

ISSN 2307-4531

<http://gssrr.org/index.php?journal=InternationalJournalOfComputer&page=index>

The Silo Effect of Information Technology on the Organizational Productivity: A Qualitative Research Study

Razak W. Abedalla

California University of Pennsylvania, 250 University Ave, California, PA 15419, USA

abedalla@calu.edu

Abstract

In the field of technology, research shows that information technology (IT) is needed to improve the quality of workplace in any industry. Thus, the advent of Internet has made it easy to communicate with others and get the work done with less effort from where you are and at any time. Considering this fact, IT gained ground in all areas of life and developing nations in various sectors. However, IT creates silos among workers and employers. This study attempts to answer the following research question: how can a silo be a bad or good thing on any organizational productivity based on the researcher's working experience shared stories? The aim of this research is to share how IT can build silos and affect on the organizational productivity. To examine the research problem, the researcher narrates the stories of his working experience in a hospital in Pennsylvania in the United States of America (U.S.). The results indicate that the IT is a very good tool to facilitate communication and solves problems, but the misuse of IT systems may lead to construction of a huge silo system among the leadership and employees within the same business.

Keywords: Communication; Information Technology; Internet; Productivity; Qualitative Research; Silo.

* Corresponding author. Tel.: +1-412-537-4812.
E-mail address: abedalla@calu.edu.

1. Introduction

The world we live in has been changed in one way or another by the information and communication technologies. With the aid of Internet and IT tools, we clearly see that people can access global libraries and information resources, and also interact with family members, friends and colleagues around the world at the same time. Through Internet and IT tools, executives and workers communicate with one another and engage in business-critical work pursuits. Therefore, IT is one of the driving forces of globalization, and the development of IT brought a revolution to the workplace in the 90s. The recent fast-paced implementation of Internet communication has affected the IT and productivity parameters of a business. For example, the IT tools installed in computers can help leaders, professionals, and employees in an organization to simplify and structure the work processes and perform tasks faster in order to accomplish the organizational goals and productivity [14].

With the advent of the Internet, sophisticated Information Technology (IT) has facilitated organizational productivity, while at the same time promoted an organizational “silo” effect. In spite of the importance and advantages of the Internet and IT tools, they could also have a negative impact on organizational productivity and create a silo among the employees and leaders whereupon leaders may stay in their offices all the time and in front of their computers without directly interacting or discussing their goals and projects with other leaders or employees within the same company. To test this claim, the researcher shares his working experience in a hospital in Pennsylvania, U.S. The name of the hospital will be kept anonymous to protect confidentiality.

Although IT plays a vital role in any industry, it may lead to build silos between the leadership and employees. So, how can a silo be a bad or good thing on any organizational productivity based on the researcher’s working experience shared stories? I personally disagree with having silos in the workplace, but agree that IT tools could create silos as they keep people away from each other.

2. Terms Definition

Internet: is a global network that connects unlimited number of computers all over the world. People are linked into exchanges of information, news, ideas, etc. The online services and Internet are not the same. Online services are centralized and controlled, but the Internet is decentralized and not controlled or owned by anyone. Internet is a concept and not an actual tangible entity [15].

Information Technology (IT): is anything related to computer technology and the people involved with it. The technology includes the development, maintenance, and use of computer systems, software, hardware and networks for the processing and distribution of data (Merriam-Webster, 2012). Information is a relative thing and valuable to the person who uses or requires it. Information is either explicit or implicit. Information and communication are two different processes, where we exchange information when we communicate [1].

Organizational Productivity: refers to the capability of an organization to produce desired results. In order to be productive, firms have to hire skilled managers to organize inputs, solve problems and plan for the future. As a result, the productivity of a firm depends on the way its production is organized [9]. Productivity is an essential economic evaluation of technology’s usage. Research shows that the shortfall of IT productivity is because of

the lack of technology tools measurement and the misuse and mismanagement of the IT by developers and users [6].

Silo Effect: the word “silo,” is a metaphor of a cylinder shaped building seen on farms that are full of grain or harvest. “Silo effect” in organizations refers to a lack of communication among employees within the same workplace where different management groups are going towards different goals instead of working together. It is an ideal metaphor of a successful business marketing campaign [7].

3. Literature Review

Information Technology (IT) is, in fact, the core business for most industries. IT is the field which pertains to the skills needed to increase, retain, and use information processing systems, software, hardware and networks for the processing and delivery of data [2]. The core business refers to main activity of the industry. IT has become the backbone of commerce and supports the industries operations. IT links the business with their customers [13]. Generally speaking, it is good for any industry to get rid of the other inadequate business and to implement new strategies. IT is the core for most industries in the 21st century. The core business is the most important area that any company focuses on in its business operations [3]. IT helps in improving measures of business value such as the revenue and productivity. IT value models have several assumptions like a commodity input and cost efficiency which enable firms to set their strategic plans regarding product quality and consumer value [11].

Over the past decades, advances in information technology have restructured industries and formed huge importance. During the new era, the vast development of communication and information technology has influenced cultures everywhere. The technological innovations changes are an example of what is happening where they turn the world into a small global village. These changes include the emergence of new technologies: satellites, cable television, disks, computer and digital technology, etc. This is clearly the age of information technology where IT brought a revolution in the field of media industry [13].

IT is the cause of changes for majority of industries. IT is a strategic tool and without information and technologies, changes are not possible. In the 1990s most of the industries all over the world used telecommunicated networks of computers at the center of information systems and communication processes. The innovation of new technologies makes communication more powerful and easier. Technology does not solve the social problems, but it is the essential tool for development and creativity in societies [10].

As many experts like Carr, Bolman and Deal have pointed out; IT became the foundation of business. IT sounds like as a chain where it links business to the customers they serve. With the increase of IT power, firms viewed it as a significant source to their success. IT is the best newly adapted technologies over the past two centuries. The arrival of the Internet has accelerated the commoditization of IT. Mark S. Lewis, the Executive Vice President of New Ventures, Chief Technology Officer, EMC Corporation-Hopkinton, Massachusetts said, “IT never mattered. What matters are the people who invent technologies and who deploy and use them” [13]. IT has its breakdown and success like any other individual efforts. IT can promote the organizational productivity

and at the same time can create a bad silo. It keeps people away from each other where they do not meet face to face to discuss the organization progress or success or even future challenges or constraints. Silo effect “refers to a lack of information flowing between groups or parts of an organization [5].” The following figure shows how people work in the same organization, but do not see each other or even communicate with one another about their projects and goals which at the end create silos between them.



Fig.1. Silo Effect [5]

By looking at this figure, it shows one way a business system can fail where there are different goals and purposes within the system. However, it could work together again with enough coordination and sharing the objectives. A simple example of this is the human body organs. The body's organs all work together, but have different purposes and functions. If one organ does not work properly, the other organs will be affected; and the person will not be productive or healthy. The person will be productive again if all organs function well. So is the case with any organizational productivity.

Breaking silos enhances innovation and increases productivity where bosses and employees can collaborate in an open environment and have an open door policy for constructive feedback. This will make it easy for organizations to implement new ideas and break the old bad habits or silos that affect work productivity. There are a couple things to be followed to reduce the silo effect. These can be [5]:

- Streamline procedures so that data is easily collected once rather than multiple times.
- Share best practices among facilities, departments and units.
- Encourage feedback and involvement in new approaches.
- Have a facility “suggestion box”—and take the suggestions seriously.
- Listen to the resident and family councils.

5. Methodology

This study attempts to answer the following research question: how can a silo be a bad or good thing on any organizational productivity based on the researcher's working experience shared stories?

The aim of this research is to share how IT can build silos and affect on the organizational productivity. To examine the research problem, the researcher narrates the stories of his working experience in a hospital in Pennsylvania, U.S.

Leadership and employees who work at this hospital utilize technology at both low and high levels within the organization. The qualitative study confined itself to the importance of IT tools with the advent of the Internet and how these tools create a silo in the workplace and how they affect the organization business.

5.1. Organizational Background

The workplace is a medical system located in Pennsylvania. It is one of the popular educational medical centers in the U.S. This center has many specialties, practices, hospitals, doctors' offices, and care facilities. It has also an employee services department that controls all the human resources (HR) services. Certainly, the HR employee services department utilizes Internet and IT system to get their job done. However, the question is if this IT utilization is correctly used and in a productive way or not. Additionally, on what basis those departments interact, if they are, with each other, their current employees, and future employees. These are what we will learn through this research.

5.2. Data Collection

The qualitative data for this research study was collected from the researcher's stories and his work experience as a former employee at one of the hospitals in Pennsylvania and how HR Division individuals do their duties and work responsibilities. Bolman and Deal's [8] Human Resource Framework was selected as a model for this study. Other sources such as authentic books and articles, and online references were used to support the research data.

5.3. Research Model

In this paper, the model to be applied is Bolman and Deal's [8] HR Framework. I have selected this model because it has a number of assumptions of Human Resource Frame and how to implement a good HR philosophy. As my study focus on the HR Division, I thought this model was a good fit.

6. Data Analysis and Discussion

McWane and Nucor were in debate about the relationship between people and organizations. Mary Parker Follett (1918) and Elton Mayo (1933-1945) were the early pioneers of the human resource frame. They argued that people play very important roles and they can either make or break the business. The human resource frame

is built on core assumptions and theories that emphasize this connection [8]. One of these assumptions is represented by serving the human needs through the organizations rather than the converse. At my former workplace, I saw the opposite where the organization did not exist to serve the employee's needs. The executive leaders were in their offices which were located in another building and never interact with the workers face to face and did not know either about the employees' needs. This created a bad silo due to the lack of interaction among leaders and workers. Maslow (1954) developed a theory about human needs where they are motivated by a variety of wants. Maslow categorized human needs into five basic layers arrayed in a hierarchy from lowest to highest [8]. Here is Maslow's hierarchy of needs. In reality, the HR department at my former workplace does not care about some layers such as physiological, love needs, etc. as they lack the communication with employees.

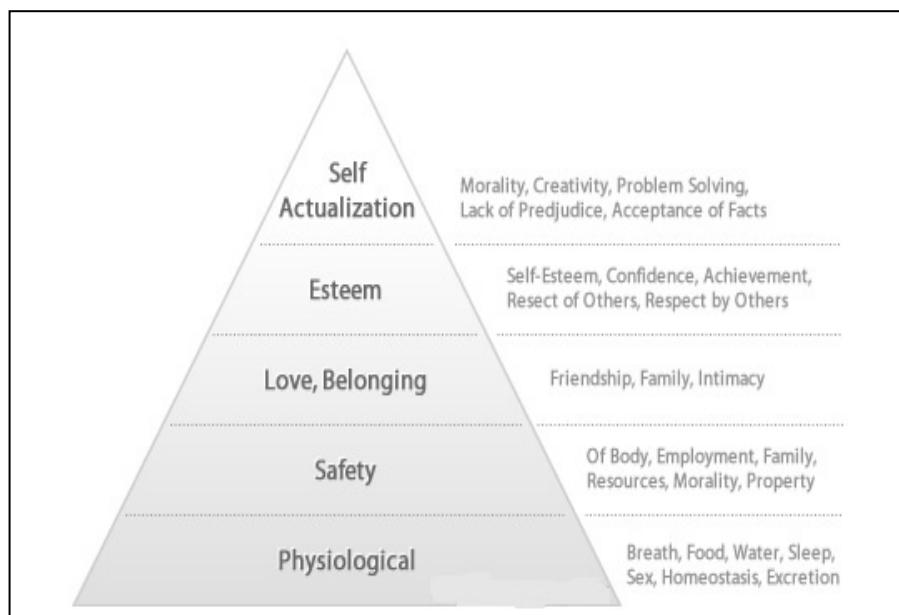


Fig.2. Maslow's Hierarchy of Needs [8]

Secondly, organizations and people need each other. Organizations look for ideas, energy, and talent, but people look for careers, salaries, and opportunities. Bolman and Deal said, "organizations exploit people-chew them up and spit them out" [8]. People need organization and the organizations need people and they cannot be a way from each other. The needs of both to each other are aligned. Metaphorically speaking, Man is definitely healthy if he does not have any medical problems. Thus, employees are the organization's heart and the organization is sick if the employees are not working well and vice versa. If the workers see that their organizations and leaders are supportive and effectively meet their goals and needs, they will be loyal in doing their jobs and responsibilities. On behalf of both the organization and its people, the human resource manager's work has to serve the best interests of both. The manager's job is to support and empower his team and to interact with them openly from time to time to show that he cares about them. He has to make sure that they have the self-sufficiency and the resources they need to do their jobs well [8]. In the two years and nine months that I worked for the hospital, my manager was not supportive and did not care of what the employees' needs were. The manager was not supportive if an employer wanted to study or work in another place as a second job

during the off hours. I have never seen the manager asking the staff about their interests and future goals or what they were doing. Another example is one of the employees who was very energetic and talented and was paid less than the average for the job. The employee asked to meet with her leader to discuss the job description as she was working more hours and above and beyond. She was exempt employee and did not get any extra payment. She wanted to ask for salary increase, the leader, without even meeting her, simply replied back from her office saying the country economy is not that good and people are fortunate to have jobs. There was a lack of empowerment from the leader's side as the leader preferred to stay in her location and use the IT systems to response and even not to meet and get more explanation from the employee. These communications were made through IT tools such as "emails" and only for a short time and no follow up happened. This way of interaction built silos between the leaders and their employees. Such silos were very bad as they poorly affected on the workers and their job responsibilities.

The final assumption is the fit of people and organization is critical as both can be victims. Argyris had the feeling that organizations often treated employees like "children rather than adults" [4]. In one scene in early 2011, my manager told me that they would send me to Washington, DC on the day of the hospital reception in mid December to meet with all Middle Eastern embassies officials and medical advisors. I used to contact the embassies through IT tools and we never met face-to-face and sometimes we had issues due to the lack of communication or technological miscommunication and interpretation. However, when the time came, the manager said we could not send you as we did not have enough budget for that promotion. This exemplifies how organization exploits the employee and how the employee is the victim. According to this, we can see three silos of lacking the interaction and the gaps are always present: organization, employee, and the customer. Organization wants the job done for the customer from their perspectives. The employee's wants his needs to be achieved. The customer wants the organization to meet their requirements. All work in different places and not connected.

Bolman and Deal and other researchers stated basic human resource strategies such as hiring the right people. Both organization and employee can be victims because the right person may not be in the right position [8]. The wrong use of the IT tools will lead to a bad effect on both the people and enterprise. Here are two examples to exemplify this. The first example is once our office was in need for someone temporary to replace another staff member who was on leave. The department's manager did not plan for that a head of time and she accepted a person whom she was in touch with by emails. The manager was working from her location and away from the HR department. The HR department did not have either the chance to interview the person and to review the qualifications. Once the new person started, she did not know about the work to be done and what to do and this made it very hard for the department to manage the work. The other example is there was a physician who completed his education overseas. He was looking for a job and applied for a valet position. He thought that he would get it right away, but unfortunately he got an email to notify him that he was not qualified. It was an automated response and this means that the HR department does not have a strategy to view the applications. They have one email and they send it to several people without reviewing their qualifications or even meeting them. Such wrong use of IT tools has to be corrected to avoid having bad silos and victims in the workplace.

To know that you are in a silo, you have to ask yourself if there are communication challenges or if it is easy to relay information between staff members, facilities, and departments. To reduce the silo effect, one has to use the IT in the right way to facilitate information and communicate with other departments throughout the organization. Silos within organization are one of productivity killers. Organizations have to build bridges between all the departments for better coordination. Breaking down silos boosts innovation and increases productivity where the needed information can be transmitted between the organizational departments.

7. Conclusion

Any business, whether small or big, needs to account for an excellent and professional long-term strategic planning. IT systems can be one positive tool used to solve problems, address business growth, increase productivity, boost employee motivation, and impact the business structure. Moreover, the misuse of IT systems may lead to construction of a huge silo system among the leadership and employees within the same business. Ultimately, this IT construction of silos will lead to the business failure. The silo is created when there is a lack of interaction and communication between groups or parts of an organization. On a farm, silos simply help prevent different grains from mixing [5]. In organizations, we do not want this to happen. Silos in an organization will separate members of different departments of the company from cooperating with each other. This lack of corporation will lead to reduced productivity. Thus, silos in the workplace are a bad thing. So as long as businesses avoid the creation of silos in their workplace, the business growth and productivity will be in a good shape.

Acknowledgements

I would like to take this opportunity and express my deepest gratitude and thanks to my caring, loving, and supportive wife, Basmah who encouraged me to write works for publications.

References

- [1] Anthony Debons. *Information Science 101*. The Scarecrow Press, Inc. Lanham, Maryland, 2008.
- [2] ARMA International. “Information Technology”. Internet: www.arma.org/it/index.cfm, Feb. 15, 2007 [Oct. 20, 2012].
- [3] Business Dictionary. “Core Business”. Internet: www.businessdictionary.com/definition/core-business.html, 2012 [Oct. 21, 2012].
- [4] C. Argyris. *Individual actualization in complex organizations*. Mental Hygiene, 1960, pp. 119-121.
- [5] Eleanor Feldman Barbera. “How to eliminate the ‘Silo Effect’ in LTC organizations.” Internet: www.ltlmagazine.com/article/how-eliminate-silo-effect-ltc-organizations, 2012 [Sep. 28, 2012].

- [6] Erik Brynjolfsson. The Productivity Paradox of Information Technology. Communications of the ACM. Vol.36.No.12, December, 1993.
- [7] Karyn Greenstreet. “Why Marketing Fails: The Silo Effect.” Internet: www.passionforbusiness.com/articles/silo-effect.htm, 2007 [Oct. 1, 2012].
- [8] L. G. Bolman & T. E. Deal. *Reframing organizations: Artistry, choice and leadership*. (4nd edition). San Francisco: Jossey-Bass, 2008, pp. 113-115.
- [9] Lorenzo Caliendo and Esteban Rossi-Hansberg. “The Impact of Trade on Organization and Productivity”. *The Quarterly Journal of Economics*. Volume 129 Issue 2, pp. 1393-1467, Princeton University on August 30, 2012
- [10] Manuel Castells. “Information Technology, Globalization and Social Development”. UNRISD Discussion Paper No. 114, September, 1999.
- [11] Matt E. Thatcher and David E. Pingry. “Modeling the IT Value Paradox.” *Communications of the ACM*. Vol. 50, No. 8, August 2007
- [12] Merriam-Webster. "Information Technology." Internet: www.merriam-webster.com 2012 [Oct. 29, 2012].
- [13] Nicholas G. Carr. (2003, May). “IT Doesn’t Matter.” *Harvard Business Review*. [On-line]. pp. 1-12. Available: www.informatik.umu.se/digitalAssets/141/141283_mis-it-doesnt-matter.pdf , [Oct. 15, 2012].
- [14] Pallab Dutta. “How Can Information Technology Change a Business?” Internet: www.ehow.com/about_5369689_can-information-technology-change-business.html, 2012[Oct. 3, 2012].
- [15] Webopedia. “Internet.” Internet: www.webopedia.com/TERM/I/Internet.html, 2012 [Sep. 28, 2012].