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Information Technology Management: A critical Analysis of Managerial Impediments Facing Information Technology Managers

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Abstract

The paper intended to study managerial impediments which may hinder strategy and objective implementation by IT managers and technicians. The managerial drivers included: rules, initiatives, emotions, immediate action and integrity. This paper describes the drivers of strategy implementation by managers in IT departments to implement their organizational objectives. The findings on Perception of IT managers and administrators towards the managerial drivers of objective implementation by IT managers has put a lot of emphasis on rules and the lack of commitment of employees (the dimension of emotions) to explain the obstacles faced by IT managers. Though the finding of our data suggests that a driver of emotions is the most critical obstacle to IT management, there are important drivers, such as immediate action that will force managers to take emergencies to deal with urgent matters without compromising organizational objectives. Thus it also proves to be vital driver to IT management.

Purpose: This research was carried out to investigate on the strategic impediments facing IT managers with regard to their attitudes and organizational perception. The study involved effective drivers of management, which constituted individual obstacles that IT administrators and technicians face during their objective implementation.

Methodology: A mixed method of qualitative (focus group discussion) and quantitative (a survey with a questionnaire) approaches was applied to this study. These involved group discussion of IT technicians and administrators in the selected organizations in a Canadian province. The total number of surveyed managers was 147.

Results**:** With regards to the drivers of management, it was established that the driver of emotions holds the highest consideration towards attitudes, management and employee motivation. This driver had, a frequency recorded 137, mean of 3.6923, median of 3.800 and standard deviation of 0.81950. The driver of rules was after analysis found to have a frequency of 145, a mean of 3.107, median of 3.400 and standard deviation of 0.76265. The driver of immediate action had a frequency of 134, mean of 3.1448, median of 3.200 and standard deviation of 0.86135. The driver of integrity had a frequency of 134, mean of 3.0489, median of 3.00 and standard deviation of 0.90948. The driver of initiatives had a frequency of 138; mean

score of 3.4214, median of 3.45 and standard deviation of 0.85542. The summary of the report has been presents in table 2.

Conclusion: This study is focused on the impediments experienced by IT managers as they implement their objectives. Taken as a whole, our findings suggest that, there are some impediments associated with drivers of Emotions, immediate action, Rules and initiatives. Even if these obstacles are in multiple levels to develop and promote IT management and objective implementation skills, it is imperative to study with more depth obstacles faced by IT managers in order to better understand how obstacles they face represent an impediment to the development of their competencies and effective performance in IT.

Keywords: Information Management, Strategic and Objective implementation, Information technology (IT), Information and Communication Technology (ICT)

1. Introduction

Information technology management is one of the key essential elements required by modern organizations for them to achieve their objectives and goals. This therefore means that information technology departments within any given institution are the main the main centers of focus as they handle crucial roles on managing all the systems within the organization. With the advancement in technology, there is dire need to ensure that these managers are given almost first hand priority in management decisions (Muhammad *et al.*, 2009; Bartol & Martin 1991). Many organizations will tend to view information technology managers as technical personnel. This often reduces the morale of such managers and often lead to demoralization, high turnovers and even sabotages on other department that rely on information and communication technology departments (Cecil, 2006; Barbara & Hughes, 2001).

Information technology managers have faced a good numbers of managerial challenges that have hindered their productivity and performance. Today IT departments are facing a number of challenges such as information insecurity related to hacking and piracy of some important information, software vulnerability, information management and personnel management (Graeme & Martin, 2009). In this context, organizational IT development and leadership professionals that support managers in the implementation of their objectives have generally found that managing successful large scale information and employees can be very difficult and that the process can be slow, frustrating, and especially complex due to a great number of extraneous environmental factors surrounding information management (Dima *et al*., 2009; Muhammad *et al.*, 2009).

What this therefore requires is that, top IT managers devise ways and means of managing their systems which play a crucial role in overall performance of an organization. A number of countries in the world are hugely faced by staff turnover to other well developed states and countries, and this is widely contributing to a number of challenges in key areas such as IT systems. This therefore calls for the IT managers and administrators to understand, key employee factors such as motivation factors. They ought to understand what motivates employees, in terms of morale, supervision, career development and paths for growth, and job security (Robert *et al*., 2009). A clear orientation with the managerial drivers such rules, initiatives, integrity, immediate action and emotions will be relative to administrators to better understand the various obstacles that they face in their discipline (Robert & Lesile, 2007; Muhammad *et al*, 2009).

Information management is an immediate task that is currently facing modern IT professionals and in that field of information perpetuity and sustainability against insecurity and other contingencies (Wiley *et al* 2006; Robert & Lesile, 2007). These managers have been faced with numerous challenges and obstacles which in management could be termed as managerial obstacles facing IT leaders. It is evident in any organization that in order to achieve the organizational set goals and objectives, then effective strategy executions have to be formulated (Wren 1994; Yongesh & Dennis, 2005).

1.1.1 Aims of the study

This research was carried out to investigate on the impediments facing IT managers with regard to their delivery, performance and professional satisfaction. The study involved effective drivers of management, which constituted individual obstacles that IT administrators and technicians face during their leadership and managerial execution. The researchers employed managerial drivers which included; rules, initiatives, integrity, immediate action and emotions to better identify key obstacles that face IT managers and administrators.

1.1.2 Hypothesis formulation

Based on the preceding research model developed from the literature, three hypotheses are formulated.

Hypothesis 1: In the context of management leadership in IT administration, IT managers would face five management impediments while implementing their objectives.

Hypothesis 2: With regards to the management obstacles faced by IT managers, the most significant obstacles perceived would be the drivers of rules and emotions.

Hypothesis 3: Given the volatility in IT environment, in the driver of immediate action, IT managers would perceive a number of emergencies and contingencies, while implementing their objectives.

1.2 Literature Review

The global concern and organizational requirements in technology development and innovations has installed a lot of pressure on IT managers to seek to perform to their best level. There are some key areas in IT that these managers have to monitor constantly and periodically to avoid any communication lapses and other technical hitches that accompany information delivery. These are: personnel management and motivation, information management, software security and information resource analysis.

1.2.1 Personnel management and employee motivation

The beauty of achieving high caliber and well motivated employees lies on how well the management manages and values such employees (Drucker 1974; Graeme & Martin, 2009). As matter of fact personnel management will involve resource planning, monitoring, rating employees for appraisal and rewarding them. In an effective organization, work is planned out in advance (Fayol 1949; Kwok & Jianmei, 2006)). Planning is the process of setting the performance expectations and goals for groups and individuals to channel their efforts toward achieving organizational objectives. Getting employees involved in the planning process will help them understand the goals of the organization, what needs to be done, why it needs to be done, and how well it should be done (Drucker 1974; Rajeev & Philip, 2003).

The regulatory requirements for planning employees' performance include establishing the elements and standards of their performance appraisal plans. Performance elements and standards should be measurable, understandable, verifiable, equitable, and achievable (Bateman & Zeithmal 1993; Robert *et al*., 2009). Through critical elements, employees are held accountable as individuals for work assignments or responsibilities. Employee performance plans should be flexible so that they can be adjusted for changing program objectives and work requirements (Wren 1994; Muhammad *et al*., 2009). When used effectively, these plans can be beneficial working documents that are discussed often, and not merely paperwork that is filed in a drawer and seen only when ratings of record are required (Bartol & Martin 1991; Dima *et al*., 2009).

Regulatory requirements for monitoring performance include conducting progress reviews with employees where their performance is compared against their elements and standards. Ongoing monitoring provides the opportunity to check how well employees are meeting predetermined standards and to make changes to unrealistic or problematic standards (Wren 1994; Barbara & Hughes, 2001). And by monitoring continually, unacceptable performance can be identified at any time during the appraisal period and assistance provided to address such performance rather than wait until the end of the period when summary rating levels are assigned (Bartol & Martin 1991; Cecil, 2006).

Employee developmental needs are evaluated and addressed, by organization with good management practice .Developing in this instance means increasing the capacity to perform through training, giving assignments that introduce new skills or higher levels of responsibility, improving work processes, or other methods (Wiley *et al* 2006). Providing employees with training and developmental opportunities encourages good performance, strengthens job-related skills and competencies, and helps employees keep up with changes in the workplace, such as the introduction of new technology (Bartol & Martin 1991).

Carrying out the processes of performance management provides an excellent opportunity to identify developmental needs. During planning and monitoring of work, deficiencies in performance become evident and can be addressed. Areas for improving good performance also stand out, and action can be taken to help successful employees improve even further (Drucker 1947; Fayol 1949; Robert et al., 2009).

In effective organizations, rewards are used well. Rewarding means recognizing employees, individually and as members of groups, for their performance and acknowledging their contributions to the agency's mission. A basic principle of effective management is that all behavior is controlled by its consequences. Those consequences can and should be both formal and informal and both positive and negative (Wren 1994). Good performance is recognized without waiting for nominations for formal awards to be solicited. Recognition is an ongoing, natural part of day-to-day experience. A lot of the actions that reward good performance — like saying "Thank you" — don't require a specific regulatory authority (Bateman & Zeithmal 1993). Nonetheless, awards regulations provide a broad range of forms that more formal rewards can take, such as cash, time off, and many nonmonetary items. The regulations also cover a variety of contributions that can be rewarded, from suggestions to group accomplishments (Bartol & Martin 1991).

In order to manage information effectively, IT managers and employees have to practice good performance management naturally all their lives, executing each key component process well. Goals are set and work is planned routinely (Muhammad *et al*., 2009). Progress toward those goals is measured and employees get feedback. High standards are set, but care is also taken to develop the skills needed to reach them (Bartol & Martin 1991). Formal and informal rewards are used to recognize the behavior and results that accomplish the mission. All five component processes working together and supporting each other achieve natural, effective performance management will be realized by IT managers and employees (Lederer & Mendelow 1988).

1.2.2 Information management

Implementing information technology solutions in a complex and ever-changing organizational environment is never easy (Graeme & Martin, 2009). The challenges inherent in information management projects mean that new approaches need to be taken, if they are to succeed. Users don’t understand systems (Muhammad et al., 2009). When presented with six different information systems, each containing one-sixth of what they want, they generally rely on a piece of paper instead (or ask the person next to them). Educating staff in the purpose and use of a disparate set of information systems is difficult, and generally fruitless (Libicki 1995). The underlying goal should therefore be to deliver a seamless *user experience*, one that hides the systems that the information is coming from (Young-Mi, *et al*., 2007). This is not to say that there should be one enterprise-wide system that contains all information. There will always be a need to have multiple information systems, but the information contained within them should be presented in a human-friendly way (Libicki 1995; Tanya & Huub, 2008).

Ultimately, it also means breaking down the distinctions between applications, and delivering tools and information along task and subject lines (Newcomer *et al* 1991). For example, many organizations store HR procedures on the intranet, but require staff to log a separate 'HR self-service' application that provides a completely different menu structure and appearance. Improving on this, leave details should be located alongside the leave form itself (Kraemer *et al* 1981). In this model, the HR application becomes a background system, invisible to the user. Care should also be taken, however, when looking to a silver-bullet solution for providing a seamless user experience (Wamsely 1992). Despite the promises, portal applications do not automatically deliver this. Instead, a better approach may be to leverage the inherent benefits of the web platform. As long as the applications all look the same, the user will be unaware that they are accessing multiple systems and servers behind the scenes (Libicki 1995).

Successful information management is about organizational and cultural change, and this can only be achieved through strong leadership (Kendall *et al* 1987). The starting point is to create a clear vision of the desired outcomes of the information management strategy. This will describe how the organization will operate, more than just describing how the information systems themselves will work. Effort must then be put into generating a sufficient sense of urgency to drive the deployment and adoption of new systems and processes (Libicki 1995). Stakeholders must also be engaged and involved in the project, to ensure that there is support at all levels in the organization. This focus on leadership then underpins a range of communications activities that ensure that the organization has a clear understanding of the projects and the benefits they will deliver (Kraemer *et al* 1981). When projects are solely driven by the acquisition and deployment of new technology solutions, this leadership is often lacking. Without the engagement and support of key stakeholder outside the IT area, these projects often have little impact.

There is no single application or project that will address and resolve all the information management problems of an organization. Where organizations look for such solutions, large and costly strategic plans are developed. Assuming the results of this strategic planning are actually delivered (which they often aren't), they usually describe a long-term vision but give few clear directions for immediate actions (Robert & Lesile, 2007).

In practice, anyone looking to design the *complete* information management solution will be trapped by 'analysis paralysis': the inability to escape the planning process. Organizations are simply too complex to consider all the factors when developing strategies or planning activities. The answer is to let go of the desire for a perfectly planned approach (Robert *et al*., 2009). Instead, project teams should take a 'journey of a thousand steps'. This approach recognizes that there are hundreds (or thousands) of often small changes that are needed to improve the information management practices across an organization. These changes will often be implemented in parallel (Gee-Woo *et al*., 2005). While some of these changes are organization-wide, most are actually implemented at business unit (or even team) level. When added up over time, these numerous small changes have a major impact on the organization (Newcomer *et al* 1991). This is a very different approach to that typically taken in organizations, and it replaces a single large (centralized) project with many individual initiatives conducted by multiple teams.

The objective of secure software development is to design, implement, configure, and sustain software systems in which security is a necessary property from the beginning of the system's life cycle (i.e., needs and requirements definition) to its end (retirement) (Lenderer & Mendelow 1988). Experience has taught that the most effective way to achieve secure software is for its development life cycle processes to rigorously conform to secure development, deployment, and sustainment principles and practices (Lawin 1947; Libicki 1995; Levin 1947). Organizations that have adopted a secure software development life cycle (SDLC) process have found almost immediately upon doing so that they have begun finding many more vulnerabilities and weaknesses in their software early enough in the SDLC that they are able to eradicate those problems at an acceptable cost (Libicki 1995). Moreover, as such secure practices become second nature over time; these same developers start to notice that they seldom introduce such vulnerabilities and weaknesses into their software in the first place (Kling 1980).

The security of software is threatened at various points throughout its life cycle, both by inadvertent and intentional choices and actions taken by "insiders"—individuals closely affiliated with the organization that is producing, deploying, operating, or maintaining the software, and thus trusted by that organization—and by "outsiders" who have no affiliation with the organization (Kling 1980; Kerr 1991; Libicki 1995). The software's security can be threatened

1.2.3 Organizational culture and managerial drivers

This issue is particularly hard to explain because the culture of an organization is mainly a perception. However, for IT implementation to be effective the right kind of culture or environment is required (Wamsely 1992; Young-Mi *et al*., 2007)). In most cases this means an organization must consistently find a common ground between individuals and systems within the organization (Kraemer *et al* 1981; Gee-Woo *et al*., 2005). Organizational culture issues include: organizational support, politics internal/external, organizational directives, and organizational IT expertise (Kendall *et al* 1987; Barbara & Hughes, 2001). There is need for an organization to appreciate the importance of managerial drivers of management, which include; rules, emotions, initiatives, integrity and immediate action. The works of Richard & Sabourin, 2009; Sabourin 2009 highlighted this managerial divers in detail. A brief discussion is presented below.

The first driver of rules deals with the clarification and alignment of the manager's objectives. This driver gathers variables that refer to factual and rational analysis of given situations. This perspective leads to concept forming and formulation of generalizations that integrate the observations and the reflections. The economic planning and the analysis are prevailing in this dimension. Obstacles deal with figures, figures and protocols. Decision-making is based on facts and abstract principles.

The second driver of emotions deals with getting a commitment to the manager's objectives by its employees. This driver gathers variable dealing with topic such as fetching a commitment, clarifying problems, reconciling the divergent points of view and establishing consensus. In this second situation, we make a thoughtful observation that consists of making observations on the experience lived by the persons and of thinking about their meaning.

The third driver of initiatives deals with translating managerial objectives into concrete projects for employees. It gathers variables dealing with introduction of new projects and ideas that results in more willing and more capable employees. This third driver relies on the active experiment of initiatives; realize projects and continuous improvements to the existing activities.

The fourth driver of immediate action gathers variables that reflect creating value-added action or immediate actions in response to urgent matters in the execution of objectives. It addresses concrete action and those that allows rapid actions on small scale to obtain quick results. Thus, the variables deal with quick decision taking without respect to an established plan.

The fifth driver of integrity deals with executing objectives in the context of integrity of values and principles. It gathers variables associated with executing objectives in respecting organizational values and principles. These variables refer to obstacles faced concerning organizational values. This is the capacity to realize the organization objectives in the respect of the integrity under pressure

1.3 Research methodology and Design

1.3.1 Study design

The research involved qualitative and quantitative studies to explore the research objectives and findings. The use of a "mixed-methodology" approach, both qualitative and quantitative methods, benefited the researcher by giving a wider view and more evidence to analyze the issues. A focus group and a survey

were involved in the respective stages (qualitative and quantitative) of this research in Canadian province. Firstly, focus group (IT technicians) findings served the purpose of providing information for the next stage. The data gathered from the focus groups was analyzed to identify how IT specific themes match the variables in the identified in the literature. Secondly, an online survey was used to explore in depth some of the impending issues which IT managers face while executing their objectives.

1.3.2 Participants (Demographics)

The eligible study participants were degree prepared and qualified IT technicians and administrators from various IT systems and institutions operating within the Canadian province selected for study.

1.3.3 Assessment tool

A survey instrument was designed to solicit opinions from the study participants. The survey instrument was web based and employed commercially available software. Web based surveys are generally inexpensive, widely distributed, avoid transcription and survey alteration issues and allow anonymity in addition to fast and efficient data collection and analysis. Response rate from web based survey are similar to paper based survey. In this study online based survey was implemented with 25 questions that were closed and open ended in nature.

In order to facilitate participants' understanding of this research, a brief introduction of the research purpose and a definition of IT leadership were provided at the beginning of the survey questionnaire. Furthermore, confidentiality and anonymity were afterwards. The demographic questions for this research were placed at the end of the survey questionnaire. According to Sudman & Bradburn (1982) and Robert & Lessile (2007), it was better to keep participants' minds on the purpose of the survey at the beginning. There were no technical jargon or difficult words in the questions, and closed ended questions were used throughout the whole questionnaire. This was quite helpful as respondents could make a quick decision when answering (Cavana et al., 2001), and it provided greater uniformity, thereby making data processing easier (Babbie, 1990; Cecil, 2006).

1.3.4 Items and measurement questions

The survey questionnaire items were selected from previous research and the results of focus group sessions, and were rephrased to suit the context of the study and to represent the variables in the research model. Items measured on a scale for rules, initiatives, immediate action, integrity and emotions were adopted in the research as specified in Table 1.

A five-point Likert scale, with anchors ranging from "Yes", to "No", was used for all questions except the demographic ones. Pre-testing of the items and their measurement was conducted by going through the results of the focus groups and by asking the opinion of academics in the IT area. All developed items were relevantly matched to the IT management and leadership in Canada.

1.3.5 Survey implementation

The survey was opened in the selected province during the Canadian IT managers meeting program, held in 2011 and closed after the meeting. Initial online surveys were completed on site by attendees using laptop stations arranged in one of the meeting rooms. Immediately following the meeting, potential respondent were conducted by email, telephone or fax to solicit their participation. Key personnel in each department within selected organizations were identified and requested to assist the researchers by mobilizing their colleagues' participation.

A selection of other methods was used in an attempt to interpretation. The investigators had no vested

interest in the enhance response rates, including: 1) ensuring that the survey specific outcomes of the survey, was user-friendly, 2) ensuring anonymity and uncensored responses from our neutral academic unit, 3) the use of several contact methods (meeting, telephone, fax, email, newspaper articles) to solicit participation, 4) ensuring timely respondent access to survey results, and 5) promoting the potential benefits of the results to the profession within the country. This was a voluntary anonymous survey. Completion of the survey was considered consent for the participant1.3.6 1.3.6 Main outcome measures

The main outcome measures for this study were professional demographics and the extent of agreement to positively phrased statements regarding their delivery, performance and professional satisfaction with emphasis on the management drivers.

1.3.7 Data analysis

For the purpose of this research, data analysis was descriptive in nature. To simplify the interpretation, degree of agreement with statements was aggregated into two categories of yes and no. Responses were analyzed as single cohort for the respective obstacles and variables that constituted the drivers. Online survey data were downloaded to an excel spreadsheet and then imported into standard statistical software for descriptive analysis. Responses were categorized into two general categories of "Yes'', and "No" to simplify data interpretation. Incomplete surveys were included in the analysis, provided that the basic demographic information and a response to a particular question were provided. The study was one component of unfunded assessment solicited by the Canadian Supreme Council of Information Communication and Technology. To minimize any perception of potential bias and loss of anonymity, the researchers were solely responsible for the administration of survey questionnaires, data collection, analysis and interpretation. The researchers had no vested interest in the specific outcomes of the survey.

1.4: Findings and Results

1.4.1 Results

One hundred and forty nine online survey accesses were recorded during the designated survey collection period. This represents 45% of all IT managers practicing in Canada. None of the surveys were found to contain no responses or respondent duplicated survey attempts and thus none was neglected. We noted that not all participants provided responses to all the survey questions.

1.4.2 Frequency demographics based on research variables with regard to organizational attitudes towards IT managers

The frequency demographic and respondents characteristics are summarized in table 2. This was based in the years of practice in administrative and management positions since commencing the employment. The analysis of the data involved a purely descriptive analysis, which had frequency, percentage, cumulative percentage and the means of central tendencies which included mean, median and standard deviation (Table 2).

1.4.2.1 The driver of rules

Below is a description of what the data gathered from the survey regarding each of the variables of this driver. The driver had variables labeled V_1 to V_5. With regards to V_1 .it was noted to have mean score 3.57, median of 4.00 and standard deviation 1.108. V_2: noted a mean score 3.73 median of 4.00, and standard deviation 1.155. V_3: the variable came out with a mean score 3.43, median 3.00 and standard deviation 0.934. V_4: had noted mean score 3.13, median of 3.00 and standard deviation 1.027. V_5: emerged with a mean score 3.11, median of 3.00, and standard deviation 1.255.

1.4.2.2 The driver of emotions

The driver had its variables labeled as V_6 to V_{10}. V_6: had a mean score: 3.85 and, median of 4.00 and, standard deviation: 0.857. V_7: noted to have a mean score 3.65, median of 4.00 and standard deviation 0.999. V_8: was observed to have a mean score 3.57, median of 4.00 and standard deviation 1.006. V_9: only reported a mean score of 3.93, median of 4.00 and standard deviation 0.917. V_{10}: after analysis, we noted a mean score of 3.45, median of 4.00, and a standard deviation of 1.266.

1.4.2.3 The driver of initiatives

The driver had important variables labeled V_{11} to V_{15}. V_{11}: For this variable the median score is 3.55, median of 4.00 and the standard deviation is 1.101. $V_{12;}$ noticed a mean score 3.03, median of 3.00 and standard deviation 1.133. V_{13} had a mean score 3.86, median of 4.00 and standard deviation 0.956. $V_{14;}$ had a mean score is 3.13, median of 3.00 and the standard deviation is 1.203. V_{15}: From the data analysis, the mean score 3.57, median of 4.00, standard deviation 1.140.

1.4.2.4 The driver of immediate action

The driver had variable labeled V_{16} to $V_{20.}$ V16: From the analysis, this variable had a mean score of 3.37, median of 4.000 and standard deviation of 1.059. V_{17}: scooped a mean score was of 2.77, median of 2.50 and standard deviation 1.233. V_{18}: The analysis of the data gave rise to a mean score 3.18, median of 3.00 and standard deviation1.156. V_{19}: This variable screened a mean of 3.20, median of 3.00 and a standard deviation of 1.059. V_{20}: managed to hold a mean score of 3.25, median of 3.00 and a standard deviation1.212.

1.4.2.5 The driver of Integrity

Under this driver there were variables labeled V_{21} to V_{25}. V21; after analysis had a mean score of 2.72, median of 3.00 and standard deviation 1.172, V_{22}; screened a mean score of 3.10, median of 3.00 and a standard deviation 1.121. V_{23}: Overall, this had a mean average score of 3.13, median of 3.00 and standard deviation 1.204. V_{24}; was noted to have a mean average score of 3.51, median of 4.00 and standard deviation of 1.214. V_{25} was observed to have a mean score is of 2.8, median of 3.00 and standard deviation 1.120.

1.4.3 Perception of IT managers towards the managerial drivers of objective implementation

The researchers developed five managerial drivers that were separately investigated to find out their contribution towards attitudes, management and employee motivation. The driver of rules was after analysis found to have a frequency of 145, a mean of 3.107, median of 3.400 and standard deviation of 0.76265. With respect to the driver of emotions, a frequency recorded was 137, mean of 3.6923, median of 3.800 and standard deviation of 0.81950. The driver of immediate action had a frequency of 134, mean of 3.1448, median of 3.200 and standard deviation of 0.86135. The driver of integrity had a frequency of 134, mean of 3.0489, median of 3.00 and standard deviation of 0.90948. The driver of initiatives had a frequency of 138; mean score of 3.4214, median of 3.45 and standard deviation of 0.85542. The summary of the above findings have been presented in table 3.

1.5 Discussion

The discussion presents an overview of the nature and behavior of managers and administrators with respect to the various management obstacles encountered while discharging their leadership roles. This part is divided into two parts; the specific section and the general discussion section.

1.5.1 General discussion section

Our analysis therefore brings to light, the modern perspective of five drivers of management for IT managers. The analysis of the data highlights how IT management gathers multidimensional practices with varying complementary facets. The following is a brief discussion of the drivers.

The driver of emotions is considered as the foremost management driver due to its high score in mean of 3.6923 and median of 3.800. In other words, motivated and engaged managers and employees contribute to the successful execution of management and objective achievement. The findings related to the driver of initiatives can be applied in the area of identification of training and developmental needs of IT managers and employees, to fulfill the competency gap. Conversion of goals into concrete projects, techniques used for team based management, techniques used as self resolution for solving managerial dilemmas all need a set of unique competency.

The findings related to the driver of rules also have managerial and leadership implications for IT managers. This driver focuses on the clarity of communicating the expectations, systems to evaluate the results and supportive parameters and the process used for regular reviews and it calls for precise identification, design and implementation of communication systems, evaluation systems and monitoring systems respectively. Hence the management should design perfect systems to ensure that the drivers of rules are followed by IT managers and technicians.

Though not all management skills has deadlines and contingencies, preparing for crisis and planning for the same will also ensures the support of the driver of immediate actions. Though the driver of integrity was not widely commented, with regards to this study on IT management and leadership exercising, there is need that managers ensure that their actions are clean and focused on the overall attainment of the organization's objectives and goals.

1.5.2 Specific Discussion

This section examines and discusses all our three hypotheses formulated earlier. With respect to the findings on the subject of exploring the obstacles faced by IT managers while implementing their objectives, we intend to examine to what extent each of our hypothesis was supported. The results of the empirical analyses have provided answers to our research questions. Apart from examining the hypotheses formulated we also wish to elucidate other potential observations of our research to existing literature on IT management and objectives implementation.

Hypothesis 1: In the context of management leadership in IT administration, IT managers would experience five information management impediments while implementing their objectives. The hypothesis was supported by the data analysis.

This first hypothesis refers to the five categories of obstacles developed in the literature review on management drivers in IT management and objectives implementation. The data analysis done supported this hypothesis. Though it is consistent to our research model, additional research with large samples would be needed to support the external validity and to generalize all the five categories in different levels of IT management and objectives implementation across geographic locations.

Hypothesis 2: With regards to the management obstacles faced by IT managers, the most significant obstacles anticipated would be the drivers of rules and emotions. The descriptive analysis largely supported this hypothesis.

In the context of management obstacles in IT management and objective implementation, our second hypothesis states that the most significant category of obstacles faced by IT managers among the five

categories found in the literature review is the driver of emotions and the factors related to it including lack of commitment to goals, lack of trust and lack of awareness of the importance of objectives. The descriptive analysis supports this hypothesis. This hypothesis states that IT managers would perceive lack of clarity in their actual results expected to be the key obstacle under the drivers of rules. It is consistent with the previous research studies indicating that clear priorities and objectives. Our descriptive analysis supports this hypothesis.

Hypothesis 3: Given the volatility in IT environment, in the driver of immediate action, IT managers would anticipate a number of emergencies and contingencies, while implementing their objectives. From the analysis, the hypothesis was supported.

Under the drivers of immediate action, our hypothesis states that IT managers would anticipate many emergencies and last minutes requests and changes as a key obstacle since there is volatility in the IT environment, especially with software security and information management. The descriptive analysis supported this hypothesis.

1.5.3Practical and Theoretical Implications for effective objective implementation by IT Managers

Our research has implication for the information management by IT managers. It shows that a specific focus should be regarding on the obstacles IT managers have had to deal with. Even if this study emphasized many managerial obstacles, it did not found the reason why IT managers encountered more obstacles related to immediate action. Consequently, the case of IT managers, a specific focus should be put for the obstacles that are related to initiatives and rules. Our research has implications for social action in relation to the thorny subject matter of information quality. For instance an organizational context where IT managers and technicians are segregated could hinder their effort to perform and to access to top management position. Our research also has implications for IT managerial action in the sense that it will be always beneficial for our organization to let express different sensibilities and approach to problem-solving within the framework to promote participative management among IT managers and their technicians.

1.5.4 Limitations and Future Research

In the context of IT management and objective implementation, additional research with large samples will be necessary to support the current findings and its validity. Additional research is required to generalize these findings to the IT managers employed specifically in the government institutions and the private sector. Also global level categories have to be included in the additional research to generalize the current research findings.

1.5.5 Conclusion

This study is focused on the impediments experienced by IT managers and technicians as they implement their objectives. Taken as a whole, our findings suggest that, there are some impediments associated with drivers of Emotions, immediate action, Rules and initiatives. Even if these obstacles are in multiple levels to develop and promote IT management and objective implementation skills, it is imperative to study with more depth obstacles faced by IT managers in order to better understand how obstacles they face represent an impediment to the development of their competencies and effective performance in IT.

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Notes:

Table 1: Description of measurement variables in the drivers

Drivers & Variables	*Measurement-Questions*
Driver of Rules	
V_1	The actual results I am expected to achieve with my boss and my organization are not clear.
V_2	We have goals to meet financial expectations and establish the rules to be followed, but we have not established goals for better customer service.
V_3	Even though they were informed, my employees do not clearly understand the results to be achieved.
V_4	The expectations of other work units are not often clear.
V_5	I notice that many issues I deal with involve costs that the organization pays little attention to.
Drivers of Emotions	
V6	My employees do not contribute to my goals (do not “buy-in”).
V_7	My employees are not fully aware of the importance of my objectives.
V_8	My employees are not very motivated to overcome themselves in achieving my goals.
V_9	There is a lack of trust among my employees..

V_{10}	There are team members who complain that we are not fair sometimes.
Drivers of Initiatives	
V_{11}	My employees are not generally held accountable for their actions.
V_{12}	My employees are not entirely able and willing to take the initiative.
V_{13}	When I am absent, my team members are not able to address problems on their own.
V_{14}	Initiatives are not often undertaken because there is a tendency to leave things as they are.
V_{15}	We represent a group of individuals rather than work as a team with clear, common goals.
Drivers of Immediate action	
V_{16}	We have difficulty planning for and dealing with emergencies.
V_{17}	We handle too many emergencies and last-minute requests.
V_{18}	Urgent issues go unresolved without ever finding durable solutions.
V_{19}	We have difficulty creating profitable action plans with long-term results.
V_{20}	We hold too many meetings and non-productive activities with no concrete action taken.
Drivers of Integrity	
V_{21}	At times, I don't think we all share the same values in my organization.

V22	When under pressure, we do not always follow the procedures and work methods.
V_{23}	Sometimes, I notice differences between my values and the values of the organization.
V_{24}	Sometimes, in my work, I don't feel I am actively working towards building the organization's reputation.
V_{25}	All employees do not seem to have a sense of obligation.

Table 1 is a presentation of the measurement items and research variables

Table 2: Summary of descriptive analysis of the research variables

Driver	Variable	Frequency	Percentage	Measures of Central Tendency		
				Mean	Median	STD Deviation
Rules	V_1	148	99.3	3.57	4.00	1.108
	V_2	147	98.7	3.73	4.00	1.155
	V_3	145	97.3	3.43	3.00	0.934
	V_4	143	96.0	3.13	3.00	1.027
	V_5	146	98	3.11	3.00	1.255
Emotions	V_6	137	91.9	3.85	4.00	0.857
	V_7	136	91.3	3.65	4.00	0.999
	V_8	137	91.9	3.57	4.00	1.006

	V_9	137	91.9	3.93	4.00	0.917
	V_{10}	137	91.9	3.45	4.00	1.266
Immediate	V_{11}	138	92.6	3.55	4.00	1.101
Action	V_{12}	138	92.6	3.03	3.00	1.133
	V_{13}	137	91.9	3.86	4.00	0.956
	V_{14}	139	93.3	3.13	3.00	1.203
	V_{15}	138	92.6	3.57	4.00	1.140
	V_{16}	134	89.9	3.37	4.00	1.059
	V_{17}	134	89.9	2.77	2.50	1.233
Integrity	V_{18}	134	89.9	3.18	3.00	1.156
	V_{19}	133	89.9	3.20	3.00	1.059
	V_{20}	134	89.3	3.25	3.00	1.212
	V_{21}	134	89.3	2.72	3.00	1.172
Initiatives		133				
	V_{22}	134	89.3	3.10	3.00	1.121
		132				
	V_{23}	134	89.9	3.13	3.00	1.204
	V_{24}		88.6	3.51	4.00	1.214
	V_{25}					

			89.9	2.81	3.00	1.120

This is a summary of the drivers and the findings of their variables

Table 3: Summary of descriptive analysis of the managerial drivers

Driver	Frequency	Percentage	Measures of Central Tendency		
			Mean	Median	STD Deviation
Rules	145	97.3	3.107	3.40	0.76265
Emotions	137	91.9	3.6923	3.800	0.81950
Immediate Action	134	89.9	3.1448	3.200	0.86135
Integrity	134	89.9	3.0489	3.00	0.90948
Initiatives	138	92.6	3.4214	3.45	0.85542

This is a holistic summary of the drivers of management under study, with their findings