CONTRIBUTION OF SEAM TO THE INFORMATION AND TELECOMMUNICATION SECTOR

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PROBLEM STATEMENT

Information and Communication Technology (ICT) as a concept includes all systems and technologies that provide support to the information processing and communication among human beings, among people and among electronic devices (Hamelink, 1997). Having well-trained workers to handle the IT developments and operations is considered a necessity for the effective use of ICT (Mutula & Van Brakel, 2007). Actually, enhancing skills in information and computer technology may have a stronger effect in a company than pushing for more ICT investments (Mutula & Van Brakel, 2007).

The telecom operators are currently facing lots of challenges as the profits from SMS and voice calls are decreasing after the emerging of the internet communication tools such as WhatsApp, Twitter, and Facebook. According to the IBM global human capital survey, the telecom industry encountered higher employee turnover compared to the other industries. The telecom industries have to improve the business processes, achieve a higher efficiency level, ensure the business continuity and keep measuring the performance of employees against key metrics. Our study is an applied research in operations management that aims to increase the efficiency of ICT organizations and achieve better results. Also the study will identify the solutions to enhance the competencies of ICT employees. The proposed research will be based on ICT department in a leading mobile telecommunication and data operator that provides services for 2 million customers in Lebanon. The company is managed by a group and initiated an expansion strategy couple of years ago, and developed rapidly in MENA region by establishing many mobile operators. The group provides market-leading mobile voice and data services to more than 46 million customers. The group has mobile operators in eight countries ("Bahrain, Jordan, Kuwait, Iraq, Saudi Arabia, Sudan, South Sudan and in Lebanon").

RESEARCH QUESTIONS

Our study aims to answer the below questions:

- What are the dysfunctions affecting the productivity in the ICT organizations?
- What are the consequences and impacts of the dysfunctions in the ICT organizations and how can we improve the effectiveness in these organizations?
- What are the skills required in the ICT industry and how can we enhance the competencies of ICT professionals?

BACKGROUND

An increasing concern about skill shortage in ICT jobs starts arising, and the rapidly changing skill requirements are causing a gap between skills required by employers and those existing in the workplace (OECD, 2000; Lopez- Bassols, 2002). The effective use of information technology requires well-trained employees to develop the software, support in the operations of and maintain the IT system (Mutula & Van Brakel, 2007). The role of IT department has evolved from being merely a back office supporter, to a service, and to an opportunity creator, by acquiring IT professionals who possess diverse skills in the organization (Lee, 2003). The skills demanded by the job market are surpassing the general and technical skills of IT towards integrated application and problem solving capacities. Lee (2003) emphasizes this evidence by stressing the importance of skills possessed by IT professionals in determining the extent to which the organization transforms the IT diffusion into strategic opportunity and competitive advantage. An important finding by Bresnahan et al (2000) states that when companies are more decentralized and invest more in human capital, information technology investment is greater (Brynjolfsson & Hitt, 2000). Moreover, ICT not only allows better delivery of the service to clients, but it enhances communication across functions and service oriented strategies of the firm (Antioco, 2006). A balance between both ICT and human capital should be attained to increase productivity. Various industry-level studies (Berndt et al, 1992; Autor et al, 1998) show that high technology equipment investment relates strongly to the demand of skilled and educated workers. According to Abell (2002), employers realize that employees are the assets of the organization and the key to its success and those employees stay in the organization by acquiring special unique qualities.

HYPOTHESES & METHODOLOGY

Our core hypothesis will be: "Reducing the hidden costs and developing the human potential of ICT employees will increase the productivity in the organization". The below table will present the list of descriptive, explicative and prescriptive hypotheses examined in our research.

Our research will be conducted in the ICT department using SEAM research methodology with the goal of reducing the dysfunctions faced by the enterprise. We will use SEAM as it's a successful systematic approach to organizational

change and development. As SEAM will offer a tested way to assess the hidden costs in an organization, implementing this process in the company will eventually enhance the data and voice service in the country. The results will be noticed once the necessary changes are identified, implemented and the efficiency of change process is assessed.

In our research, the analysis will include both people and finance so the intervention will cover the whole system in the organization as the value of human capital is an essential part in the competitiveness of a firm. When the employees are respected and got the chance to improve their workplace, the work effectiveness will increase as they will be more engaged and willing to contribute to the profitability of the firm. The human capital should be perceived as a strategic asset and not as an operational cost in the telecommunication sector.

SEAM can develop the quality of human resource management and abilities and consequently improve the value of human capital. To improve the organizational productivity, we need to uncover the potential and hidden cost and make a list of changes in the organization. According to Savall and Zardet (2008), "A cost is said to be hidden when it does not explicitly appear on the company information system, such as the budget, financial accounting, and cost accounting, or in the usual ledgers and logbooks". We will investigate the present dysfunctions in the organization: working conditions, work organization, communication-coordination-cooperation, time management, integrated training, and strategic implementation.

Table 1: Body of Hypotheses

Descriptive Hypotheses	Explicative Hypotheses	Prescriptive Hypotheses
DH01: The employees are not following the processes set to maintain the systems. Once the processes are well adapted, we can avoid lots of network degradations.	EH01: The lack of documented, clear, efficient, consistently followed business processes is increasing the number of errors.	PH01: Establish key business processes and enhance the distribution of tasks across units.
DH02: Managers are not devoting the necessary time to develop the skills of the employees and they are losing their time on routine tasks that can be performed by the team leaders.	EH02: Lack of delegation, cleanup, coordination, vertical communication are affecting the prioritization of tasks and delaying the development of employees.	PH02: Define the roles of each employee, establish clearly aligned accountability and responsibility, improve the 3Cs and the delegation of tasks.

DH03: The current abilities and skills are very poor to observe analyze and solve the encountered problems.	EH03: Attending regular trainings is a strategic decision especially in this ICT sector where there are lots of technologies emerged every year.	PH03: Applying the competency grid to classify the expertise of each employee and plan the required trainings.
DH04: Employees resist the change in the company structure and have fear to communicate the frauds or escalate the suspicious transactions or deals.	EH04: The lack of robustness, flexibility and alignment between the department objectives and the company objectives are hindering the changes and expansion.	PH04: Develop the human potential, improve the vertical communication, audit, and control on the system and share clearly the vision and objectives of the company.
DH05: Develop the human potential, improve the vertical communication, audit, and control on the system and share clearly the vision and objectives of the company.	EH05: The high number of sick leaves is due to the lack of strict regulations implemented in the company.	PH05: Tackle and solve the problems in the working conditions and apply the administrative rules.
DH06: There is missing information while executing the work activities and lots of efforts, time, and money are lost.	EH06: The lack of communication, coordination, Cooperation will affect the quality of service and consequently decrease the revenues.	PH06: Encourage the team work and improve the 3Cs within and between units and develop the information distribution level.
DH07: The training cost is increasing in the company due to staff turnover of skilled engineers.	EH07: Qualified employees are leaving the company because they had been offered better wages by competitors.	PH07: Take a strategic decision to invest in the human potential and review the career progression and pay and reward system.
DH08: The vendors are not delivered the expected product features and support.	EH08: The lack of strategic decisions and the lack of information in the bidding process are affecting the delivered product quality.	PH08: The management board should push the vendors to provide high quality products and an effective procurement plan should be established to ensure the adequacy of product specifications.

DH09: New units are required in the company and some units should be merged with other units to avoid the loss in time, resources and delay in the productivity.	EH09: Poor management skills and lack of clearly defined roles and functions are affecting the workflow and increasing the operational costs.	PH09: Enable better control, enhance the strategy, the procedures and define clearly the scope of each function.
DH10: There is gap in the salaries between employees having the same job title. There is no career growth and the objectives set in the performance appraisal system are not related to the tasks.	EH10: There is a lack of structured career progression policy and fair appraisal system.	PH10: Develop a fair system of pay increases and promotions and set strict career path guidelines.
DH11: The priorities are not well defined and lots of projects are squeezed on time.	EH11: The lack of time management skill is affecting the workload distribution and decreasing the efficiency and the productivity.	PH11: Conduct time management tool to help assess how the employees use their time and eliminate the hidden costs.
DH12: Offices are too small and the equipments and tools are not adequate to be productive.	EH12: The lack of investment in the ICT department is affecting the working conditions of the employees and the needed effectiveness and efficiency levels.	PH12: Improve the strategic plan and allocate an additional budget to enhance the working conditions of ICT employees.

We created the priority action plan that allows us to identify the actions to be implemented. The below table will list the schedule of our ongoing research.

Table 2: Priority Action Plan

Strategic Axis	Priority Objective	Priority Action	Researcher	CEO	Advisor	Steering committee	Actors	J	F	M	A	M	J	Comments
Priority Action Plan			**Divisions, departments or people concerned**					**Forecast scheduling 2016-2017**						
Practical Part	Horizontal Diagnosis	Horizontal Interviews	x				x	→→						
		Field note quote categorization,revision & correction	x		x				→→→					
		Time Management tool presentation and collection	x	x			x				→			
		Mirror effect	x	x		x	x					→		
		Expert advise design	x	x		x						→		
		baskets presentation	x	x		x						→		
	Vertical Diagnosis	Vertical Interviews	x				x	→→						
		Field note quote categorization,revision & correction	x		x				→→→					
		Hidden costs calculation	x								→			
		Mirror effect	x	x		x	x					→		
		baskets presentation	x	x		x						→		
Theoretical Part	Formulation of Doc B	Enrich the problem statement, the research questions and the hypotheses	x		x			→→→→→→						
	Review of hypotheses	Adjust the descriptive,explicative and prescriptive	x		x			→→→→→→						
	outline	set the thesis outline design	x		x					→→→→				
Meetings	Review with the advisors	discuss the progress and get the advises	x		x			→→→→→→→						
Presentation	Conference	present the document B at the doctoral conference	x										→	