Critical Success Factors for Effective IT Leadership

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Abstract: The growth of the Information Technology (IT) industry has placed unique challenges on IT professionals. In addition to this, the explosive growth of IT has created many expectations in numerous organisations for IT to be the one-stop solution and miracle 'saviour' to any business problem. This has increased the pressure on IT professionals and executives to deliver on often unrealistic expectations and promises. A proposition is put forward by McKeen and Smith (2003:295) who state that despite the increasing importance of IT products and systems within organisations, there is still a great lack of representation or understanding of IT within the executive and boards of most organisations. The lack of support for IT in organisations, coupled with the complexity and pressure of the environment surrounding IT, has led to an increasing outcry for strong and effective leadership within IT. Many researchers, including Tae-In Fom (2003:3291) have found that the only way for the IT industry to counter the negative factors faced by IT professionals is to develop strong leadership within the professionals. In order for IT professionals to succeed in developing systems that create value and that correctly identify and address the business needs of the firms that they work for, they require knowledge and experience of effective leadership skills.

This research explores the definitions and Critical Success Factors (CSFs) that influence the effectiveness of general leadership and IT leadership in particular. The research further analyses the impact that effective IT has on the IT department and on organisational success, and a relationship between them was found. The research also investigates what competencies are required of IT professionals in order for them to be effective IT leaders. Finally, these Critical Success Factors were integrated into a framework that can be used to develop effective IT leaders.

The research is conducted using a qualitative approach through the review of various existing literature covering the topics of leadership and IT leadership. A comparison and analysis of current models culminated in the proposal of two new unique models displaying the CSFs of effective IT leadership within the operational, tactical and strategic levels of the business.

The proposed models suggest that a leader needs to shift his/her skills and focus within each of the business levels, from the teams' skills, to individual skills and ambition or drive of the firm respectively.

Keywords: critical success factors, effectiveness, leadership, model, CIO

1. Introduction

There are many theories and models developed around IT leadership, and leadership in general. Many of these have several characteristics of leadership in common, and incorporate the concept of technical competencies for the IT leader. Further, there is speculation on what constitutes an effective leader. Tae-In Fom's (2003:3292) definition of IT leadership is "the process followed by an organisation's top IS executive to influence other people within and outside the IS department to attain the department and organisational goals." This research proposes that the effectiveness of IT leaders is characterised by the application of a set of competencies, also known as CSFs, which may refer to a trait, behaviour, the exercise of power or influence, or the situation-specific application of behaviour (McKeen and Smith, 2003:304).

2. Defining leadership

A study by Processor Tech and Trends Journal (2006:29) also proposes that IT can greatly influence organisational success. The authors contend that IT has successfully been used as a tool for improving organisational performance and for providing effective and innovative solutions to traditional business problems. The authors also believe that IT can be used to improve business productivity and the effectiveness of the business' operations. This view is supported by McKeen and Smith (2003: 295), who believe that the only way the IT department can contribute any significant benefits to the organisation is if it receives direction from an effective leadership team. They contend that effective leadership is the only way to infuse an organisation with vigour, optimism and creative energy. These qualities, they propose, are more crucial to creating a productive organisation than any other characteristics. They believe that the effectiveness of the IT leadership directly determines the success of the IT department as a whole.

There are significant amounts of literature that explore what constitutes leadership. Brecher (2006:1) states that the one thing all leaders have in common is that they are able to get the best performance out of their subordinates. Voshurgh (2005:28) emphasises that the core talents of a great leader should be optimism and ego. He defines a leader as someone who rallies people to a better future, as opposed to a manager who turns talents into performance. Whereas a manager starts with the person and then uses his/her talents, a leader starts with a future vision and then uses people to create that vision.

3. Defining IT leadership

IT leaders of the 1970s to 1990s needed a different mix of skills to the ones current IT leaders ought to have. In the past CIOs and IT directors required skills that were heavily skewed towards technology and engineering (Figure 1). Today's IT leaders need a balanced set of skills comprising business skills, technology skills, leadership and management skills, organisational and cultural skills, and fiscal management skills (Figure 2) (Lutchen 2004:26-29).
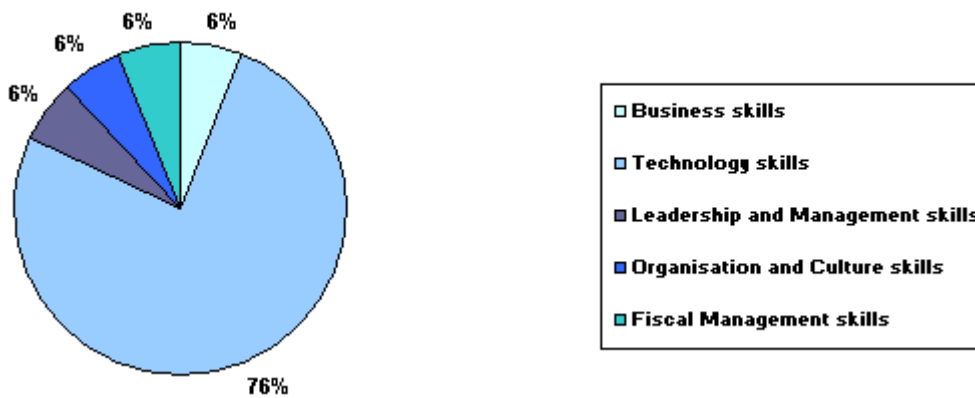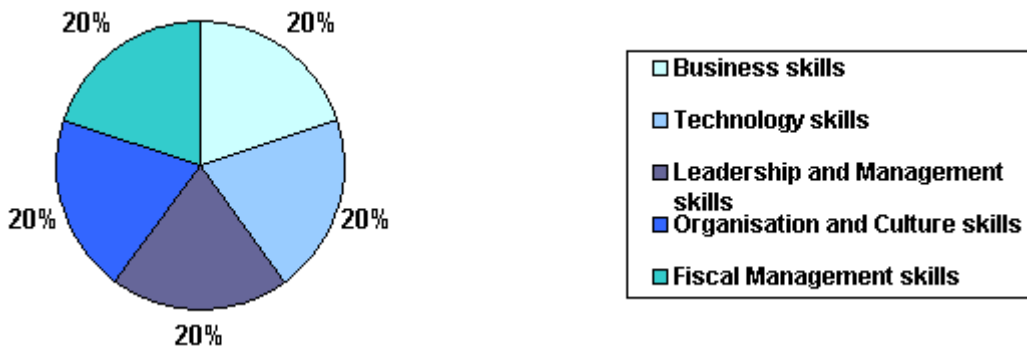
Figure 1: 1970 - 1990 IT Leadership Skills

Figure 2: Today's IT leadership skills

Lutchen's (2004:26-29) Model of Current IT Leadership Skills (Figure 2) provided a convenient starting point for our research as it indicates that an IT leader needs a mix of different skills. McLean and Smits' (2003:1277) Integrated Leadership Model proposes that effective IT leaders must be adept at fulfilling four roles namely: technologist, enabler, innovator and strategist. Chari's (2006:56) research indicated that IT leaders must be able to vary the roles they use in accordance with the needs of the people and the technology they are faced with at any given moment and can apply this role to the situation with the possible business conditions ranging from a stable to a dynamic business climate. The Leadership Growth Role model (Figure 3) depicts Chari's (2006:43) findings.
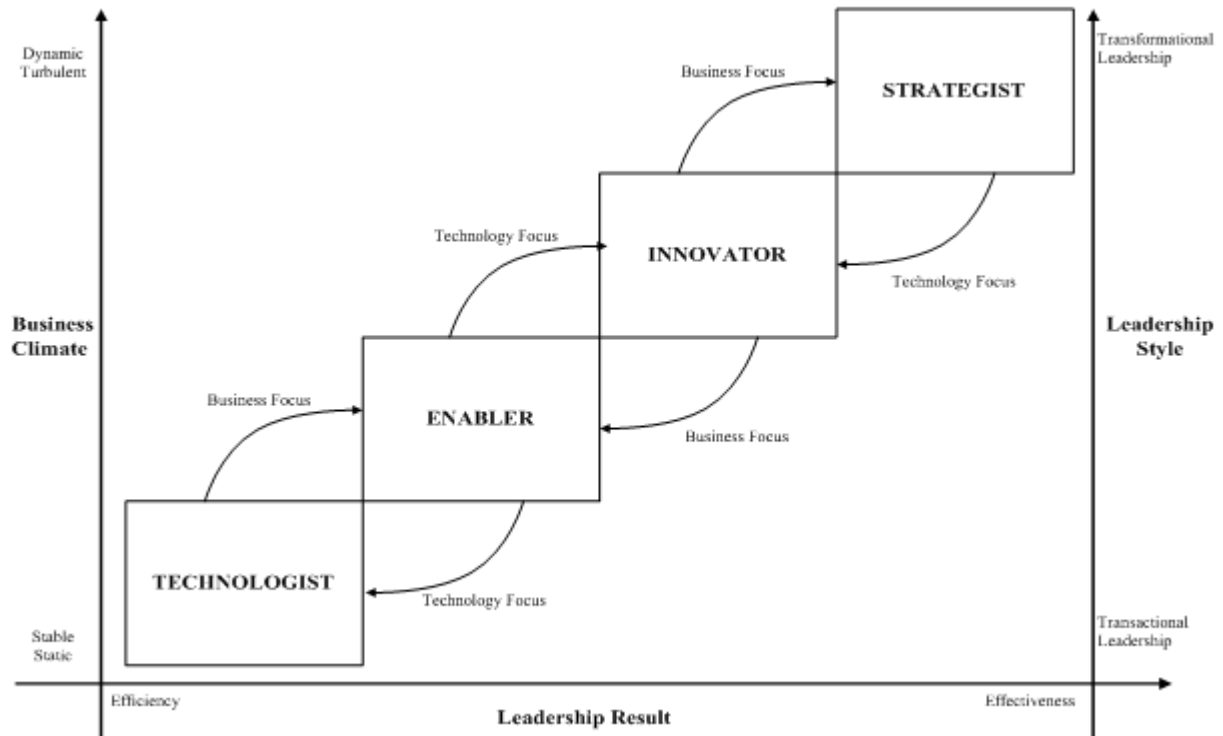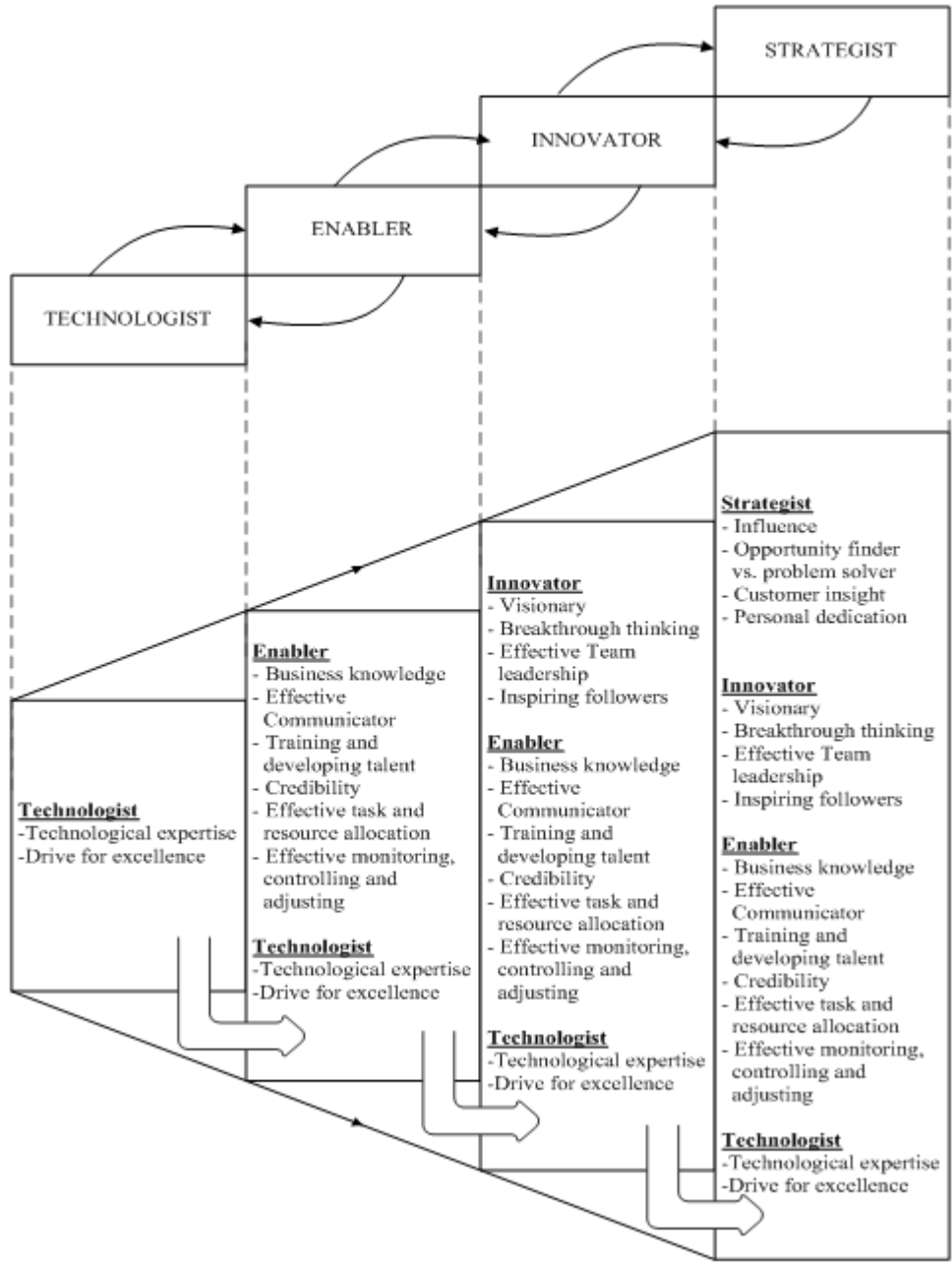
Figure 3: Chari's leadership growth model

4. High level IT leadership competencies

Using the Leadership Growth Model as a guideline, Chari researched the competencies an effective IT leader need to have in each of the four roles. The Extended Leadership Growth model (Figure 4) depicts Chari's (2006:54) findings. With each step up the corporate ladder the IT leader needs to acquire/display a new competency while retaining his/her technical IT skills. Chari's (2006) finding that an effective IT leader needs to have technical competencies in each of the identified roles confirms Lutchen's findings (figure 2).

Figure 4: Extended IT leadership growth model

Chari's Extended IT Leadership Growth Model contends that an effective IT leader is one who has achieved mastery of sixteen competencies through different roles of IT management shown in Table 1 below.

Table 1: Extended growth model competencies

Leadership Role	Individual Competency Needed
Technologist	Technological expertise Drive for excellence
Enabler	Business knowledge Effective Communicator Training and Development Credibility Effective task and resource allocation Effective monitoring, controlling and adjusting
Innovator	Vision Breakthrough thinking Effective team leadership Inspiration
Strategist	Influence Opportunity Finder vs Problem Solver Customer Insight Personal dedication

Chari's (2006) research proposes the effectiveness of an IT leader increases as the leader progresses from technologist to strategist. Additionally, that depending on the size of the IT organisation effective IT leaders need to exhibit different competencies dependant on the role they have to fulfil in the IT department.

5. Detailed IT leadership competencies

von Urff Kaufeld (2007) explored Chari's high level findings using a qualitative approach reviewing existing literature covering the topics of leadership and current IT leadership models to identify detailed competencies of effective IT leaders. von Urff Kaufeld (2007:) derived Table 2 identifying the consolidated competencies of each model listed in the "Competencies" column and the various authors of the existing models as column headings Each set of competencies is grouped according to their focus on Ambition, Individual Skills and Team Skills. These groupings were identified by authors as the most suitable headings to describe the different groups of leadership attributes. Table 2 shows the number of times each author identifies a particular characteristic of effective leadership in their models.

Table 2: Model comparison

Competencies	McKeen and Smith	Gill	Bennis	Papp	Broadbent and Kitzis	Andriole	Total
Ambition							
Vision and Mission	2	1	1	1	1		6
Passion	3		1				4
Risk Management	1		1	1	1		4
Customer insight	1						1
Individual Skills							
Technical Skills	1			2	3	2	8
Empowerment	4	1		1	1		7
Business knowledge	1			1	3	2	7
Change Management				1	1		2
Team Skills							
Support	1	3			1	1	6
Communication	1				1	2	4
Trustworthiness	2		2				4
Team Work	2						2

6. The IT leadership focus model

Based on table 2, von Urff Kaufeld (2007: 39) proposed the IT leadership model (Figure6). The model reflects how the business is divided into operational, tactical and strategic management areas, with fewer people in the strategic management areas than in the tactical and operational areas. This is represented by the triangular shape of the combined leadership traits. As the leader moves through the ranks from operations to strategy, his/her attention moves up the three focus areas and as a result their leadership style should become more effective. von Urff Kaufeld (2007: 47) suggests that in order to be effective, a potential leader must focus on the three key focus areas of the Team, the Individual and Ambition, and these occur within the Operational, Tactical and Strategic areas of the business respectively. von Urff Kaufeld supports Chari's finding that an effective IT leader needs a wide variety of competencies on the strategic level of an organisation and that the leader needs to use different competencies at different levels of management dependant on the focus needed.
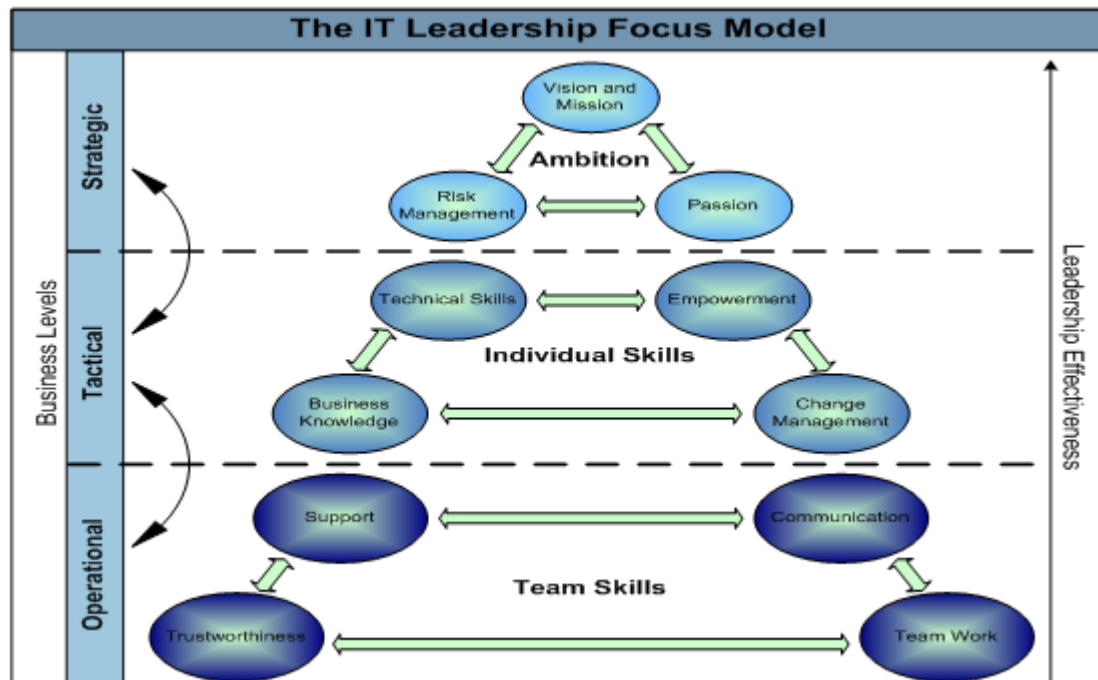

Figure 6: von Urff Kaufeld's IT leadership focus model

6.1 Components of the IT leadership focus model

6.1.1 Operational focus and team skills

Initially the IT leaders must focus on the team. This is the main focus of leaders within operations management. Without a team that is willing and able to be lead to greatness, there can be no leader. "The most commonly used measure of leadership effectiveness is the extent to which the leader's group or organisation performs its tasks successfully and attains its goals." (Yukl 1981: 5). The team constitutes the operational focus of the model, as the team is responsible for carrying out the day to day tasks.

The individual focus areas within the team and operational focus areas are Support, Communication, Trustworthiness and Team Work. Every leader must ensure that s/he supports the team in every possible way. The leader must offer encouragement, and flexibility, and encourage team members to take initiative (McKeen and Smith 2003: 304). This is reiterated by Gill (2006: 91) through the identifying, displaying and reinforcing of shared values, so that each member of the team has a foundation for support which enables them to pursue the team's vision and mission. The leader should also influence, motivate and inspire the team. Broadbent and Kitzis (2005: 7) state that a leader must support his/her team by changing and influencing them to deliver the team's expectations and values. Andriole (2007: 67-72) also emphasises this idea, but focuses more on technology perspective.

Communication is at the forefront of any type of successful team. A team that cannot communicate effectively is certain to fail. A leader must head the communication of the team by keeping members up to

date on events (Andriole 2007: 67-72) and engaging others in the process (McKeen and Smith 2003: 304). In addition the leader must be able to communicate IT to any non IT stakeholder by translating it into business relevant language (Broadbent and Kitzis 2005: 7-9) (Andriole 2007: 67-72).

A team must fully trust their leader to lead them to greatness. The leader must be honest and open with his/her team members so as not to promise anything that cannot be achieved (McKeen and Smith 2003: 304-305). Bennis (1989: 39-41) reaffirms this by declaring that two of the basic ingredients of a leader are integrity and trust. He states that a leader should know both his strengths and weaknesses, and earn the trust of his/her followers through displaying integrity.

After summarising a number of definitions written by various authors, McKeen and Smith (2003: 296) conclude that leadership involves the "conscious influence of one person over a group of other people...". The focus on this section of the definition is on the people that the leader needs to influence in order to be effective. A leader must have the ability to lead a team; otherwise s/he would not be a leader. Similarly, the leader must work as an integral part of the team s/he is leading so as to encourage support, communication and trustworthiness (McKeen and Smith 2003: 305). Despite the fact that McKeen and Smith are the only authors to emphasise on teamwork directly, the author suggests that without the focus on the team, there would be no leader, and as such, Team Work is included in the IT Leadership Focus Model.

6.1.2 Tactical focus and individual skills

Once a leader has developed collaboration within an effective, qualified team that is fully supported by, and trusts him/her, the leader must shift his/her focus towards the tactical level and on the skills and qualifications s/he holds that make him/her capable of achieving the goals of the team. It is not simply enough to enlist a leader that does not have sufficient knowledge of the environment; a leader must be familiar with at least some aspects of the environment, and must be able and willing to explore the areas where this understanding is lacking. Lutchen (2004: 26-29) emphasises that effective leaders should have business, technology, leadership, organisational and fiscal management skills.

A leader must be able to develop his/her own talents and capabilities, as well as those of the team (McKeen and Smith 2003: 305). This is done by encouraging others to accomplish more than they thought they could, by always expecting the best and providing leadership opportunities so as to build up a confidence of their ability (McKeen and Smith 2003: 304). Empowering the leader as well as the team influences them to achieve what needs to be done (Gill 2006: 91). Papp (2001: 50-66) restates this by maintaining that every leader must have the ability to coach the team into acquiring the skills needed to perform. To do this the leader must know the competencies required by the team, and have the aptitude to recruit people with the skill or talent for the job (Broadbent and Kitzis 2005: 7-9).

The one aspect that differentiates the IT Leadership Focus Model from a general leadership model is technical skill. This point is widely emphasised by all the authors that specifically examine IT leadership in their models. McKeen and Smith (2003: 305) call it Technical Knowledge, while Papp (2001: 50-66) states that an IT leader should design and evolve IT infrastructure and arouse the use of IT in the business. The IT leader should be able to weave together the business and its IT function by creating clear and appropriate IT governance and using IT to address business needs (Broadbent and Kitzis 2005: 7-9). In addition the IT leaders must keep abreast of relevant technical advances and set expectations for the technology employed (Andriole 2007: 67-72).

One of the critical traits of an IT leader that is often overlooked is business knowledge. McKeen and Smith (2003: 305) address this in their three critical knowledge/skill areas for IT and emphasise that both technical and business skills must be present in an effective IT leader. The leader must use IT to evolve and expand business opportunities on an operational, tactical and strategic level (Papp 2001: 50-66). Business knowledge must reinforce the technological skills so that IT strategies can be aligned with those of the organisation (Broadbent and Kitzis 2005: 7-9). Andriole (2007: 67-72) states that IT leaders must first focus on the business processes, operations, risks and opportunities before designing the technology to complement it.

The role of IT in the future is an ongoing discussion in many businesses. IT in the past was simply used in the individual departments of a firm, without any integration or communication between functions. Since then, the world has transitioned into a global economy with increasing competition and demand. In order to keep up with this massive growth and change in demand, businesses have had to focus on their core strengths while using IT to facilitate this change. IT is no longer just a competitive advantage, but a strategy

that is critical to the survival of the firm in today's global economy (Kassanjee 2007). Globalisation has enabled businesses the opportunity to track consumer demands around the world. This has meant that businesses that do not keep up with changing trends often go under. Change management is therefore a critical role in IT leadership to ensure that the organisation can keep up with the fast pace of global demand (Kassanjee 2007). Papp (2001: 50-66) and Broadbent and Kitzis (2005: 7-9) reiterate the importance of change management among people, jobs and workflows.

6.1.3 Strategic focus and ambition

Finally, the leader should have a certain ambition or drive that enables him/her to lead the team to greatness. Ambition is the main part of strategic management, as it has to do with planning the future of the business. This ambition is divided into three competency areas: Vision and Mission; Passion; and Risk Management. Table 2 shows that Customer Insight was included as a derived IT leadership trait; however, the lack of coverage by other authors signifies its lack of importance, and as a result it has been discarded within the IT Leadership Focus Model. This competency however, could improve the effectiveness of an IT leader within the E-commerce industries.

Every leader should have a clear vision of what is to be achieved (McKeen and Smith 2003: 304), and a mission through which it can be pursued (Gill 2006: 91). The vision should be used to inspire and motivate the team members, to maintain a bigger picture of the overall goal (McKeen and Smith 2003: 304), and should give the leader a guiding strength to accomplish it (Bennis 1989: 39-41). A mission defines how the leader will build the organisations success (Papp 2001: 50-66) (Broadbent and Kitzis 2005: 7-9).

Donald Trump proclaims, "I've always told people that to be successful you have to enjoy what you are doing" (Woopidoo 2007). This point has been reiterated by Mihaly Csikszentmihalyi, Bob Parsons, and Oprah Winfrey (Woopidoo 2007), among several other successful leaders. Therefore we can deduce that any person is most successful when s/he enjoys what s/he is doing, and as a result the same thing goes for leaders. A leader should ideally have a passion for his/her role and the task that is to be accomplished. S/he should know the technology and the business thoroughly enough to be called an expert (McKeen and Smith 2003: 304), and must have a drive to achieve success and a passion for the business (McKeen and Smith 2003: 305), life and a course of action (Bennis 1989: 39-41). By communicating and sharing this passion with the team, the leader is certain to be more successful (Bennis 1989: 39-41).

A leader must develop the ability to follow ideas and take risks (McKeen and Smith 2003: 305). S/he must have a certain curiosity or daring when it comes to pursuing opportunities (Bennis 1989: 39-41), and have risk management skills. Specifically within the changing world of technology, an IT leader should have the capacity to develop or follow technology trends (Papp 2001: 50-66) and manage the IT risks that result (Broadbent and Kitzis 2005: 7-9).

6.1.4 The business environment

The business environment is not explicitly represented within the model, but it includes all external factors to the firm in which the IT leader operates. The IT leader does not have any influence over the aspects of this environment, and so must adjust his/her leadership techniques accordingly. This business environment includes the global economy and markets within which the firm is operating, the organisations stakeholders, partners and competitors, as well as the government, laws and industry standards. The business environment is important within the IT Leadership Focus Model, because all three focus areas in the operational, tactical and strategic leadership areas exist within this environment, and therefore cannot be influenced without taking the environment into account. Essentially the business environment consists of a number of barriers which define the scope of the organisation and form its boundaries. The IT industry presents a fast paced changing environment within which the IT leaders must follow or set trends in order to survive.

7. Conclusion

The constant evolution of IT results in firms having to re-engineer their business processes to incorporate the latest technological advancements. These advancements present demanding challenges for IT leaders as they must ensure that IT is aligned with business strategies, while maintaining consistent and applicable business systems. It is therefore pertinent that IT leaders are aware of what competencies and traits facilitate effective leadership. The leaders must develop and nurture these abilities if they are to be successful. It is important for business continuity that leadership skills are developed at all levels of the organisation.

A key attribute of an effective leader was found to be the awareness of and sensitivity to the dynamics of the business environment, the people, tasks and organisational structure, which enables a leader to use particular competencies to invoke the appropriate behaviour or trait. It should be noted that in most cases it is simply a lack of any of these characteristics that make the leader ineffective.

Finally, the research also indicates that to be an effective IT leader one needs to have a wide variety of critical competencies at the operational, tactical and strategic business levels.

8. Future work

There is a need for future research to assess the findings of the proposed IT Leadership Focus Model. A research questionnaire will be set up based on the competencies found in this research and this will be empirically tested in the business environment to determine if the findings can be used to evaluate the effectiveness of IT leaders.

In the higher tertiary education environment the IT Leadership Focus Model (Figure 7) suggests that IS post graduate courses should promote Vision and Mission, Business Knowledge, Risk Management and Empowerment competencies to prospective IT leaders to promote their effectiveness in industry.

Finally, the IT Leadership Focus Model could be transformed through the inclusion of a further dimension, detailing how to use the findings of the model for IT leadership training.

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