

USE OF INFORMATION SYSTEMS IN THE LEADERSHIP TRIANGLE-NACE FRAMEWORK

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Abstract

Focusing on the various stages involved in becoming an expert leader, this working paper delves into the details as to how a leader could be better equipped with skills that would help in leading a team effectively. A pre-requisite to becoming an expert leader is the ability to think critically, analyse the strategic environment and make well-informed decisions that are less emotional. Alongside, there is increasing importance to harness the potential benefits of innovation, information systems and information technology to make right and better decisions. Globalization and information technology have changed the conditions for leadership. Leadership calls for continuous improvement and smart use of information technology to reach the most pristine form. Using Maslow's hierarchy of needs framework as its edifice, this research has constructed a Leadership Triangle- Novice, Advanced beginner, Competent and Expert (NACE) framework that studies every organ of the various stages of leadership that constitutes to becoming an expert leader. This ongoing research also focuses on presenting these various stages of leadership by identifying how Knowledge Management System tools assist a Novice leader to make key decisions that would otherwise be difficult due to insufficient experience and expertise and how Decision Support System tools could be helpful for both competent and expert leaders.

Keywords: Decision Support System, Knowledge Management System, Leadership traits, Leadership Triangle, NACE Framework

1. Introduction

'*Capax Imperii Nisi Imperisat*' means that 'he would have gone capable of ruling, if he had not ruled at all.'

This apothem relays the need to be an effective leader. Trying to address in principio what makes a good leader, this working paper reviews every organ of Abraham Maslow's hierarchy of needs framework that succinctly forms the genesis of leadership crucibles from which Leadership Triangle-Novice, Advanced beginner, Competent and Expert (NACE) framework clearly delineates that irrespective of the level of managerial expertise, there arises a need to have a judicious combination of hardiness, ability to grasp context to survive blasphemy and hone the actions through the epiphany. A true leader therefore goes through this hermeneutic circle of existence to inhabit their own practice and their own idiosyncratic identity (Nasiopoulos, et al., 2013). Research shows that learning to be an esteemed leader not only involves knowing what we know and can do, but also understanding who we want to mould ourselves to be.

Relating this to the NACE framework, beginning with the Novice level of leadership, the proposed Leadership Triangle shows a linear progression to the next stage of Advanced Beginner and then enters the Competent stage, finally achieving the level of Expert leadership that is also known as

the 'realised state', where all deficiencies have been met and an individual reached "self-actualisation". This is being referred to by Maslow as the state of 'self-actualisation' or B-level (the state of being). Alongside, this paper attempts to address how information systems would be effective in assisting Novice leaders to make some timely decisions. Studies indicate that the past three decades have witnessed dynamic changes in the way an organisation works. With there being an increasing competition, every organisation is in a race for survival. Organisations have therefore tried to be more effective than efficient in their overall decision-making. This, in turn, has had an impact on how the overall leadership is being viewed. At this juncture, it is apt to highlight the four essential traits such as:

- 1) Ability to engage others: exhibiting an inclusive approach in key decision-making process promotes a sense of belongingness among employees.
- 2) A distinctive and compelling voice that helps diffuse any situation.
- 3) A sense of integrity with a strong focus on values.
- 4) Adaptive capacity that portrays the capability to transcend any situation, grasp the context and emerge more powerful than before.

Alongside the above traits, the use of information systems by Novice leaders is a handy tool for effective decision-making. It is evident that Novice leaders find knowledge management system (KMS) in particular very handy in their overall decision-making. Irrespective of the size of the organisation and stage of leadership, studies point out that most of them adopt some kind of an information system tool for an effective functioning (Kepner & Tregoe, 1981). It is also observed that, all information is not sought from the information systems alone, but partly from the projects and individuals in their environment.

"Information is an arrangement of people, data, process and information technology that interact to collect, process, store and provide as output the information needed to support an organization", indicating the importance of information in decision-making (Kepner & Tregoe, 1981). The crucial nature of information systems is that they are not just concern processing data but creating meaning. Information is what you get when humans give data meaning. Much applicability is seen in the initial stages of leadership especially, the Novice level where the epiphany sets in. Research results show that Novice leaders usually prefer another person rather than manuals for information and support.

Importance of information can also be extended to manage a welter of factors that are a part of all level of leadership through to the Expert level. Evidently, absence of relevant and timely information for a decision making in an organization means poor organization planning, poor prioritization of tasks, poor decision-making and overall a poor organization (Adebayo, 2007). Thus, a good flow of information raises the stage from being a Novice through to Advanced beginner, then through to a Competent leader and finally an Expert, who is fully equipped to emerge from any tumultuous circumstances. Recollecting the Hermeneutic circle, this mire of circular qualities coupled with good information for decision-making constitutes an effective leader. It is also believed that a deluge of information to the Novice stage of leaders makes the entire structure flimsy and this is the reason why a knowledge management system would be a better support for novice leaders.

The management of information through information systems such as KMS, plays a profound role in supporting human decision making through a proper analysis of the operational activities in an organisation. Providing timely information and performance analysis reports implies that a Novice leader is fed with information about the direction of the organisation. Consequences of actions or decisions and a few suggestions also fall in place towards effective decision-making (McLeod, 2017). As mentioned in the earlier part of this paper, increasing competition and globalisation, to name a few, have increased the importance of using information system tools such as KMS that appears to enormously assist Novice leaders, in particular, towards sound decision-making. These decisions become the pillars of very sustenance of an organisation. From

the above, it is evident that the purpose of this working paper is to explore the applicability of information system to the NACE framework in particular. This ongoing research also aims to study the applicability of both KMS and DSS towards effective decisions for an organisation.

2. Leadership Defined

Before delving into the literature review of NACE framework, this paper attempts to define the term leadership. Research points out that leadership is not innate, and a leader could be an extrovert or an introvert. Thus, leadership is an acquired skill that can be learnt and must be learnt to manage an organisation with effective ease (McLeod, 2017). This said, no research seems to exist that expounds any pre-defined leadership traits in particular. However, studies do exist to say that an effective leader has many followers, focusses on result by doing the right things, works by setting examples and shows responsibility.

Displaying a 'can do' attitude, an Expert and effective leader makes a difference by constant review of the missions and goals of the organisations. In sharp contrast to the above views of Drucker (1996), Maslow's hierarchy of needs exhibits the following as below mentioned.



Maslow's Hierarchy of Needs

Maslow's hierarchy of needs states that organisations not only focus on daily functioning of the business, but also pay equal importance to the wellbeing of its employees and customers, who form the stakeholders of the organisation (Maslow, 1943). More than following a performance by measurement, an encompassing attitude appears to make a leader more complete. This ability to fulfil the highest needs constitutes the apex entity of self-actualisation in Maslow's hierarchy of needs. Moving into the other entities of Maslow's hierarchy of needs framework, the elements of safety, belonging and self-esteem coupled with physiological factors play a fair part in moulding a leader to be effective in mastering the art of team work and thinking together. For a quick recapitulation, Maslow's hierarchy of needs is diagrammatically shown as follows:

Maslow's Hierarchy of Needs Framework

Having a basic understanding of the hierarchy of needs framework (Figure 1), the first four levels are considered D-needs or deficiency needs and the apex entity called self-actualisation is the B-needs or the being needs. Deficiency needs have that unique capacity to motivate people to work harder to help them achieve their basic needs, which in turn assist towards fulfilment of the highest needs or growth. Growth does not emanate from a lack of something but it is that inner desire to grow to the next level.

Applying Maslow's framework, the proposed NACE framework is shown in Figure 2:

Figure 2. The Proposed NACE Framework – Leadership Triangle.



While Novice and Advanced beginners could still be a tenderfoot in involving and motivating the team, the higher levels of leadership such as the Competent and Expert levels portrays a picture of a leader who is honest, open in communication and build a venerable position for themselves and a positive impact of belonging for both team and organisation. Thus, irrespective of the leadership stage, good and timely information plays a profound part to moulding a leader to be effective holistically.

3. Literature Review

Much research seems to exist on the applicability of technology in management and decision-making. There also exists some literature review on how IT models can be used towards strategic leadership. There are a few other articles that address the impact of management information systems (MIS) on planning and decision-making. Other studies reveal information systems as “a system consisting of network of all communication channels used within an organisation.” In line with this paper, studies also reveal key information models and their relationship in decision-making using some information system tools such as Enterprise Resource Planning (ERP), Knowledge Management System (KMS), Decision Support System (DSS) and Customer Relationship Management (CRM) to enhance the quality of decision-making. When applied to our proposed NACE framework, information system models above mentioned such as KMS and DSS appear to be increasingly applicable to our research. While KMS appears to be a handy tool for both Novice and Advanced beginners' stage of leadership, DSS works well for both Competent and Expert stages of leaders alongside also helping both Novice and Advanced beginners with effective decision-making.

Trying to focus on an exact definition for KMS, there seems to be clear obfuscation surrounding this. As mentioned in principio, KMS is where knowledge has been considered valuable and the diffusion of the same has been primary in increasing competitiveness of a firm. Simply put, KMS is an important information system tool that applies and uses knowledge management principles, which is in particular handy for key decision-making.

Alongside reviewing the literature for KMS, studies also bring out that DSS play a key role in managerial effectiveness. Research also points out as to how DSS helps support both Competent and Expert leaders in particular and equally supports all stages of leadership towards implementation of strategic decisions rather than replacing (Alter, 1976). It conforms to our common wisdom that not all organisational functions can be automated and in many circumstances, they cannot be. It now raises questions about the effectiveness of information systems in helping with informed decision-making from Novice through to Expert levels of

leadership. Although different types of information systems have been conceived through time, research delineates how leaders seem myopic and fail to anticipate how these new systems can raise the organisational standards enmasse. Thus, the purpose of this working paper is to remove these anomalies in the overall application of information systems. This paper aims at understanding how the various information system tools such as KMS and DSS help Novice through to Expert leaders in key decision-making process in an organisation with the right flow of information at the right time to the right set of people. Succinctly stated, the applicability of KMS and DSS to Leadership Triangle -NACE framework is enhanced through this research.

4. Applicability of DSS and KMS to the Leadership Triangle- NACE framework

Recapitulating the diagram from the earlier part of this paper that expounds the NACE framework, clearly a linear progression is imminent. Studies also reveal that in some circumstances, the progression in leadership is non-linear(Dall'Alba, n.d.). A non-linear growth is represented in the following way for an easy reference (Figure 3):

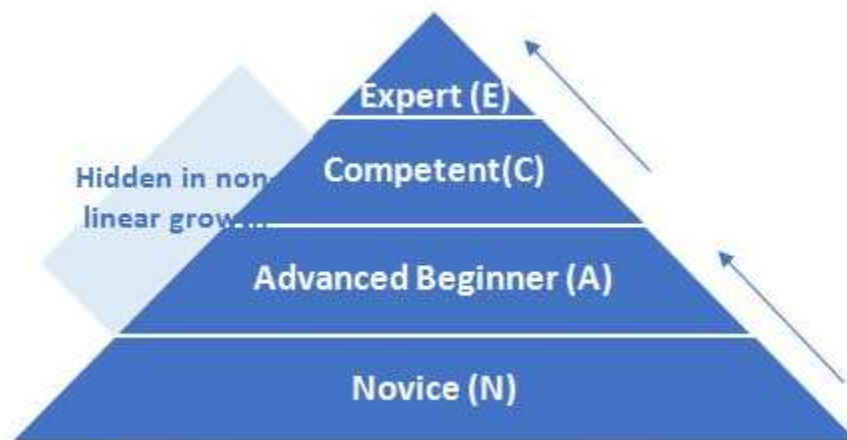


Figure 3. Non-linear growth in the proposed NACE Framework.

The above diagram shows the transformation of Novice leaders straight through to the level of Expert when a situation demands. The Novice still goes through his hidden stages of Advanced Beginner and Competent; albeit while this progression is non-linear, the entire journey of leadership progression is still completed but hidden for the outside view. A few questions that are a routine for effective leaders are best stated in the following(Karim, 2011):

- 1) What is going on?
- 2) Why did this happen?
- 3) Which course of action need to be taken
- 4) What lies ahead?

Clearly, the above questions ask for seeking information, clarifying the sought information, use critical thinking skills to understand why it has happened and finally draw upon an effective solution to the situation alongside understanding the repercussions of the entire decision made. The above is also represented in the form of a diagram in the later part of this research. Irrespective of the leadership stage, the above idea of seeking and clarifying the information appears imperative. In attempting to understand what both KMS and DSS play, these information system tools assist the Novice stage of leaders in particular by helping them to understand the consequences of their decision; suggest alternative ways in the overall decision-making; and help both Novice and Advanced beginners' stages of leaders with timely access to information so that informed decisions can be made.

Evidently, as against Novice and Advanced beginners who are tenderfoots in their decision-making, being equipped with information becomes an incumbent strength at all levels of leadership. Thus, the above brings out the applicability of information system tools to the proposed NACE framework. This judicious combination of information system tools to the proposed NACE framework can be represented diagrammatically as shown in Figure 4 (Kepner & Tregoe, 1981):

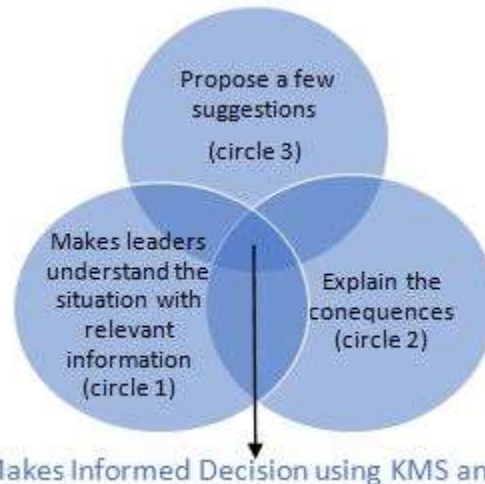


Figure 4. Diagram showing the applicability of information systems tools to the NACE Framework.

Taking the first circle shown in the above figure, a leader is made to understand the situation using the right kind of information at the right time and in the right place. This explains for the increasing applicability and appropriateness of KMS to the Novice and Advanced beginner stage of leadership. This also aligns with Maslow's hierarchy of needs where both Novice and Advanced beginner's stages of leaders are meant to get a good grasp of the D-needs such as physiological, safety, belonging and self-esteem. An epiphany of the above enables an amateur leader to fully prepare for the next levels of leadership namely, the Competent and Expert levels that indicates the self-actualisation stage. Therefore, in trying to understand the role of KMS in assisting both Novice and Advanced beginners, Karim states that with the key information at the right place and in the right time, effective and strategic decisions are more well informed (Karim, 2011). Alongside, understanding the consequences of the decisions further enhances the quality of decision making. Applying Drucker's (1996) idea of leadership being an acquired skill to the NACE framework, at all stages of leadership and in particular, the Novice and Advanced beginner stages, use of information system tools comes in handy to analyse the consequences of actions prior to strategic decision making. This is represented in the second circle of the diagram shown earlier. Proposing suggestions and having an alternative as a fall back is perceived to be handy at all levels of leadership. This is shown in circle 3. Making informed decisions with full awareness of the repercussions enhances the effectiveness of the organisation. This is represented in the area where all the circles culminate.

If an interrelation was absent, then clearly, the circles would be separate rather than being co-joined. This would indicate a lack of communication to assist the Novice and Advanced Beginner stages of leaders to make key strategic decisions in a timely manner. It is under these circumstances that leadership becomes less effective and less powerful that in turn transforms an organisation to become less cohesive in their overall structure. When shown diagrammatically (Figure 5):

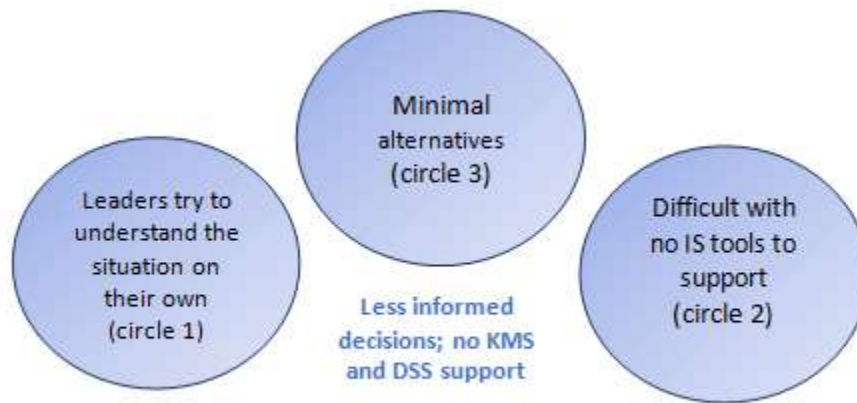


Figure 5. Less cohesive organisation due to due lack of communication and improper information flow and decision making seems affected.

To help understand the effectiveness and applicability of the information system tools, this research uses examples from one of its research studies. Studies by Karim, (2011) reveal the use of information system tools on some key areas of the organisation namely, finance. Understanding the role of KMS, in the field of finance, inputs to help leaders understand the situation would imply helping the leaders to project the future business levels in the areas of finance and minimise the idle cash within the organisation. Understanding the situation coupled with a clear knowledge of the consequences would mean proposing a fitting solution that would be modulating the levels of advertising, pricing to achieve the desired result. The final outcome of a well thought out decision emanates clearly using the information system tools such as DSS and KMS. The applicability and effectiveness of DSS and KMS in an actual organisational environment would be the focus of this working paper at the next level.

This ongoing research also analyses how these different information system tools such as DSS and KMS ideally help their users. It understood from various studies that many DSS help improve interpersonal communication, foster learning thereby reinstating Drucker [6]'s doctrine that leadership is a learned skill. It is also evident that irrespective of the leadership stage, these information system tools holistically assist all the stages to help gain that overall organisational control. While a Novice is still in the experimental phase of leadership, an advanced beginner is better placed to effectively practice people management, conflict management skills better. The use and importance of both DSS and KMS applies here. Having a persuasive approach that is accompanied by effective articulation for efficient negotiations raises the quality of leadership. The above has increased relevance to both Novice and Advanced beginners who are still tenderfoots in the leadership team.

Conclusion

Research also expounds those gaps imminent with information system tools despite its overall usefulness to both Novice and Advanced beginners. A few gaps as pointed out from other research studies conducted are:

- 1) A need to justify the need for DSS simply because a minority group in an organisation find a requirement
- 2) A general perception that technical people understand and appreciate the technical beauty in a system and expect the non-technical employees to know the importance. This said, management usually proceeds with any proposed information system tool if they feel that it is likely to create a positive impact on decision-making capabilities within an organisation.
- 3) In line with the apprehensions of non-technical employees, the relevance of Maslow's hierarchy of needs is worth a mention here. Belonging is that entity that gives its due

contribution towards achieving self-actualisation. This is seemingly reduced with increased use of information system tools in the overall decision-making. A reduction in human involvement indicates a reduced belongingness and self-esteem that feeds the D-needs unhealthily.

Despite these abovementioned gaps hither and thither, the increasing applicability of both KMS and DSS in key strategic decision-making cannot be ruled out. Both these information system tools are believed to greatly enhance the quality of decisions emanating from all the stages of leadership especially from Novice and Advanced beginners. Clearly, the role of DSS and KMS is justified in helping Novice and Advanced beginners with better communication skills that help clearly articulate their strategies for the overall growth and sustainability of the organisation.



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