

The Role of Technology in the Structure of Bureaucratic Forms of Organization

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Introduction:

Advancements in information technology (I.T.) are affecting every aspect of human life as a result of the structural revolution. It also affects organizations' compositions and functions, specifically those of bureaucratic organizations. It can be said that information technology is improving managerial efficiency in bureaucratic organizations in both short- and long-term scenarios. With the use of information technology, one can store, access, and retrieve large amounts of information accurately and rapidly.

With the use of information technology in bureaucratic organizations, time-saving and effective decision-making is achieved. Effectiveness in decision-making is achieved as a result of improved communication channels. Thus, information technology is affecting the centralization or decentralization of decision-making and control systems (Bezweek and Egbu, 2010). Technology has deeply affected the working structure of organizations. It is also challenging the traditional hierarchy and decision-making. It is possible that these technological advances will lead to the end of bureaucratic forms of organization in the future. It is very difficult to manage these organizations in the long run, as in this structure, there is no strict control over the activities of highly skilled workers. This difficulty is resolved with the use of portfolio employees who no longer depend on the organization's career structures. Organizations will then work in the form of post-bureaucratic organizations that have flexible specializations after the adoption of technology. Technology is making organizations work with fewer hierarchy levels. This feature is quite different from that of bureaucratic organizations. Due to fewer levels of management or hierarchy, the workload at each level of the hierarchy has now increased. This paper will discuss the role of technology in the structure of bureaucratic forms of organization as well as the associated advantages and disadvantages due to these technological changes.

Bureaucracy In Literature:

Bureaucracy has a variety of ambiguous and overlying definitions, and it has also been around for a long time. It is defined as an organizational prototype. According to Max Weber, unambiguity, precision, hierarchy, continuity, rule-based operations, knowledge of the files, technical competence, speed, and ambiguity are some of the characteristics of ideal bureaucratic organizations (Kim et al., 2014). Bureaucracy can also be defined as having an ideal type of organizational setting in the form

of a bureau (Lunenburg, 2012). It is a formalized structure that has rule-bound hierarchical authority and standardization as its main features. There is also specialization in bureaucratic organizations as a result of the distinct functional divisions of labor. People in this organization have full-time administrative staff that enjoy their life-long employment, planned careers, salaries and allowances, and promotions based on their formal education. They also enjoy the legal protection and optional firing (Olsen, 2008). Bureaucrats have to follow the rules and orders as they are instructed by their trustees to do so. Therefore, this form of organization is managed by specialized officers who possess technical competence along with expert training. The performance of an organization increases due to these characteristics, which are a result of technical superiority. In a bureaucratic organization, cost control can be performed by those who have the required knowledge and skills for different functions (Zammuto et al., 2007). The fully bureaucratic organization has a monocratic office hierarchy (Treem and Leonardi, 2013). It is referred to as a type of centralization that defines the extent to which decision-making authority is determined in an organization. However, it also has a negative result in the form of red tape (Moon and Bretschneider, 2002).

Disadvantages Of Bureaucracy:

Bureaucracy can be taken as a form of organization that is much like a machine, and ideally, every part is structured in such a way that it performs its duty, and the whole setup functions like clockwork in a formalized way. This setup makes this system function efficiently. But this also makes people function like machines. Due to this approach, the problem of lack of motivation and absence of innovation and change is reported. Customers also are not at an advantage due to this system. When people in the organization are living in a rule-based environment, then they are not motivated and do not care much about customer satisfaction (Knights and Willmott, 2017). These rules are formed for the benefit of companies and not for the benefit of customers.

Information Communication Technology:

In the current competitive environment, traditional administrative techniques are losing their value, and new techniques have taken their place. Among the modern administrative techniques, some of the most widely used techniques are management by objective (M.B.O.), self-efficacy theory (S.E.T.), and total quality management (TQM), along with information communication technology (I.C.T.) (Schaper and Pervan, 2007). Information Communication Technology (I.C.T.) refers to the conjunction of audio-visual and telephone nets and computer systems via a single cabling relation arrangement (Schaper and Pervan, 2007). It is not only frequently employed as a prolonged substitute for (I.T.), but it is an additional precise period that leads to enhanced communication. This Information Communication Technology has an effective role in operations, particularly in mechanization and output. Communication and feedback are now easy to handle as a result of the implementation of this technology. This trend is observed in both private and public organizations. Due to this, the world has also become a global village, and people can now manage large volumes of commercial dealings with

any company all over the world.

Effect Of Technology On Organizational Structure:

The association between technology and organizational structure and task has been of attention to organization experts for over 50 years. Many scholars consider technology as a determinant of organizational structure (Zammuto et al., 2007). Traditional bureaucratic organizations are changing with the advancement and enforcement of technology in carrying out the organization's functions. If there are advantages to the use of technology, then there are also disadvantages to using it in organizations. Firstly, it is a challenge for managers to adopt the technology effectively in their organizations (Kim et al., 2014). Some managers in bureaucratic organizations believe that the use of technology will slow down processes. However, it is also a fact that in today's competitive global economic scenario, it is not possible for organizations to survive without the use of technology. Organizations that fail in the adoption of technology are at the risk of lagging both in productivity as well as market share (Lai and Wang, 2008). There are different views concerning bureaucratic organizations and the adoption of technology. According to Taylan, technology conflicts with bureaucracy, and it considers bureaucratic organizations to be inefficient and uncompetitive (Kim et al., 2014). Lee has a different opinion, and in his opinion, there is the same value sharing between information technology and bureaucracy (Kim et al., 2014). Lee considers the computerization of bureaucratic processes as an ultimate form of organizational rationalization (Kim et al., 2014). Computerization removes all hatred, love, and other emotions from the bureaucratic organization.

Advantages Of Technology Usage:

The origin of new machines has opened new working opportunities in the workplace. The workforce and organizational structure are changing, and now, there is a huge increase in the productivity of organizations. There are new and easy ways of introducing products in organizations as a result of the use of technology. Now, workers are more knowledgeable and expert when dealing with production (Knights and Willmott, 2017). There are efficient ways to use them now that decrease waste both in terms of time and resources. With the use of technology, there are now more sophisticated systems to manage different departments like marketing, production, and human development. Concerning different departments as well as other related fields, decision-making is also improved. However, to manage all these with the help of technology, user acceptance, and competency must be first required in any organization (Knights and Willmott, 2017). For this purpose, the first step is to change the organizational structure to prepare all the stakeholders for the adoption of technology.

Post-Bureaucratic Organizations:

Post-bureaucratic organizations can have the working concept of virtual organizations or knowledge economy. These organizations reverse the conventional images of being tough, paper-driven, stubborn, and incompetent bureaucracy. This form of organization has faced long-lasting and constant criticism due to its strict structure. The disadvantages that a bureaucratic organization bears include too big an organization that is also powerful and possesses a hierarchical structure. People here are inefficient and lazy. There is no flexibility in the structure, and people in managerial positions are inhumane (Olsen, 2008). Also, there is no economic efficiency due to this type of organization. Due to this large list of charges over the structure and function of the bureaucratic organization, this form of organization is losing its value, and many other factors are also playing a key role. Now, bureaucracy is going to be replaced with enterprises that are market-driven and non-legal, along with having a soft image of governance.

Effect Of Technology On Hierarchy:

Bureaucratic organizations that adopt the technology and use technology in their systems are likely to have a decrease in hierarchy. These are aimed at focusing on flexibility and constant information flow rather than on addiction to the rules and regulations. It is a feature of bureaucratic organizations that they transfer information from lower and authorize it to the higher levels (Knights and Willmott, 2017). This form of organization is also known as e-governance. The use of a new style of leadership in this organization also boosts citizen contribution to the decision-making process (Knights and Willmott, 2017). This tends to make the system more efficient and transparent. Furthermore, the use of technology enables organizations to make use of external resources for the production of products. This develops the more flexible borders between the organization and its environment (Knights and Willmott, 2017). People are also allowed to work temporarily rather than permanently. Working in these types of organizations, people do not enjoy lifelong employment. There is also a practice of transferring values to customers in order to manage costs and increase efficiency.

Technology At the International Level:

Moreover, international organizations have been thought to be at the front step in de-bureaucratization since the end of the 1970s (Olsen, 2008). Democratic states are also not supporting this form of organization anymore. This transformation has also been interpreted as an inevitable shift due to technological advances. To adopt a certain technology, there is always a need to have some changes within the organization at all levels. For this change, middle managers play the main role (Schein, 1983). Technology is mostly used to automate current operations. This also includes an increase in the speed of communication within an organization. I.T., in the first step of technology transfers, is supposed to take over the routine procedures (Zammuto et al., 2007). In this procedure,

paper and people are replaced with electrons, and this leads to a change in the way they work (Zammuto et al., 2007). It does not necessarily affect the existence of the bureaucratic organization. But it also assists in handling uncertainty and information complexity. There are advantages to information technology and strict bureaucracy structures that can be aided by the use of technology. A bureau can be taken as a chest of drawers, and each drawer represents a specific function. Each function collects and stores information relevant to the activities in its drawer (Zammuto et al., 2007). The role of information technology is to manage these drawers effectively by making the process smooth and helpful. The effective role of technology turns a bureaucratic organization into a bureaucratic organization. Post-bureaucracy organizations have advantages over bureaucratic organizations. These include the open and visible peer review processes as compared to hierarchical appraisals (Zammuto et al., 2007). In the bureaucracy, there is a fixed decision-making process and expectation of reliability, while in post bureaucracy organizations, there is a flexible decision-making process and expectation of change.

Virtual Organizations:

Post-bureaucracy organizations also allow the opportunity to work and collaborate virtually to share and integrate knowledge. These then work in the form of virtual teams that enjoy the new patterns of collaboration. However, the nature of the task, along with the type of technologies, decides what the organizational arrangements should be for the completion of tasks (Zammuto et al., 2007). Sometimes, the use of too much technology makes things more complicated and makes routine tasks too complex. For this purpose, formal face-to-face meetings are also held. These do not require the use of technology. The use of technology also makes numerous structures of bureaucratic organizations inappropriate and even detrimental (Bezweek and Egbu, 2010). Due to advancements in technology in both private and public sectors, it is now possible to have a diversity of different organizational arrangements. One can be in the form of a matrix organization that does not use the straight-line hierarchical authority that goes from the top down (Bezweek and Egbu, 2010). However, it makes use of vertical and horizontal dimensions of authority in an organization (Bezweek and Egbu, 2010). The vertical dimension consists of functional departments, while the horizontal dimension consists of working teams (Bezweek and Egbu, 2010). Due to the use of information technology, lines of command and authority have changed. Communication and the flow of information are increased as a result of a decrease in layers of control. Organizations are now more complex, discerned, and decentralized (Bezweek and Egbu, 2010).

Thus, there are many more features of bureaucracy that affect I.T. in numerous ways. One of the main features is the presence of hierarchy in organizations. These traditional hierarchies are a source of barriers to sharing and disseminating information (Kim et al., 2014). Organizations convert towards the adoption of technology, but vertical departmentalism is the main obstacle in their way of progress (Kim et al., 2014). Also, centralized structures do not allow the adoption of information technology. Thus, if there are organizations with flatter and decentralized structures, then it is easy to improve organizational communication as well as coordination with the use of technology.

Technology enforcement is difficult due to the red tape present in bureaucratic organizations. This red tape is the cause of a decrease in the innovative effectiveness of organizations with the progress of such a climate that reduces the motivation regarding the adoption of innovation or technology (Casey, 2004). Acceptance of I.T. can be gained if there is more technical competency present in the organization. It is hypothesized that if the organization knows better what to do, then it can do it in a better way. Thus, if the bureaucracy has more knowledge of a task, then it is possible to have a quick implementation of information technology. However, technicians must also know how to modify the working habits of workers and their production capabilities for the adoption of new technology (Newell et al., 2009).

Working Smarter:

Information technology is not only altering the method by which business functions. However, it also alters the environments in which business functions. The changes are also seen in roles and environments as a result of the implementation of technology in business. This information technology has reformed personal as well as professional culture on effectively every level (Moon and Bretschneider, 2002). This change has been called working smarter since the 1990s. With the use of the Internet, it is now possible to have access to the public and other personnel as well (Harris and Rea, 2009.) These people were not within reach of the organization previously. Email, the World Wide Web, and other technologies are now providing almost instant reach to information and communication with these external stakeholders (Newell et al., 2009). One example of this can be seen in marketing efforts. If a company wants to introduce a new product in the market, it has an opportunity to conduct a pilot survey over the Internet due to the trend of social media use (Kamel Boulos and Wheeler, 2007; Treem and Leonardi, 2013). This was not previously possible in bureaucratic organizations that did not make use of any information system.

Implementation Of Information System:

An information system (I.S.) is the use of computing and communication technology that makes business functions cost-effective (Fennell et al. 2010). Eventually, an I.S. occurs to benefit an organization and help it achieve its goals. An I.S. receives raw evidence, recognizes it as data, and assimilates, operates, collects, and disintegrates that data into something that has a sense of a boss or worker (Fennell et al. 2010). An I.S. should deliver leadership to the administration's staff to better contribute to the achievement of those aims. I.S. influences all heights of the organization, including all three levels: operational, tactical as well and strategic level. They influence all functional parts, such as finance, tasks, marketing, strategic planning, employees, and, most importantly, the information technology function itself (Daud and Kamsin, 2004). The adoption of information technology in any organization is inevitable as there is now the diffusion of electronic business and electronic commerce technologies in the private sector (Fennell et al. 2010). This has made organizations pay deep attention to information and communication expertise. The use of technology

has progressed from the mechanization of controlled procedures to systems that are accurately radical in that they acquaint with alteration into central business events, workflow, and the organization of an association Daud and Kamsin, 2004). In post-bureaucratic organizations, information production is heavily reliant on the shared hint of production procedure (Ke and Wei, 2008). This process is run by mutual assignments and communal values, as well as an acknowledgment of a solid external promise between the organization's performers and shareholders (Knights and Willmott, 2017).

Comparison Of Two Systems:

Post-bureaucratic administrations need tools that will sustain organizational knowledge in multiple circumstances Gal et al., 2008). These organizations also recover faith in the group procedures via measures in which evidence is shaped by the association, and choices are completed. Bureaucracy is an age-long managerial system that is no longer able to work in a current business environment. The comparison of the two systems revealed that bureaucracy is consistent with rubrics, guidelines, and techniques that constrain novelty, inventiveness, and individual and group self-confidence. It is also opposed to natural flexibility to modification (Knights and Willmott, 2017). The suggestion is that organizations that follow bureaucratic philosophies are slow in the process and are barely consequence concerned with both output and service distribution. Conversely, modern administrative values are flexible, thus reassuring individual and group creativities, inventiveness, novelty, originality, self-discovery, and confidence (Knights and Willmott, 2017).

Motivation Due To Technology:

Lack of motivation was the result of the bureaucracy in an organization. This can also be tackled with the use of information technology. It is the source of job satisfaction for employees who work in new modern organizations. These have flexible rules and opportunities available to the people (Orlikowski, 2008). Now, workers have the opportunity to work from home in their most suitable hours as a result of the use of information technology (Choi et al. 2010). Different software systems allow users to have access to the material and evidence in their traditional offices. With this software, they get the chance to have an association with their other team members. They all work in virtual teams and take into account all the responsibilities required to ensure the safety of data in an organization (Romero and Molina, 2011). Traditional meetings are also conducted using different technological tools. There are video conferencing and other alliances available to connect them. This has also provided the company with the advantage of taking the services of employees who are not located in the specific region in which the company operates.

Human Resource Issues:

Also, there are many issues in human resources that need to be catered to while dealing with the strict rules and regulations of bureaucratic organizations. Certain people do not adjust to the strict timings of the official work and need flexible working hours. This was not possible in bureaucratic organizations, but it is now possible in modern organizations that depend on different information subsystems for the management of employees (Knights and Willmott, 2017). Also, previously, it was not possible to manage a large diversity of people in an organization. However, post-bureaucratic organizations also have the flexibility to adjust to this aspect (Knights and Willmott, 2017). This diversity and operations are managed by different information systems that allow people to work as virtual teams. They make use of lots of software and technology for this purpose to have a smooth workflow among them in different activities (Knights and Willmott, 2017).

A key element of research design is also the aim of the study. This can be descriptive, exploratory, and analytical, as well as case study analysis. A descriptive study is related to the description of features of the variables of interest. The objective of the descriptive study is to provide information regarding the prevalent facts related to the topic. The main advantage of this research is that it allows exploring further ideas. For instance, an exploratory study can be used to gather information regarding the competitors. An exploratory study is conducted when there is not much known about the topic and no past study has effectively addressed the topic. This takes into account a wide range of extensive preliminary work. For example, exploratory research can be conducted on the topic of "quality of life." The purpose of the analytical study is to test the hypothesis. This is mostly used to explain the nature of certain relationships. It describes the interdependence of two or more factors in a given situation. For example, the analytical study can be used for the description of the association between advertising and increased sales. Moreover, case study analysis is used to analyze a given topic in depth. Case studies are not recommended to be used as a problem-solving technique as it is not possible to always have the same problem in any other organization. The reason for a case study is to study powerfully one position of something as dissimilar intact. However, if case studies under investigation are qualitative, then these are valuable in smearing clarifications to current problems founded on past problem-solving involvements. However, case studies do not unavoidably employ qualitative data only. These are also valuable for making further theories for experiential analysis. These should not be used only as there is another evaluation design appearing to work. These serve as a useful evaluation tool when the project absorbs the implementation of an accessible program in a new situation.

Furthermore, the types of investigation can be correlational or causal. In a causal investigation, it is essential to find a definite cause-and-effect relationship. It is usually adopted when the aim is to explain more than one factor that is causing problems. For instance, the role of smoking in causing cancer can be analyzed with the use of causal investigation. A correlation study is carried out when there is only a need for the identification of different factors, and no detailed study is required. Researcher interference can be minimal, or it can be manipulative. This depends on whether the

study is causal or correlational. In a correlational study, the researcher purposely alternates certain variables and impedes the proceedings as they usually happen in the organization.

In the context of study settings, natural settings are used for correlational studies. For cause and effect studies, lab settings are used. The unit of analysis in a research design refers to a population of studies. This includes individuals, groups, organizations, industry, and country. For example, if there is research conducted to know the individual performance of employees after certain training, then here, a unit of analysis will be individuals if this performance is to be checked at production as well as sales department level. Then, here, the unit of analysis will be grouped. This can also be at the industry level when an investigation is carried out to analyze the percentage of the workforce working in care, and then the unit of analysis is an industry (Khankeh et al., 2015). The time horizon can be cross-sectional, or it can be longitudinal studies. Longitudinal studies refer to those which are conducted at more than one point in time. For example, the performance of employees before and after training can be assessed using longitudinal studies.

The research design should include information related to the topic of the research, the significance of the research, the beneficiaries of the research, and the place of the research. With a good research design, it is possible to reduce bias and increase the ability of the data to be composed and investigated (Noble and Smith, 2015). The design that provides the minimum experimental error is described to be the best design in the scientific search. This paper will discuss the key elements of research design as well as associated challenges for qualitative research.

The key elements of research design include a perfect declaration of research problem procedures and techniques to be used for collecting information, a method to be applied for treating and examining the data, the aim behind the study (descriptive or casual), types of investigation (observational or survey), researcher interference (minimal or manipulative), study setting (research environment), time limit (cross-sectional or longitudinal) as well as a unit of analysis. A good research design must start with the perfect declaration of the research problem. It should provide the reader with the history and importance of the problem as well as its current scenario.

Research can be carried out quantitatively as well as qualitatively. These approaches fluctuate in the amount of the researcher's interest regarding the empirical appointment, direct association with the subjects, and physical participation in the situation. If a researcher is using them as a qualitative research design, then it may face certain challenges associated with this approach. However, it cannot be concluded that qualitative research design should not be used as there are many situations where the requirement is to use the qualitative research design or it best serves the purpose. Qualitative research refers to the systematic subjective method that can be used for the description of events in qualitative terms. Its main goals are to have an understanding of the topic and explore the topic in depth (Taylor et al., 2015). Case studies are frequently understood as major examples of qualitative research that involve the explanatory method to study data.

After the research questions are established, the next crucial decision is to select a suitable method

and research design. Then, succeeding planning would be based on the correct technique of data collection, the number of part-takers, the research setting based on methodology, and the research question. Sometimes, it gets difficult for researchers and students to comprehend that using a qualitative method is only the first phase in selecting a suitable research methodology.

The qualitative research design is based on a social constructivism perspective. For example, these can be used to improve the understanding of health-related phenomena (Fleurence et al., 2014). Here, it involves the methodical collection, organizing, and clarification of material in a documented form that is consequential from conversations or observations. Researchers start the expedition for the new hypothesis in health, which should concede that the suitability of qualitative research obtains from the nature of the social incident to be discovered. A context-specific perspective provides knowledge in qualitative research. Data analysis, ethical concerns, and inflexible methods of findings are some of the concerns of Qualitative research design while working on health-related phenomena. This design is lacking in that it does not equip researchers with a set of procedures to pursue. Rather, it depends on the control of words and images. It does not offer results in the form of numbers and equations, but it displays results regarding meaning and understanding.

In this design, the research problems turn into research questions founded on previous research practice. In this study, the chosen sample sizes can be as small. The data collection methods can be to conduct the interview or have the director non-participant observation. There is also the use of field notes as well as journals and logs. The main challenges that a researcher faces while doing qualitative research are the identification of the problem and the formation of the research question. There is also the requirement of selecting an appropriate methodology while conducting qualitative research (Ritchie et al., 2013). These are challenges that any researcher faces during the initial phases of any research project. These problems are principally common for beginners. Identification of research problems is a major issue in qualitative research. It is the topic that the researcher wants to take into account while conducting research. This is the main reason why the researcher is engaged in the investigation.

Identification of the problem is essential as it is like a lens that will be used to look at the reality of the phenomenon under study. But interestingly, here, the topic is mostly one in which the researcher is already familiar. The difficulty at this stage comes from the fact that the researcher has to start his investigation at this point with the use of his personal experience. Significant time and energy are consumed by the researcher, so the problem must be identified clearly. One solution to this can be to narrow down the problem with the aim of clarifying the topic for the research. For this purpose, research questions can be used for the formation of the research problem. There can be more than one research question. It is also observed that researchers do not first decide about the use of specific research designs. However, they propose questionnaires, or they start interviewing far too early to answer their research questions. However, in this case, conclusions drawn will usually be feeble and unpersuasive and will be unsuccessful in answering the research question. This also makes them change their research questions or approach during their research design. This practice is taken by novice researchers, and their research questions are very wide, uncertain, and fuzzy. Research

questions should be trustworthy, and the research method should be trustworthy.

The research design and methodology must be sufficient to deal with the chosen topics and the research question. Researchers have to recognize, explain, and rationalize the methodology they decide on, in addition to the selection of strategies and measures implicated. Consequently, it is essential to discover the correct technique for the research question. It should be noted that some of the particulars of a qualitative research task cannot be determined in advance and may perhaps be decided as they happen throughout the research process. The problem of distorted differences between qualitative approaches requires consistency and coherence and is known as method-slurring. This is the trouble of disfiguring differences between qualitative methods. Each method has to reveal its steadiness to its basics and will mirror them in data collection, examination, and acquaintance assert.

Good research questions must have these characteristics as they must be specific, inferring the problem or phenomenon, reflect the interference in experimental research, and identify the target group of participants. Thus, the main aim behind the identification of the research problem is to explore and understand the phenomenon. Moreover, the researcher should take care that he/she bestows somber deliberation on the selected region as the foundation of research and that a qualitative scheme is pertinent and probable. Consequently, forming the research question in a good mode and choosing a suitable methodology can ensure innovative, attractive, and applied facts.

Conclusion:

There are many more benefits of information technology usage, and this is the reason that more and more organizations are now making use of information technologies. However, this is surely not possible with traditional bureaucratic organizations that have strict rules and no flexibility in their operations, line of command, or communication methods. These all need to be changed if organizations have to shift towards the use of information technologies within their boundaries.

References

Be week, S.A., Egbu, C.O., 2010. The impact of information technology to facilitate communication and collaboration in Libyan public organizations, in C.I.B. World Congress 2010. School of Built Environment, The University of Salford.

Casey, C., 2004. Bureaucracy re-enchanting? Spirit, experts, and authority in organizations Organization, 11(1), pp.59-79.

Choi, S.Y., Lee, H. and Yoo, Y., 2010. The impact of information technology and transactive memory systems on knowledge sharing, application, and team performance: a field study. M.I.S. quarterly, pp.855-870.

Daud, M.N.R. and Kamsin, A., 2004, January. The impact of Information Systems on organizations in Malaysia: Knowledge worker aspect. In Proceedings of the Winter International Symposium on Information and Communication Technologies (pp. 1-6). Trinity College Dublin. Kim, S., Paik, W., Lee, C., 2014. Does bureaucracy facilitate the effect of information technology (I.T.)? *Int. Rev. Public Adm.* 19, 219-237.

DiMaggio, P. ed., 2009. *The twenty-first-century firm: changing economic organization n international perspective*. Princeton University Press.

Fennell, M.L., Prabhu Das, I., Clauser, S., Petrelli, N. and Salner, A., 2010. The organization of multidisciplinary care teams: modeling internal and external influences on cancer care quality. *Journal of the National Cancer Institute Monographs*, 2010(40), pp.72-80.

Gal, U., Lyytinen, K. and Yoo, Y., 2008. The dynamics of I.T. boundary objects, information infrastructures, and organizational identities: the introduction of 3D modeling technologies into the architecture, engineering, and construction industry. *European Journal of Information Systems*, 17(3), pp.290-304.

Harris, A.L. and Rea, A., 2009. Web 2.0 and virtual world technologies: A growing impact on I.S. education. *Journal of Information Systems Education*, 20(2), p.137. Knights, D., n.d. [Introducing Organizational Behaviour and Management](#).

Ke, W. and Wei, K.K., 2008. Organizational culture and leadership in ERP implementation. *Decision support systems*, 45(2), pp.208-218.

Kamel Boulos, M.N. and Wheeler, S., 2007. The emerging Web 2.0 social software: an enabling suite of sociable technologies in health and health care education. *Health Information & Libraries Journal*, 24(1), pp.2-23.

Knights, D., Willmott, H., 2017. *Introducing Organizational Behaviour and Management*.

Lunenburg, F.C., 2012. Organizational structure: Mintzberg's framework. *International journal of scholarly, academic, intellectual diversity*, 14(1), pp.1-8.

Lai, F., Li, D., Wang, Q. and Zhao, X., 2008. The information technology capability of third-party logistics providers: a resource-based view and empirical evidence from China. *Journal of Supply Chain Management*, 44(3), pp.22-38.

Moon, M.J. and Bretschneider, S., 2002. Does the perception of red tape constrain I.T. innovativeness in organizations? Unexpected results from a simultaneous equation model and implications. *Journal of Public Administration Research and Theory*, 12(2), pp.273-292.

Newell, S., Robertson, M., Scarbrough, H., Swan, J., 2009. *Managing knowledge work and innovation*. Palgrave Macmillan.

- Orlikowski, W.J., 2008. Using technology and constituting structures: A practice lens for studying technology in organizations. In *Resources, co-evolution and artifacts* (pp. 255-305). Springer, London.
- Olsen, J.P., 2008. The ups and downs of bureaucratic organization. *Annu. Rev. Polit. Sci.*, 11, pp.13-37.
- Romero, D. and Molina, A., 2011. Collaborative networked organizations and customer communities: value co-creation and co-innovation in the networking era. *Production Planning & Control*, 22(5-6), pp.447-472.
- Schaper, L.K. and Pervan, G.P., 2007. I.C.T. and O.T.s: A model of information and communication technology acceptance and utilization by occupational therapists. *International journal of medical informatics*, 76, pp.S212-S221.
- Treem, J.W. and Leonardi, P.M., 2013. Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Annals of the International Communication Association*, 36(1), pp.143-189.
- Zammuto, R.F., Griffith, T.L., Majchrzak, A., Dougherty, D.J., Faraj, S., 2007. Information technology and the changing fabric of the organization. *Organ. Sci.* 18, 749-762.
- Fleurence, R.L., Beal, A.C., Sheridan, S.E., Johnson, L.B. and Selby, J.V., 2014. Patient-powered research networks aim to improve patient care and health research. *Health Affairs*, 33(7), pp.1212-1219.
- Khankeh, H., Ranjbar, M., Khorasani-Zavareh, D., Zargham-Boroujeni, A. and Johansson, E., 2015. Challenges in conducting qualitative research in health: A conceptual paper. *Iranian Journal of Nursing and Midwifery Research*, 20(6), p.635.
- Noble, H. and Smith, J., 2015. Issues of validity and reliability in qualitative research. *Evidence-Based Nursing*, pp.ebnurs-2015.
- Ritchie, J., Lewis, J., Nicholls, C.M. and Ormston, R. eds., 2013. *Qualitative research practice: A guide for social science students and researchers*. Sage.
- Taylor, S.J., Bogdan, R. and DeVault, M., 2015. *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.