts knowledge for drilling the wells for BP.* Group discussion started by reminding themselves about an incident that happened on one of our platforms (Deepwater Gunashly - DWG) and actionable outcomes that were generated from the incident investigation. This part of the discussion was done pretty quickly, and the focus was moved toward the reconfirmation of the RD and the answer to the question if KCAD GM is the real owner of the problem. The discussion was developing around understanding how important the financial aspect of the operation is and who was the main actor in making decisions on what will be operational KPI. The Statement was given that our main office in Aberdeen (means the top level of company management, or executive board) was responsible for setting up those operational and financial KPI. Expanding deeper, on OL and how KCAD is sharing learning among the junior workforce at the beginning of the project 15-20 years ago, it became apparent that the client or BP was also not interested to share knowledge and experience to sustain operations by nationalizing expert workforce. Interestingly, even the client was supporting fast drilling and delivering of oil production and losing focus from OL in part of Nationalization process where knowledge about drilling those wells needs to be transferred to the local workforce that will in 10-20 years take over the whole process for both BP and KCAD operations. By focus on the theme of nationalization, the group agreed that a structural company approach to OL and sharing expertise did not exist at the time. However, the leadership of GM at the time was driven by organizational and inter-organizational politics, which was acknowledged by the group. Throughout the whole FG, participants repeated the same themes discussed at the RP session in the line of leadership, Fast solutions, No room for mistake, Consequence management, Human error, WG and procedures leading towards the development of a blame culture under the SLL approach.

Work Guidelines were recognized as the primary OL tool that was abused or misused for the past eight years. That was due to leadership and politics applied within the organization, what was resulting in deterioration in communication and generating and sharing OL. The theme of 'fear' was identified and recognized as one the most influential contributing factors to the organizational communication and knowledge sharing that is supposed to support the nationalization process, as one of the contractual obligations of KCAD. Thus, bringing the discussion to the next level, different behaviors we recognized as the main driver of the organizational reality of KCAD (Development of Blame culture under SLL) resulting in the

following behaviors (Frozen Communication; Tacit knowledge sharing became pointless; Organizational and team trust building under threat). However, despite the 'fear', managers are possessing the strength to express possible actions as a ‘way out’ from this organizational situation which will potentially allow organizations to shift toward the DLL. The managers saw an opportunity for an organizational shift toward DLL in two steps (actions). The first step is that the top management of KCAD needs to commit voluntarily to unfreeze present organizational behavior, where the second step will be to train and mentor managers to be capable of developing DLL behaviors.

4.3.2 Evaluation

The FG session was designed to gather all relevant data from the RP session and use them as an initial point for developing a deeper level of discussion between managers. The discussion was going in direction of confirming different levels of importance following my emerged Themes and thinking about systems that are existing within the organization. Discussion about the owner of the problem, political and leadership influence on the organizational flow of knowledge and supporting levels of communication exposed different worldview perception of managers. The conceptual modeling step is where we will analyze data collected from previous sessions and group discussions. A main conceptual model is the one which is giving managers different views of the level of responsibility towards the organizational existing reality. A final conceptual model is depicting different organizational systems that are not visible from the SLL perspective. Those organizational systems are hidden within the organizational structures, as a possible part of individual tacit knowledge, and can be explored only by applying deeper DLL inquiry. This conceptual model exposed to the managers how external structures of our company are affecting our operability and knowledge development within the organization in an ideal world environment.

4.3.3 Conceptual Modelling (CM)

After successfully finishing the FG part fo the planned session:

1) Welcome and opening speech (10 minutes)
2) Exposing Root Definition from Rich Picture session in conjunction with my research question (100 minutes)
3) RD, Incident Investigation report HSE-002155 and Research question exposition
4) Group discussion
5) Generating and recording the organizational Conceptual model

The CM part of the session (Generating and recording the organizational Conceptual model) started by me explaining first about CM, which was to capture participants' different worldviews, on levels of responsibility across different organizational systems ranging from personal responsibility, through interpersonal or team, organizational (KCAD Azerbaijan), Inter-organizational (KCAD Worldwide) to International. Each participant was asked to express his 'internal to external' worldview, starting with how his personal responsibility in the organization transmuted to the outside world of KCAD Azerbaijan, then to the head office of KCAD in Aberdeen, and ultimately, its international influence.

The second CM was to stimulate participants' discourse about the real organizational world, visible or obvious to the managers, and the system-thinking world, where sometimes not all systems and knowledge from there are 'visible' or known to the managers. This session took much longer than expected because managers had difficulty understanding KCAD systemically. However, they managed to overcome this initial hurdle and developed their CM to show how KCAD systems can be affected, even from outside the original KCAD Azerbaijan organizational system, even the organizational decision-making process. This step made clear that barriers to DLL (leadership, politics, and communication) are closely interconnected within the organizational systems that affect the OL process in KCAD.

4.3.4. Evaluation

This step of CM led me to understand how managers perceive the distribution of different levels of responsibility embedded within the organizational or inter-organizational environment. Following on, different themes and subthemes emerged from FG and CM discourse, it was interesting to observe managers' cognitions about where responsibility lies within the organization. This last step of data collection was probably the hardest for me because I faced difficulty explaining CM to the managers and why we need to develop them. CM is the step which combined all data from the initial stages of SSM thinking about the problem, developing RPs with dedicated RDs, and finally, FG.

Throughout the Action stages, I was extremely pleased with the levels of interest shown by, and the interactions with, the managers. This was the most validating process for me and my choice of research question and methods. I realized during the sessions that I had not allocated enough time for certain elements, particularly the discussions and I had to let them run over. In the future, I would allocate whole sessions to discussions, as this is where participants become most animated and can share their tacit knowledge to the full. At a deeper level of reflection, I began to realize that sharing tacit knowledge occurs in more relaxed and

informal settings (i.e. without the formal input of the session manager), following the conditions set out by Wenger (1991). In practical terms, therefore, it may be important to provide more opportunities for organizational 'Communities of Practice' to meet in person.

4.4 Data Analysis

The Qualitative research and SSM approach, in particular, generates a huge volume of data, which tends to overwhelm novice researcher like me. However, after data was collected initial analysis was done following the next three steps:

Step 1) *Rich Picture session No1* - One group of six managers was formed in a way that they were chosen amongst fourteen managers that manage to develop or make their RP's and the same time could dedicate time to attend AR Rich Picture No1 on 15th Jun 2018.

Those six managers were (Manager #1 – Rig Manager West Azeri; Manager #2 – Maintenace Superintendent Central Azeri; Manager #3 – Rig Manager West Chirag; Manager #4 – Rig Manager Deepwater Gunashly; Manager #5 – Rig Manager Contingency Crew; Manager #6 – Rig Manager Central Azeri), from those six managers five were rig managers and one was maintenance superintendent.

Step 2) *Focus Group session* – FG session was the natural extension of the RP session in sense of choosing the relevant participants that can satisfy criteria for the FG. The target number of managers was six and they were all invited to the FG session. The intent was to use the same managers with experience of participating in the RP session. All six chosen participants were satisfying already defined criteria in the section of designing the FG. The FG was set to take place on 03rd of December 2018 in KCAD office, 14th Floor ISR Plaza, 69 Nizami Street, AZ1000 Baku, Azerbaijan in a meeting room 2. From six invited participants, four of them confirmed their attendance and manage to participate in the session. The planned duration of the session was 2h, and it took 1hour and 50minutes to finish the following planned and schedule program for the session.

Step 3) *Conceptual Modeling* – this part of FG session was the last one where the intent was to generate and record the organizational Conceptual models that will capture and analyze data collected from different discussions, RP's and RD's gathered during session discourses.

Throughout the Action stages, I was extremely pleased with the levels of interest shown by, and the interactions with the managers. This was a most validating process for me and my

choice of research question and methods. I realised during the sessions that I had not allocated enough time for certain elements, particularly the discussions and I had to let them run over. In future I would allocated whole sessions to discussions, as this is where particpants become most animated and are able to share their tacit knowledge to the full. At a deeper level of reflection, I began to realise that sharing of tacit knowledge occurs in more relaxed and informal settings (i.e. without the formal input of the session manager) in accordance with coditions set out by Wenger (1991). In practical terms therefore, it may be important to provide more opportunities for organisational ‘communites of practice’ to meet in person.

Chapter 05 Discussion on Findings

5.0 Introduction

In this chapter, I present my findings that emerged from my action research on how to develop double-loop learning within the KCADeutag Azerbaijan business unit.

The in-depth rich picture and focus group discussions described organizational situations that are contributing, on different levels, to how KCAD is capturing and sharing Organizational Learning. Equally valuable was the SSM approach of expanding participants' for finding a 'way out' for this particular organizational situation.

5.1 Rich Picture

After finishing the Introductory session A or B, the initial fourteen managers made their draft or raw drawings representing the problem that each of them is focused upon. Following the development of the raw drawings, managers used them as a template for the development of their final individual RP with the help of the professional drawing person, and these were used for RP Session No1. Each manager spent on average 30-60 minutes to develop his RP. Each drawing session was arranged to last three hours and to include cover a minimum of three managers.

Twelve of the fourteen managers used one-page drawings, one manager used two pages and one manager used three pages. I took finished drawings and made a scan of them for my file and preparation on the AR Rich Picture Session No1.

Table 5. – Rich Pictures

	Root Definitions	
Manager #1	Old Ways	Figure 10
Manager #2	Nationalization	Figure 11
Manager #3	Communication	Appendix B
Manager #4	Silo Management	Appendix C
Manager #5	Sustainable Growth	Appendix D
Manager #6	Demoting Day-to-day work	Appendix E

The Rich Pictures, together with their explanations, are shown in the following chapter.

The task for the group was to draw together the issues emerging from the RPs and to provide a short description to indicate their main meaning.

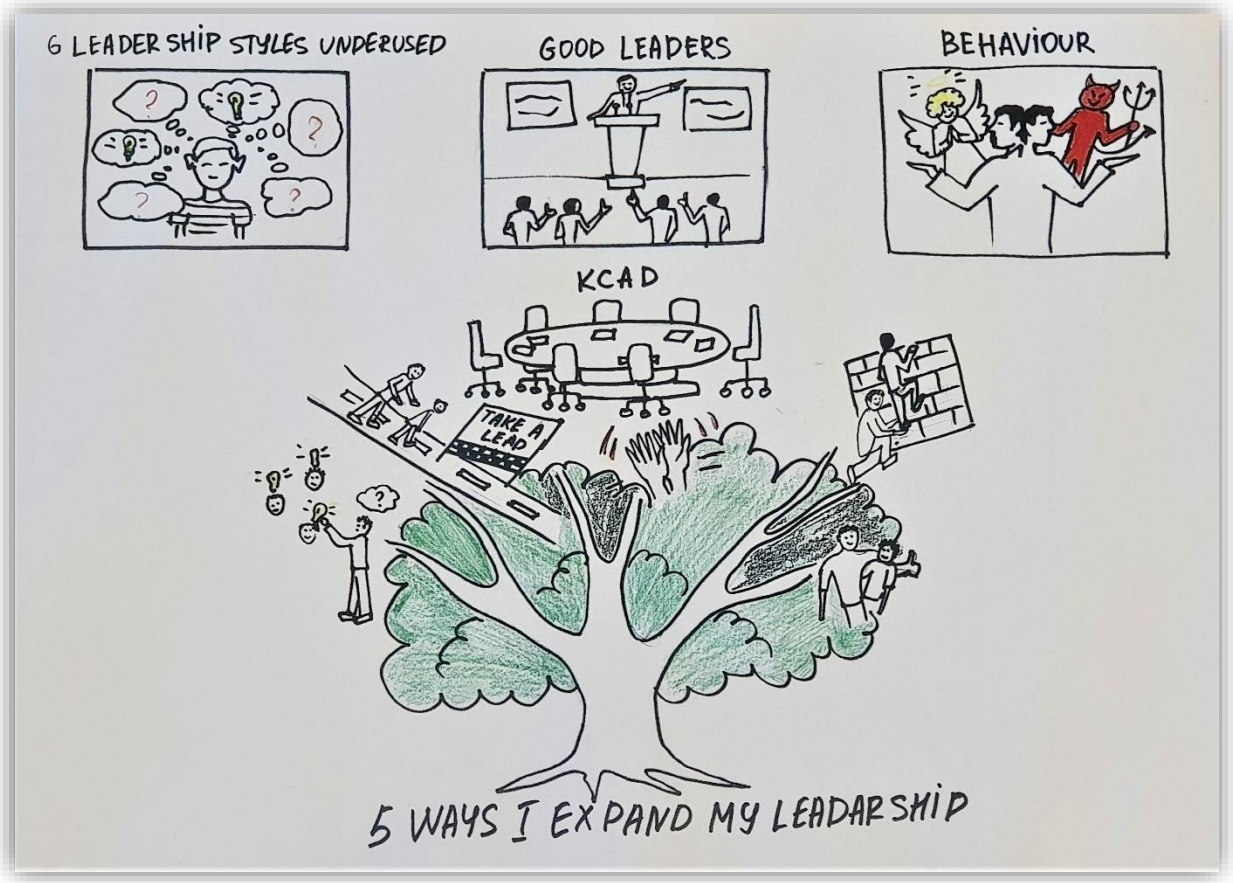
The following Problems were recognized by each manager at the beginning of the session:

- Manager #1: Root Definition is “Old Ways” - The Problem is to understand *six leadership styles*, what *good leadership* looks like, *ethical decision making* by the good leader or challenges that good leader is facing during decision-making problems, applied *leadership in the organization.*
- Manager #2: Root Definition is “Nationalization” - of the *Workforce*, *Two nationalities*, *Downtime, Company revenue*. Overall, the RP is stressing fear over losing the job due to loss of productivity, knowledge, and experience, due to the process of nationalization of the workforce.
- Manager #3: Root Definition is “Communication” - The Problem is the *Human Resource Department* /*Training Department*, both as the part of *Onshore* or office side of the operation. Another side of the operation is *Offshore management* and *Offshore crews*.
- Manager #4: Root Definition is “Silo Management” - The Problem is to be able to sustain an *Initial state* of KCAD operations (the first stage before the storm). *Silo Management* occurs where information is not shared during the process of searching for solutions to organizational and operational problems (second stage during the storm). *Corporate Management* needs to allow Azerbaijan managers to make more independent decisions (the third stage after the storm).
- Manager #5: Root Definition is “Sustainable Growth” - The Problem is *Declining oil industry, Sustainable Growth, Place to be.* This RP is displaying a problem with many small contributing factors to Sustainable Growth.
- Manager #6: Root Definition is “Demoting Day-to-day work” - The Problem is depicted as a *Hospital* as the center of help giving to the other concerned groups. The concerned groups consist of *Equipment, Personel, Contrat, Communication, Spare parts, and Planning, which* by asking the rig manager for additional help on daily basis, are generating additional stress.

Then all six participants agreed and chose two of the RP’s (‘Old Ways’ and ‘Nationalization’) that they recognized as the most relevant for my research question of *‘How can we develop double-loop learning in KCA Deutag Azerbaijan?’*. They each described the situation as they perceived it, and participated in the reflection process with the group. The next step was to

define a dedicated RD for each of those two RP's and run the CATWOE mnemonic as a test tool for the RD's. Throughout the process of defining RD's and testing them by CATWOE mnemonic, managers were able to hear their voice and their opinions, that were exposed to the group with the potential to affect the process of forming RD's and became part of OL and knowledge (Bell and Morse, 2013).

Figure 11. Manager #1 Rich Picture – Old ways (leadership)



RD #1 - *A system where the General Manager's leadership style affects the operational department by sacrificing trust for self-protection in drilling the wells for BP.*

This is a Semi Coherent Rich picture (Bell, Berg, and Mores, 2016), with some strong colors and lines, depicting a strong story and is in line with a research question.

At the top, we have three snapshots (1, 2, and 3), each depicting the following about leadership:

5. Expanding your leadership – Individually thinking about available leadership styles, and ones that are in use by the individual managers together with other styles that are underused. Furthermore, thinking about 'Why other styles of leadership are not

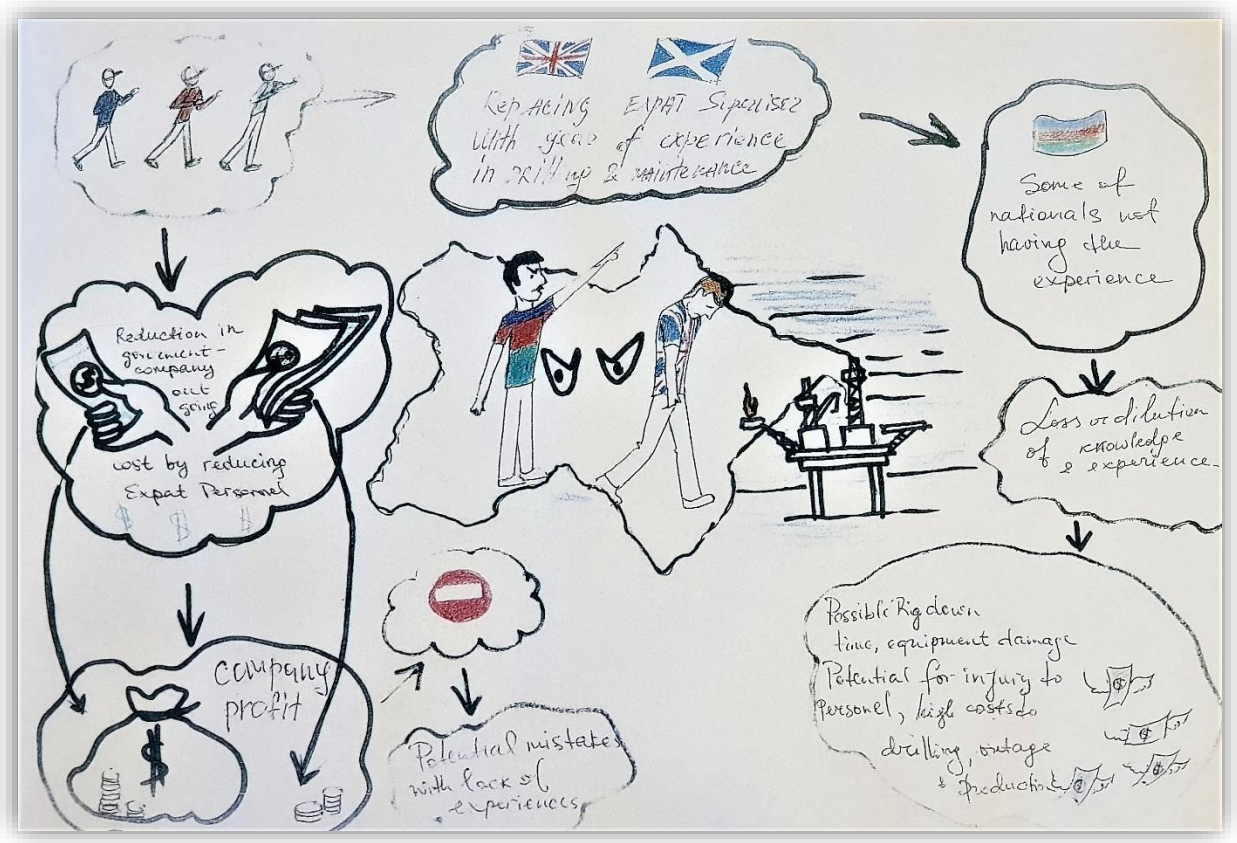
applied?' Is it due to lack of training, or using old patterns or ways of doing the job? Participants agreed that good leaders would use their core values, and would apply all styles of leadership, depending on the circumstances, where in reality, they use only one or two leadership styles.

6. Good Leaders - You can train a person to be a good leader, but you cannot embed the good behavior in him. When leaders get into difficulties, they revert to their original selves. Leaders need to embed their learning into their style of leadership. In the RP the leader's hand position and pointing finger, represent the 'Old Ways' of managing or leading the workforce, resulting in the generation of fear amongst them and ultimately, their demotivation.
7. Behaviors – The Leader must realize that his individual behavior will reap consequences. He must reflect upon what he does and how he does it. *"If you create an environment of arguing, you will get arguments back…what you give, you will get back (positive or negative)".*

The tree represents the KCAD organization with top management depicted by the oval desk at the top of the tree. Another part of the tree represents the manager's personal leadership, and what good leadership represents:

- How a manager expands his leadership by talking to people and accepting their ideas. Knowledge is not embedded in one person; it is in all of the team members.
- Take a lead and take others with you, it is about the team and developing others.
- Two hands are celebrating the success of any individual team member.
- Barriers to climb and get over together: if we train people like that, they will see and think differently, this is an opportunity to harvest new knowledge.
- Taking 3rd parties into your team; including 3rd party people as part of your team.

Figure 12. Manager #2 Rich Picture – Nationalization



RD #2 - *A system of nationalizing operations department and diluting operational knowledge for drilling the wells for BP.*

This is a Semi Coherent Rich picture (Bell, Berg, and Mores, 2016), with some strong colors and lines, depicting a strong story and occasionally reference to the research question.

The description starts at the left upper corner and goes clockwise. KCAD does not own assets or tools, we sell people. To do the job successfully we need the right 'tools' for the job. For the first 15 years of operating in Azerbaijan, the process of nationalization was slow, but now it is so aggressive and accelerated that is jeopardizing safety and performance. The main reason for the acceleration of the nationalization process is in senior management's decision for short-term gain as extra revenue in the yearly Azerbaijan budget.

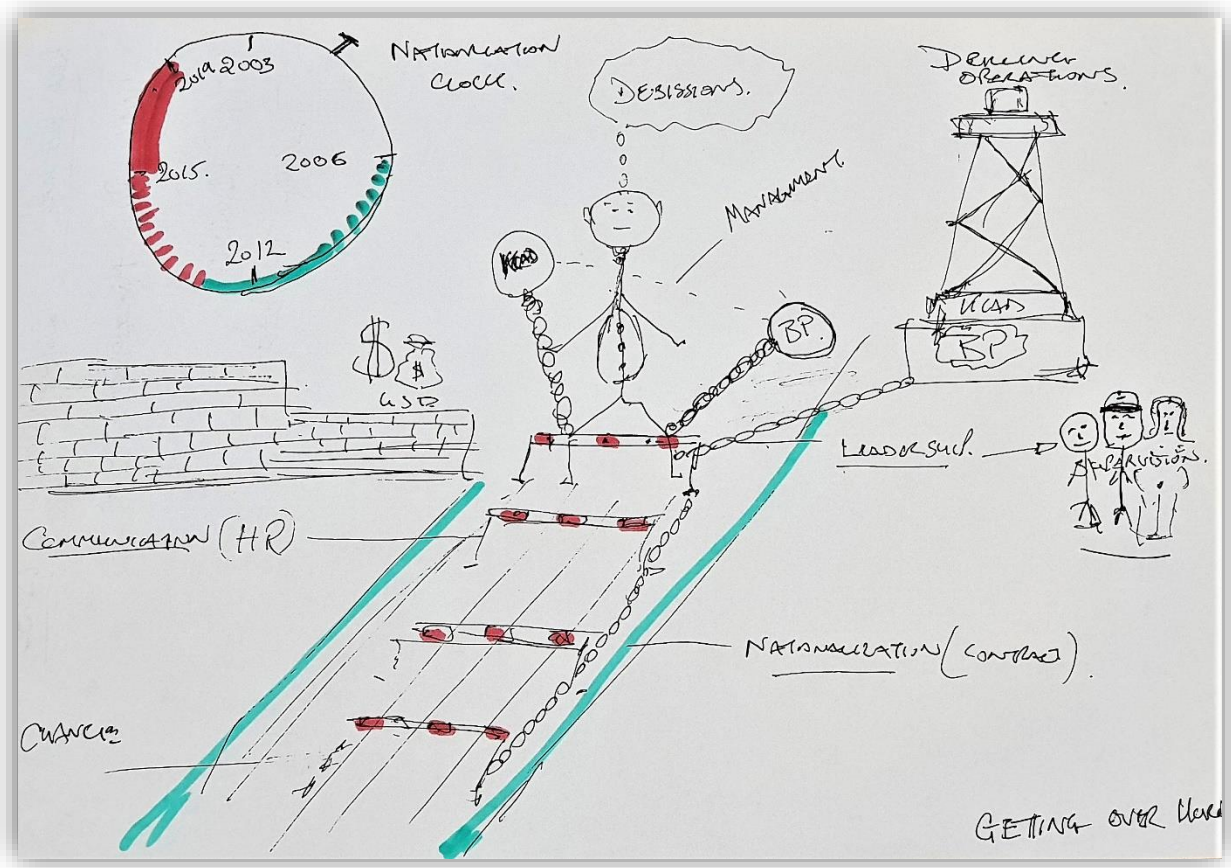
If the national workforce replaces the expert workforce, is the result will be a knowledge gap, which will inevitably be followed by the reduction in operational excellence and increasing the time needed for repairs and downtime. A strong feeling of fear and demotivation is depicted

by the middle part of the RP, also showing the outcome of that fear.

The following step in this session was for participants to draw their final RP, drawing together their thoughts and observations from the two shown here. This stage was the crucial one for this session and my research, in defining the relevant RD for teste using CATWOE mnemonic (see Fig.6).

The group was questioned different manager's perspectives and ways of viewing the problem. But at the same time, they allowed themselves to review their conclusions by looking more deeply into the contributing factors that were shaping the exposed problem. This reflection/discussion process was taking around 30 minutes for each chosen RP ('old ways' and 'nationalization') what gave them enough time to define the actors, customer, what is the process that is shaping the whole changing system, owners of the problem and constraints using CATWOE mnemonic.

Figure 13. Final Group Rich Picture



Final RD - *A system where top leaders' directing style of leadership, following contract obligations for nationalization, affects fast decision making which stifles communication and*

restricts knowledge for drill the wells for BP.

This is a Semi Coherent Rich picture (Bell, Berg, and Mores, 2016), with some strong colors and lines, depicting a strong story and is in line with a research question. The RP depicts the strong central position of the manager, whose main task is to win the race within the time allowed. His main task is to make decisions that will take into account the following obstacles that are obstructing the race or the manager:

- The upper left corner represents time and the nationalization process that has accelerated from 2015 onwards.
- Two headache balls attached to the manager's legs are representing organizational restrictions and politics that are working against decisions made. Furthermore, the manager needs to take into consideration the offshore platform which is his main responsibility, and the people working there (represented by the drilling rig).
- The racetrack is covered with leadership-related barriers that are affecting the delivery time of the project: by leadership in BP and KCAD, communication, nationalization, and change.
- A brick wall represents problems that exist within the organization and can be adjusted using the financial aspects of the business.

The RP and RD provided information about power distribution levels within the organization from the standpoint of the top manager's position within the company and using the nationalization process as a vehicle, to explore how OL is supported and transferred within the organization. The final correlation was done between RP and RD to make sure that all the emerging assumptions from the group discourse were contained within the picture and at the same time reflected within the RD (see section 4.4.2). This stage was an extension of presenting individual RP's, where the main intent was to generate a reflection process amongst managers, allowing them to expand the initial level of thinking of a 'single-loop', and try to enter into a more complex level of 'double-loop' learning thinking about governing the variables of Leadership, Politics, and Communication. In essence that was the process that managers brought to the deeper level of inquiry, to explore new avenues for expanding the chosen problem statements in the form of the RD. Throughout the whole session, I was following the agenda that was developed in the Methodology chapter of my thesis to run AR Rich Picture Session No1 and to oversee the managers throughout the whole process.

5.2 Focus Group

I framed the focus group discussions as an 'Oil Company with Engineering / Technical Mindset' paradigm. From the discussions, I tracked a number of emerging themes as follows: Leadership, Fast solutions, no room for mistake, Consequence management, Human error, WG, and procedures leading towards the development of a blame culture under the SLL approach. Digital recording was transcribed and reviewed for accuracy. Using the above themes and by the process of a line by line coding process, odes were developed to cover specific areas:

1) Leadership - as the main theme and with development of relevant subthemes (punishment as a consequence of leadership style applied, and zero tolerance for human error)
2) Nationalization – as the main theme and with development of relevant subthemes (operational procedural discipline, and explicitly written Work Guidelines)
3) Organizational learning – where group discourse took nationalizations process as a vehicle for developing and transferring the knowledge from the expert crew to the national crew, which is taking over the whole drilling operations

Throughout the whole FG, participants reconfirmed the same themes emerged already at the RP session and they are given in following Table 4 with dedicated quotations:

Table 4. Example of Themes, Subthemes, and Dedicated Quotations

Themes	Subthemes	Dedicated Quotations
Leadership within Azerbaijan:		
leadership style applied to generate a culture of Punishment/ Consequence, not allowance for social/human error	Top-down leadership	"at that point, and it didn't happen overnight, but over the time it came that it didn't really matter what the f... I thought about how this job should be done. That guy out there tells me how to do it.."
	Fear as an approach for leading the people	"yeah that was fear, there were three players who back each other up one masterminds Phil and we have two hedge man…."
	Punishment influencing organizational trust and finally communication	"you would come along with an issue, right? And I know that the answer is B, if I say B, you will be publicly humiliated and you will then be given a f……. CATs action to go and sort it out. So guess what happened..don't say f..... word...."
	Problem-solving/ Punishment/ quick fix	"Rather than look at the problem, we went back up to line one to a quick fix in favor of a written warning and the problem will go away…"
	Punishment/ quick fix	"We had a guy on Central Azeri who left the line open, and we sacked him, where is he now…"
Nationalization:		
using procedures or explicit WG's as a learning tool	The behavior to nationalize earlier than planned, to make short term gain	"then we're saying that we are losing guys that actually know how to the drill the well and we make guys up anyway…..the nationalization is a money-spinner"
	Behavior affecting trust and communication	"One Guy, only one guy who always opened his f……. mouth every week Dave Wood....and he got f….. slaughtered. But he ended up saying nothing. It was fear.....It was excellent…"
	Work Guidelines (WG's) become too explicit	"WG was a basic tool, we ended up Lessons Learned for incidents and High Potential Incidents (HIPO's)…"

Organizational Learning:	Barriers	
Linear problem-solving methods applying 'quick fixes'	Quick fix' solutions diluting organizational knowledge	"that hole fast solution in the first one, right? You know, what we did with the competence, that, that kind of lives on in all of this because we made a mockery of, nobody believes incompetency….."
	WG became too big to handle by people	"Didn't follow this work guideline... So they made it impossible. The guys are tied. Their hands are tied. They're gonna get nailed to the cross.....because they're gonna be blamed because everything is in that work guideline, but it's so big that they're not learning.."
	The human capacity to deal with complexity	"this thing it grew arms and legs and became monster..are we saturated?"
	communication	"top-down communication comes from onshore...You know all that was taken away from me. All I got was tell that guy to do something and I have to tell you to do something right. Yeah…."
	Politics	"Oh no, it, it was all politics. Yeah, it was all politics….Phil was driven by the guy down the road Covey…."
	Politics and nationalization	"there is a bigger picture…..you know, you see the TRP thing becoming more awkward in that. So there's actually a couple of side effects, KCAD's got their own agenda, that, there's also an agenda from the government, as well."

The root definition from the RP session was presented to the four participants in the FG and used as a base for initiating the dialogue. Thus, although the issue of drilling the well for the client was the main focus of the RD, reduced to second-order importance with the discussion focussing upon leadership within the organization and the nationalization process, and how they are affecting the process of OL in knowledge development and transfer within the KCAD. Both concerns, leadership, and the nationalization process, are raised on several occasions concerning the impact on OL and KCAD capability to sustain drilling service to the client. Participants expressed concern about the General Manager (GM) taking over the ability for managers to make job-related decisions.

A 'Manager#1' argued: *"GM took responsibility, but he did not take accountability....forget names. If you just talk about the culture, the culture that we have offshore, we shaped by that f... carry on man, there about five, six years when we lost control of the job, which is what you've said when we lost the ability to manage it."*. His words strongly indicate that the GM was making all decisions relevant for the operations by himself, degrading managers' positions within the organization, and affecting managers' behavior by his top-down leadership style.

‘Manager#2’ also argued: *“at that point, and it didn't happen overnight, but over the time it came that it didn't really matter what the f... I thought about how this job should be done. That guy out there tells me how to do it.."*, giving an explanation on how leadership within the organization was shaping the decision-making process between managers, not allowing them to contribute to the problem-solving situation, or knowledge development, or knowledge sharing process.

This unsatisfactory state is perhaps best described again by ‘Manager#1’: *"you would come along with an issue, right? And I know that the answer is B, if I say B, you will be publicly humiliated and you will then be given an f……. CATs action to go and sort it out. So guess what happened..don't say f..... word."*. Here the suggestion is that GM’s leadership style of punishment was inducing organization distrust and restricting communication, thus reducing OL.

‘Manager#3’ argued, *“One Guy, only one guy who always opened his f…….. mouth every week Dave Wood....and he got f….. slaughtered. But he ended up saying nothing. It was fear.”*, suggesting that organizational ‘reality’ was being shaped by the opinions of one man, and thereby providing a false consensus on how to approach different issues and expand the level of OL. This leads to the generation of fear among managers and the workforce, ‘Manager#1’ continues *“yeah that was fear, there were three players who backed each other up; one was mastermind GM and we have two hedge men.”,* explaining that as well as the GM there were additional people in the system who, using their position power as Operations managers, were supporting decisions made by the GM, rather than trying to expand and question the relevant worldview within the company.

Moving on from leadership towards the nationalization process, participants used the nationalization to describe how the process is being managed and what concerns they see in it.

A ‘Manager#2’ argued, *“then we're saying that we are losing guys that actually know how to drill the well and we make guys up anyway…..the nationalization is a money-spinner.”,* explaining that nationalizing the expert workforce was being utilized by management to save money. Experienced crews were being lost, to be replaced by less experienced national crews, but in so doing losing collective knowledge and jeopardizing operational efficiency and thus, our long-term sustainability.

The system being developed here is a distorted version of the Competency System. A ‘Manager#4’ observed, *“that hole fast solution in the first one, right? You know, what we did with the competence, that, that kind of lives on in all of this because we made a mockery of, nobody believes incompetency.”*, suggesting that competency system was developed in a hurry and used just to satisfy our contractual obligation towards the client, rather than fulfilling its main purpose for knowledge transfer, and expanding *“Rather than look at the problem, we went back up to line one to quick fix …. and the problem will go away”*.

The next step in group discourse focused upon the organization’s attempt to capture knowledge principally using Work Guidelines (WG’s) or operational procedures as the means. Participants expressed the following concerns on the account of WG's and its implementation, a 'Manager#2’ argued *“Didn't follow this work guideline... So they made it impossible. The guys are tied. Their hands are tied. They're gonna get nailed to the cross.....because they're gonna be blamed because everything is in that work guideline, but it's so big that they're not learning.”.* Here Manager#2 depicts the organizational reality of using WG's as the main tool for mediating OL, by arguing how limited this approach really is.

A ‘Manager#1’ stated, *“WG was a basic tool, we ended up Lessons Learned for incidents and High Potential Incidents (HIPO's)…. this thing it grew arms and legs and became monster..are we saturated?”*, final agreement about the point was made that the system is saturated and WG’s are not giving for what they are designed for, ending with ‘Manager#2’ statement “*we had a guy on Central Azeri who left the line open (not following WG), and we sacked him."*, where WG's are used in an explicit way of capturing learning and using WG's in conjunction with leadership for showing zero tolerance towards the human error.

The group discourse went into Politics and how politics was affecting our organizational reality depicted above showing three contributing dimensions of politics. A‘Manager#1’ stated *“Oh no, it, it was all politics. Yeah, it was all politics….Phil was driven by the guy down the road Covey.”*, meaning that client Vice President of British Petrol was one dimension of political pressure towards KCAD reality, expanding into the *"there is a bigger picture…..you know, you see the TRP thing becoming more awkward in that. So there's actually a couple of side effects, KCAD's got their own agenda, that, there's also an agenda from the government*.", the political dimension which is directed from Azerbaijan government, and finally ending within our own organization “owner of the problem is KCAD finance Aberdeen.”, where the group concluded that organizational politics from head office affected our organizational reality too.

Work Guidelines were recognized as a minor OL tool that was abused or misused for the past eight years. That was due to leadership style applied within the business unit, and politics from within and from the outside the company resulting in deterioration in communication and building and sharing OL. The theme of 'fear' was identified and recognized as one the most influential contributing factors to the organizational communication and knowledge sharing that was supposed to support the nationalization process, as one of the contractual obligations of KCAD. Thus, bringing the discussion to the next level, the following behaviors were depicted as important for the organizational reality of KCAD:

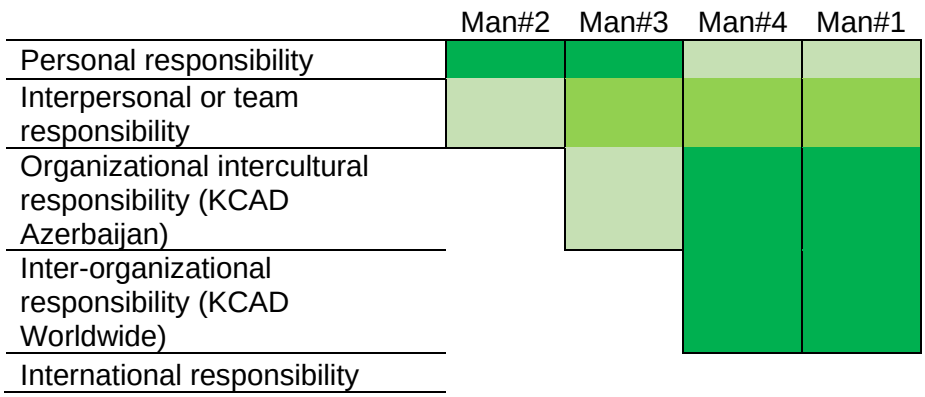
1) Development of Blame culture under SLL
2) Resulting Behaviours – a) Communication became 'frozen' in WG's; b) Tacit knowledge (Social) showing became pointless; c) Community and Teams trust-building restricted; d) Difficulty to move to DLL

The final step of this part of the group discussion was to define the actions as a potential 'Way out' from the existing organizational reality. The group argued that options could be set up on two levels of action. The first level of action was agreed by the group to be the step where top management needs to commit to unfreeze the present organizational culture described above. The second level of action top management must agree to attend additional coaching and training sessions in developing behaviors that will support building the team and community trust, improving communication from within the WG's and harvesting tacit knowledge.

5.3 Conceptual Modeling

The following graphic was developed based on conducted discourse about different worldviews concerning levels of responsibility across different organizational systems, ranging from personal responsibility, through interpersonal or team, organizational (KCAD Azerbaijan), Inter-organizational (KCAD Worldwide) to International

Figure 14. Levels of responsibility across the organization



The green shaded columns under each participant's 'name' represents their worldviews on how deep organizational levels of responsibility stretch within the organization and even in the outside world. These levels were supported throughout the discourse by each manager's ability to discuss multiple systems levels and their understanding of how they are affecting organizational reality.

For example, 'Manager#2's believes that personal responsibility (dark green) has a greater influence on the organization than interpersonal or team responsibility (light green).

A 'Manager#3' also considers Personal responsibility to be the most important, with Interpersonal or team responsibility coming next, followed by organizational intercultural responsibility of KCAD. Both Manager#2 and Manager#3 have the view that their individual responsibility is the one that is primarily shaping OL, a view where it is up to the individual's willingness to accept the prevailing knowledge within the company or any organizational system, and to try to develop it further.

The other two managers, 'Manager#1' and 'Manager#4' have worldviews which contradict the previous two, stating that it is the inter-responsibility of all the organizations from KCADeutag head office in Aberdeen, to our organizational development of OL, For 'Manager#1', *"It's KCAD finance in Aberdeen"* that holds most responsibility followed by Interpersonal or team responsibility, and lastly, Personal responsibility. Those two managers, 'Manager#1' and 'Manager#4', demonstrated perhaps the broadest comprehension of a range of organizational responsibility by expressing their worldview arguments stretching across several organizational units and systems.

5.4 Observing and Evaluating Action

This final stage of SSM allows me to reflect on my observations and assessments of the entire SSM process during the time of researching KCADeutag Azerbaijan. It is important to mention that my research was just a small attempt to generate changes in practice on how my organization learns. At this stage, research participants admitted that they were surprised by the open discussion they had with me and that they been able to speak openly about any problems they considered important, or that contributed to a broader organizational problem. Furthermore, they were surprised by the depth of the discussion that took place when seeking explanations for the different behaviors and actions of individual members of our organization. These discussions enabled them to reflect deeply on their own thoughts and to begin to

recognize other perspectives and to envisage problems in a different light. Furthermore, managers acknowledged to me that they were encouraged by my open and honest discussion of relevant day-to-day issues that I presented as potential obstacles to their day-to-day operations. Following one of the FG sessions, a participant told me that I miss my profession and that I should work on presenting business management education to different organizations and not to work within the oil business management! Some of the participants even mentioned that we should design a relevant WG that will guide employees on how to design and apply RP and FC tools in their daily examinations of organizational problems. Despite the success of implementing RP and FG with this limited part of the organization, managers recognized that this positive effect would have a "short breath" if further organizational acceptance of the research results was not applied.

5.5 Key Themes and Discussion

Leadership - leadership style applied to generate a culture of Punishment/ Consequence with no allowance for social/human error

During both RP and FG discussions, some themes uncovered similarities between different barriers observed within the research discourse. While Politics and Communication were seen through different lenses as separate barriers, Leadership style was considered to be the major barrier to double-loop learning. This organizational reality of top-down leadership, together with poor vertical communication and coordination across the functions restrict integration processes within the organization (Beer et al. 2005; through Schilling and Kluge, 2009). My rationale for this observation is that participants reached a consensus about the organizational reality, where top-down leadership style applied was supporting the desire for 'quick fixes' which, in turn, are diminishing managers' ability to make job-related decisions; dissolving individual and organizational trust, and restricting all levels of communication. Throughout the participants' discourse, many empirical pieces of evidence were discussed which supported espoused worldviews. One statement reported earlier, but which I feel is important to re-state comes from 'Manager#3', who argued most forcefully on how the present leadership style promoted fear, *"One Guy, only one guy who always opened his mouth every week Dave Wood....and he got slaughtered. But he ended up saying nothing. It was fear."* The theme of 'fear' was identified and recognized as one of the most influential contributing factors for damaging organizational communication and knowledge sharing.

Of all the processes in play within the company, the nationalization of the workforce is potentially the one which will negatively influence knowledge development and knowledge sharing the most. Following the path of knowledge transfer using existing top-down, linear organizational communication, the group discourse confirmed that the organizational reality is

supporting less pleasant situations that are generating less effective knowledge transfer (Schilling and Kluge,2009). Furthermore, participants that new ideas, processes, and practices cannot be brought to life under the present leadership style that pervades, all levels of leadership within the organization (Beer and Eisenstat 2000). The final group discourse using the SSM FG session explored opportunities on how the 'way out' from the present organizational reality might look. The participants realized that barriers to OL, embedded within the organizational reality, exist both at the structural and cultural levels. These can only be overcome by an in-depth empirical analysis of the relationship between leadership style applied and OL Berthoin-Antal et al. (2001) and Lawrence et al. (2005). Culture is defined as *"a set of norms and values that are widely shared and strongly held throughout the organization"* (O'Reilly and Chatman, 1996; through Sorensen, 2001; p.1) which can benefit from engaging highly motivated employees who are committed to common organizational goals (Sorensen, 2001). Furthermore, organizational culture shapes employee's interpretations of organizational processes and their basic assumptions which, ultimately can contribute to the process of OL that needs to be changed. It was also acknowledged throughout the group discourse that the top-down directive leadership style applied is perceived as ruthless in handling situations and is having a negative side effect on other employees and parts of the organization. Finally, the group formulated a statement that: *"our particular organizational culture within the company is more suitable for the newly open businesses that require rapid solutions to survive on the market, and which are situated in non-complex environments, such as the one* KCADeutag's of 20 years ago *"* (Rashid et al; 2004

Nationalization - using procedures or explicit WG's as a learning tool

The participants used the nationalization process as the vehicle for developing discourse around how their organization is supporting knowledge development and knowledge sharing. The previous paragraph explains how leadership barriers are recognized as the main drivers of problematic organizational behaviors. The nationalization process, however, is considered to be a vehicle for allowing acquired individual and organizational knowledge to be collected and reused in the future. This process is part of a contractual obligation. Participants agreed that this operational knowledge of drilling the wells for the client is confined to the Work guidelines (WG's) that have developed over time, from being relatively simple into overly too robust and 'too big to handle'. The WG's are, in any case, only one way of storing knowledge, and to rely upon this explicit set of rules obviously omits 'softer' forms of tacit knowledge, which is the main vehicle for spreading innovative ideas. 'Manager#1' described that pathway, *"WG was a basic tool, we ended up Lessons Learned for incidents and High Potential Incidents (HIPO's)…. this thing it grew arms and legs and became monster. Are we*

saturated?". However, group discourse exposed an organizational reality where the implicit intent of the organization was to develop and share OL using WG as the main communication tool that gave license to top management's worldview for the application of 'fast fixes' and support to their top-down communication. All four participants agreed that the present organizational reality is dismissive of tacit communication with the result that essential processes such as intuiting, interpreting, integrating, and institutionalizing are being lost Crossan et. al. (1999).

Furthermore, the group acknowledged that organizational learning within the KCADeutag is currently suppressing the framed experiences, belief systems, as well as intuition that uses a framework for appreciating new ideas: what Kransdorff (1998) recognized as a pathway to DLL. The discourse exposed organizational reality where KCADeutag is focusing only on those organizational processes that have short-term financial benefits and potentially jeopardize OL. 'Manager#2' expressed this feeling as follows:*"…..nationalization is a money-spinner"*. Supporting evidence for this statement is based on the organizational reality whereby nationalization will be achieved earlier than plan. This means that while we have been employing national employees for many months on lower salaries than the resident 'expert' workers we can still charge the client higher expert fees until the end of that particular accounting year, thus making considerable cost savings. This additional profit is not included within the yearly budget, and as such, adds up to an additional bonus for KCADeutag senior management. This process on its own, although serious, is not as grave as the result one or two years down the line when the pool of experienced and competent people is drained to zero.

Organizational Learning - Linear problem-solving methods applying 'quick fixes'

The OL theme also emphasized the three-fold political barriers of politics that influenced KCADeutag. The first is client-driven politics, as summarised by 'Manager#1': *"Oh no, it, it was all politics. Yeah, it was all politics….Phil was driven by the guy down the road Covey."* highlighting that KCADeutag General Manager (GM) Phil was driven by client British Petrol (BP) Vice President (VP), who was also supporting top-down leadership approach, looking for 'fast fixes' and not tolerating human errors from KCADeutag Azerbaijan operations. Stemming from 'Manager#A's' the comments above, participants suggested that the KCADeutag GM did not know how to manage this situation, and from there he went on mismanage the internal affairs at KCADeutag, by slavishly fulfilling every demand from the client whilst disregarding individual, team and organizational feedback that can lead to DLL.

The barriers of double-loop learning are based on what Argyris and Schon (1974) termed as "…defensive patterns that occur as a result of bureaucratic accountability as well as new processes and systems that reward or punish employees". Participants' understanding of organizational reality was expressed through the existence of employee's defensive patterns, generated as a response to their increased sense of fear towards their job security. The process, together with its outcome, is expressed by (Mazutis & Slawinski, 2008) as, *"The result is a culture of competition and win/lose dynamics in which individuals avoid confrontation because they fear losing control over situations."* (p.439).

'Manager#1' outlines the link between internal company processes and those of the Azerbaijan Government's external processes as follows: *"There is a bigger picture…..you know, you see the TRP thing becoming more awkward in that. So there's actually a couple of side effects, KCAD's got their own agenda, that, there's also an agenda from the government, as well"*. To realize the nationalization of foreign companies within the country, Azerbaijan Ministry insists that every foreign employee needs to extend his work permit yearly. If the Ministry sees any Azeri person with the same qualification looking for the job, they can refuse to reissue the foreigner's permit.

The third political barrier stems from our own head office in Aberdeen, which supports the Azerbaijan top management's accelerated nationalization policy and the ensuing extra profitability. The participants considered this acceleration of the process of nationalization as a further threat to the OL and DLL as it keeps the company in SLL whilst preventing feedback loops. This organizational process of nationalization was recognized throughout the discourse as one that impedes DLL, but what keeps KCADeutag in the SLL stage was the bulk of information's locked within the SLL and not allowing further feedback loop of inquiry to be generated Tagg (2010).

Following focus group discussions several themes emerged which led participants to develop a conceptual model (see Fig.14) that represents an ideal world or 'way out'. The CM represents the stakeholder's desire for a more open, deeper level inquiry and reflection process and, at the same time, depicts a complex organizational reality where barriers are suppressing the development of a healthy discourse (Nolan and Crowe, 2010).

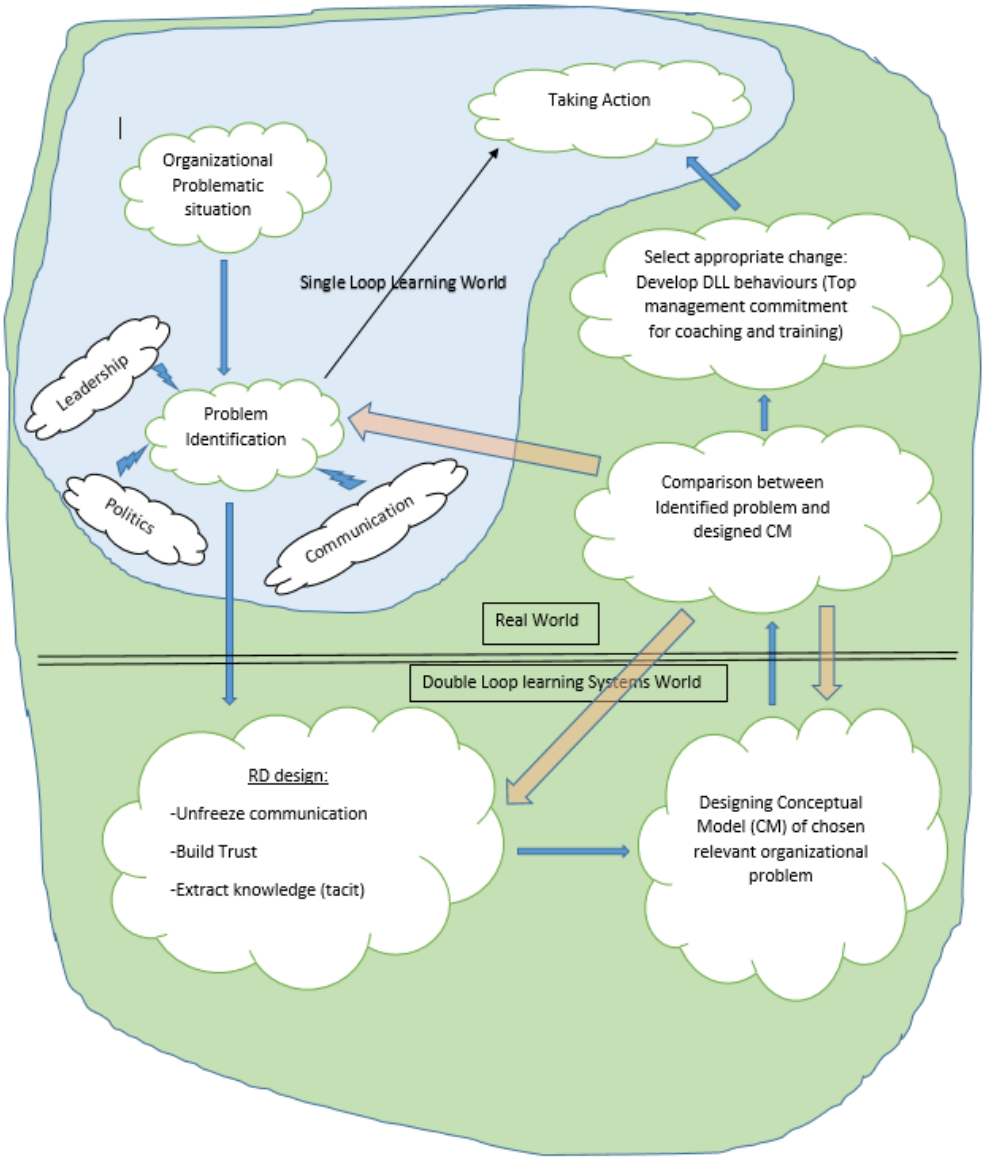
Fig.14 depicts the relationship between different organizational systems. Those which operate within an SLL environment are shown in light blue. Participants emphasized how existing the current organizational SLL reality remains hidden within the wider organizational structures. Operating as a sub-system, SLL is suppressed by organizational barriers applied in the form

of GM leadership styles, multiple political factors, and restricted forms of communication reinforced by organizational behaviors. The participants expressed on more than a few occasions that those three organizational barriers dictate the existing SLL level of our OL, and which only can be improved by top management's commitment to unfreeze existing organizational behaviors. The CM of an 'ideal organizational situation' would be achieved by penetrating the SLL 'bubble', through a wider understanding of systems thinking models. In behavioral terms it would involve top management supporting the free flow of communication, based on improved interpersonal and organizational trust, the outcome being that higher levels of knowledge sharing at an individual (tacit), team, and organizational levels by deeper DLL inquiry. This conceptual model, therefore, is designed to assist top managers to visualize how existing external structures of our company can improve our operability and knowledge development within the organization in an ideal world environment.

This process is depicted in figure 14 and consists of seven critical steps:

1. Recognizing Organizational Problematic situation
2. Problem identification
3. Designing dedicated RP and RD
4. Designing dedicated CM that is incorporating relevant organizational problems
5. Comparison between the identified problem and designed CM
6. Selecting appropriate changes
7. Taking action

Figure 15. SLL and DLL organizational systems



In this section, I outline the action processes with my AR approach.

1. *Recognizing Organizational Problematic situation* - is the initial critical step that offers the organization a problematic situation that requires actioning Taking into consideration the human capacity to recognize or identify organizational situations as potentially problematic, this stage prevents such problems from remaining hidden. The threat of not recognizing a problematic situation lies, a) by people simply not able or interested to look beyond the present and b) due to human blind spots: where danger signals are overlooked because the problem appears may too difficult to challenge, or where the solving of a problem may present threats to the individuals concerned e.g. being made redundant where over-manning is recognized. The sources of organizational danger are invisible, and causal reasoning is an abstract,

analytical exercise, where the ability to recognize problems rest with the cultural ideal of the 'causal l chain' and in recognizing organizational factors as the significant underlying cause (Nævestad, 2008).

2. *Problem Identification* - is a step that challenges an individual or group's perspective about what they meant by the problem, what characterizes it, and from whose perspective. This activity required the group to generate different viewpoints about the problem. The group recognized this point as the most crucial for directing organizational processes away from SLL towards DLL. As mentioned earlier, the whole group agreed that the existing process reifying SLL due to the barriers that exist within the organizational reality (coercive leadership, top-down communication, and politics). In an attempt to compare the group's worldview of barriers to DLL to the existing literature, I introduced them to the concept of 'cultural dominance' (Nævestad, 2008; p.158). The example of 'cultural dominance' occurs in many organizations as a unified approach towards incident root causes and often ends with the judgment being 'human error'. Presently in KCADeutag Azerbaijan, 'human error' is the default judgment for the causes of most incidents that occur. This tendency represents a cultural norm, which acts to strengthen a strong, unified, – albeit, only superficial, organization-wide safety culture which the public demands of an oil company. However, as *Nævestad*, (2008; p.159) argues: *"The predominance of the 'Human error' frame of reference seems to involve certain cultural blindness. The fixation on human error as a decisive source of hazard on the platform may allocate attention away from other, significant hazards (e.g. organizational or cultural), as these may be considered less legitimate (and perhaps non-existent)."* Because of this illegitimate fixation on 'human error', this step (2) is the most crucial for deciding whether the organization enters the DLL process or stays on the path of SLL. Participants recognized the critical nature of this step, deciding that leadership styles. politics and ensuing communication problems had to be tackled as a matter of urgency. It is at this point where a behavioral commitment towards a 'way out' needs to forged to stimulate a shift in OL from SLL to DLL.

3. *Designing dedicated RP and RD* - working on the assumption of a behavioral commitment by top management towards breaking the SLL process, this is the initial step towards the development of a DLL approach, which will support the building of trust, unfreezing communication, and extracting knowledge from the individual (tacit), group, or organizational levels. This step enables participants (and ultimately top management) to visualize how structures external to our company interact with and affect our operability and knowledge development (albeit within a notional 'ideal world' environment). All steps until this point can be facilitated and improved by utilizing RP's and developing dedicated RD's, where RP's are considered as conceptual understanding of a problem situation, or a literal diagram

(Lewis, 1992). The use of the professional drawing person was very well accepted by the participants.

4. *Designing dedicated CM that is incorporating relevant organizational problems* - Step (4) - exploring CM, led to the point where the team designed a dedicated CM relevant to the problem identified. This step involved an open discussion about the feasibility and desirability of the available solutions identified. At this stage, the group needed guidance by their experienced inside company practitioner, or outside expert facilitator, to be capable of developing an open discourse This step (4) is crucial in expanding participants' awareness about different organizational processes that are affecting the chosen organizational problem. The participants' ways of thinking play a major role in understanding what is affecting organizational reality and to understand cognitive mapping techniques (Siau & Tan, 2005). In this research, the participants had different and varied views and understanding of how deep and were within the organizational structure, the responsibility for the problems lay (see Fig.13). It is evident from the research that two participants considered the major cause to lie with individuals, or themselves: two participants had 180 degrees different views, putting the major responsibility on 'Inter-organizational responsibility (KCAD Worldwide)'. I realize that during this step, that I lacked sufficient experience as a facilitator, of FG discussions and CM development, which may unintentionally have affected the quality of their development (Siau & Tan, 2005)?

5. *A comparison between the identified problem and designed CM* - Step (5), entails confirming whether or not the CM system is aligned with the group's consensus worldview, before deciding on which actions can bring the desired outcome or changes to the system. This step is the second most important in the whole process of 7 steps, where corrections and adjustments are made to of steps (2), (3) and (4), should the group discussions indicate it is necessary to amend some pre-agreed problems, definitions, actors, processes, or owners. This step enables DLL to function within the group, by instigating feedback loops when and where they arise, thus maintaining the flexible, organic nature of the system in question.

6. *Selecting appropriate changes* - In step (6), the group defined the change that will generate desired DLL behaviors. To enact this process, participants need to have appropriate levels of pre-knowledge commensurate with organizational change. In reality, my organization tends to use and focus on conceptual and procedural knowledge, solely defined by the strict set of rules and regulations stipulated within the WG's. This particular way of learning from any identified organizational problem consists of, as explained earlier, a set of 'repetitive actions' accorded by the rule book. By acting in this manner, the learning process does not

allow other forms of knowledge (i.e. dispositional or locative knowledge) to be recognized and review like, which can 'push' learning to the next, DLL level (Lukic, et al; 2010). The assumption behind discussions at this stage is that the solution lies in the engagement of participants in the surfacing and discussion of unproductive behaviors, that can generate group/individual reflection and thus learn from their group effort to change (Beer and Eisenstat, 2000). That was what this group achieved when they recognized a need for top managers to commit to a change and accept a need for additional training and coaching, and to be introduced to systems thinking.

7. *Taking action* – this step closes a complete loop of DLL within the action research, by implementing chosen actions in step (6). To put those actions into motion, I presented this research outcome to the President of KCADeutag and asked for his commitment towards the chosen action steps. In my case, the President did not consider those steps to be necessary, because senior management plans to replace GM in question and to replace him with someone with a different leadership style. The planned replacement of the existing GM in November 2020.

The final analysis of the developed DLL steps is showing that step number (7) is the first one that needs to be successfully actioned to induce a shift towards the desired organizational change and a shift towards DLL. of leadership style applied what will further generate a change of organizational practice of SLL towards DLL. This shift will be reflected in step number (2) which will then eliminate or reduce the influence of detected barriers of leadership, politics, and communication and allow OL to enter the space of DLL. As described earlier, steps 3-5 urge the development of participant's exposure and experience of using RP's and FG's, and developing RD's and CM's. That session should also equip participants to apply DLL by allowing a feedback loop back to step 2, or 3, or 4. This practical experience to develop this as an automatic skill can be gained through organizational commitment to include RP and FG sessions, as a part of the investigation process for our organization.

Chapter 06 Conclusion

This concluding chapter is covering three main areas: (I) summary of key findings, (II) the accomplishment of research objectives by (1) to explore existing barriers to double-loop learning in KCA Deutag Azerbaijan, (2) to increase management's awareness of detected barriers, (3) to evaluate Soft Systems Methodology for practical use within a live situation, and (III) my contribution to the scholarship from a scholar-practitioner standpoint of view.

(I) ***The summary of Key findings*** identified the existing organizational process of SLL and barriers to a deeper level of inquiry for DLL:
Existing organizational SLL process – the process is depicted within the light blue cloud in the conceptual model (see Fig.14). The research data highlights how 'Problem Identification' is critical in the research process, as it represents a crossroads between the SLL and DLL pathways. The research data further shows how three factors are keeping the organization on the SLL pathway as follows: (1) the top management's leadership style of 'Do what I say' (Goleman, 2017); (2) Inter-organizational political motives (KCA Deutag Azerbaijan, Azerbaijan government, and BP); and (3) 'top-down' communication in KCA Deutag Azerbaijan. As a result, shortcuts are being taken which avoid in-depth reflection of problems, but instead rush towards 'taking action', thus missing the opportunities for DLL - to build trust, unfreeze communication, and extract tacit knowledge (see Fig.14).

Leadership is the main barrier to the DLL process – "Many managers mistakenly assume that leadership style is a function of personality rather than strategic choice. Instead of choosing the one style that suits their temperament, they should ask which style best addresses the demands of a particular situation" (Goleman, 2017, p. 3). By taking (Goleman's, 2017) ideas and comparing them with the research data, participants detected a link, leading them to deduce that the existing organizational leadership style, whilst suiting his temperament, inhibits the organization's flexibility to generate and capture knowledge, and dampens employees' motivation. The data collected data from the research enabled the participants to identify this as a major barrier to effective OL within KCAD, affecting communication at all organizational levels as 'Manager#1'. opined, "yeah that was fear; there were three players who backed each other up, one was the 'mastermind' GM and we have two henchmen."

Political barriers stemmed from three different sources - Internal organization, client, and government). When trying to understand politics inside the organization, it is important to understand that "information is one of the key organizational resources and thus one of the core bases of power in organizations" (Seo, 2003, p.11), which, by generating different organizational routines that distort information, are forming different defensive political

processes. My research data indicate one internal and two external political influences that are active in our organization. Internal political forces have created a defensive culture within the organization - a phenomenon which was recognized during the group discourse where the GM blames and uses 'KCAD head office' as 'a a stick' when there is resistance against any change. Using the power of head office, client, or his own position, the GM developed a strong and dominant political position, allowing him to apply top-down leadership and communication style and thus blocking DLL. It is noticeable that the client's Vice President exerts a similar leadership style, appearing to be at the mercy of his environment, which involves the Azerbaijan government's policy of accelerating the nationalizing process.

The communication barrier identified in the organization results from several factors at play in the organization, Authoritarian leadership styles being one of them. Communication works cyclically as one element in a chain of possible causes and effects. Recruitment practices, whereby certain personality 'types' are favoured over others, shift over time and relative to an organization's environment: a placid environment may favour democratic leaders, whereas Authoritarian, action-oriented styles may seem necessary in a rapidly-changing world. The Oil Industry operates in a state of relative environmental turmoil - relative, that is, to its long and stable past when demand for the product was continuously rising. During those times, oil companies could control their environments by dint of their market powers. This changed considerably when environmental lobby groups forced successful legal challenges for negligence against oil companies (including high ranking managers) after a series of major oil spills. A direct effect was to increase the Industry's awareness of, and attention to, its safety procedures - or WG's.

KCA Deutag's Working Guidelines attempt to cover all accidents and possible events occurring over the course of a day, working on-site. Written and monitored by its client, BP, KCA Deutag applies strict measures on employees transgressing any part of its WG's whether accidentally or not (see Ch 1 for examples). This policy induces stress upon middle-managers, who are expected to know, or be able to locate, the exact rule and procedure to cover every eventuality. Workers too, fear for their jobs in case something occurs for which they can be held responsible. Thus, the working culture has become rules-based at the expense of two-way communications, ideas generation, and OL. It was the WG that became recognized as the main communication tool within the organization. The research shows that in many instances, our top management took for granted that well-conceived changes, learning, or organizational knowledge - wrapped up into the WG, equals successful implementation.

I end this section with a quote from Beer and Eisenstat (2000) about how one-way communication as described above, affects an organization's ability to detect what is wrong, and to learn: "In fact, the core barrier, called 'poor vertical communication,' not only hinders strategy implementation, it also prevents discussion of the barriers themselves" (p.31), - where term 'poor vertical communication' is understood to mean when employees recognize a problem, but they fear the senior managers are not open to candid discussion.

This research examined the specific topic of OL within the KCAD with a focus on barriers that are restricting OL at the level of SLL. However, discussion rapidly expanded from the basic acknowledgment of the barriers to their inter-connectivity, and wider influence on knowledge acquisition and sharing within the organization to sustain the business within the Azerbaijan business unit. Both the nationalization process and WG's represented linear organizational processes that allowed for the continued implementation of embedded organizational policies and procedures, which failed to consider multiple sources of new ideas generated in the light of new findings to the old problems.

Whilst KCAD senior managers officially promoted an 'outside of the box' way of thinking, in reality, they supported 'fast fixes'; largely technical, low-cost rational solutions, and on blaming 'human error' that thus excluded the possibility for system error. In effect, they supported the process of SLL. This led to important opportunities to use human or social aspects of working within the organization being missed. Furthermore, the development of individual identity, values, and cultural perspective for building new ways of dealing with the identified organizational problems, were neglected. The result was to establish a strong 'fear' factor, further excluding the possibility for deeper level inquiry and reflection through DLL. The participants agreed that this approach towards incident investigations generated cultural blindness' towards deeper level behavioral and cultural root causes (Nævestad, 2008).

In developing a shared cognition about the inherent interrelation between leadership style, the influence of political factors, and extant processes, participants became aware of the restrictions which affected leadership style. To penetrate and alter this cyclical interrelationship - explained in Chapter 5, the group chose leadership style as being the factor that could be most easily changed. Furthermore, changes to the leadership style within KCAD had the potential to improve the everyday work experience at the individual, team, and organizational levels by reducing top-down communication, and to offer more advanced ways for solving problems that those outlined in the previous paragraph. Knowing that the key to better organizational performance is better communication, it became inevitable for the

organization to demand further effort from top managers and subordinates alike, "those who ask and those who answer" (Argyris, 1994, p.85).

Additionally, this thesis assists in utilizing Mode 2 SSM as a rigorous and reflexive approach to analyzing complex organizational issues by enhancing the new way of learning for KCAD and allowing participants to generate actionable knowledge towards the identified organizational issue. The utilization of data collection tools of RP, FG, and conceptual modeling allowed participants to firstly explore the problems affecting the organization's everyday life, based on the presumption that something or someone is restricting access to a better way of learning. During my initial introductory session, the participants were introduced (for the first time) to RP's, FG's, and conceptual modeling. These methods were presented a stark contrast with the methods of data collection used in KCAD, and with which they were familiar. Conceptual modeling was the biggest unknown, creating an almost tangible level of stress within the group. RP's, on the other hand, were considered as a relatively simple way for transferring inner thoughts onto the paper, although the process was undoubtedly helped by me introducing the professional drawing person, who was assisted participants to transfer their ideas and emotions to the drawings, using different colours and sizes of the objects on the RP. I thus recommend, to others thinking of using RP's, that they employ the services of a professional drawing person, to alleviate stress amongst participants who are unfamiliar with this tool, and who may worry because they are 'no good at drawing', or who may be embarrassed about sharing their deeper thoughts and emotions.

Following the development of individual participant's RP's, the group chose the two they considered most accurately depicted the organization, and out of which were developed two root definitions.

The final RD was conducted using the 'CATWOE' mnemonic to detect and confirm relevant stakeholders (customers, actors, and owners), transformation process, and Weltanschauung. For reasons laid out above, the participants decided to concentrate upon internal factors rather than the environmental constraints contained in the RP. In part, their lack of experience in using Catwoe analyses contributed to this limiting factor, but they also considered that too many assumptions were being made about how suggested changes in the client organizations would affect KCADeutag. As a basis for their discussion and search for different organizational and individual behaviors, the participants framed their analysis as follows:

"A system where top leaders' authoritarian style of leadership, and fast decision making, considered necessary to meet contractual obligations for nationalization, but which stifles communication and restricts knowledge for drilling the wells for BP"

The final step of the FG session was to generate CM and actionable objectives. In terms of this thesis's outcomes, these objectives are framed as 'Actionable Knowledge' is represented by top management commitment towards behavioral change that can potentially allow DLL implementation and is described in two action levels that represent the 'way out' (see 4.4.1).

The group remained concerned about how this outcome could be successfully applied when those being asked to change risked losing their power - a concern also shared by Seo (2013) "How can people commit themselves to double-loop action-learning practices, when these practices will undermine their very political power in organizations?" (p.12). Despite the group's concern about the viability of chosen actions, they continued to discuss what that commitment might generate within the organization. The discussion ended on a positive note, as participants acknowledged that the change in leadership style that had already begun in the client organization would likely induce pressure to change in KCADeutag.

(II) The accomplishment of research objectives:

1. To explore existing barriers to double-loop learning in KCA Deutag Azerbaijan.

(i) The analysis of data collected utilizing SSM show that Leadership style is the main barrier to DLL and OL within the organization. This barrier is framed within the instrumental, means-end reflection, generating 'fast fixes' to problems, both people (human error) and equipment as apparent low-cost solutions rather than addressing the deeper issues at hand, by reflecting on the norms, values, and social relationships within the organization.

(ii) The research findings of 'politics-as-a-barrier' are confirmed to exist and are depicted by the participants to consist of three different but interdependent directions of politics:

a) Internal organizational where rigid financial expectations are set that pressurize the Azerbaijanian GM to apply a directive/top-down leadership style to fulfill this expectation or organizational targets.

b) External Client - The power exerted by the client's Vice President (VP) was directly influenced the KCAD GM, who was not capable of either absorbing or deflecting it way from KCAD's internal processes. Instead, he cascaded, and in some cases, even amplified, the same harmful ways of communicating and information sharing to his workforce.

c) The Azerbaijanian government's Econo-political agenda to nationalize the workforce within a short time-span, became a burden on KCAD's top management as they risked losing their most experienced staff to be replaced by lower-cost but inexperienced nationals.

Participants recognized the inevitability of external pressure from the business environment, which had to be managed strategically, rather than in a 'knee-jerk' fashion.

(iii) Communication operates in the form of top-down enforcement rather than through consultation with the experienced middle managers. Furthermore, communication is led by a rules-based (WG's) culture in which all incidents are considered black or white, leaving the workforce with no room for negotiation or manoeuvre.

2. To increase middle management's awareness of detected barriers to DLL.

The participants' awareness about the barriers to change, and how our organization is learning was enhanced because participants acknowledged changes in their worldviews about all three barriers and their correlation with the way how KCAD is learning. The group acknowledged that the GM was under political pressure from all three political forces and that it was just his fear and personal experience that allowed him to choose the style of leadership which supports SLL.

3. To evaluate Soft Systems Methodology for practical use within a live situation.

This objective was achieved when participants acknowledged the usefulness of SSM tools for collecting the data and acquiring new organizational knowledge. After the RP and FG sessions, participants recognized that the knowledge they gained by participating in the research opened up new opportunities to examine organizational problems in different and deeper ways.

They voiced their appreciation for this 'new' method for analyzing difficult organizational problems, which enabled them to discover hitherto unrecognized cause-and-effect relationships between contributing factors. They also acknowledged that RP as a visualization tool represents a new way ahead in shaping OL and to enable different levels of the organization to present and understand the particular chosen issue. They went so far as to embrace RP as a standard tool for exploring any company problems. It is important to note, that such investigations relate not only to incidents but also to performance and human behavioral issues across the company and its environment.

The participants regarded FGs as an advanced form of 'brainstorming' where CM exposes different and new ways of expressing explicit and particular tacit knowledge. They realized the importance of providing equal opportunities for each participant to express his opinions and

contribute to the group's discourse. The participants admitted that building group discourse is the way to secure a double loop approach to organizational and individual learning. This mirrors the point that Crossan (1999) made, depicted free expression as the bridge towards individual and group learning, as part of a bigger organizational frame of learning.
Finally, managers reiterated the need to continue applying the knowledge gained knowledge from this research by incorporating RP into the organizational procedure and to continue practicing FG deep-level discussions amongst managers that will support double-loop learning.

Participants' knowledge in applying DLL is certainly actionable in the future, although it will require practice. As a visual aid, a conceptual model (Fig.14) was developed to show them how inter-related organizational systems remain hidden when SLL is used. This CM of an ideal organizational situation extends the narrowly focussed SLL 'reality' towards a systems-thinking model, where the commitment of top management supports a free flow of communication, based on improved interpersonal and organizational trust which will support greater sharing of tacit knowledge among individuals, teams, and other organizational levels.

The participants emphasized existing organizational SLL reality within the ideal designed organizational systems that lie hidden within the organizational structures. The participants expressed on more than a few occasions that the three organizational barriers act to maintain the existing SLL level of our OL, which can be improved by top management commitment to unfreeze existing organizational behaviors. The CM of the ideal organizational situation is expanding the SLL reality world towards more systems thinking models where the commitment of top management is supporting the free flow of communication, based on improved interpersonal and organizational trust, what for the outcome will support a higher level of knowledge extraction on the individual, team and organizational levels by deeper DLL inquiry. This conceptual model provides a visual image to top managers of how externalities affect our organizational operability and knowledge development. The seven steps within the model are described in full in Chapter 5.

As an 'insider-researcher', my actionable knowledge is found in the process of applying SSM to an organizational situation. Furthermore, it became apparent that the seven steps require a facilitator with considerable experience and 'fluency' in the use of the tools.
This can be achieved by accepting a commitment to training managers for facilitating and using research tools.

(III) My contribution to the scholarship from a scholar-practitioner standpoint of view:

In terms of my contribution to scholarship, the processes involved when using SSM required deep self-reflection. Taking in consideration that application of SSM within the AR framework is a more of novelty within the scholarship practice and pioneering approach to my research, it became a challenge for me to use this particular methodology for my research and try to achieve double loop learning. For me to facilitate DLL among participants, I had to engage with it myself - although I was not always aware of it at the time! I was not expecting to encounter feedback loops, which would take me back to fundamental issues like my research objectives, which I thought were firmly established. Making subtle changes to the research question at a late stage of the thesis was an unsettling experience that proved the point I was trying to make to the participants: "before you reach the right solutions, you have to ensure that you are asking the right questions". This realization was quite an 'eye-opener' for me, but it made me comprehend the value of using SSM for DLL, as without it I might easily have slipped into the linear-thinking habit so typical of SLL.

"Often, the focus is on immediate causes and consequent solutions that address the symptoms rather than the causes of incidents or deeper assumptions and behaviors in the organizational culture. This is also evident in the education of safety engineers, which focuses on human and technical factors rather than organizational culture or systemic dysfunctions." (Lukic, et al; 2010; p.437).

Barriers and Limitations

A barrier to my research became apparent when managers reported that they were not available for planned sessions. This should not have come as a surprise given their busy schedules and heavy workloads., but it did mean that my research had to continue with fewer participants than I had wanted. This barrier can be overcome with better long-term planning, and securing management's approval to run sessions during the weekends.

Fortunately, I genuinely feel that the small number of participants who partook in all the sessions did not affect the quality of my data or findings. This may not always be the case for aspiring SSM researchers, for I was fortunate in dealing with well-educated and experienced practitioners, each of whom having a large stake in the problem at hand. Others may not enjoy that luxury if their participants are less willing or able to engage in this form of research.

In terms of 'rolling-out', the findings of this research, a further barrier would arise if the top management will not accept the commitment needed to affect change in the organization. Once again, the thought comes toot mind: "How can people commit themselves to double-

loop action-learning practices, when these practices will undermine their very political power in organizations?" (Seo, 2003, p.12). Neither Head Office nor senior management was included in the research as it was not possible given time limitations or my position in the company to do so. It is often difficult for a research-practitioner to include the most senior managers in their plans. To do so would have meant them directly challenging their own personal self-perception and positions - a process known as 'triple-loop learning' (Argyris 1999), which carries its own dangers.

The following limitations to this research provide the opportunity for future research.

1 Single business unit – the research took into consideration just one area of the organization, where the other fifteen areas of KCA Deutag worldwide were still to be explored. This limitation is restricting the application of findings to the other areas of the company with different organizational situations.
2 Primary reliance on participant's view of the organizational reality - the lower number of participants were included within the research due to the organizational restrictions in overbooking managers with operational needs. The research is relying mainly on the participant's worldviews and their capability to reflect on knowledge and information are acquired.
3. The time limitation - time limitation did not allow me fully evaluate the outcome of those applied actions (in my case change of GM that will happen in November 2020), which at the end was not part of this study due to already mention time constraints.

Those recognized limitations allow me or somebody else to expand this study to the areas that were not part of this research and compare both findings to improve organizational learning within the KCA Deutag worldwide.

Further Research

One of the areas for further research would be to conduct an 'impact analysis to measure managers' awareness about barriers to change and SLL. Further impact analysis can be carried out to measure the impact levels of politics and leadership in the client's organization upon KCAD.

A further area for research can be to utilize mixed research methods allowing the collection of quantitative data from a larger group of participants including the GM and senior management of the company and comparing those findings with this study.

The third area for the research is the profile of an ideal KCA Deutag leader where research will need to define a profile of the individual who will more likely to succeed in a leading organization with new client expectations and generated changes.

The fourth area is to expand study outside of the Azerbaijan business unit to the other organizational areas on both the On & Offshore part of the company.

Chapter 07 Reflections

Throughout the research I learned a lot about how choices of different leadership styles in conjunction with different politics affect organizational and individual communication and OL, and where is my and participants position within the organizational reality.

7.1 My learning about the journey as scholar-practitioner

I commenced my research with the basic assumption that I knew a great deal about my organization: its leadership, organizational politics and communication. I also knew that this knowledge was just a fraction of that yet to be gained. This awareness enabled me to challenge any false sense of self-esteem, encouraging me to accept the challenge of becoming a scholar-practitioner. The initial feeling of being a leading practitioner within the organization, who will develop an organizational sense of a need for a change, made me proud and strong. At this initial point, my knowledge was low, and my willingness to learn and progress high. As time passed and I began to think about the formulation of the organizational issues or research question, and exploring literature about the chosen issue, that particular process induced a change of forces on my balance. Part-way through the research, although my knowledge of theory grew, my self-confidence and willingness to proceed declined as I realized the enormity of information in the field to be explored. I overcame this hurdle by keeping in constant contact with my research supervisor, who advised me to take one step at a time.

As a practitioner, I was is easily distracted from the research task by constantly needing to fulfil my daily role as a KCADeutag Azerbaijan employee. These distractions threw me off balance and affected my research timetable many times. The biggest distraction happened when I was promoted to the Operations Manager position, which I had to become accustomed to. Despite all this, I managed to carry on with my research by developing my research methodology and preparing myself for the practical part of data collection.

The RP's and FG sessions were where I collected my raw data and where I realized that I was totally dependent upon my participants' engagement and goodwill. I am thankful that participants gave me and my research full support by participating in open and honest questioning, discussions, and reflections, which generated a large volume of data for my further analysis. Throughout the RP and FG sessions, I managed to generate feelings of trust with my participants and them between each other. This trust resulted in a deeper level of inquiry and knowledge sharing, especially tacit knowledge. Sometimes, discussions became funny and joyful; and sometimes full of emotions that exposed frustration reflected in the use

of jargon language with much badmouthing. It was fulfilling to discover that, despite these emotions, participants could distinguish between objective organizational matters, and what they themselves could contribute to the improvement of OL. As my father likes to say, 'good planning is half job done'. I experienced the same effect by preparing my plan and collecting data, which went well, giving me a feeling of satisfaction. Now the final stage for me was to analyze collected data and interpret findings. At this stage, I was depending solely on myself and my pace of working. Towards the end of the five years of my DBA journey, 'my legs became heavy', and my willingness dropped to the lowest levels ever. Combining this with increasing job demand due to starting up the process of tendering for our new five-year service contract for BP, the speed of writing my research came almost to a standstill. Thankfully, we won a new five-year contract and I was back on track to finishing my research.

7.2 My learning about the KCADeutag Azerbaijan

Few major changes had affected the Oil Industry for the last few decades. The focus was mainly on short-term financial gains, jeopardizing long-term sustainability. This focus was mirrored in the literature on organizational strategies, where a dominant theme was the ‘maximization of shareholders value’, supported by all three pillars of the ‘triple bottom line’ or ‘sustainability’ approaches (Norman and MacDonald, 2004). But by the end of the last millennium, thoughts about the next major 'step-change' were set in the mind of shareholders and ignited by the process of sustainability supporting the human part of the triple bottom line. My organization is no different from others, with their focus on two pillars of Business (finance) and the Environment, leaving the Social or Human pillars are often neglected.

I learned that one reason why business organizations neglect the Social or Human pillars is that people make judgments about the world based upon their individual rationality. These individualized notions of what is 'rational' result in widely differing reactions and conflict. As such, this is a difficult area that is often neglected. More recently, however, organizations are awakening to the enormous potential benefits available to those willing and brave enough to meet the challenges.

I also learned more about the impact of the client's actions on our company. In the section discussing political barriers, it became clear that the KCADeutag Azerbaijan GM did not have a huge area for manoeuvering and that he made a wrong choice in his leadership style. Although it became clear that people within the organization are still looking towards a financially driven leader, making decisions based on metrics or measurable economic outcomes, it is the leader's responsibility to adapt their style to meet multiple goals. Therefore, an increased leadership emphasis upon human/social considerations, should not mean a reduction in financial oversight.

I consider that, for future research, using quantitative methods - within a mixed-methods approach - would generate data that is more acceptable to the whole organization. I base this consideration on the historical reliance that Oil Companies have had on measurable data, which they have come to trust, although questions remain about the usefulness of statistical measurements in this topic area. The research approach adopted in one isolated country (Azerbaijan) may fail to generate deeper levels of inquiry and reflection i.e. DLL throughout KCADeutag worldwide. This can be changed by expanding my research to other parts of KCADeutag worldwide. My hope is that, should this research prove effective in guiding the change process, the organization's worldview regarding qualitative vs quantitive methods will also change.

7.3 Learning about myself

Throughout this entire research, my interactions with participants gave me, other than a new understanding of the research techniques and data gathered, a change of awareness about myself and my position within the organization. Research participants were most enthusiastic when using the research methods and the new insights they had gained from the process. As a result, I learned that I have much more capability to influence other people around me than I was aware of, making the possibility to continue using those methods more widely in the organization.

By reflecting on my style of leadership and communication, I realized that by doing my research and feeding new knowledge to the organization, I must now elevate those learnings to the senior management of the company and generate the opportunity to sustain the positive impact of this research on other participants including senior management.

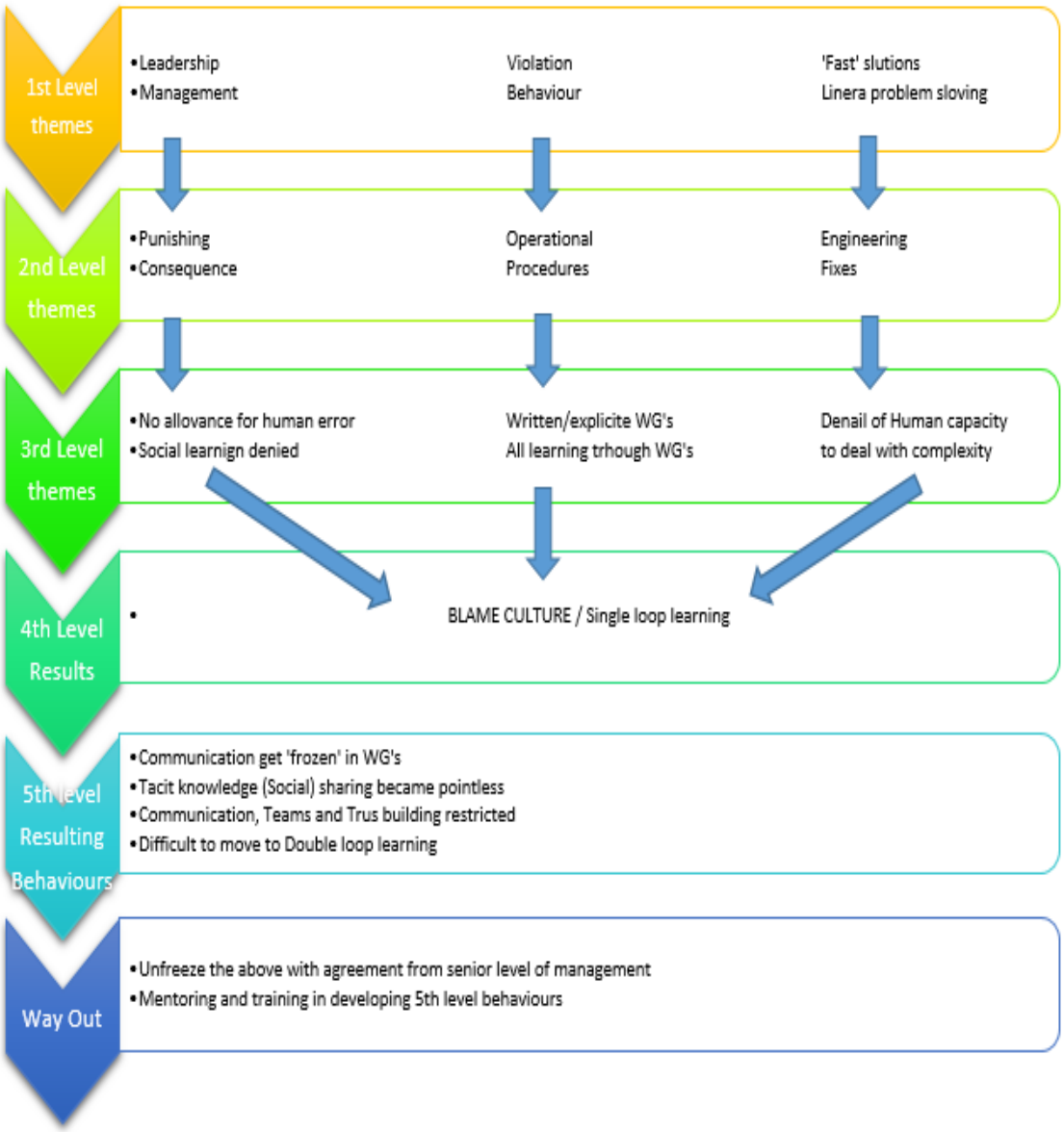
7.4 Learning about my Research

From the many factors affecting organizational learning and the pursuit of DLL, several were chosen that fall within the scope of this thesis and my capacity to influence change. Thus, my literature focused upon the OL processes engaging individual, group and organization influences (e.g. Cangelosi and Dill, 1965; Crossan, 1999), the role of leadership (Bass, 1985; Hater & Bass, 1998; Beer & Eisenstat, 2000; Goleman, 2013; Raj & Srivastava, 2016), Communication (Kransdorff, 1998; Y, 2009) Politics (Lawrence et. al.; 2005) and barriers to communication (Crossan, 1991).

But as explained earlier in the thesis, other topics were discarded either because they were considered too 'large' to be included e.g. organizational culture or because I felt they fell beyond my limitations to affect change. Other themes were considered, such as human agency and independence within the workplace (Caldwell, 2012), specific forms of organization encompassing bureaucracy, democracy, autocracy, or technocracy (Schilling and Kluge, 2009), and the notion of 'psychic traps' (Morgan, 2006). Each of these, however, were considered too complex or peripheral to this research and were dropped.

These topics all fall within the scope of an organizational system and thus, of having the capacity to affect DLL which is examined in the literature primarily as an advanced and improved form of learning compared to SLL, but moreover as a concept, that encompasses complex changes to patterns of working, communicating and leading in organizations, with each of these operating as interactive sub-systems. It was important for me to recognize that these topics should not be presented or described as discrete topics, but as dynamic entities with a system, in this case, KCADeutag Azerbaijan, as I repeat below, from Chapter 2:

Oil Company with Engineering / Technical Mind-set



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Appendices

Appendix A

UNIVERSITY OF LIVERPOOL

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Dear FIN PATERSON

You are being invited to participate in a research study I am undertaking within KCA Deutag as part of my dissertation area of focus for the University of Liverpool, Doctorate Business Administration (DBA). Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask me if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends, relatives, and others if you wish. I would like to stress that you do not have to accept this invitation and should only agree to take part if you want to. Thank you for reading this Information Sheet.

1. **Why am I undertaking the Research Study?**

For the last four years I have been pursuing a Doctorate of Business Administration degree at the University of Liverpool (UoL); a program designed for senior managers to improve their skills and knowledge while conducting significant research in their field. The Doctorate of Business Administration program is using the innovative approach of the Critical Action Learning (CAL) and Action Research (AR) learning methods to combine real work-based problems with academia thereby making it more relevant in finding practical solutions to difficult work-based challenges.
The final step of my DBA program is a dissertation part that is consists of a critical research project inside of my organization (KCA Deutag) that will generate actionable knowledge that can be used instantly for the benefit of the organization where the research was conducted (KCA Deutag). I am now at this final dissertation stage; hence the reason I am undertaking this research.
Tomislav Klenkar

2. **What is the purpose of the study?**

The aim of my research study is to apply Action research within the KCA Deutag Azerbaijan Business Unit and confirm the existence of Barriers to double-loop organizational learning. Barriers that will be in focus of the study are leadership, politics, and communication.
Along doing the research, the focus will be on an attempt to address real work-based problems or issues that will fit organizational effort to address change and transformation agenda on an organizational level.

UNIVERSITY OF LIVERPOOL

3. **Why have you been chosen to take part?**

This research will be based on a dynamic approach called 'Action Research (AR)'; in which I will cooperate with participants that will voluntarily participate in AR within KCA Deutag Azerbaijan business unit to capture used leadership practices story in the emerging inquiry process. You were chosen to participate in research based on your role and responsibilities as a key stakeholder in making the decision for your project, and as experienced manager on your current position within KCA Deutag Azerbaijan business unit what will give value-added to my research.

4. **Do you have to take part?**

Your participation in this research is purely voluntary and you are free to withdraw at any time you wish for. If you decide to do so, no additional explanation or justification will be required from your side and without any incurred disadvantage.

5. **Is there any compensation or expense for taking part?**

Your participation is purely voluntary and as an outcome, there will be no compensation or expenses for participating in this research.

6. **What will happen if you take part?**

There will be 2 stages to your participation as follows

1. If you decide voluntarily to participate in the research, you will be asked to participate in the initial inquiry (data collection) research part which will be focusing on gathering related information to identify the way how well existing knowledge is shared and applied among managers in the organization:

    a. Stage one is qualitative in nature and will take 2 hours of your time to participate in the introductory session.
    b. Stage two is qualitative in nature and will take 3 hours to participate in the workshop.
    c. Stage three is qualitative in nature and will take 2 hours to answer to the case study

    Furthermore, you will be asked to share your view on the possible existence of barriers to double-loop learning in form of applied leadership style, politics, and communication from your perspective in relation to your present role and responsibility using the existing way of communication.

2. You will be asked to participate in a different sessions where you will be observed as part of a larger group using different tools (Ritch Picture, Storytelling, and Conceptual Modeling), following with possibility to be asked to share copies of relevant documents that can support your way of thinking

which can give value added to the research outcomes and possible improvement of organisational learning. This possibility of sharing additional documents will depend solely about you and your willingness to share those documents with the researcher and whole group.

7. Is there any risk in taking part?

At this time, there are no perceived disadvantages or risks involved in your participation in this research. Further, if you should experience/feel any discomfort or potential disadvantage as part of this research; kindly bring this to my attention immediately. Finally, if you wish to discontinue your participation in the research due to mentioned discomfort or disadvantage, you can withdraw without any reason or explanation given for your withdrawal.

8. Are there any benefits in taking part?

This research is a part of a larger contribution to the existing action in practice, which is searching for supported collaboration by using individual, team and organizational inquiry. This practical part of the research is placed inside an organization to trigger dynamic processes that will allow all participants to learn a new and different way of doing day-to-day business. By choosing to be part of this study, you will be directly involved in applied action that will generate positive changes for KCA Deutag and yourself as part of that same organization. The final research report will be available for your overview.

9. What if I am unhappy or if there is a problem?

Initially, you can inform me about any issues or concerns that you are facing via my contact mobile number +994 502258371 or you can use my email address Tomislav.klenkar@kcadeutag.com and I will try to help you. Alternatively, you should contact Dr. Terry Nolan, the Research Supervisor at; terry.nolan@online.liverpool.ac.uk

If you remain concerned or have unresolved then you should elevate this issue to the higher level of the University of Liverpool (UL) and Committee on Research ethics. Following statements is supporting this opportunity, "If you are unhappy, or if there is a problem, please feel free to contact the University of Liverpool Committee on Research Ethics. If you remain unhappy or have a complaint which you feel you cannot come to us with then you should contact the University Of Liverpool Doctor Of Business Administration Research Governance Officer on 0151 794 8290 ethics@liv.ac.uk When contacting the Research Governance Officer, please provide details of the name of the study, the researcher(s) involved, and the details of the complaint you wish to make."

10. Will your participation be kept confidential?

Data types of collected from your participation in the research (Audio and written form) will be kept confidential and stored securely for my access solely. All electronic data will be password protected and kept on a password-protected laptop. All other types of evidence or data will be kept in a secured and locked cabinet which again

will be accessible only to me. Gathered data can be used for this research purposes only unless agreed differently with the participant. The time frame for keeping collected data alive will be closed when the dissertation will be completed and published. Upon publishing my dissertation, data will be disposed in accordance with the treatment of strict confidential content.

11. What will happen to the results of the study?

The results of the study will be used to write and submit my dissertation to the UoL in written form. Prior to issuing my dissertation to the UL, my draft dissertation will be available for review by all participants, including you. In the dissertation, participants will be no identifiable from the results unless they required so. Will the results be available to the company? (Please see my comments in Section B.5 of the Full Application Form)

12. What will happen if I want to stop taking part?

Participation is voluntary and you can withdraw at any time, without any explanation. Results up to the time of withdrawal can be used if you agree too. Otherwise, data can be destroyed on your request and further use can be made of them. Taking into account that study results will be anonymized, such withdrawal can be done only prior anonymization.

13. Who can I contact if I have further questions?

Please feel free to contact me if you have any further questions:

- The key researcher - Tomislav Klenkar
- Key researcher address - 14th Floor ISR Plaza, 69 Nizami Street Baku, Azerbaijan.
- Phone number: +994 50 225 8371.
  Research Supervisor: Dr. Terry Nolan
  Phone number +44 1905753417

Your participation in this research is not related to any condition or external factors that would expose you to the risk of incurring a medical condition, financial debt, or legal concerns.

UNIVERSITY OF LIVERPOOL

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of Research Project: Organizational Learning in KCA Deutag Azerbaijan: Barriers to Double Loop Learning

Researcher(s):

		Please Initial box
1.	I confirm that I have read and have understood the information sheet dated :24 May 2018) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	✓
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.	✓
3.	I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.	✓
4.	I agree to take part in the above study	✓

Fin Patterson	28/05/18	
Participant Name	Date	Signature
Tomislav Klenkar	28/5/18	
Name of Person taking consent	Date	Signature
Tomislav Klenkar	28/5/18	
Researcher	Date	Signature

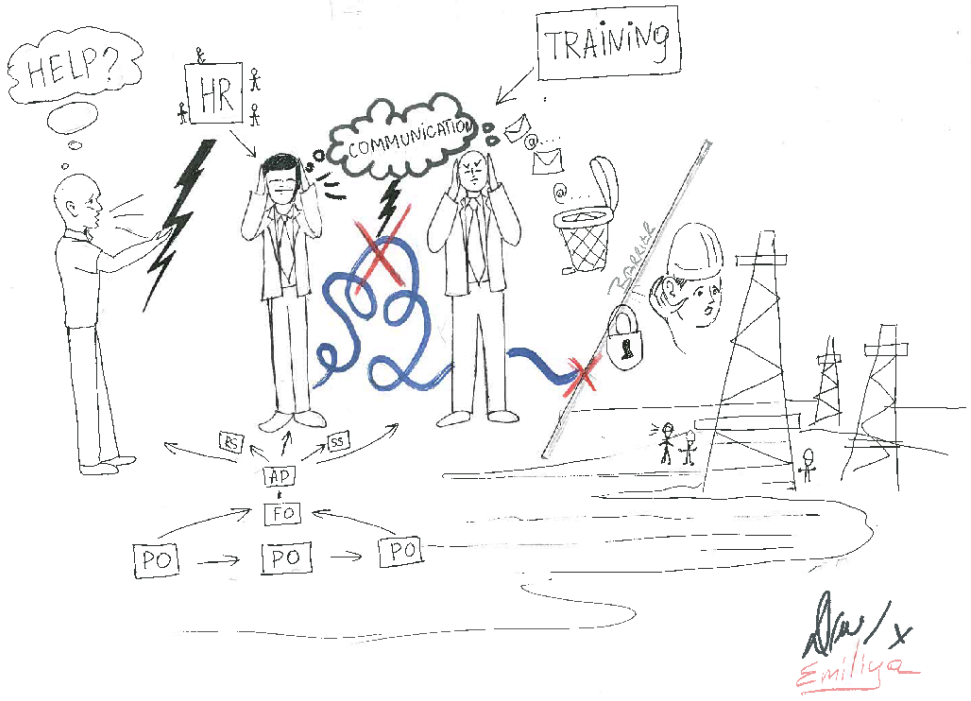
Principal Investigator:
Name
Work Address
Work Telephone
Work Email

Student Researcher:
Name Tomislav Klenkar
Work Address 14th fl. ISR Plaza, 69 Nizami, Baku
Work Telephone +994 50 2258071
Work Email Tomislav.Klenkar@kcaceutag.com

[24 May 2018]

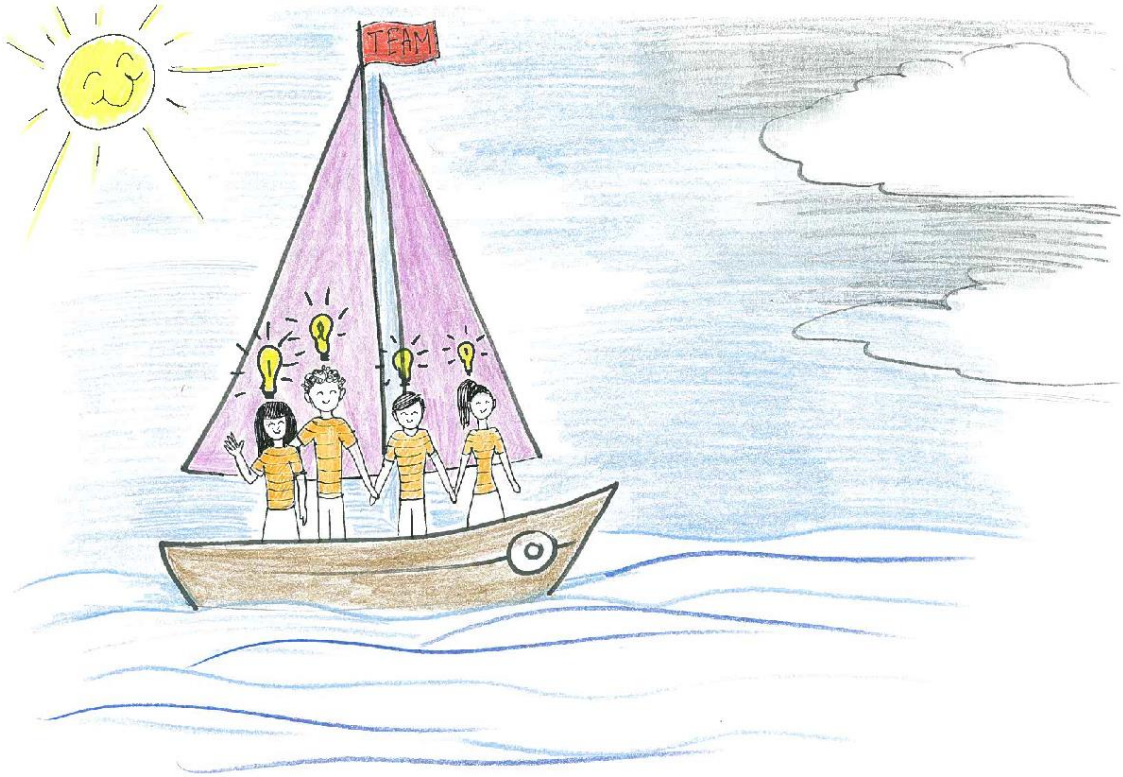
Appendix B

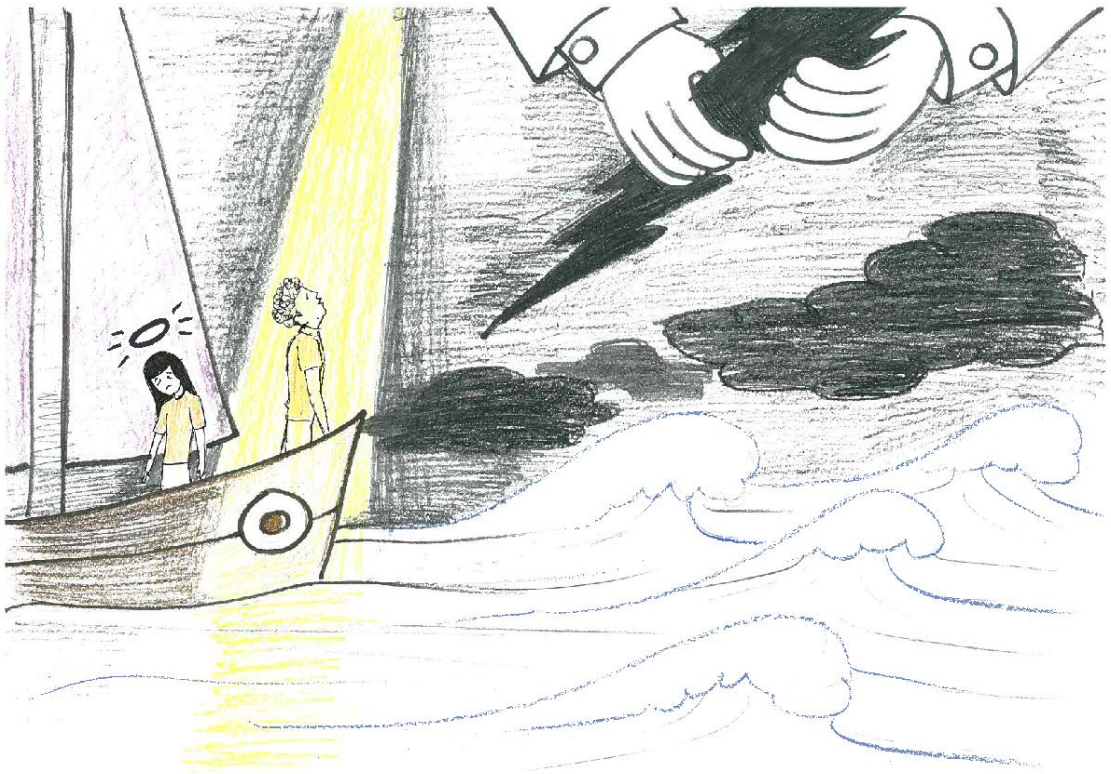
RP – ‘Communication’



Appendix C

RP –Silo Management





Appendix D

RP – Sustainable Growth

Appendix E

RP – Demoting Day-To-Day work