RELATIONSHIP BETWEEN PERCEIVED LEADERSHIP AND

MANAGEMENT SKILLS TRAINING IN AN ENGINEERING ENVIRONMENT

BY

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DECLARATION

I, **Francois Jacobus du Toit**, hereby declare that this dissertation submitted for degree purposes at the Vaal University of Technology, has not previously been submitted for degree purposes to any other institution of higher learning and that, except for sources acknowledged, the work is entirely that of the researcher.

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ABSTRACT

Technically qualified persons are frequently promoted into managerial positions. This move from a highly objective and exact environment to one which is uncertain and sometimes without objective measures, principles and guidelines is not always successful. The qualities that were the foundation for success in the technical environment quite often become stumbling blocks for success in management.

This study compares perceived leadership of a technically trained person in management who has obtained some management skills training (MST) with technically trained colleagues in management but without MST.

The most significant observation from this study is that the leader with MST is perceived to be slightly more effective in terms of perceived leadership when compared with colleagues without MST. The chosen research design and the fact that other variables which also affect perceived leadership were not considered in this limited study, leads to the conclusion that MST, although an important contributor, can not be seen as the only contributor to increased leadership effectiveness.

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CHAPTER 1: INTRODUCTION AND OVERVIEW OF THE STUDY

This dissertation explores the relationship between perceived leadership and management skills training in an engineering environment.

This chapter presents the background to the study, followed by the research question and general hypothesis. It also provides an overview of the purpose and objectives of the study. The research design and research methodology are briefly described and the scope and demarcation of the study is outlined. A chapter description is also supplied.

1.1   Background

Technically qualified persons, amongst others engineers, are frequently promoted into managerial positions. Most University training programmes in these technical fields contain little or no management skills training (Badawy, 1995:51). This leads to the fact that these persons find themselves in a situation where little or no applicable training forms the basis of the task they now have to perform as a manager.

For many years it was believed that engineers place more emphasis on the more exact dimensions of work (task-driven) while the emotive aspects (people-driven) are neglected (Coetzee, 1987:32). Technical professionals find themselves moving from highly objective and exact technical and scientific fields to highly subjective and uncertain environments without objective measures, principles and guidelines to fall back on. This generates a great deal of anxiety and frustration during the transition period (Badawy, 1995:17). It is, therefore, no surprise that managers with an engineering background fulfil this task with varying degrees of success (Badawy, 1995:72).

Read (1996:18) summarised this view as follows:

"Just because you are an excellent contributor technically does not guarantee you will be an effective leader. To the contrary, your technical skills may even get into the way of your ability to perform as a good manager."

1.2 Research Question and General Hypothesis

This study will assume that management skills training provides the manager with "content skills": Those skills required to manage subordinates. The **research question** that needs to be answered is:

Does Management Skills Training also provide the manager with "process skills": those skills required to be an effective leader to his/her subordinates?

The **general hypothesis** of this study is:
There is no significant difference in perceived leadership effectiveness between technically trained managers with management skills training and technically trained managers without management skills training.

1.3 Purpose of the Study

The purpose of the study can be described in terms of the following general and specific objectives:

The **general objective** of this study is to determine whether technically trained people in possession of management skills training are perceived to be more effective leaders when compared with technically trained people in management positions who have received no formal management skills training.

The **specific objectives (theoretical)** of this study are:
- To determine those key managerial skills needed for effective leadership in an engineering environment, as documented in literature.

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- To conduct a literature study regarding the instruments available for the practical determination of effectiveness in leadership.

The **specific objective (empirical)** of this study is:

- To determine whether management skills training improves the perceived leadership effectiveness in an engineering environment.

1.4   Research Design

For the purpose of this study, a post-test only, two group design is used. An *ex post facto* field study is conducted: The first group consists of subordinates, peers and the supervisor of a leader who has been subjected to management skills training, while the second group consists of subordinates, peers and the supervisor of leaders who received no formal management skills training.   This second group of leaders developed their management skills mainly through experience in the workplace.   Both groups form part of the same engineering environment namely the Faculty of Engineering at the Vaal University of Technology.

1.5   Research Methodology

1.5.1   Measuring Instrument

An instrument known as the Multifactor Leadership Questionnaire (MLQ) is used for this study. The MLQ measures the broad range of Leadership from Laisses-fair to Idealised Influence.   It measures dimensions associated with effective and ineffective leadership.   The MLQ consists of 45 items with four factors that represent the meaning of each construct of the full range model. Research indicates the reliabilities of the scales by means of Cronbach's coefficient alpha of 0,944; 0,736 and 0,803 for transformational-, transactional- and non-transactional leadership respectively (Brand, 2003:6). The MLQ has been shown to be equally effective when supervisors, colleagues, peers or direct reports rate the leader (Bass and Avolio, 1997:11).

The MLQ has been the subject of study and method in at least 100 doctoral theses and research investigations, many of these in Europe, Asia and Africa (Bass and Avolio, 1997:16). A copy of the MLQ and associated documentation is included as **annexure C** to this dissertation.

1.5.2 Experimental Procedure

The nine Heads of Departments, taking up a leadership role on middle management level in the Faculty of Engineering at the Vaal University of Technology, are the subjects of the evaluation.

The first step in the process was for the researcher to convince these leaders to subject themselves to a 360° MLQ leadership evaluation: an agreement of absolute confidentiality in exchange for individual feedback after the session was contracted. A copy of the request for participation is included as **annexure D** to this dissertation.

Group sessions, arranged by each leader with his subordinates, where both the leader and those subordinates who were willing to participate, were present, were conducted. The researcher explained the purpose of the experiment and this was followed by a session during which the leader performed a self-evaluation while at the same time the subordinates evaluated their leader. The subordinates were not informed about the fundamental purpose of the research in order to prevent them from being biased in any way.

Honesty and confidentiality were stressed as the cornerstones for the success of the exercise. For the purpose of peer evaluation, each leader was requested to identify two fellow leaders who were perceived to have sufficient knowledge about the leader. They were then requested to evaluate their peer.

The Dean of the Faculty was requested to do a top-down evaluation of the nine leaders. This was done in isolation from the group of leaders. Honesty,

objectivity and confidentiality were again stressed as critical contributors to the success of the exercise.

Once completed, the questionnaires were processed by Productivity Development (Pty) Ltd, Ferndale, Randburg.

1.6 Scope and Demarcation of the Study

The primary focus of the study is the determination of the effect of management skills training on perceived leadership effectiveness in an engineering environment. The broader picture of leadership/managerial efficiency does not form part of this study. This can be the focus of a follow-up study.

Only one variable, namely the effect of management skills training is to be evaluated. The effect of secondary variables such as years of experience, personality traits and so on are not considered.

1.7 Chapter Division

The chapter division of this study is as follows:

Chapter 2 is entitled *Key Leadership and Management Concepts as Applied to an Engineering Environment*, and explains elements of leadership, management and engineering management.

Chapter 3 entitled *Fundamental Concepts Related to the Growth of the Technical Professional into Management*, explains characteristics of the typical technical professional and its managerial implications, challenges faced by the technical employee when promoted into management and skills required for effective leadership and management in an engineering environment.

Chapter 4 entitled *Research Methodology,* explains the selection of the sample from the target population, the location of the instrument used for perceived leadership effectiveness, the measuring instrument, the reasons for the use of the structured questionnaire, the research design as well as validity and reliability of the methods used.

Chapter 5 entitled *Results and Discussions of Findings,* includes the results, an analysis of the findings and a discussion of these findings.

Chapter 6 entitled *Conclusions and Recommendations,* contains the conclusions and recommendations for further research in this field.

1.8   Summary

In this chapter an overview of the study is provided. Attention is drawn to the phenomenon of technically trained people ending up in managerial positions.

The purpose and objectives of the study as well as the appropriate research design and methodology are discussed briefly. The scope and demarcation of the study are presented followed by the chapter division.

Chapters 2 and 3 present a literature study, embarked upon to provide theoretical knowledge on key elements of leadership and management as applied to an engineering environment; characteristics of the technical professional; challenges faced by the technical employee when promoted into management and fundamental skills required for effective leadership and management in an engineering environment.

CHAPTER 2: KEY LEADERSHIP AND MANAGEMENT CONCEPTS AS APPLIED TO AN ENGINEERING ENVIRONMENT

2.1   Introduction

The purpose of this chapter is to describe relevant leadership and management concepts that form the basis of this study. The focus is on those concepts that are relevant to an engineering/technical environment. A basic description of the concept is, where possible, integrated with an engineering perspective: the way it finds application in this specific environment.

2.2   Leadership

Leadership, a concept that has fascinated people for many centuries, is defined in many ways. According to Kreitner and Kinicki (1995:428) leadership is defined as *"a social influence process in which leaders seek the voluntary participation of subordinators in an effort to reach organizational objectives".*

Many early attempts were made to find the single **leadership trait** (characteristic), or the grouping of say half a dozen of these traits, that would explain the difference between successful and unsuccessful leaders. Research results in this area proliferated without revealing any substantial correlation between traits in any reasonable combination and leadership effectiveness (Giegold, 1982:91).

Enthusiasm for the trait approach diminished, but some research in traits continued. By the mid 1970's, a more balanced view emerged: although no trait ensures leadership success, certain traits are potentially useful. The perspective of the 1990's was that some **personality traits** – many of which a person need not be born with, but can strive to acquire – do distinguish effective leaders from other people (Bateman and Zeithaml, 1993:416). These traits are:

- Drive: *Drive* refers to a set of traits that reflect a high level of effort. Drive includes high need for achievement, constant striving for improvement, ambition, a high energy level, tenacity (persistence in the face of obstacles), and initiative. In several countries, the achievement needs of top executives have been shown to be related to the growth rates of their organisations.

- Leadership motivation: Great leaders not only have drive; they *want* to lead. They have a high need for power, preferring to be in leadership rather than subordinate positions.

- Integrity: *Integrity* is the correspondence between actions and words. Honesty and credibility, in addition to being desirable characteristics in their own right, are especially important for leaders because these traits inspire trust in others.

- Self-confidence: *Self-confidence* is important for a number of reasons. The leadership role is challenging, and setbacks are inevitable. Self-confidence allows a leader to overcome obstacles, make decisions despite uncertainty, and instill confidence in others. All of these qualities are vital to implementing decisions and attaining the leader's vision.

- Knowledge of the business: Effective leaders have a high level of knowledge about their industries, companies, and technical matters. Leaders must have the intelligence to interpret vast quantities of information. Advanced degrees are useful in a career, but ultimately less important than acquired expertise in matters relevant to the organisation.

- The ability to perceive the needs and goals of followers and to adjust one's personal leadership approach accordingly: Leadership means being able to assess others, evaluate the situation, and select or

change behaviour to more effectively respond to the demands of the circumstances.

2.2.1 Leadership Models

Leadership style became more prominent as researchers realised that leadership success is also affected by the *approach* the leader used with his or her followers. Different **leadership models** were developed.

One-dimensional leadership models such as Robert Tannenbaum's development, attempted to plot leadership behaviour on a single scale ranging from highly autocratic or dictatorial to highly democratic. The well known theory, developed by Douglas Mac Gregor, identified two polar positions: A group of attitudes towards employees he labelled Theory X and another set he called Theory Y (Giegold, 1982:92).

A Theory X manager would classify his subordinates as follows: *"People work primarily for money. They are only motivated by fear and insecurity and only to a small degree by non-monetary rewards. They tend to shun responsibility and therefore need very close supervision. You have to lay out procedures for them in great detail because they will go astray if you let them take things into their own hands. Tight control is the watchword, and they will respect you for that. In fact they will be very uncomfortable if you don't give it to them."* A Theory Y statement would contain basically the opposite assertion: people strive for growth; are motivated by achievement, freedom and self-control; actively seek more responsibility; do not need or want close supervision and have a great deal of untapped initiative and creativity that they are eager to use. Mac Gregor suspected that managers who operated under the Y assumptions would excel (Giegold, 1982:92).

A natural extension of this model was the **two-dimensional leadership model**, where two variables are involved, namely task-oriented activities and people-oriented activities (Giegold, 1982:93).

The two-dimensional model was enhanced with the development of Blake and Mc Canse's "leadership grid" when numerical co-ordinates were added to this concept as shown in Figure 1.

High 9 8	**1,9 Country Club Management** Thoughtful attention to needs of people for satisfying relationships leads to a comfortable, friendly organisation atmosphere and work tempo.						**9,9 Team Management** Work accomplishment is from committed people; interdependence through a 'common stake' in organisation purpose leads to relationships of trust and respect		
Concern for People 7 6 5				**5,5 Middle of the Road Management** Adequate organisation performance is possible through balancing the necessity to get out work with maintaining morale of people at a satisfactory level					
4 3 2 Low 1	**1,1 Impoverished Management** Exertion of minimum effort to get required work done is appropriate to sustain organisation membership.						**9,1 Authority-Compliance Management** Efficiency in operations results from arranging conditions of work in such a way that human elements interfere to a minimum degree.		

1	2	3	4	5	6	7	8	9
Low			Concern for Production					High

Source: Daft, 2002:56.

Figure 1.   The Leadership Grid

- **Task-orientated activities**, including all behaviour directed primarily at completion of a task or at "getting out the production", behaviour that tends to ignore or sub-serviate the workers' interests, needs and feelings. This leadership variable was usually labelled *concern for production*.

- **People-oriented activities**, consisting of all behaviour that showed consideration for the comfort, feelings, problems and general well-being of the work force, without apparent concern for the task itself. This leadership variable, reflecting the amount of such activity, was labelled *concern for people*.

In an effort to determine why neither the task-oriented nor the human-relations-oriented leader was consistently successful, F E Fiedler introduced the **Fielder's contingency model** of leadership effectiveness. This **three dimensional leadership model** presents the leadership situation in terms of three key elements that can either be favourable or unfavourable to a leader. They are the quality of the leader-member relations, task structure and the leader position power. Daft (2002:81) explains these three elements as follows:

Leader-member relations refer to group atmosphere and members' attitudes toward and acceptance of the leader. When subordinates trust, respect, and have confidence in the leader, leader-member relations are considered good. When subordinates distrust, do not respect, and have little confidence in the leader, leader-member relations are poor.

Task structure refers to the extent to which tasks performed by the group are defined, involve specific procedures, and have clear, explicit goals. Routine, well-defined tasks, such as those of assembly-line workers, have a high degree of structure. Creative, ill-defined tasks, such as research and development or strategic planning, have a low degree of task structure. When

task structure is high, the situation is considered favourable to the leader; when low, the situation is less favourable to the leader.

Position power is the extent to which the leader has formal authority over subordinates. Position power is high when the leader has the power to plan and direct the work of subordinates, evaluate it, and reward or punish them. Position power is low when the leader has little authority over subordinates and cannot evaluate their work or reward them. When position power is high, the situation is considered favourable for the leader; when low, the situation is unfavourable to the leader.

Figure 2 illustrates the outcome of Fiedler's research.

Leader-member relations	Good				Poor			
Task structure	Structured		Unstructured		Structured		Unstructured	
Leader position power	High	Low	High	Low	High	Low	High	Low
Category	1	2	3	4	5	6	7	8

◄──►

Favourable for leader   **Unfavourable for leader**

Type of leader most effective in the situation	Task motivated	Task motivated	Task motivated	Relationship motivated	Relationship motivated	Relationship motivated	Relationship motivated	Task motivated

Source: Bateman and Zeithalm, 1993:422.

Figure 2. Fiedler's analysis of situations in which the task- or relationship-motivated leader is more effective

From figure 2, the following can be derived:

- The lower the category number, the more favourable the situation is for the leader and visa versa.
- Different situations dictate different leadership styles.

In conclusion it can be remarked that Fiedler's theory was not always supported by research. His viewpoint that leaders cannot change their leadership style, but must be assigned to situations that suit their style, remains controversial. (Robbins, 1994:503–504). House, as quoted by Kreitner and Kinicki, (1995:438) advocates that leaders can exhibit more than one leadership style as discussed in the next section.

2.2.2 Leadership Styles

- Directive leadership: Providing guidance to employees about what should be done and how to do it, scheduling work, and maintaining standards of performance.
- Supportive leadership: Showing concern for the well-being and needs of employees, being friendly and approachable, and treating workers as equals.
- Participative leadership: Consulting with employees and seriously considering their ideas when making decisions.
- Achievement-oriented leadership: Encouraging employees to perform at their highest level by setting challenging goals, emphasising excellence, and demonstrating confidence in employee abilities.

Abovementioned leadership styles can be summarised as **transactional leadership**; focussing on the interpersonal transactions between managers and employees. Leaders engage in behaviours that maintain quality interaction between them and their followers. The two underlying characteristics of transactional leadership are that firstly leaders use contingent rewards to motivate employees and secondly leaders exert

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corrective action only when subordinates fail to obtain performance goals (Kreitner and Kinicki, 1995:441).

In contrast **charismatic or transformational leadership** transforms employees to pursue organisational goals over self-interests. (Kreitner and Kinicki, 1995:441). These leaders inspire followers to transcend their own self interest for the good of the organisation and are capable of having a profound and extraordinary effect on their followers (Robbins, 1994:514).

In general terms, research indicates that charismatic leaders received higher performance ratings, were viewed as more effective leaders by both supervisors and followers and had more satisfied and productive followers than non-charismatic leaders. Charismatic leaders also had higher project quality and budget/schedule performance ratings and were identified as more effective role models (Kreitner and Kinicki, 1995:444).

2.2.3 The Shift from Transactional to Transformational Leadership

The basis of **transactional leadership** is a transaction or exchange process between leaders and followers. The transactional leader recognises followers' needs and desires and then clarifies how those needs and desires will be satisfied in exchange for meeting specified objectives or performing certain duties. Thus, followers receive rewards for job performance, while leaders benefit from the completion of the task. Transactional leaders focus on the present and excel at keeping the organisation running smoothly and efficiently (Daft, 2002:147). In its more constructive form, transactional leadership is supplemented by working with individuals and/or groups, setting up and defining agreements or contracts to achieve specific work objectives, discovering individuals' capabilities, and specifying the compensation and rewards that can be expected upon successful completion of the tasks. In its corrective form, it focuses on setting standards and either passively waiting for mistakes to occur before taking action or, in its active form, closely monitoring for the occurrence of any mistakes. In either its passive or active form, it focuses on identifying mistakes (Bass and Avolio, 1997:2).

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The reliance on transactional leadership will, however, fall short of the leadership challenges confronting most organisations today. The need for developing transformational leadership skills and competencies has never been greater (Avolio, 1997:1).

Transformational leadership involves leaders who motivate individuals to perform beyond normal expectations by inspiring subordinates to focus on broader missions that transcend their own immediate self-interests, to concentrate on intrinsic higher-level goals rather than extrinsic lower level goals, and to have confidence in their abilities to achieve the extraordinary missions articulated by the leader (Bartol and Martins, 1998:434).

To summarise, transformational leadership differs from transactional leadership in four significant areas (Daft, 2002:148):

- Transformational leadership develops followers into leaders.
- Transformational leadership elevates the concerns of following from lower level physical needs (such as safety and security) to higher level psychological needs (such as self-esteem and self-actualisation).
- Transformational leadership inspires followers to go beyond their own self-interests for the good of the group.
- Transformational leadership paints a vision of a desired future state and communicate it in a way that makes the pain of change worth the effort.

In general terms, transformational leadership is associated with higher levels of effectiveness and greater satisfaction. Constructive transactional leadership yields similar outcomes, but to a lesser degree. The optimal leader is one who integrates constructive/corrective transactional leadership with transformational leadership over time and situational challenges. Effective transactional leadership forms the base upon which transformational leadership builds to achieve higher performance (Bass and Avolio, 1997:13).

The major leadership constructs – transformational leadership, transactional leadership and non-leadership – form a new paradigm for understanding both the lower- and higher order effects of leadership style. This paradigm builds on earlier leadership paradigms, such as those of autocratic versus democratic leadership, directive versus participative leadership and task, versus relationships oriented leadership which have dominated selection, training, development and research in this field for the past 50 years (Bass and Avolio. 1997:2).

2.2.4 Leading Technical Professionals

Leading technical professionals can take place more effectively under the following conditions (Babcock, 1991:143-145):

- Technical competence: The supervisor's technical competence is related both to scientific productivity and the scientists' willingness to comply with management directives. Leaders of productive groups serve many roles that depend on technical expertise including recognising good ideas emerging inside and outside the group, defining the significant problems, influencing work goals on the basis of expertise and providing technical stimulation.
- Controlled freedom: Leaders of productive groups create controlled freedom, a condition in which decision making is shared but not given away and autonomy is partially preserved.
- Leader as metronome: The job of the project manager is to widen or narrow limits, add or subtract weights where tradeoffs are to be made, speed up or slow down actions, increase emphasis on some activities and decrease emphasis on others.
- Work challenge: Since challenging work is one of the most important things to a professional, the technical manager is measured by the extent to which he or she can provide challenging assignments. The professional's view of what is challenging must be reconciled with the needs of the organisation, and the challenge to the supervisor is not just making wise assignments, but structuring them as much as

possible to provide the desired challenge and then persuading the individual of their importance.

2.3   Management

Formally defined. **management** is the process of working with and through others to achieve organisational objectives in an efficient manner (Kreitner and Kinicki. 1995:8). **Efficiency** is a vital part of management. It refers to the ratio of outputs to inputs. More outputs for a given input means increased efficiency, sometimes also referred to as increased productivity. Since managers deal with input resources that are scarce - money, people, and equipment – they are concerned about the efficient use of these resources. Efficiency alone is not enough. Management is also concerned with getting activities completed; which refers to **effectiveness**. When managers achieve their organisations goals, they are seen to be effective (Robbins, 1994:5). Effectiveness also means the degree to which the organisation's outputs correspond to the needs of the external environment.

According to Bateman and Zeithaml (1993:7), managers spend most of their time mastering basic routines and deciding how to do things right (effectiveness). Leaders, in contrast, use vision and judgement to create and to do the right things (efficiency).

An **effective manager** is an active leader who creates a positive work environment in which the organisation and its employees have the opportunity and the incentive to achieve high performance (Bateman and Zeithaml, 1993 7).

2.3.1 Key Management Functions

The key management functions each effective manager must perform to create a positive work environment and to provide the opportunities and incentives needed, include *planning, organising and staffing, leading* and *controlling* (Bateman and Zeithaml, 1993:14–16):

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- Planning

  Planning is analysing a situation, determining the goals that will be pursued in the future, and deciding, in advance, the actions that will be taken to achieve these goals. Plans are developed for entire organisations, for specific work units, and for individual managers and workers. These plans may cover long periods of time (5, 10 or 20 years) or a short time horizon (days or weeks). They may be very general (e.g. to improve profits through new-product development) or very specific (e.g., to reduce product defects on the assembly line by 10 percent over the next month through a system of employee incentives). In each case, however, managers are responsible for gathering and analysing the information on which plans are based, setting the goals that will be achieved, and deciding what needs to be done.

- Organising and Staffing

  Although a good plan is important, a manager usually cannot do the job alone or without adequate resources. Furthermore, the people and tasks of the organisation or work unit must be coordinated in a way that allows the organisation to be efficient and effective. The second major management function, organising and staffing, includes the efforts of managers to assemble the human, financial, physical, and information resources needed to complete the job and to group and coordinate employees, tasks and resources for maximum success.

- Leading

  The leading function focuses on the manager's efforts to stimulate high performance among employees. This activity involves directing, motivating, and communicating with employees, both as individuals and in groups.

- Controlling

  Managers are concerned with achieving individual and organisational goals. The previous three functions develop plans to reach those goals, assemble and organise the resources needed in their pursuit, and direct and motivate employees toward their realisation. However, comprehensive plans, solid organisations, and outstanding leaders do not guarantee a sure road to success. As a result, the fourth function, controlling, emphasises evaluation and change.

  When managers begin to implement their plans, they often find that things are not working out as planned. The controlling function involves monitoring the progress of the organisation or the work unit toward goals and then, if necessary, taking corrective action. Successful organisations, both small and large, pay close attention to how they are doing. They also take fast action when problems arise.

2 3.2 Basic Managerial Tasks

Seven basic managerial tasks are identified (Kreitner and Kinicki, 1995:10):
- Managing individual performance
- Instructing subordinates
- Representing one's staff
- Managing group performance
- Planning and allocating resources
- Co-ordinating interdependent groups
- Monitoring the business environment

The **level** of management determines the relative importance of these managerial tasks. Figure 3 illustrates the task profiles of different levels of management as identified by Kreitner and Kinicki (1995:10).

From this figure it is evident that:
- There are basic managerial tasks common to all levels of management

- The perceived importance of these tasks changes as one moves up the management ladder:
  - → The first two tasks are paramount for first-line supervisors
  - → The next three tasks are important for middle managers
  - → The last two tasks are mostly the responsibility of executives
  - → People oriented tasks (one to four and six) comprise the bulk of the manager's responsibility
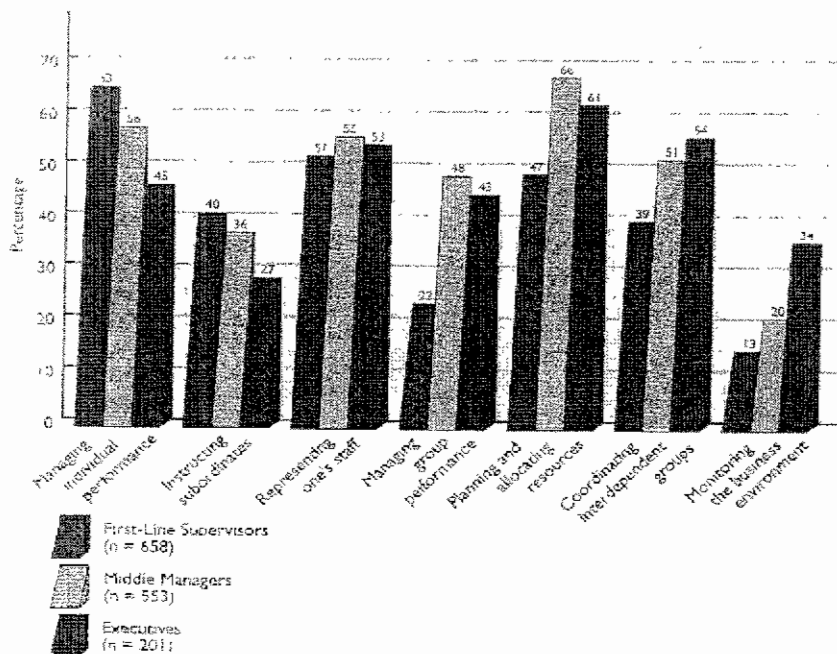
Source: Kreitner and Kinicki, 1995:10.

Figure 3. Task profiles of different levels of management

The numbers refer to the percentage of managers who said the task was of "the utmost" or "considerable" importance.

2.3.3 Management Skills

A further requirement for efficient and effective management is management skills. Although many skills are involved, the following skills are seen as key management skills for success. They can be categorised as technical skills, interpersonal and communication skills, and conceptual and decision skills.

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- Technical Skills

  A Technical skill is the ability to perform a specialised task that involves a certain method or process (Bateman and Zeithaml, 1993:16). Technical skills are skills such as machining and word processing, practiced by the group under supervision. First line supervisors, the lowest managerial level, have the operated need for technical skills since they are directly supervising the people that are doing the technical work. Even top managers must understand the underlying technology on which their industry is based (Babcock, 1991:11).

- Interpersonal and Communication Skills

  Interpersonal and communication skills influence the manager's ability to work well with people. In fact, these skills are often called the *human* or *people skills.* A study of senior executives showed that well over half of their time was spent interacting with people. Because managers must deal with others, they must develop their abilities to lead, motivate, and communicate effectively with those around them. The ability to get along with many diverse types of people and exchange information with them is vital for a successful management career. These skills are essential at all levels and in all parts of an organisation. It is vital not to minimise the importance of these skills in getting a job, keeping it, and performing well in it. As one expert commented, *"In many, many companies, the reason a manager fails is not because he doesn't have the technical skills. It's because he doesn't have the people skills".* (Bateman and Zeithaml, 1993:16). Interpersonal skills are important at every management level, since every manager achieves results through the efforts of other people (Babcock, 1991:11).

- Conceptual and Decision Skills

  Conceptual and decision skills refer to the ability to discern the critical factors that will determine an organisation's success or failure, in other words, the ability to *"see the forest in spite of the trees".* These skills

are essential to the top manager's responsibility for setting long term objectives for the organisation (Babcock, 1991:11). These skills involve the manager's ability to recognise complex and dynamic issues, to examine the numerous and conflicting factors that influence these problems, and to resolve such situations for the benefit of the organisation and everyone concerned. As managers rise through an organisation, they must exercise their conceptual and decision skills with increasing frequency. They confront issues that involve all aspects of the organisation, and they must consider a larger and more interrelated set of decision factors. Thus, decisions at higher levels have more profound effects on the organisation. Senior executives use these skills when they consider the overall objectives and strategy of the firm, the interactions among different parts of the organisation, and the role of the business in its external environment (Bateman and Zeithaml, 1993:17).

Executing the managerial functions with the necessary management skills will ensure a positive, higher performance work environment.

The relative importance of these skills varies with the management level in the organisation, as illustrated in Figure 4.

Top-level management (Executives)			Conceptual, administrative and decision skills
Second level (Middle Management)		Interpersonal and communication skills	
First-level management (Supervisors)	Technical Skills		

Source: Adapted from Badawy, 1995:33

Figure 4. The Managerial Skill Mix

As shown in Figure 4, technical skills are inversely related to management level. They are most important at lower management levels, but their importance tends to decrease as you advance to higher levels in the organisation (Badawy, 1995:32).

Handling people effectively is the most important skill at all levels of management. If a manager has considerable technical and administrative skills, but his interpersonal skills are not up to standard, he is a likely candidate for managerial failure (Badawy, 1995:34).

At upper-management level, the importance of interpersonal skills decreases and conceptual, administrative and decision skills become more important. With the increase in power and influence, managers may become less sensitive to human needs and individual satisfaction (Badawy, 1995:34).

2.3.4 Different Management Levels

The different management levels, as observed in an engineering environment, namely first level-, middle- and top-, need some explanation (Babcock, 1991:9–11):

- First-Level Managers
  First-level managers are the only managers who directly supervise non-managers. They hold titles such as foreman, supervisor or section chief. In general terms they are responsible for carrying out the plans and objectives of higher management, using the personnel and other resources assigned to them. They make short-range operating plans governing what will be done tomorrow or next week, assign tasks to workers, supervise the work that is done, and evaluate the performance of individual workers. First-level managers may only recently have been appointed from among the ranks of people they are now supervising. They may feel caught in the middle between their former fellows and upper management, each of which feels the supervisor should be representing them. They must provide the

- Top Managers

  Top managers bear titles such as chairperson of the board, president or executive vice-president; one of these will normally be designated "chief executive officer" (CEO). In government the top manager may be the administrator or secretary or governor or mayor. While they may report to some policymaking group (the board of directors, legislature, or council), they have no full-time manager above them. Top managers are responsible for defining the character, mission, and objectives of the enterprise. They must establish criteria for and review long-range plans. They evaluate the performance of major departments, and evaluate leading management personnel to gauge their readiness for promotion to key executive positions.

2.4   Engineering Management

The words *engineer* and *ingenious* both stem from the Latin word *ingenium* which means a natural talent or capacity or a clever invention. Early applications of "clever inventions" often were military ones, and *ingeniarius* became one of several words applied to builders of such "ingenious" military machines (Babcock, 1991:1).

Although the question "what is engineering management" has certainly been answered before, the answers are far from uniform. Engineering management textbooks frequently provide the skills needed for engineering managers, rather than what engineering management is (Lannes, 2001:107). The skills normally referred to are technical-, leadership-, administrative-, interpersonal- and conceptual skills, as discussed in the previous section.

Babcock (1991:14) attempts to answer this question in saying that some writers would use a narrow definition of "engineering management", confining it to the direct supervision of engineers or of engineering functions. This would include supervision of groups of engineering researchers or engineering design activities. Others would add an activity we might consider the "engineering" of management – the application of quantitative methods

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and techniques to the practice of management (often called "management science"). However, these narrow definitions fail to include many of the activities engineers actually perform in modern organisations.

If engineering management is broadly defined to include the broad management responsibilities engineers can grow into, one might well ask how it differs from "ordinary" management:

> "The engineering manager is distinguished from other managers because he (or she) possesses both an ability to apply engineering principles and a skill in organizing and directing people and projects. He (or she) is uniquely qualified for two types of jobs: the management of **technical functions** (such as design or production) in almost any organization, or the management of broader functions (such as marketing or top management) in **a high-technology organization**" (Babcock. 1991:107).

Engineers can be effective in the general management of technically oriented organisations for several reasons. High-technology organisations make a business of doing things that have never been done before. Extensive planning is therefore needed to make sure that everything is done right the first time, since there may not be a second chance. Planning must emphasise recognising and resolving the uncertainties that determine whether the desired product or outcome is feasible. Since these critical factors are often technical, the technical professional is best capable of recognising them and managing their resolution. In staffing a technically based organisation, engineering managers can best evaluate the capability of technical personnel when they apply for positions and their later performance. Further, they will better understand the nature and motivation of the technical professional and can more easily gain their respect, confidence, and loyalty (Babcock, 1991:14).

2.5 Summary

This chapter described some leadership and management concepts. Brief reference was also made to technical professionals. Engineering management was also described.

A better understanding of the technical person is, however, needed for two reasons Firstly, it is the technical person that needs to be managed effectively in the engineering environment. Secondly, the manager is frequently a technical person promoted into this managerial position. The technical professional is observed more closely in chapter 3.

CHAPTER 3: FUNDAMENTAL CONCEPTS RELATED TO THE GROWTH OF THE TECHNICAL PROFESSIONAL INTO MANAGEMENT

3.1   Introduction

The purpose of this chapter is to describe the technical professional. A proper understanding of the nature of this key person in an engineering environment is essential if the organisation aims to fully benefit from the knowledge and skills available from this person. Efficiency and effectiveness of this worker is only possible in an environment where subordinate and manager fully understand each other. The engineering manager can only properly respond to the expectations of the technical employee if the characteristics of those to be managed, is fully understood.

A "profession", according to Webster's Third International Dictionary, can be defined as *"a calling requiring specialized knowledge and often long and intensive preparation including instruction in skills and methods as well as in the scientific, historical or scholarly principles underlying such skills and methods, maintaining by force or organization or concerted opinion high standards of achievement and conduct, and committing its members to continued study and to a kind of work which has for its prime purpose the rendering of a public service"* (Babcock, 1991:2).

Engineering, according to the American Engineering Society, is defined as *"the profession in which a knowledge of the mathematical and natural sciences gained by study, experience and practice is applied with judgement to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind"* (Babcock, 1991:2).

Fundamental skills required for effective leadership and management of the technical professional concludes this chapter. This is done by means of a summary of different authors' views in this regard.

3.2 Characteristics of the Typical Technical Professional and its Managerial Implications

3.2.1 Characteristics of the Typical Technical Professional

The nature of technical professionals will now be investigated in more detail. The Typical Technical Professional will be effective when the following aspects are considered:

- Specialised expertise based on specialised training
  Firstly, they have specialised expertise (Kindler, 1993:2). This expertise is stemming from long, specialised training (Babcock, 1991:140). They prepare for their career with years of university, college and work experience (Kindler, 1993:2).

- Autonomy
  Secondly, they merit and seek a measure of autonomy in defining the means and ends of their work (Babcock, 1991:140). They prefer to maintain control of their projects (Kindler, 1993:3).

- Networking
  Technical professionals identify with their profession and their peers there-in (Babcock, 1991:140). They network with colleagues in other organisations with whom they share information in publications and at conferences (Kindler, 1993:3).

- Standards and performance
  Technical professionals seek exacting standards and performance (Kindler, 1993:3): They collegially take responsibility for setting and maintaining standards in the profession (Babcock, 1991:140).

- Objectivity and rationality
  Technical professionals often value objectivity and rationality more than people's feelings and empathic communication (Kindler, 1993:4). They

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aspire to be ethical, unemotional and unselfish in the conduct of their professional activities (Babcock, 1991:140).

- Commitment
  They have a commitment to their work and their profession (Babcock, 1991:140).

- Details of job
  Technical professionals know the details of their jobs more intimately than their bosses do (Kindler, 1993:2).

Adding to these facts about the technical professional, Repic (1980:163) described the productive engineer as follows:

- In terms of *motivation*, this person is self-motivated, takes initiative, perseveres, likes challenges, is results-orientated, needs minimum supervision, sets high standards and adapts well.

- In terms of *knowledge*, this person is technically competent, creative, innovative, seeks improvement, is professionally ambitious and is open to new ideas.

- In terms of *communication*, this person interfaces effectively, is a team worker, possesses good written and verbal skills, shows good rapport with management, is accurate, reliable and is well accepted by co-workers.

It is, however, important to realise that professionals, even if confined to technical professionals, are far from being a monolithic group. The following differences between engineers and scientists needs to be highlighted (Babcock, 1991:142):

- Scientists place higher value on independence and learning for the sake of learning, while engineers are more concerned with professional preparation, success and family life.

- The "true scientist" is commonly assumed to have a doctorate while the typical engineer generally begins professional practice with a B-Degree, but may add a Master's degree later.

- The scientist puts a high value on professional autonomy and publication of results, while the engineer is a team worker and places little value on publication.

- Although both groups desire career development and advancement, the scientist depends on reputation with peers outside the company while the engineer's advancement is tied more to activities within the company. The engineer, therefore, is motivated more by organisational goals, is comfortable with more applied assignments and is more likely to seek tangible rewards within the organisation.

- Science grows through evolutionary additions to the literature, to which the scientist wants to be free to add. The engineer is more likely to be working with developments that are considered proprietary information by the organisation, and has less opportunity to publish results.

3.2.2   Implications for the Management of Technical Employees

Considering the nature of the technical employee, being an engineering manager, especially at the first or second level, is a very real challenge. (Repic, 1980:6). These managers work with people who are not managers and who often resent a "managerial approach" to things.

The following problems are examples of common problems facing first-level technical supervisors at many organisations (Badawy, 1995:27):

- *Handling difficult performance appraisals.* They need to develop the ability and willingness to give thorough and effective appraisals without

avoiding difficult problem areas where constructive comments are needed.

- *Overcoming the "mother hen syndrome".* Inexperienced technical supervisors with strong technical interests often frustrate their engineers by acting as super-project engineers rather than as managers.

- *Neglecting managerial aspects of job.* Technical supervisors sometimes have difficulty realising that their job involves much non-technical work such as recruiting, budgeting, forecasting and so on. They tend to neglect these areas, seeing them as distractions rather than as an inherent part of the job.

- *Developing enthusiasm and motivation.* Technical supervisors vary widely in their ability to develop enthusiasm and motivation in their employees. Special problems can arise in keeping people motivated during both overload and slack periods. Other problems can result from slow business growth and the resulting lack of promotion opportunities and salary compression.

- *Developing decisiveness.* Some technical supervisors delay making important decisions because they never have enough facts to suit them. They need to appreciate that a potentially wrong decision is often better than no decision. They also need to develop a sensitivity to situations in which they slowly drift down a dead-end road trying to solve a potentially unsolvable problem. This often delays the day of reckoning when drastic action must finally be taken.

- *Developing employees.* Some technical supervisors fail to realise that a part of their job is to develop their employees' overall capabilities so that they are prepared for advancement when the opportunity arises.

- *Communicating adequately.* Technical supervisors are often negligent in communicating pertinent facts and news about the business to their staff. This often goes along with the failure to have group meetings to give their employees a chance to interact and to make them feel that they are a part of a team.

- *Playing favourites.* Inexperienced technical supervisors may spend most of their time with one or two employees and totally neglect the less interesting activities of the rest of the group.

- *Holding a narrow perspective of job.* Technical supervisors will sometimes launch important new projects without first gaining an understanding of customers' needs and without understanding the products being offered by the competition.

- *Recognising special performance.* Technical supervisors often fail to give suitable recognition to employees who have performed beyond the call of duty in completing rush projects.

- *Understanding matrix management.* Technical supervisors often have difficulty working comfortably within a matrix management situation. Coping with the requirements of both their line managers and program managers causes a surprising amount of confusion and frustration.

- *Having financial consciousness.* Some technical supervisors are not really interested in financial matters and neglect to control the manufacturing costs of their products as well as the development costs.

3.2.3 Technical Professionals Meeting the Managerial Challenge

The organisational needs and goals must be met as efficiently and effectively as possible while ways are found to honour the values of the technical professionals. According to Kindler (1993: 4–6) this can be achieved as follows.

3.2.3.1 Integration of the efforts of the specialists

- Communication of the organisation's vision and long term goals to staff as well as agreement on how to translate corporate direction into the group's operation.

- Development of cross-functional teams where members are given the opportunity to share perspectives on how their specialised skills can be integrated into each project to ensure success.

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- Development of a group mission statement during collaborative planning sessions, bridging the group's aims with that of the organisation.

3.2.3.2 Gaining respect for the managerial role

- Determination of the needs and wants of the professional subordinates. Removal of obstacles getting in the way of achieving outstanding individual and team performance.
- Support for technical subordinates in the role of "boundary" manager. Utilisation of the power inherent in the managerial position by:
    → Crossing boundaries to obtain resources to address staff needs
    → Challenging the system to remove performance obstacles.
    → Providing access to other managers, suppliers and customers.
    → Arranging for formal training.
    → Recognising and where possible rewarding outstanding performance.

3.2.3.3 Successful supervision of people knowing more about their jobs than their supervisors

- Effective managers defray from getting into the details of how subordinates execute their daily work. The manager's task is to orchestrate and blend specific tasks into a coherent whole that serves customer needs with improved quality, delivery and cost.
- Obtain specific information needed by asking for it. Most professionals love to talk about their jobs in great detail to somebody with sincere interest.
- Supervisor to keep up with professional literature to spot trends, design challenging assignments and to appreciate outstanding performance by staff members.

3.2.3.4 Meeting professional standards and organisational goals

- Maintain respectful two-way communication, reach agreements about mutual expectations so that professionals can take pride in their work, mindful of economic and political pressures. Stay focussed on the common goal of serving the best interest of the customer.
- Utilise peer review to resolve differences when agreement can't be reached between manager and subordinate over issues of professional standards.

3.2.3.5 Inspiring teamwork

- Arrange regular meetings where technical professionals report progress, discuss concerns and explore possible mutual support.
- Deliberately steer clear of a rigid hierarchy, the enemy of teamwork, by:
  → Cancelling perks that only accentuate status differences.
  → Eliminating approvals for minor expenditure
- Refrain from using the term "subordinate". Professional subordinates can preferably be referred to as *associate staff member* or *professional.*

3.2.3.6 Dissemination of professional information

- Share cutting-edge information when and where possible. While business reasons require protecting intellectual property, societal benefits accrue from broadly sharing information in public interest. Adjucate disputes through peer review regarding what information is to be released when.

3.2.3.7   Development of well-rounded technical professionals

- As knowledge-worker organisational structures are becoming flatter with fewer middle managers, technical professionals increasingly have to manage themselves in semi-autonomous project teams.
- Empower professionals through managerial leadership. Ensure that they are in possession of the necessary interpersonal skills that will enable them to resolve complex problems with others, manage disagreement constructively and communicate sensitivity.

3.2.4   Synopsis

Taking into consideration the characteristics of the typical technical employee, the major challenge is to grasp the strong points of these individuals to the mutual benefit of both employer and employee. Only when this is achieved, maximum gain will be attained for the three parties involved: Employer, Employee and Customer.

3.3   CHALLENGES FACED BY THE TECHNICAL EMPLOYEE WHEN PROMOTED INTO MANAGEMENT

3.3.1   Introduction

Technically qualified persons, amongst others engineers, are frequently promoted into managerial positions. Most University training programmes in these technical fields contain little or no management skills training (Badawy, 1995:51). This leads to the situation where little or no applicable training forms the basis for the task these persons have to perform.

It is frequently believed that engineers place more emphasis on the more exact dimensions of work (task-driven) while the emotive aspects (people-driven) are neglected (Coetzee 1987:32). Technical professionals find themselves moving from highly objective and exact technical and scientific

fields to highly subjective and uncertain environments without objective measures, principles and guidelines to fall back on. This generates a great deal of anxiety and frustration during the transition period (Badawy 1995:17). It is, therefore, no surprise that managers with an engineering background fulfil this task with varying degrees of success (Badawy, 1995:72). Read (1996:18) summarised this view as follows: *"Just because you are an excellent contributor technically does not guarantee you will be an effective leader. To the contrary, your technical skills may even get into the way of your ability to perform as a good manager."*

Over many years different authors studied the phenomenon of technically trained persons in managerial positions. During 1979 – 1980 questionnaires were sent to a sample of professional engineers in the United Kingdom, British Columbia and Australia. The main purpose was to obtain data on the managerial skills and expertise used in their jobs. The purpose of the international comparison was to determine whether the needs of engineers in different countries differ. The difference between the data from the three sets of engineers was not significant. The most significant difference was found in the relative importance of some managerial skills (Wearne Eley & Pugh, 1982:3). In all three countries, however, the engineers sampled stated a lack of preparation for their managerial tasks.

3.3.2 Reasons why Technical Professionals switch to Management

According to Badawy (1995:65-70), the following can be seen as the main reasons why technicians, engineers and scientists' switch to management:

- *Financial Advancement.* Because the reward system in most organisations is geared towards management advancement as an index for success, many technical professionals believe that the only way to improve their financial status is to move into management.
- *Authority, Responsibility and Leadership.* Sometimes technical professionals switch to management in reaction to being dominated: They believe that being the manager is the only way to ensure that the

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right things happen, i.e. improving efficiency. Management is seen as an opportunity to assume a leadership role with far more authority and responsibility than their technical positions have ever enabled them to have.

- *Power, Influence, Status and Prestige* is usually part of the reward package associated with managerial positions. While not to many technical professionals are willing to admit it, power has been found to be a strong motivation among those opting for a management career.

- *Advancement, Achievement and Recognition*. For many technicians, engineers and scientists, getting into management is the ultimate advancement. An explicit symbol of achievement and success is to be the boss. This, however, is a dangerous practice because many technical people now end up in management not because they want to but because they have to. This might partly explain the high rate of incompetence and attrition among technical supervisors and managers in some organisations.

- *Fear of Technological Obsolescence* is another reason for advancement into management. Threatened by technical obsolescence, the technical professional might see management as the only alternative. At companies where there is a dual ladder system - technical and administrative – special care should be taken so that the managerial ladder is not used as a face-saving dumping ground for technical professionals who have failed as professional specialists, nor should the technical ladder be allowed to become a dumping ground for incompetent technical managers. In the former case, the result is second-rate managers; in the latter situation, technical activities will be performed by second-class professionals.

The frequency of technical professionals using management as an escape because of fear of technological obsolescence is higher than that of technical managers returning to their speciality in response to the fear of managerial failure. There are mainly two reasons for this. Firstly, with the ever-increasing technological complexity, it is difficult

for a technician, engineer or scientist to go back to "the trade" after a few years in management. Secondly, the technical professional's move from management back to the technical ladder usually has a negative connotation: If they have to return to their technical fields because of marginal managerial performance, they have a deep sense of failure, resentment and disappointment and a poor self image. To many technical professionals only hierarchical advancement brings increased authority, power and prestige.

- *Random circumstances* can include an unplanned move into management because of an offer by management to the technical professional, presented as a "promotion". It could also be due to the sudden resignation, transfer, replacement or advancement of the individual's immediate supervisor.

3.3.3 The Troublesome Transition from Technical Professional to Manager

Although many technical professionals make the transition to management smoothly and successfully, many, unfortunately, don't. While it cannot be generally stated that good technical practitioners cannot be good managers, many are not successful. Although they are well qualified for management by virtue of their analytical skills and backgrounds, many technical professionals switch to management for the wrong reasons and to satisfy the wrong needs.

Three groups of factors have been identified as reason for this troublesome transition (Badawy, 1995: 71-79), namely:

3.3 3.1   The nature of technical education

Firstly, the nature of technical education is an important factor: Technical undergraduate curricula focus mostly on technical subjects. Students are equipped with the basic methods and attitudes. The system over-develops their analytical skills (as model builders) while their managerial skills (as decision makers) remain highly under-developed. Furthermore, the criteria for success in science and technology on the one hand, and management

on the other hand, are not the same. The training of technicians, engineers and scientists typically emphasises the reduction of all problems to terms that can be dealt with by objective measurement and established formulas based on predictable regularities. The world of management, however, is far less exact and less predictable. This world is a complex, ill-structured environment where tentative techniques and solutions are applied to business and management problems. This situation leads to the inescapable conclusion that because of inadequate preparation of engineers and scientists for careers in management, many competent technical professionals may not become competent managers (Badawy, 1995:71).

3.3.3.2   The organisation's management systems and policies

Secondly the organisation's management systems and policies contribute to this troublesome transition:

Technical competence is frequently used as criteria for promotion to a managerial position. Igbaria and Siegel (1992: 101–126), however, suggest that these individuals make the poorest managers. Management should look well beyond a candidate's technical ability to his motivation for switching to management, knowledge of the basic principles of the field, administrative skills, decision-making ability, ability to work with and handle people, leadership style, and capacity to operate within the organisational system. The prime criterion in the identification of management potential should be the technical professional's demonstrated ability to bridge the gap from a technical to a management orientation.

The *dual ladder system,* as discussed in a previous paragraph, is an important contributor. This system was initiated to give technicians, engineers and scientists flexibility in choosing between a technical or a management career while ending up with equally attractive reward packages from the company.

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For this system to work effectively, it must meet the following criteria:

- The technical and administrative ladders must be equally attractive to technical professionals in terms of salary scales, status symbols and other non-monetary rewards.
- Neither ladder should be used as a dumping ground for individuals who are unsuccessful on the other ladder.
- Criteria for promotion on the technical ladder must be rigorous and based on high technical competence and achievement.
- Both ladders must have the full support of management.
- The system must be fully accepted by the technical staff.

This system, even though it may be implemented at an organisation, is not without its problems:

- Abovementioned criteria are frequently violated consciously or unconsciously in many organisations.
- The administrative ladder is more consistent with the workings of the business culture in terms of criteria for promotion and titles used: The term "manager" is well known, while "research associate", "group leader" etc. is not.
- The technical ladder runs counter to the business psychology of success being associated with becoming the "boss".
- The technical ladder is more compressed: the professional can only go so far, whereas the promotional path for managers is wide open.
- The perception that people do not get ahead as fast on the technical ladder is well and alive.
- Rewards for both ladders are usually not equally attractive. Managerial practices at many organisations clearly shows that rewards for the managerial path are usually more appealing than those for the technical path.

Although the dual-ladder concept in principle is good, it can be concluded that its problems have arisen primarily from the difficulty of its implementation.

The *nature of the managerial task* being very different when compared to the world of science and engineering, the technical professional is used to, also needs some discussion. The newly appointed supervisor is now expected to play a dual, complex role; expected to be able to speak two languages. As a manager, concern should be about things such as efficiency, return on engineering and research-and-development (R&D) investment and channelling R&D efforts towards achieving economic ends (company goals). On the other hand, as a professional technologist, he is expected to have the professional skills and attitudes to keep up with developments in his field, to work with his colleague-subordinates who have diverse orientations and research interests, and to create a climate conducive to their creativity, imagination and satisfaction (Badawy, 1995:72).

3.3.3.3   The special characteristics of technical professionals

The third and last source is related to the special characteristics of technical professionals. Additional to the characteristics mentioned in the previous section, the following general stereotypes of technicians, engineers and scientists as a group, explain why they experience problems with the transition to management (Badawy, 1995:77-78):

Bias Toward Objective Measurement
Having been trained in "hard" sciences, where exact measurement is one of the natural beauties of the scientific method, engineers and scientists are more comfortable working with things that they can objectively control and measure. Managers, in contrast, must rely on intuition and judgement in dealing with values, attitudes, biases, perceptions, emotions and feelings. The fact that these intangible variables are hardly measurable - let alone controllable - makes the technical manager's job thoroughly frustrating. One of the things that technical professionals must learn in order to succeed in management is to stop insisting on measuring everything with a

Technical professionals as Introverts

Many technicians, engineers and scientists are "introverts" rather than "extroverts". Introversion is usually associated with creativity. The problem is that while creating is an individual (introvert) act, managing is a team (extrovert) activity. The ability to work with others and to be a good team player is one of the distinctive skills of successful and competent managers. The "lone wolf" nature of many technical professionals could, therefore, make it double as difficult for them to function effectively as technical managers (Badawy, 1995:78).

Poor Delegators

One of the most valuable skills a manager can possess is the ability to delegate. One should never undertake what one can delegate. One cannot grow as a technical manager unless one delegates, and ones subordinates expect one to. However, technical managers have often been found to be very poor in learning to achieve things through others: They are poor delegators. Technical professionals are doers rather than delegators because they believe, rightly or wrongly, that they can perform a task better than anyone on their staff. Developing the will to delegate requires a change in the technical professional's attitudes, behaviour, and assumptions about people working for him. He might even have to force himself to delegate tasks to his subordinates. At any rate, whatever it takes, delegation is one of the prime skills technical supervisors must acquire to enhance their managerial competence (Badawy, 1995:78).

Inadequate Interpersonal Skills

A major source of problems and headaches for managers is "people" problems. Poor interpersonal skills have been found to be a major factor in managerial failure among technical managers. Management requires dominance of personality traits and characteristics that are alien to most technicians, engineers and scientists. Managers must deal with the diffuse, the intangible, and the intractable, as well as with insufficient information. Perhaps what is needed are managers who analyse like technologists but act like people!

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In short, while the special analytical skills possessed by technicians, engineers and scientists make them attractive candidates for management, some of their personality characteristics and behavioural patterns might make requirements for managerial competence alien to them. This mismatch could make the transition to management most troublesome and result, ultimately, in a tragic waste of a valuable resource (Badawy, 1995 78)

3 3.4 Synopsis

Although management as a career path is attractive to many technicians, engineers and scientists, it is clear that the transition to management is difficult. Different complicating factors have been identified. Both the employing organisation and the individual share the responsibility to address these difficulties in a constructive way in order to ensure efficiency and effectiveness.

In the next section key managerial skills will be identified which will ensure effective leadership and management in an engineering environment.

3.4 SKILLS REQUIRED FOR EFFECTIVE LEADERSHIP AND MANAGEMENT IN AN ENGINEERING ENVIRONMENT

3 4.1 Introduction

Following some understanding of relevant leadership and management concepts, characteristics of the typical technical employee as well as some of the challenges faced by the technical employee when promoted into management, skills required for effective leadership and management are now explored.

Different authors list these skills in differing order of importance. A summary of the views of some of these authors will be described. General patterns will

be determined and a list of those skills seen to be of importance for effectiveness in a technological environment will be viewed.

3.4.2 Fundamental Leadership and Managerial Skills: Different Views

The views described in this paragraph will not be in any preferred order. They are listed alphabetically according to the surname of the first author. The next paragraph will then identify the relevant skills.

Ayres (2003: chapter 6) conceptualises effective leadership in the 21st century as falling into three spheres of influence: namely self-leadership, people leadership and organisation leadership. In the first category of **self-leadership**, leaders display the following personal characteristics:

- A high level of emotional intelligence and self-awareness enabling them to recognise, understand and manage their own emotions as well as those of others, and to comprehend their own capabilities and limitations.

- The art of being able to manage themselves successfully in order to ensure optimum self-efficacy in the face of increasing demands.

- A commitment to being involved in ongoing self-development in order to ensure their own continued competence as leaders.

- The desire to live with integrity and uphold a strong value system, that dictates guidelines for personal and professional behaviour. This code determines how the individual relates to others and forms the yardstick for the decision-making process.

- The wish to lead by example and to create a model of appropriate ethics by cultivating the image of a capable, informed and productive leader who adds value to the organisation.

- An appreciative, respectful and caring attitude towards staff, where the emphasis is on providing a supportive environment for all employees.

- The ability to be charismatic and exhibit energy, passion, a positive attitude and a belief in the leader's own capabilities as well as those of others.

- Knowing how to be focused and disciplined in obtaining goals despite distractions.

- Tenacity and resourcefulness leading to an untiring pursuit of desired goals.

- Flexibility that allows for adjustment in the face of changing demands, people and situations.

- An adeptness at reprogramming the standard and routine business-world model of thinking to incorporate ambiguity, constant change and the complexity of the contemporary business environment.

The second category, that of **people leadership**, includes leaders who demonstrate the following interpersonal characteristics:

- The ability to inspire individuals and teams by understanding what motivates them to contribute to the organisation.

- The ability to empower employees and teams by helping them understand how their efforts impact on the organisation, by setting realistic goals for them, by providing them with the necessary information and resources to perform optimally, by promoting continuous learning, by facilitating their contributions to the organisation and by recognising and rewarding their performance.

- The advantage of being culturally literate so as to appreciate, manage and utilise cultural differences inside the organisation and in global business.

- The ability to build collaborative relationships inside the organisation to increase teamwork and the drive to form partnerships outside the organisation in order to more easily obtain resources and skills to increase opportunities for organisational growth.

- The know-how to utilise influencing skills to bring about positive outcomes for themselves, others and the organisation.

In the third category, that of **organisation leadership**, successful leaders exhibit the following business operation characteristics:

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- They established a shared cultural and corporative value system that employees could identify with and function within and that would assist them in delivering on corporate goals.

- They built a feeling of community and team spirit in order to pursue shared organisational objectives effectively.

- They lead strategically by providing organisational direction through a compelling vision. They also display themselves as capable of looking for emerging opportunities, as staying current with emerging trends, communicating effectively, staying abreast of technological change and constantly managing and driving change within the organisation.

Badawy (1995:28) believes that the ingredients of managerial competency lie in a combination of the building blocks: knowledge, skills and attitudes. The management process consists of a sequence of activities. These activities are the managerial functions of planning, organising, leading and controlling. Management skills – the abilities managers exhibit in carrying out their jobs effectively – are needed to perform these functions. Skills are what managers do – specific types of behaviour – to achieve effective performance, in other words the manager's ability to translate knowledge into action by using appropriate management tools and techniques. These skills are now discussed in more detail:

- **Technical skills,** the ability of the manager to develop and apply certain methods and techniques related to his task, includes a general familiarity with and understanding of the technical activities undertaken in his department and their relation to other divisions within the organisation.

- **Administrative skills** relate primarily to the manager's ability to manage effectively. This reflects the ability to organise, plan, direct and control. To make decisions, evaluate performance and finally to direct subordinates by motivating, communicating and leading them in

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a certain direction that would help the organisation achieve its objectives. The core elements of administrative skills are the ability to search out concepts and catalogue events; the capacity to collect, evaluate and process pertinent information; the ability to distinguish alternatives and make a decision; and resourcefulness in directing others and communicating to them the reasons behind the decisions and actions. These skills are, however, related to and based on other skills such as cognitive and conceptual abilities.

- **Interpersonal skills,** probably the most important of all, involve interaction with, motivate, influence and communicate with people. People are very important in any organisation, and through their activities, organisations either prosper or fail. Managing people effectively is the most critical and most intricate problem for managers today.

Bateman and Zeithaml (1993:16) believe that the management functions: Planning, organising and staffing, leading and controlling are the corner stones of a manager's job, however, recognising and understanding these functions does not ensure success. Managers need a variety of skills to execute these functions successfully. Skills are specific abilities that result from knowledge, information, practice and aptitude. Although managers require many individual skills, they can be grouped into three general categories: **technical skills, interpersonal and communication skills** and **conceptional and decision skills**. These categories were discussed to some extent in a previous section of this dissertation.

When executive recruiters were asked to list the characteristics they look for in a top prospect, the following were listed (Bateman and Zeithaml, 1993 : 24): Strong **leadership** skills, an **action orientation**, a **vision** of where the firm is going, excellent **communication** skills, **self-confidence**, the ability to **take risks**, the ability to **motivate**, the ability to **generate loyalty**, high **integrity**, **teambuilding** skills, **operations** experience and **international** experience.

To summarise the viewpoints of Bateman and Zeithaml, an effective manager is an active leader who creates a positive work environment in which the organisation and its employees have the opportunity and incentives to achieve high performance. Managers should be leaders who take the initiative and become active participants in the activities of their sub-ordinates and operations. Successful managers create a situation that encourages high performance and removes the causes of failure. Such managers ensure that employees understand their jobs and have the resources necessary to complete their tasks.

Effective managers attemp to create interesting jobs and motivate employees with appropriate incentives.

Coetzee (1987:32) investigates the management profile of the South African engineering manager for the year 2000. This research emphasis that the manager of the future will posses specific **managerial personality traits** (characteristics), **managerial skills** and **self-maintenance** abilities.

From Coetzee's research the management profile of the South African engineer, as indicated in Table 1, was obtained.

The top three dimensions indicate the critical areas as highlighted by this South African research. They are:

Analytical ability; the effectivity whereby key issues can be isolated, the ability to get to the root of a problem, the ability to make sense out of financial and statistical data, the ability to interpret complex data;

Planning; the efficiency applied in the planning and conceptualisation of activities (own- and group), future planning; and

Table 1.   Management Profile of the South African Engineer

PROPERTY	RANKING
Analytical ability	1
Planning	2
Judgement	3
Independence	4
Initiative	5
Perseverance / Flexibility	6
Decision making	7
Control	8
Energy / Self motivation	9
Impact	10
Organising	11
Focus on business principles	12
Leadership	13
Ability to listen	14
Motivating others	15
Stress Tolerance / Self control	16
Sensitivity	17
Written communication	18
Verbal communication	19
Self development	20
Verbal ability	21
Focus on development	22

Source: Coetzee, J. 1987. Die bestuursprofiel van die Professionele Ingenieur IEMSA 32 – 35, Oktober.

Judgement; the ability to reach logic conclusions based on available facts, the ability to be able to distinguish between priorities, the ability to isolate reachable goals, the ability to also consider long term implications of decisions;

Although communication and development were not dominant, they must not be seen as unimportant. Within the context of this research, they were not identified as top dimensions.

Farr (1997:38) describes leadership for engineering managers in terms of **qualities** associated with **effective leaders**. Nine qualities, drawn from a variety of sources, are presented in Figure 5. An in-depth understanding of these nine qualities is essential to defining not only what constitutes a good leader. but also present specific areas on which development can be focussed.
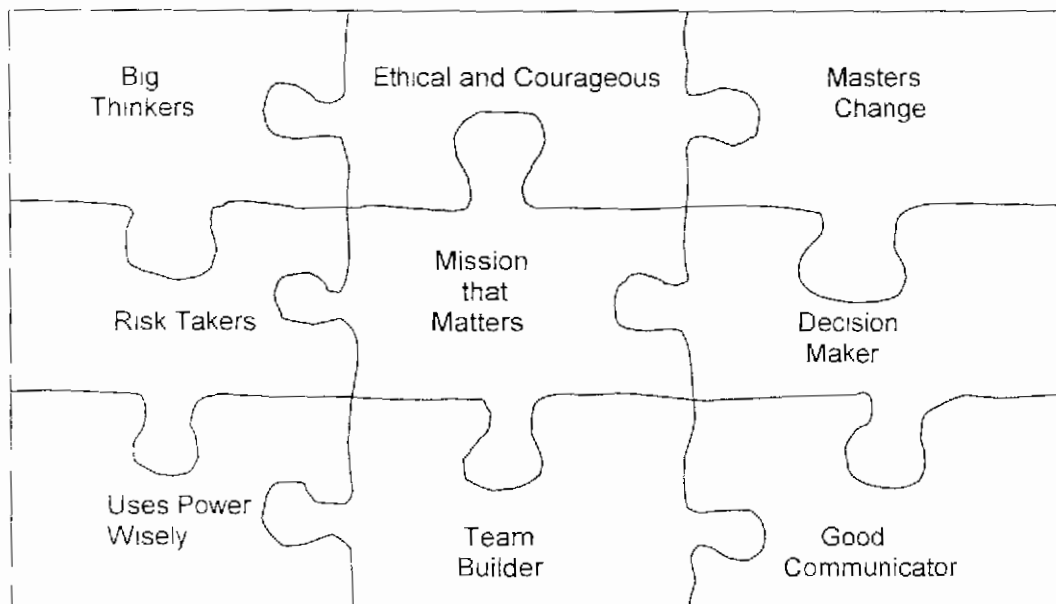
Source: Farr, J. V., 1997. Leadership Development for Engineering Managers

Figure 5.   Nine Leadership Qualities

Leaders must be **big thinkers** in terms of both quality and responsibility. They must have **high ethics** because people still look for ethical leaders who **have courage**. Courage includes persisting, surviving, maintaining stamina, as well as doing the right things and making the right decisions. They must **master change** and be responsive to people in our culturally diverse society. Leaders are **risk takers**. They must have the courage to begin new projects, make changes, and so on.

No other quality is more important for a leader than **to have a mission that matters**. This commitment, when effectively communicated, inspires and motivates others. It also produces the energy and dedication that is important throughout a professional career. If a leader is to make a difference, he or she must be able to make hard decisions after careful data and opinion gathering and analysis. They must also **use power wisely** because it is the prime mover of people and events. **Team building** is required to inspire the group to maximise people potential, productivity, morale and creativity. Finally, leaders must **communicate effectively** because your mission grows from what and how you communicate.

Lastly, senior engineers can refine their leadership skills by (Farr, 1997 : 40):

- **Continuing** their **education** in depth but more importantly in breadth.
- **Continuing self-evaluation** and, based on feedback and advice from others. continue to work on those areas in which they are weak.

No engineer ever made the transition from a technical staff engineer to executive without attending to many of the abovementioned skills.

Hawley (2001:247) firmly believes that you cannot be trained to be a leader without some inherent ability: *"You are either born with the right qualities or you aren't. Truly inspirational leadership comes from within – from tapping into who we really are and combining that with skills and knowledge."*

Those who make it to the top have all or some of the same characteristics: they are **highly motivated** to succeed, have high **energy** levels and work out

career moves in advance. They tend to be **goal directed**, **politically active**, **content** and **confident** and **capable of distinguishing** the important from the unimportant.

Successful leaders must **recognise the worth** of their people and **motivate** them to perform to the best of their ability by giving them a **clear direction**. There must be a clear view of the objective to be reached and then a **determination** to get to that objective and not to be put off or diverted by side issues. The ability to communicate the reason for the objective – and the route to get there – is also vital.

So too is the **understanding** of the **needs** of employees who want to take pride in what they produce. To **admire** the people they work with. To work for a company that has a **meaningful vision** that is appealing to the head and worthy of the heart. To work for a company whose mission is committed to something more than just financial gain. To be valued not just for their technical skills, but for the diversity of their experience. To learn, grow and fulfil their potential. To trust their leaders to create an environment that will help them to experience meaning in their lives.

Other strengths needed are the ability to **communicate**, **honesty** and **integrity**, **innovation** and **vision**, the ability to **inspire trust**, the ability to **motivate**, a **personal drive** and **sense of purpose**, **self-confidence** and the ability to make **decisions** (Hawley, 2001:248).

Hogan (2001:251) investigated leadership from within a military training establishment. The following person's qualities are believed to be key qualities in order to be a leader: **efficiency**, **sympathy**, **courage**, **personality**, **loyalty**, **sense of duty**, **humanity**, **good judgement**, **energy**, **resolution**, **tenacity**, **faith**, **communication**, **integrity** and **common-sense**.

Looking at these qualities immediately creates the following problems: There is no universal agreement about them, they are in no specific priority, they are impossible to measure, they (or some of them) are often absent in great

leaders, there is no universal application of these qualities, it is difficult to possess all of them, they tend to be "good" qualities and it is impossible to train many of them.

Because of the fact that it is not possible to list, say five key managerial skills for successful leadership, let alone prioritise them, Hogan (2001:253) believes that leadership qualities cannot be taught. Any leadership training course should be seeking to develop those "good" qualities already possessed by an individual, identify the "not so good" ones and most importantly, identify those qualities not possessed i.e. the person's blind spot.

The required leadership attributes vary according to individual or organisational perspective. Generally, the three most important attributes are accepted to be intelligence, communication and activism:

- **Intelligence**: Not measured by exam results but by commonsense, the ability to problem solve, prioritise and think quickly. This must always be backed up by personal credibility. You need to be credible within your profession, as this is the foundation of your style.

- **Communication**: The ability to talk to people so that they empathise with you. Also, to communicate in the written form. No matter how good you are, if you cannot communicate, how will people know what you actually want?

- **Activism**: Zeal, energy, enthusiasm. The ability to make things happen. Leadership is doing not being (Hogan, 2001:254). Your presence is not sufficient. Your participation must be felt by the group you are leading.

James (2000:53) believes that good managers are difficult to find: unless you work for an exceptional organisation, you probably won't easily find it. A good manager would be an **effective communicator**, **good listener**, **clear**

thinker, firm but fair. Other necessary skills include the ability to **develop people**, work in **teams, solve problems** and make **decisions**.

Read (1998:120), states that a person needs expertise in four dimensions to get results through others, namely technical, managerial, leadership and process. **Technical skills** represent the traditional engineering knowledge and abilities gained academically and by professional experience. **Managerial skills** are those administrative skills (e.g. time and project management) necessary to orchestrate the effective use of resources (people, time and money). **Leadership skills** often centre on "soft" skills such as interpersonal, motivational and communication skills. **Process skills** require the engineering manager to be the process owner for his/her department to ensure that the staff uses systematic processes and best practices.

Soat (1996:88) developed the Management Assessment and Development Inventory (MADI). This instrument, consisting of an 87 item questionnaire, rates a manager of technical employees on a five-point scale of effectiveness. Eight areas are covered by the MADI. They are **leading, motivating, communicating, delegating, decision making, planning, relating** and **developing**.

Tredoux (2002:15) asked the following question: *"What are the attributes of business leaders that helped them climb to the top of the corporate pile and how do they stay there?"* The following are some of the answers:

- **The ability to create a vision** for the organisation's future, which all the stakeholders, i.e. shareholders, clients and employees, will aspire to. and the ability to **communicate** this.

- **Courage** is the one attribute that really distinguishes leaders from great leaders. The courage to make a decision and the willingness to execute the decision and accept the subsequent positive or negative results.

- Truly great leaders have **the courage to ask for advice,** as well as the ability to **listen** to advice. They must also be able to **interpret information** from different sources and then **make the necessary decisions.**

- True leaders **do not wilfully claim the success**, they often allow their colleagues and subordinates to receive the praise.

- **Integrity** is a core attribute of business leaders who are successful over the long term. This is one trait without which no business leader can survive.

- Furthermore, leaders must demonstrate a mix of **firmness, inspiration** and **compassion**. They must be able to **excite, motivate** and **implant energy.**

- **Responsiveness** and **decisiveness** are also important. They must also have a deep and resilient **passion** for and **commitment** to their organisations.

Varhol (2001:144), although he held minor management positions, never felt comfortable in them and inevitably reverted back to the working level. The **following characteristics**, Varhol believes, are **not essential to be a good manager**: Intelligence; although there are a number of obviously bright managers, you also find some who are not as intelligent. Education: while some responsible for hiring managers seem to place a premium on MBA degrees from top schools, many working engineers at the project level manage budgets pretty well. Organisational ability; some managers lack even a rudimentary level of organisation and they still achieve positive results. Political Savvy; an ability to understand the political and cultural climate of your company is essential to knowing what course of action to pursue, yet an excess of this quality decreases management ability.

Whether it is possible to pinpoint precisely how a good engineer can make a good manager, Varhol believes that there isn't exactly a formula, but it is possible to identify the factors that make management better or worse (Varhol, 2001:145):

- **Leadership**: In a certain sense this is easy to accomplish because on engineering projects, most participants will want to follow a common direction to make the project a success, but translating this common direction into a means for completing the project is extra-ordinarily difficult.

- **Focus**: Managers can't focus on the details of implementation, instead, they have to focus on the structure. This is where delegation comes in: you have to delegate the details of the project to your team.

- **Lack of control**: Frequently there is little control in the process, instead, your goal is to provide the resources and focus to the project so that those doing the actual work can do it successfully.

To summarise, the information contained in this paragraph clearly covers two different areas. Firstly certain categories of skills for effective leadership and management are identified. Secondly important personality characteristics or traits associated with efficient leaders and managers are listed.

A study of the personal characteristics of different managers and the impact thereof on leadership effectiveness falls outside the scope of this study. The reasons for this being:
- The list of so called "good" qualities is very long;
- Every manager will have a unique combination of these "good" as well as some "not so good" qualities.

This statement is clearly illustrated by **Wilf Altman** (2000:231-232), who clearly indicates in a study of three high profile and very successful global leaders, that different combinations of personal characteristics applied in three different situations lead to success:

- Richard Branson, chief executive of Virgin, classified as **the charismatic prodigy**, started from scratch and is presently at the age of 50 one of the richest and most successful businessmen in the United Kingdom.

- Percy Barnevick, the man behind the merger of a Swedish Engineering group, ASEA, and the Swiss Brown Boveri, to form ABB, is classified as **an energetic networker**. His leadership style has created one of the most innovative large organisations in the world.

- David Simon, chairman of British Petroleum, with an annual remuneration package of $1,2 million, is classified as **the trusted communicator**. He is a person with a great deal of emotional intelligence, cross-cultural sensitivity, an accessible person and a good listener. Simon says that he spends a lot of time talking and a lot of time listening.

3.4.3 Fundamental Skills for Effective Leadership and Management in an Engineering Environment: A Summary

Based mostly on the work done by Badawy (1995:28), Bateman and Zeithaml (1993.16), Coetzee (1987:32) as well as Read (1998:120), the following classification of fundamental skills required for effective leadership and management in an engineering environment have been identified by the researcher, namely:

- Technical skills
- Process skills

- Administrative skills
- Management skills
- Interpersonal skills

These skills form the basis for the evaluation of managerial and leadership effectiveness in an engineering environment.

- **Technical skills** represent the traditional engineering knowledge and abilities gained academically and by professional experience (Read, 1998:120). It is the ability of the manager to develop and apply certain methods and techniques related to his task. This includes a general familiarity with and understanding of the technical activities in his department and their relation to other divisions within the organisation (Badawy, 1995:28). Self-maintenance, also in this area, is of high importance. Education, in depth but most importantly in breadth, must continue: The focus must not only be on technical development. Self-evaluation must continue. Based on feedback and advice from others, the person must continue to work on areas of weakness (Farr, 1997:40).

- **Process skills** require the engineering manager to be the process owner for his department: To make sure that the staff use systematic processes and best practices (Read, 1998:120). The biggest mistake of new managers is to misunderstand the difference between "process" and "content". Consequently they will rely on "content" knowledge. This leads to a focus on what is being done rather than the "process" of how the work is done. An engineer-manager can for example still attempt to perform the design without concern for how the design might better be performed (using best-practice processes) (Read, 1998:121).

- **Administrative skills** relate primarily to the manager's ability to manage. It is the capacity to build a workable group or unit; to plan; to make decisions; to control and evaluate performance and finally to

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direct subordinates in such a way that the organisational objectives are achieved. Superior administrative skills are related to other skills such as cognitive and conceptual abilities (Badawy, 1995:30).]

- **Management skills** - the abilities managers exhibit in carrying out their job effectively – are needed to perform the management functions of planning, organising, directing and controlling (Badawy, 1995:28). It involves those skills necessary to orchestrate the effective use of resources (people, time and money) (Read, 1998:120), to be able to execute the seven basic managerial tasks: Managing individual performance, instructing subordinates, representing one's staff, managing group performance, planning and allocating resources, co-ordinating interdependent groups and monitoring the business environment (Kreitner and Kinicki. 1995:10).

- **Interpersonal skills**, probably the most important of all, involves the interaction with people: subordinates, peers and superiors. These skills include leadership, motivation, communication, coaching, performance appraisal, handling power and corporate politics, as well as conflict management (Badawy, 1995:29).

3.4.4 Synopsis

It is obvious that different people will have different views on those skills that are fundamental to effective leadership and management. It is, however, clear from this section that a number of key elements exist which are viewed as important by most of the authors.

3.5   Summary

This chapter investigated a number of very important aspects surrounding the transition of the technical professional into management. Skills required for effective leadership and management were also identified.

Chapter 4 explains the research methodology used in this study and, amongst others, reviews instruments available for the practical determination of leadership and management effectiveness. An explanation of the process to eventually find the most suitable tool for the execution of this study is also supplied.

CHAPTER 4: RESEARCH METHODOLOGY

4.1　Introduction

This chapter outlines the research methods used during this study. The selection of the sample from the target population is described. Techniques used to gather the data, including a description of the measuring instrument as well as research conducted to obtain this instrument, is supplied. The research design is outlined and the chapter is concluded with arguments on the validity and reliability of the methods used in this research.

4.2　Selection of the Sample from the Target Population

The target population, being the total group of people from whom information needs to be obtained, and whose perceptions are needed to fulfil the objectives of the research (De Jager, 2003:91), were the 106 academic and technical staff members of the Faculty of Engineering at the Vaal University of Technology. This includes the Dean as well as the Heads of Departments.

The sample, being a sub-set of the population, representative of the population (De Jager, 2003:91), was the Dean, Heads of the Engineering Departments of the Vaal University of Technology as well as most of their lecturing- and technical subordinates. Because of the fact that group sessions, as described in chapter 1, were arranged, participation was high in most instances and complete in other instances. A total number of 88 people participated. This method of sampling is described as convenience sampling: A group of individuals that is readily available is used (De Jager, 2003:92).

4.3　Location of the Instrument used for the Determination of Perceived Leadership Effectiveness

The following steps were taken by the researcher to eventually obtain the instrument used in this research.

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4 3.1 Search based on the literature study

From the literature study two possible sources of an instrument emerged:

- Mr Ronald G Read, University of Wisconsin, USA, referred to the measurement of leadership and management efficiency. The researcher approached him at the University of Wisconsin through e-mail (please refer to **annexure A**). Unfortunately no feedback was obtained.

- Dr Douglas M Soat, Consulting Psychologist, Janesville, USA, developed the Management Assessment and Development Inventory (MADI). This instrument, consisting of an 87 item questionnaire, rates a manager of technical employees on a five point scale of effectiveness. Eight areas; leading, motivation, communicating, delegating, decision making, planning, relating and developing are covered by the MADI. A request was addressed to Dr Soat enquiring about a tool to measure effectiveness (please refer to **annexure B**). Unfortunately no feedback was received.

4.3.2 Search based on an internet review

An internet search was conducted under the heading: "Use of 360° Managerial Skills Assessment Tool for Research Purposes". A large number of tools available for this purpose, were identified. Unfortunately most of these companies were based overseas, mostly in the USA. One company, Bliss and Associates, based in New York, USA, responded. They were willing to develop a suitable tool and conduct such an investigation. Practical aspects such as time, distance, and cost, however, lead to the abolishment of this possibility.

4.3.3 Search based on personal contact and verbal discussion

The following people were contacted in this regard:

- Prof F van Graan, North West University, Vanderbijlpark. He advised the researcher to contact two people:
  - Mr Mauritius Pretorius (Pretorius, 1996:1), a Magister Artium student, who made use of a questionnaire developed by Mind Garden Inc, California, USA. This questionnaire, by Bass, BM and Avolio, BJ is supported by a South African Company: Business Learning Consultants, based in Randburg.
  - Mr Conrad Brand, Business Learning Consultants, Randburg. He introduced the researcher to the Multifactor Leadership Questionnaire (MLQ) that was eventually used to determine perceived leadership in an Engineering Environment. The MLQ is discussed in the next section.

4.4   Measuring Instrument

Additional to the information already supplied in chapter 1, section 1.5.1, the following information about the Multifactor Leadership Questionnaire (MLQ), included as **annexure C** to this dissertation:

The MLQ, consisting of 45 items, assesses five components of transformational leadership, three components of transactional leadership, one non-transactional leadership component and three outcomes components (Bass and Avolio, 1997:13). The distribution of these 45 items amongst the three components is as follows:

- Transformational Leadership:

Idealised influence (Behaviour)	4 items
Idealised influence (Attitude)	4 items
Inspirational motivation	4 items
Intellectual stimulation	4 items
Individualised consideration	4 items

- Transactional Leadership:

    Constructive transactions

      Contingent reward   4   items

    Corrective transactions

      Management-by-exception (Active)   4   items

      Management-by-exception (Passive)   4   items

- Non-transactional Leadership:

    Laissez-Faire   4   items

- Outcome Factors:

    Satisfaction with the Leader   2   items

      Individual, group and organisational

        effectiveness   4   items

    Extra efforts by associates   3   items

The nine factors embedded in the three leadership styles can be described as follows (Bass and Avolio, 1997:34-36):

4.4.1   Transformational Leadership Factors

- Factors 1 and 2: Idealised influence (charisma– attributes and behaviours)

  Idealised Influence is generally defined with respect to associates' reactions to the leader as well as to the leader's behaviour. Associates identify with and want to emulate these leaders who are trusted and seen as having an attainable mission and vision. Such leaders are thoroughly respected, have much referent power, hold high standards, and set challenging goals for their associates. A sample attributional item is: *"The leader reassures others that obstacles will be overcome."* A sample behavioural item is: *"The leader emphasizes the importance of having a collective sense of mission."*

- Factor 3: Inspirational motivation

  Inspirational Motivation may or may not overlap with idealised leadership, depending on how much associates seek to identify with the leader. This type of leader provides symbols, metaphors, and simplified emotional appeals to increase awareness and understanding of mutually desired goals. A sample item is: *"The leader articulates a compelling vision of the future."*

- Factor 4: Intellectual stimulation

  Intellectual Stimulation is used to encourage others to question their old way of doing things or to break with the past. Leaders support associates for questioning their own values, beliefs and expectations, as well as those of the leader and organisation. Associates are also supported for thinking on their own, addressing challenges, and considering creative ways to develop themselves. A sample item is: *"The leader gets others to look at problems from many different angles."*

- Factor 5: Individualised consideration

  Individualised Consideration is used by leaders who treat associates differently but equitably on a one-to-one basis. Not only do these leaders recognise associates' needs and raise their perspectives, but these leaders deal with associates' means of more effectively addressing goals and challenges. With Individualised Consideration, assignments are delegated to associates to provide learning opportunities. A sample item is: *"The leader spends time teaching and coaching."*

4.4.2 Transactional Leadership Factors

- Factor 6: Contingent reward

  Contingent Reward involves an interaction between leader and associates that stresses an exchange; for example, the leader provides

appropriate rewards when associates meet agreed-upon objectives. Emphasis is on facilitating the achievement of agreed-upon objectives by associates. Their needs are identified, then linked both to what the leader expects to accomplish and to rewards if objectives are met. A sample item is: *"The leader makes clear what one can expect to receive when performance goals are achieved."*

- Factor 7 and 8: Management-by-exception (active and passive)

  If Management-by-Exception (Active), the leader monitors to make sure mistakes are not made and allows the status quo to exist without being addressed. If Management-by-Exception (Passive), the leader intervenes to make some correction only when things go wrong. Generally, the modes of reinforcement are correction, criticism, negative feedback and negative contingent reinforcement, rather than the positive reinforcement used with Contingent Reward leadership. Punishment is also used in conjunction with Management-by-Exception. A sample active item is: *"The leader directs attention towards failures to meet standards."* A sample passive item is: *"The leader takes no action until complaints are received."*

4.4 3   The Non-leadership Factor

- Factor 9: Laissez-Faire

  Laissez-Faire indicates the absence of leadership, the avoidance of intervention, or both. With Laissez-Faire (avoiding) leadership, there are generally neither transactions nor agreements with associates. Decisions are often delayed; feedback, rewards and involvement are absent: and no attempt is made to motivate others or to recognise and satisfy their needs. A sample item is: *"The leader avoids getting involved when important issues arise."*

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4.4.4 Outcomes Components

The three outcomes components can be described as follows (Bass and Avolio, 1997:37):

- Extra effort

  Extra Effort reflects the extent to which associates exerts beyond the ordinary as a consequence of the leadership. A sample item is: *"The leader heightens others' desire to succeed."*

- Effectiveness

  Effectiveness reflects a leader's effectiveness as seen by both self and others in four areas: meeting the job-related needs of associates; representing associates' needs to higher-level managers; contributing to organisational effectiveness; and performance by the leader's work group. A sample item is: *"The leader is effective in meeting organisational requirements."*

- Satisfaction

  Satisfaction reflects how satisfied both leader and associates are with the leader's style and methods, as well as how satisfied they are in general with the leader. A sample item is: *"The leader uses methods of leadership that are satisfying."*

4.5 Reasons for the use of the Structured Questionnaire in this Research

The research method namely the use of a reliable. standardised, structured questionnaire was the suitable option for the following reasons:

- The subjects of the research had less problems to subject themselves to a tried and tested instrument because they realised that the outcomes will be reliable and valid.

- It was economical in terms of time and money to use a structured questionnaire. Within one week all nine leaders were subjected to a 360° leadership evaluation. One supervisor, eight peers and 78 subordinates were involved in this exercise.

- Anonymous feedback, without fear of victimisation, was ensured to the subordinates (Mc Farlane, 1999 : 25).

- Respondents were able to carefully think through each item and respond honestly.

The only other option, personal interviews, was not considered because of the following reasons:

- Personal interviews are very expensive in terms of time and money required.

- Even if all the time, money and effort were spent on this technique, a lower number of respondents would participate, making the feedback less significant.

- Scientific interpretation of the feedback obtained from a selection of personal interviews remains difficult (Ayres, 2003: Chapter 6).

4.6   Research Design

For the purpose of this study, a post-test only, two group design has been used. An *ex post facto* field study has been conducted: The first group consisted of subordinates, peers and the supervisor of a leader who have been subjected to management skills training, while the second group consisted of subordinates, peers and the supervisor of leaders who received no formal management skills training. This second group of leaders developed their management skills mainly through experience in the workplace. Both groups form part of the same engineering environment namely the Faculty of Engineering at the Vaal University of Technology.

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4.7   Validity and Reliability of the Methods used

Validity, described as actually measuring what we attempt to measure, can be sub-divided into *internal* and *external* validity.   Internal validity is concerned with whether the research has been designed so that it truly deals with what is being examined. Key questions with regard to internal validity are: *"Can the data collected actually be used to answer the question? Do the findings reveal the truth about the question posed in the study?"* External validity is concerned with the external question of whether or not the results will remain valid, when subsequently applied to situations outside the original investigation. The question here is: *"Do the findings reveal the truth about these questions when they are situated outside the study?"* (De Jager, 2003:88).

Reliability, being the answer to the question whether the research instrument collects data in a consistent manner, sets the limits for validity. In other words, the accuracy of measurement is limited by the consistency of measurement. Reliability is usually expressed as a correlation coefficient, or r-value. Levels of 0,70 or more are generally accepted as representing good reliability (De Jager, 2003:89).

The reliability of this study, executed by using a tried and tested measuring instrument known as the Multifactor Leadership Questionnaire (MLQ), is above question. The MLQ, as reported in section 1.5 chapter 1, was indicated to have reliabilities of 0,944; 0,736 and 0,803 on the scales of the Cronbach's coefficient alpha, for transformational-, transactional- and non-transactional leadership respectively (Brand, 2003:6). Because reliability sets the limit for validity, it can be assumed that the validity of this research is also beyond doubt: The findings reveal the truth about the perceived leadership of the nine Heads of Departments of the Faculty of Engineering at the Vaal University of Technology at the time of the research.

4.8   Summary

This chapter outlines how data was collected: the selection of the sample from the target population is described.

Information about the measuring instrument is supplied and reasons why a structured questionnaire was used, is explained.   The research design is discussed followed by remarks on validity and reliability of the methods used.

Chapter 5 presents the results obtained from the completed questionnaires as well as an analysis and discussion of these findings.

CHAPTER 5: RESULTS AND DISCUSSION OF FINDINGS

5.1 Introduction

This chapter includes the results obtained from the questionnaires completed as well as an analysis of these findings. Finally these findings are then discussed.

5.2 Results

In order to meet the general objective of this study as explained in Chapter 1, Section 1.3, the results of the post-test only, two group design, *ex post facto* field study. where the researcher, who have been subjected to management skills training additional to his technical training, is compared with a second group of leaders who received no formal management skills training, additional to their technical training, is now presented.

A 360° MLQ leadership evaluation, that was discussed in full in chapter 1, section 1,5,1. as well as chapter 4, section 4.4, included as **annexure C** to this dissertation, was conducted on the researcher (Group 1). This included the following:

•	Top-down evaluation	x 1
•	Self-evaluation	x 1
•	Peer-evaluation	x 2
•	Subordinate (bottom-up) evaluation	x10
	Total:	14

The control group (group 2), consisting of 8 fellow leaders to the researcher, was also subjected to a 360° MLQ leadership evaluation. For the group of 8 people, this included the following:

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• Top-down evaluation				x 8				
• Self-evaluation				x 8				
• Peer-evaluation				x 16				
• Subordinate (bottom-up) evaluation				x 68				
Total:				100				

This represents an average of 100/8 = 12,5 ratings per person for the control group, (Group 2) which compares favourably with the 14 ratings done for the experimental group (Group 1 : The researcher).

The following leadership results – an extract from the feedback to individual leaders is included as **annexure E** to this dissertation - was obtained from the study. A to H represents the control group (Group 2. Other Leaders), while I represents the experimental group (Group 1, The researcher):

Table 2. Leadership Results of all Leaders (Scale explained on next page)

	A	B	C	D	E	F	G	H	I
Transformational Leadership:									
* Idealised Attributes	2,9	2,1	2.4	3,0	2,9	3,3	2,8	2,8	3 0
* Idealised Behaviours	3,0	2,3	2,9	2,5	2,7	3,2	2.9	2,6	3,0
* Inspirational Motivation	3,0	2,3	2.6	2,9	2,7	3,6	3,0	2,9	2.8
* Intellectual Stimulation	2,6	2,3	2,7	2,7	2,7	2,7	2,8	2,5	2,5
* Individual Consideration	2,6	2,2	2,4	2,5	3.0	2,8	3,0	2,5	2.9
Average	2.8	2,2	2,6	2,7	2,8	3,1	2,9	2,7	2.9

	A	B	C	D	E	F	G	H	I
Transactional Leadership:									
* Contingent Reward	2,8	2,3	2,4	3,0	3,0	3,1	3,2	2,8	3,0
* Management-by-Exception (Active)	2,0	2,4	2,9	1,8	2,2	2,3	2,0	2,2	2,2
* Management-by-Exception (Passive)	1,0	1,8	1,0	1,4	0,7	1,1	1,4	1,7	1,1
Average	1,9	2,2	2,1	2,1	2,0	2,2	2,2	2,2	2,1

	A	B	C	D	E	F	G	H	I
Non-Transactional:									
* Laissez Faire	0,6	1,5	1,2	0,9	0,7	0,8	1,2	1,1	0,8

Source: Own research

Explanation of the scale:

0	=	Not at all
1	=	Once in a while
2	=	Sometimes
3	=	Fairly often
4	=	Frequently, if not always

When table 2 is converted into results for Group 1 (Experiment) and Group 2 (Control) through the utilisation of weighted averages, the comparison becomes:

Table 3. Leadership Results of Experimental- and Control Group

	Group 2 (Control)	Group 1 (Experiment)	Deviation
Transformational Leadership		.	
* Idealised Attributes	2,7	3,0	+ 0,3
* Idealised Behaviours	2,7	3,0	+ 0,3
* Inspirational Motivation	2,8	2,8	0.0
* Intellectual Stimulation	2.6	2,5	- 0,1
* Individual Consideration	2,6	2,9	+ 0,4
Average	2,7	2,8	+0,1
Transactional Leadership			
* Contingent Reward	2,8	3,0	+ 0,2
* Management-by-Exception (Active)	2,3	2,2	- 0,1
* Management-by-Exception (Passive)	1,3	1,1	- 0,2

Non-Transactional			
* Laissez Faire	1.0	0,8	- 0,2

Source: Own research

In terms of outcomes of leadership, the following results represent a summary of the feedback received for the control group (Group 2) [A to H] as well as the experimental group (Group 1) [I]:

Table 4. Outcomes of Leadership for All Leaders

	A	B	C	D	E	F	G	H	I
Extra Effort	2,57	2,46	2,66	2,92	3,08	3,07	2,92	2,51	2.66
Effectiveness	3,13	2,43	2,70	3,02	3,11	3,22	3,03	2,86	3,05
Satisfaction	3,26	2,37	2,24	3,24	3,16	3,26	3,17	3,08	3,17
Weighted Average	2,94	2,40	2,56	3,01	3,08	3,15	2,99	2,76	2,92

Source: Own research

When table 4 is converted into outcomes of leadership for Group 1 (Experiment) and Group 2 (Control) through the utilisation of weighted averages, the comparison becomes:

Table 5.   Outcomes of Leadership for Experimental- and Control Group

	Group 2 (Control)	Group 1 (Experiment)	Deviation
Extra Effort	2,75	2,66	- 0,09
Effectiveness	2,90	3,05	+ 0,15
Satisfaction	2,92	3,17	+ 0,25
Weighted Average	2,83	2,92	+ 0,09

Source: Own research

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5.3   Analysis of Findings

The findings of section 5.2 is now analysed under the headings: transformational leadership, transactional leadership, non-transactional leadership and outcomes-of-leadership-factors.

5.3.1 Transformational Leadership:

In terms of Idealised Influence (Charisma-Attributes and Behaviours) as well as Individualised Consideration the researcher was rated slightly higher than his colleagues. Inspirational motivation was perceived to be on the same level as his colleagues while Intellectual Stimulation was perceived to be slightly lower.

In general terms, the researcher was rated slightly higher than his colleagues on Transformational Leadership. Both the researcher and his colleagues were, however, rated close to the ideal of 3.0 or higher on the scale, meaning that this favourable behaviour is exhibited fairly often.

5.3.2 Transactional Leadership

In terms of Contingent Reward, the researcher was rated slightly higher on the scale compare to his colleagues. Management-by-exception, both active and passive was also perceived to be slightly better (lower on the scale) compared to the group.

In general terms, the researcher was rated slightly higher than his colleagues on transactional leadership. Both the researcher and his colleagues, were rated close to the ideal: Both groups exhibit contingent reward fairly often, active management-by-exception sometimes and passive management-by-exception once in a while.

5.3.3   Non-Transactional Leadership

In terms of Laisses-Faire or non-leadership, the researcher was rated slightly lower on the scale compared to his colleagues: the researcher is perceived to exhibit slightly less of this unwanted non-leadership compared to his colleagues.

In general terms, however, both the researcher and his colleagues exhibit this unwanted behaviour only once in a while.

5.3.4   Outcomes of Leadership

In terms of "Effectiveness" and "Satisfaction", the researcher was rated slightly higher than his colleagues. "Extra effort" was perceived to be slightly lower. In general terms, the researcher was rated slightly higher than his colleagues on Outcomes of Leadership. Both the researcher and his colleagues, were, however, close to 3.0 on the scale, meaning that this favourable behaviour is exhibited fairly often.

5.4   Discussion of Findings

5.4.1   Interpretation of Findings

The findings will now be interpreted under the headings: Transformational leadership, transactional leadership, non-transactional leadership and outcomes-of-leadership-factors.

- Transformational Leadership
  The researcher was rated slightly higher in terms of Idealised Influence (Charisma-attributes and behaviour): instilling pride in others to be associated with him; going beyond self-interest for the good of the group; acting in ways that build others' respect for him; displaying a sense of power and confidence; talking about his most important values and beliefs; specifying the moral end ethical consequences of

decisions and emphasising the importance of having a collective sense of mission.

He was also rated slightly higher in terms of Individualised Consideration: spending time teaching and coaching; treating others as individuals rather than just a member of the group; considering an individual as having different needs, abilities and inspiration from others and helping others to develop their strengths.

In terms of Inspirational Motivation, there was no perceived difference between the researcher and his fellow leaders: The two groups were perceived equal in terms of talking optimistically about the future; talking enthusiastically about what needs to be accomplished; articulating a compelling vision of the future and expressing confidence that goals will be achieved.

He was rated slightly below the group in terms of Intellectual Stimulation: re-examining critical assumptions to questions whether they are appropriate; seeking different perspectives when solving problems; getting others to look at problems from many different angles and suggesting new ways of looking at how to complete assignments.

In general terms, he was rated slightly higher than the group in terms of Transformational Leadership.

- Transactional Leadership
The researcher was rated slightly higher in terms of Contingent Reward: providing others with assistance in exchange for their efforts; discussion in specific terms who is responsible for achieving performance targets; making clear what one can expect to receive when performance goals are achieved and expressing satisfaction when others meet expectations.

He was also rated slightly higher than the group (lower on the scale) in terms of Management-by-exception (active): focussing attention on irregularities, mistakes. exceptions and deviations from standards; concentrating full attention on dealing with mistakes, complaints and failures; keeping track of all mistakes; directing attention towards failures to meet standards as well as Management-by-exception (passive): failing to interfere until problem become serious; waiting for things to go wrong before taking action; showing that he is a firm believer in *"If it ain't broke, don't fix it"* and demonstrating that problems must become chronic before taking action.

- Non-Transactional Leadership

  The researcher was rated slightly higher (lower on the scale) in terms of non-leadership (Laissez-faire): avoid getting involved when important issues arise; being absent when needed; avoiding making decisions and delay responding to urgent questions.

- Outcomes of Leadership

  The researcher was rated slightly higher in terms of effectiveness: being effective in meeting others' job-related needs; being effective in representing others to higher authority; being effective in meeting organisational requirements and leading a group that is effective.

  He was also rated slightly higher in terms of Satisfaction: using methods of leadership that are satisfying and working with others in a satisfactory way.

  He was rated slightly lower in terms of Extra Effort: getting others to do more than they expected to do; heightening others' desire to succeed and increasing others' willingness to try harder.

  In general terms the researcher was perceived slightly better in most areas of leadership in comparison with the group. The two areas

where he was perceived weaker were in Intellectual Stimulation (Transformational Leadership) and Extra Effort (Outcomes of Leadership).

5.4.2 Significance, Validity and Reliability of Findings

The researcher, being the person with technical training as well as management skills training, was compared with eight other leaders, operating in exactly the same engineering environment under the same supervisor. This is an environment suitable for this study. The question can be asked: Is the researcher with management skills training, perceived to be more effective in terms of leadership, when compared with his peers, who had no management skills training?

The study indicates that the researcher is perceived to be slightly more effective in terms of most of the leadership dimensions. The two areas where he was perceived to be slightly less effective, were Intellectual Stimulation (Transformational Leadership) and Extra Effort (Outcomes of Leadership).

The significance of the study is that it supports the possibility that management skills training could have had a positive influence on the researcher's leadership effectiveness. The fact that a post test only research design was carried out, makes it impossible to assume that the statement is true: The perceived leadership evaluation of the researcher as well as that of his peers should have been done 10 years ago when the researcher started with management skills training. Scientifically this would have indicated a higher growth rate in leadership effectiveness of the researcher when compared with his peers, if management skills training had a positive effect.

The reliability and validity of the findings of this research is beyond doubt: Because of the fact that a tool known as the Multifactor Leadership Questionnaire (MLQ), used in at least 100 doctoral theses and research investigations in different countries, was utilised for this study (Bass and

Avolio, 1997:16), the truth is revealed about the perceived leadership of the nine leaders under investigation.

5.4.3 Effectiveness of the Selected Research Design and Research Method

The use of a post-test only, two group *ex post facto* field study research design had a negative effect on the credibility of this research. The leadership effectiveness of the researcher and his peers was not measured before the researcher undertook the management skills training. It can therefore not be assumed that it was the application of the independent variable only; management skills training, that had a positive effect on the dependent variable. perceived leadership effectiveness.

The researcher could have been in the same situation, compared to his peers, before he undertook management skills training.

The use of a randomised pre-test post-test control group design combined with an analysis of co-variance would have been the ideal.

Many difficulties will however, be experienced with such an approach. Firstly, very few technically trained people in the same environment will normally see the need for management skills training. Secondly, evaluation of perceived leadership effectiveness is a very sensitive topic: leaders do not easily subject themselves to such an experiment out of their own free will. Thirdly, because of the fact that such a leader will normally be undertaking such study on a part time basis, it will take a considerable period of time before the post-test could be completed. Many variables could change in the meantime making such a scientific experiment difficult, if not impossible.

The research method namely the use of reliable, standardised questionnaire, as stated earlier, was the suitable option because of the following reasons:

- The subjects of the research had less problems to subject themselves to a tried and tested instrument because they realised that the outcomes will be reliable and valid.

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- It was economical in terms of time and money to use a questionnaire. Within one week all nine leaders were subjected to a 360° leadership evaluation. One supervisor, eight peers and 78 subordinates were involved in this exercise.

- Anonymous feedback, without fear of victimisation, was ensured to the subordinates (Mc Farlane, 1999:25).

- Respondents were also able to carefully think through each item and respond honestly.

The only other option, personal interviews, as stated earlier, was not considered because of the following reasons:

- Personal interviews are very expensive in terms of time and money required.

- Even if all the time, money and effort were spent on this technique, a lower number of respondents would participate, making the feedback less significant.

- Scientific interpretation of the feedback obtained from a selection of personal interviews remains difficult (Ayres, 2003: Chapter 6).

5 4 4   Correlation of Findings with Information from Relevant Literature

The assumption of this study is that management skills training provides the manager with "Content Skills": Those skills required to manage subordinates. The research question is: "Does management skills training also provide the manager with "Process Skills": Those skills required to be an effective leader to his/her subordinates?

The findings of this research support the possibility that management skills training did have a positive effect on the perceived leadership of the researcher. The research design, unfortunately, as previously explained, does not allow the research to proof the research question without reasonable doubt.

The impact of management skills training, for example MBA studies, on managers, as reviewed in relevant literature, will now be explored.

The "traits approach" to management is rejected by Badawy (1995:17). He believes that managerial performance depends on fundamental skills rather than personality traits. Badawy supports the "skills approach" to management. He believes that considerable evidence available supports his view that managerial skills can be developed. Badawy does, however, believe that some traits of successful managers are innate, for example aptitude, ability, talent and intelligence.

Badawy (1995:18) supports the following five statements:

- Managers are made, not born.
- There are no poor engineers or scientists, only poor managers.
- Managing is a skill; the only way to learn it is to practice it.
- The primary problems of engineering and research and development management are not technical; they are human. Many technical managers fail because they were never trained in organisation and management skills.

With regard to the possibility to teach management, Badawy (1995:171) believes that the only thing the university business school or engineering school can do is to teach *about* management; it cannot teach management. He believes that the action does not take place in the classroom, but in the workplace. Management is a skill. The only way to acquire this skill is by practicing it – by putting it to use. While management concepts, theories and principles (management knowledge) are learnable in an academic setting, managerial practices are not,unless the learner is permitted to put the learning into action (learning by doing). No amount of education or training will really develop the manager's skills. These skills can only be developed through practice, experience and application.

Badawy summarises that the only thing the university can do is to teach an individual what a manager does, without enabling him to do it; a person can

learn to manage but not necessarily be taught to manage. He believes that the formal approach to developing managerial skills of technically trained people usually includes the following (Badawy, 1995:172):

- Management workshops or seminars sponsored by management groups, consulting firms or professional societies.
- In-house training programmes.
- University degree programmes.
- University continuing education programmes.
- Corporate management education and development centers.
- Job assignment and job rotation.
- On-the-job-training.
- Temporary assignments to other areas.
- Any other type of programme formally sponsored by the organisation or outside agencies.

Dennis R Towill, F Eng (Towill, 1999:111) discusses the problem of management producing an estimated 2000 books per annum. His problem is to find a way to identify those books containing useful information that will generate a competitive edge from those that are written *"to make the authors richer and greatly raise their self esteem"* (Towill, 1999:120).

He raises seven basic objections to management theory (Towill, 1999:112):

- They tend to degenerate into fads as distinct from becoming a way of life.
- They tend to be 'quick fixes', not fundamental solutions.
- Reliable information on success rate is rarely available.
- They create unrealistic expectations.
- They waste energy and resources.
- They breed fear in employees.
- Each new buzzword is treated with even more scepticism than the last.

Towill, identifies four groups of 'players' in the business of management (Towill, 1999:14):

- The practitioners of management, at all levels; those people who actually do things.
- Management consultants, who advise on business improvement strategy and tactics.
- The management 'gurus' who pontificate on the latest 'buzzwords' offering unique and universal solutions to business problems.
- Academics (usually, but not always from business schools) who provide human resources for the next generation of gurus and consultants and sometimes even the next generation of practitioner.

Towill obviously questions the usefulness of authors developing new management theories faster than the real world out there can digest or utilise them.

Cedric Brown, chairman of the Joint Board for Engineering Management, Suffok, UK, sees engineering management training as a competitive advantage (Brown, 1998:247). He believes that continuing economic development depends on this training. Provided that such a course focuses on real skills development in the management and business areas of most relevance to technical and engineering staff:

- Managing innovation.
- Project development.
- Strategic planning.
- Corporate decision-making.
- Commercial planning and control.
- Organisational change.
- Finance.
- Legislation.
- Organisational management. Brown believes that such a course will support aspiring professional engineers to understand business in greater dept and help them to survive the transition into the management field (Brown, 1998:250).

Jonathan Slack. Chief Executive of the Association of Business Schools in the UK, believes that a MBA is very usefull to engineering graduates: Up to one-quarter of students at business schools come from this field (Slack, 1999:231).

Many engineers find technical knowledge alone will not help them climb the corporate ladder. Their first degrees tend to concentrate primarily on the technical aspects of their job, hence new skills are often required to further their careers at a later stage (Slack, 1999:231).

Engineers are accustomed to solving technical problems, but the managerial situation often requires the use of much broader thinking, involving, for example financial and marketing concepts.

The MBA helps engineers to make the final transformation to all-rounders, charged with looking after a variety of departments and functions, not just their own technical teams. It paves the way for accelerated promotion and enables them to realise their potential at a much earlier age (Slack, 1999:231). An MBA gives them insight into all aspects that makes up a business, such as finance. marketing and operational management. It also helps them to develop soft skills such as communication and human resource management. It helps them to understand new ways of thinking and it gives them opportunities to discuss a broad range of issues with different people in the business.

From this brief review of some relevant research it is evident that:
- Many different views on the value of management skills training are held by different people.
- The view of a specific person is frequently influenced by the specific industry this person is coming from.
- Even management training in general is seen by some observers as of little practical use.

The question: "Does the MBA or equivalent qualification supply the student with "content skills", those skills required to manage subordinates; as well as "process skills", those skills required to be an effective leader, is answered as follows by Badawy (1995:175): *"Contrary to popular belief, quite frankly, the perceived value of the MBA is simply not true in reality. Whether a graduate degree in management has anything to do with skills development and potential managerial performance is open to serious question, to say the least. Except for testimonial observations. there is no concrete evidence that those with and MBA performs better than those without it. Management education in fact, has been viewed by some as a myth."*

The researcher can. however, confirm that MBA studies had a positive effect: His view was broadened by the management skills training and he performed his management and leadership role with much more confidence after completion of the theoretical modules. To just mention one aspect: the subject: "Organisational Dynamics" broadened his views on the role of the individual and the working groups in the macro-environment of the bigger organisation.

MBA studies alone, in the opinion of the researcher, will, however, not have a significant effect on leadership and management effectiveness.

Experience in leadership and management. even though this variable was not investigated in this study, surfaced as a possible contributor to increased perceived leadership effectiveness.

5.5   Summary

This chapter discussed the results of the empirical research. These findings were analysed and interpreted. A final attempt was also made to link these findings to relevant theories regarding the impact of management skills training. Chapter 6 contains the final conclusions and recommendations of this study.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary of the main conclusions of this study. These conclusions are substantiated by the relevant theories as well as the empirical findings of the research.

These conclusions are followed by recommendations including an indication of possible further research in this area.

6.2 Conclusions

The **general objective** of this study was to determine whether technically trained people in possession of management skills training are perceived to be more effective leaders when compared with technically trained people in management positions who have received no formal management skills training.

The **target population** was the nine Heads of Departments of the Faculty of Engineering at the Vaal University of Technology. These nine leaders function in an engineering environment, under the supervision of the same engineering leader and they lead technically trained subordinates in their respective departments.

The **research instrument** was a questionnaire known as the Multifactor Leadership Questionnaire (MLQ). This questionnaire is proven to be reliable for the evaluation of the different elements of leadership.

The **research design** was a post-test only, two group design. An *ex post facto* field study has been conducted: The researcher, having obtained management skills training additional to his technical training, formed the experimental group with his subordinates, peers and supervisor.

The other eight Heads of Departments, who received no formal management skills training additional to their technical training, with their subordinates, peers and supervisor (same person as for the experimental group) formed the control group.

With reference to the general objective of this study as explained in Chapter 1, Section 1.3, the following **conclusions** can be made from the research findings:

- The researcher with management skills training additional to his technical training, was perceived to be marginally better in terms of transformational leadership, transactional leadership as well as non-transactional leadership, when compared with his fellow-leaders.

- This leader was also perceived to be slightly better in terms of the following outcomes of leadership: Effectiveness and satisfaction. He was, however, perceived to be weaker in terms of extra effort. In general terms he was perceived to be marginally better in terms of outcomes of leadership.

These conclusions must, however, be seen in context with the chosen research design as well as relevant information obtained from the literature survey:

- The post-test only research design implies that no pre-test was done on the experimental- and control groups. No evaluation was done before the researcher started his training in management skills. His perceived leadership status relative to the other leaders before the experiment has started, is therefore unknown.

- No evidence could be found in the literature of any pre- and post-test experiment of this nature that was conducted on technically trained people. It therefore remains a perception of the researcher that management skills training of a technically trained person, or any leader for that matter, does have a

positive effect on his leadership as perceived by his direct associates.

- In **general terms** it can be **concluded** that management skills training alone does not have a significant effect on perceived leadership effectiveness. Other variables also affect leadership effectiveness. These variables were neither identified nor investigated as part of this limited study.

6.3 Recommendations for Further Research

The following recommendations can be made:

- A pre- and post-test experiment on perceived leadership of a group of leaders in a large technical concern can be considered. As explained in the previous chapter, there are, however, a number of serious challenges embedded in the execution of such a task. This can possibly be the answer to the question why such an experiment has not yet been conducted.

- The effect of other variables on perceived leadership effectiveness needs to be researched. This study suggests the possibility that years of leadership experience could be positively linked to perceived leadership effectiveness.

- A study on the broader picture of leadership/managerial efficiency linked to management skills training can be undertaken. This involves the assessment of managers in an assessment centre. The effect of secondary variables like years of experience, personality traits and so on, can also be introduced into such a study. This will, however, be very expensive in terms of time and money. The limited number of participants will also make it difficult to extract meaningful data from such an experiment.

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LIST OF ANNEXURES

Annexure A :   Letter of request to Ronald G Read, University of Wisconsin, USA

Annexure B :   Letter of request: Douglas M Soat, Consulting Psychologist, Janesville, USA

Annexure C :   The Multifactor Leadership Questionnaire (MLQ) and associated documentation.

Annexure D :   Request for participation to Leaders (HOD's): Faculty of Engineering, Vaal University of Technology.

Annexure E :   MLQ feedback for each individual leader under evaluation.

Annexure A

Letter of request to
Ronald G Read,
University of Wisconsin, USA

2 May 2002

Ronald G Read: University of Wisconsin
(E-mail: rread@de.ittind.com)

Ronald

My name is Frans du Toit. I am Head of the Department: Metallurgical Engineering, Vaal Triangle Technikon, South Africa and I am presently working on a dissertation as part of a MBA qualification.

I am a person with Technical qualifications who is presently in middle management in an Engineering environment.

I read your article titled: "The engineer in transition to management": Light wave, August 1998 and as the title of my proposed MBA dissertation is: "Managerial Efficiency in an Engineering Environment", I firmly believe that I can learn from you, provided that you are willing to become involved.

The main research question I would like to investigate in a scientific manner and hopefully come to an answer that will carry some weight, scientifically, is:

Does management skills training (MST), say an MBA or equivalent, have any effect on Managerial Efficiency in an Engineering environment, in other words:

Technical Manager A: Technical Training
vs
Technical Manager B: Technical Training and MST (e.g. MBA).

Is B a better/more efficient manager than A as seen through the eyes of his subordinates?, peers?

My next question is: Does a standardized tool (e.g. questionnaire) exist to investigate such a question? (Specific reference to Engineering Management)

Any comments, suggestions??

Kind regards

FRANS DU TOIT

Annexure B

Letter of request:
Douglas M Soat,
Consulting Psychologist,
Janesville, USA

2 May 2002

Dr Douglas M Soat
Consulting Psychologist
2600 N River Bluff Drive
Janesville
WI 53545-0701
(608-756-1700)

Dr Soat

My name is Frans du Toit. I am Head of the Department: Metallurgical Engineering, Vaal
Triangle Technikon, South Africa and I am presently working on a dissertation as part of a
MBA qualification.

I am a person with Technical qualifications who is presently in middle management in an
Engineering environment.

I read your book titled: "Managing Engineers and Technical Employees".

The title of my proposed MBA dissertation is: "Managerial Efficiency in an Engineering
Environment."

The main research question I would like to investigate in a scientific manner and hopefully
come to an answer that will carry some weight, scientifically, is·

Does management skills training (MST), say an MBA or equivalent, have any effect on
Managerial Efficiency in an Engineering environment, in other words:

Technical Manager A: Technical Training
vs.
Technical Manager B: Technical Training and MST (e.g. MBA).

Is B a better/more efficient manager than A as seen through the eyes of his sub-ordinates⁹,
peers?

To be able to answer abovementioned question. I need a standardized tool that will measure
efficiency/effectiveness/??? in an Engineering/Technical/Scientific environment.

Appendix E in your book briefly touches on an effectiveness feedback form. Can you be of
further assistance to me in this regard?

Yours sincerely

F J DU TOIT
HEAD: DEPARTMENT OF METALLURGICAL ENGINEERING

Telephone: (016) 950 9305
Fax: (016) 950 9797
e-mail·   fransd@nt.tritek.ac.za
              martier@nt.tritek.ac.za

Annexure C

The Multifactor Leadership Questionnaire (MLQ) and associated documentation

Multifactor Leadership Questionnaire
Question Booklets (MLQM)

Instructions:

1. Write in the details of the Leader's Name and other particulars on both the Leader's and Rater's Answer Sheets.

2. Distribute the Booklets and Answer Sheets. **Be sure that the name on the answer sheet and booklets match and are sent to the same person.**

3. Distribute the Rater Booklets and Rater Answer Sheets to others who know the leader well.

4. Mark on the Leader Answer Sheet how many Rater Answer Sheets you have distributed.

5. **Important:** Fill out a date on each Answer Sheet and send them to PRODUCTIVITY DEVELOP-MENT **at least 10 working days before you need the report.**

6. Distribute the Leader Booklet and Leader Answer Sheet to the Leader.

7. Complete the Answer Sheets and then place them in an envelope big enough to receive them **WITHOUT FOLDING** and send it to The Scoring Department at the address below.

8. You will need to confirm that the answer sheets have been sent to the address below by ten working days before you need your *Multifactor Leadership Questionnaire Report.*

If you have questions, contact:

The Scoring Department
Productivity Development (Pty) Ltd.
P.O. Box 756
Randburg
2125

Tel.: (011) 787-3349
Fax: (011) 789-4628

Multifactor Leadership Questionnaire

Leader Booklet (MLQM)

by Bernard M. Bass and Bruce J. Avolio

DIRECTIONS: This questionnaire is designed to help you describe your leadership style as you perceive it. Please answer all items on the separate Leader Answer sheet. Be sure the answer sheet has your name on it. Judge how frequently each statement fits you. The word "others" may mean your peers, clients, direct reports, supervisors, and/or all of these individuals. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Use the following rating scale:

0	1	2	3	4
Not at all	Once in a while	Sometimes	Fairly often	Frequently if not always

1. I provide others with assistance in exchange for their efforts

2. I re-examine critical assumptions to question whether they are appropriate

3. I fail to interfere until problems become serious

4. I focus attention on irregularities, mistakes, exceptions, and deviations from standards

5. I avoid getting involved when important issues arise

6. I talk about my most important values and beliefs

7. I am absent when needed

8. I seek differing perspectives when solving problems

9. I talk optimistically about the future

10. I instill pride in others for being associated with me

11. I discuss in specific terms who is responsible for achieving performance targets

12. I wait for things to go wrong before taking action

13. I talk enthusiastically about what needs to be accomplished

14. I specify the importance of having a strong sense of purpose

15. I spend time teaching and coaching

16. I make clear what one can expect to receive when performance goals are achieved

17. I show that I am a firm believer in 'If it ain't broke, don't fix it."

18. I go beyond self-interest for the good of the group

19. I treat others as individuals rather than just as a member of a group

20. I demonstrate that problems must become chronic before I take action

21. I act in ways that build others' respect for me

22. I concentrate my full attention on dealing with mistakes, complaints, and failures

23. I consider the moral and ethical consequences of decisions

24. I keep track of all mistakes

25. I display a sense of power and confidence

26. I articulate a compelling vision of the future

27. I direct my attention toward failures to meet standards

28. I avoid making decisions

29. I consider an individual as having different needs, abilities, and aspirations from others

30. I get others to look at problems from many different angles

31. I help others to develop their strengths

32. I suggest new ways of looking at how to complete assignments

33. I delay responding to urgent questions

34. I emphasize the importance of having a collective sense of mission

35. I express satisfaction when others meet expectations

36. I express confidence that goals will be achieved

37. I am effective in meeting others' job-related needs

38. I use methods of leadership that are satisfying

39. I get others to do more than they expected to do

40. I am effective in representing others to higher authority

41. I work with others in a satisfactory way

42. I heighten others' desire to succeed

43. I am effective in meeting organizational requirements

44. I increase others' willingness to try harder

45. I lead a group that is effective ⌐

When you are finished please place your Answer Sheet in an envelope large enough - DO NOT FOLD - and send to the address below.

MULTIFACTOR LEADERSHIP QUESTIONNAIRE
Leader Answer Sheet (MLQM)
by Bernard M. Bass and Bruce J. Avolio

11382

LEADER

Leader Name

Leader# #Raters

Leader Name:
Organization:
Business Unit:
Region:
Level of Leadership:

IMPORTANT: This answer sheet must be completed & placed in envelope for Scoring by:

Please mark the number of rater forms you have distributed. If you are distributing less than ten forms mark zero in the first box; e.g., for six forms mark 0 6 and fill in the corresponding circles.

1 ○ ○
2 ○ ○
3 ○ ○
4 ○ ○
5 ○ ○
6 ○ ○
7 ○ ○
8 ○ ○
9 ○ ○
0 ○

DIRECTIONS: First mark the number of rater forms you have distributed in the box provided. Then use this answer sheet to respond to the questions in the MLQ Leader Booklet. Be sure the Leader Booklet has your name on it.
This survey is designed to describe your leadership style as you perceive it. Please answer all the items in the question booklet. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.
Forty-five descriptive statements are listed in the MLQ Leader Booklet. Judge how frequently each statement fits you. Use the rating scale shown below:

Proper Mark: ○ ○ ● ○   Improper Marks: ✓ ⊘ ● ⊙

0	1	2	3	4
Not at all	Once in a while	Sometimes	Fairly often	Frequently if not always

0 1 2 3 4

1. ○ ○ ○ ○ ○
2. ○ ○ ○ ○ ○
3. ○ ○ ○ ○ ○
4. ○ ○ ○ ○ ○
5. ○ ○ ○ ○ ○

6. ○ ○ ○ ○ ○
7. ○ ○ ○ ○ ○
8. ○ ○ ○ ○ ○
9. ○ ○ ○ ○ ○
10. ○ ○ ○ ○ ○

11. ○ ○ ○ ○ ○
12. ○ ○ ○ ○ ○
13. ○ ○ ○ ○ ○
14. ○ ○ ○ ○ ○
15. ○ ○ ○ ○ ○

0 1 2 3 4

16. ○ ○ ○ ○ ○
17. ○ ○ ○ ○ ○
18. ○ ○ ○ ○ ○
19. ○ ○ ○ ○ ○
20. ○ ○ ○ ○ ○

21. ○ ○ ○ ○ ○
22. ○ ○ ○ ○ ○
23. ○ ○ ○ ○ ○
24. ○ ○ ○ ○ ○
25. ○ ○ ○ ○ ○

26. ○ ○ ○ ○ ○
27. ○ ○ ○ ○ ○
28. ○ ○ ○ ○ ○
29. ○ ○ ○ ○ ○
30. ○ ○ ○ ○ ○

0 1 2 3 4

31. ○ ○ ○ ○ ○
32. ○ ○ ○ ○ ○
33. ○ ○ ○ ○ ○
34. ○ ○ ○ ○ ○
35. ○ ○ ○ ○ ○

36. ○ ○ ○ ○ ○
37. ○ ○ ○ ○ ○
38. ○ ○ ○ ○ ○
39. ○ ○ ○ ○ ○
40. ○ ○ ○ ○ ○

41. ○ ○ ○ ○ ○
42. ○ ○ ○ ○ ○
43. ○ ○ ○ ○ ○
44. ○ ○ ○ ○ ○
45. ○ ○ ○ ○ ○

Please retain a copy of this form and the question booklet. Be sure to include your phone number in case there are any queries. If you have any questions, please contact: The Scoring Department, Productivity Development (Pty) Ltd., P.O. Box 756, Randburg 2125, Tel: 787-3349, Fax: 789-4628

11382

Multifactor Leadership Questionnaire
Rater Booklet (MLQM)

by Bernard M. Bass and Bruce J. Avolio

Rater No.

DIRECTIONS: This questionnaire is to describe the leadership style of the person named on the answer sheet. Describe the leadership style as you perceive it. Please answer all items on this answer sheet. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank. Please answer this questionnaire anonymously.

Forty-five descriptive statements are listed on the following pages. Judge how frequently each statement fits the person you are describing.

Use the following rating scale:

0	1	2	3	4
Not at all	Once in a while	Sometimes	Fairly often	Frequently if not always

THE PERSON I AM RATING...

1. Provides me with assistance in exchange for my efforts
2. Re-examines critical assumptions to question whether they are appropriate
3. Fails to interfere until problems become serious
4. Focuses attention on irregularities, mistakes, exceptions, and deviations from standards
5. Avoids getting involved when important issues arise
6. Talks about their most important values and beliefs
7. Is absent when needed
8. Seeks differing perspectives when solving problems
9. Talks optimistically about the future
10. Instills pride in me for being associated with him/her
11. Discusses in specific terms who is responsible for achieving performance targets
12. Waits for things to go wrong before taking action
13. Talks enthusiastically about what needs to be accomplished
14. Specifies the importance of having a strong sense of purpose
15. Spends time teaching and coaching

0	1	2	3	4
Not at all	Once in a while	Sometimes	Fairly often	Frequently if not always

THE PERSON I AM RATING...

16. Makes clear what one can expect to receive when performance goals are achieved

17. Shows that he/she is a firm believer in "if it ain't broke, don't fix it."

18. Goes beyond self-interest for the good of the group

19. Treats me as an individual rather than just as a member of a group

20. Demonstrates that problems must become chronic before taking action

21. Acts in ways that builds my respect

22. Concentrates his/her full attention on dealing with mistakes, complaints, and failures

23. Considers the moral and ethical consequences of decisions

24. Keeps track of all mistakes

25. Displays a sense of power and confidence

26. Articulates a compelling vision of the future

27. Directs my attention toward failures to meet standards

28. Avoids making decisions

29. Considers me as having different needs, abilities, and aspirations from others

30. Gets me to look at problems from many different angles

31. Helps me to develop my strengths

32. Suggests new ways of looking at how to complete assignments

33. Delays responding to urgent questions

34. Emphasizes the importance of having a collective sense of mission

35. Expresses satisfaction when I meet expectations

36. Expresses confidence that goals will be achieved

37. Is effective in meeting my job-related needs

38. Uses methods of leadership that are satisfying

39. Gets me to do more than I expected to do

40. Is effective in representing me to higher authority

41. Works with me in a satisfactory way

42. Heightens my desire to succeed

43. Is effective in meeting organizational requirements

44. Increases my willingness to try harder

45. Leads a group that is effective

When you are finished please place your Answer Sheet in an envelope large enough - DO NOT FOLD - and send to the address below.

MULTIFACTOR LEADERSHIP QUESTIONNAIRE
Answer Sheet (MLQM)
by Bernard M. Bass and Bruce J. Avolio

Leader Name (Person You Are Rating) Leader# Rater#

Leader Name:

Business Unit:

Region:

RATER

IMPORTANT (necessary for processing):
Which best describes you?

- ○ I am at a higher organizational level than the person I am rating
- ○ The person I am rating is at my organizational level
- ○ I am at a lower organizational level than the person I am rating
- ○ I do not wish my organizational level to be known

IMPORTANT: This answer sheet must be completed & placed in envelope for Scoring by:

DIRECTIONS: First mark your organizational level in the box provided. Then use this answer sheet to respond to the questions in the MLQ Rater Booklet. Please answer every item. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank. Please answer this questionnaire anonymously.
This survey is designed to describe the leadership style of the above-mentioned individual as you perceive it. Forty-five descriptive statements are listed in the MLQ Rater Booklet. Judge how frequently each statement fits the person you are describing. Use the rating scale shown below:

Proper Mark: ○ ○ ● ○   Improper Marks: ✓ ✗ ○ ◉

0	1	2	3	4
Not at all	Once in a while	Sometimes	Fairly often	Frequently if not always

0 1 2 3 4
1. ○ ○ ○ ○ ○
2. ○ ○ ○ ○ ○
3. ○ ○ ○ ○ ○
4. ○ ○ ○ ○ ○
5. ○ ○ ○ ○ ○
6. ○ ○ ○ ○ ○
7. ○ ○ ○ ○ ○
8. ○ ○ ○ ○ ○
9. ○ ○ ○ ○ ○
10. ○ ○ ○ ○ ○
11. ○ ○ ○ ○ ○
12. ○ ○ ○ ○ ○
13. ○ ○ ○ ○ ○
14. ○ ○ ○ ○ ○
15. ○ ○ ○ ○ ○

0 1 2 3 4
16. ○ ○ ○ ○ ○
17. ○ ○ ○ ○ ○
18. ○ ○ ○ ○ ○
19. ○ ○ ○ ○ ○
20. ○ ○ ○ ○ ○
21. ○ ○ ○ ○ ○
22. ○ ○ ○ ○ ○
23. ○ ○ ○ ○ ○
24. ○ ○ ○ ○ ○
25. ○ ○ ○ ○ ○
26. ○ ○ ○ ○ ○
27. ○ ○ ○ ○ ○
28. ○ ○ ○ ○ ○
29. ○ ○ ○ ○ ○
30. ○ ○ ○ ○ ○

0 1 2 3 4
31. ○ ○ ○ ○ ○
32. ○ ○ ○ ○ ○
33. ○ ○ ○ ○ ○
34. ○ ○ ○ ○ ○
35. ○ ○ ○ ○ ○
36. ○ ○ ○ ○ ○
37. ○ ○ ○ ○ ○
38. ○ ○ ○ ○ ○
39. ○ ○ ○ ○ ○
40. ○ ○ ○ ○ ○
41. ○ ○ ○ ○ ○
42. ○ ○ ○ ○ ○
43. ○ ○ ○ ○ ○
44. ○ ○ ○ ○ ○
45. ○ ○ ○ ○ ○

Please retain a copy of this form and the question booklet. Be sure to include your phone number in case there are any queries. If you have any questions, please contact: The Scoring Department, Productivity Development (Pty) Ltd., P.O. Box 756, Randburg 2125, Tel: 787-3349, Fax: 789-4628

11874

Annexure D

Request for participation to Leaders (HOD's): Faculty of Engineering Vaal University of Technology

17 February 2004

Colleagues

As you most probably know, I am enrolled for the qualification M Tech: Business Administration, in the Faculty of Management Sciences, Vaal University of Technology. I have completed the 5 subjects required for this qualification some time ago and I am right now busy with the second part of the study, the dissertation.

My research is about a technically trained person in a managerial position (like myself and each one of you). The title of my dissertation is:

Relationship between Perceived Leadership and Management Skills Training in an Engineering Environment.

My assumption in this regard is: Management Skills Training provides the manager with "Content Skills": Those skills required to manage subordinates.

My research question is: Does Management Skills Training also provide the manager with "Process Skills": Those skills required to be an effective leader to his/her subordinates.

The tool I intend to use for this study is the Multifactor Leadership Questionnaire (MLQ). The MLQ consists of 45 items and was found to be highly reliable.

Suggested Procedure:

- Each Academic Head of Department (Faculty of Engineering) is to be rated by:
  - Himself/herself (The Leader)
  - His/her superior (Dean: Faculty of Engineering - Rater)
  - Two fellow HOD's, as selected by the relevant HOD (Raters)
  - A minimum of 6 sub-ordinates of the HOD (Raters)

- All answer sheets, once the process has been completed, are then sent to a company: Productivity Development in Randburg, by the researcher to be processed.

- Research results, once it is available, will then be forwarded to the researcher for interpretation and inclusion in the dissertation.

- The researcher, once the dissertation is completed, will then share the findings, in general terms with his fellow leaders. (HOD's).

Will you please assist me in this regard? I undertake to only use the data obtained for the purpose of the study and for no other purposes.

Thank you,

F J DU TOIT
FJDT/mer

Annexure E

MLQ feedback for each individual leader under evaluation

Leader A

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Fairly often (2.9)
Idealized Behaviors	Fairly often (3)
Inspirational Motivation	Fairly often (3)
Intellectual Stimulation	Fairly often (2.6)
Ind. Consideration	Fairly often (2.6)

Passive — — — — **Active**

Transactional Leadership

Contingent Reward	Fairly often (2.8)
Management-by-Exception (Active)	Sometimes (2)
Management-by-Exception (Passive)	Once in a while (1)

Non-Transactional

Laissez-faire   Once in a while (0.6)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0)**. The average of your five Transformational Leadership scales was Fairly often (2.8)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Fairly often (2.9)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Fairly often (3)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate an provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (3)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Fairly often (2.6)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Fairly often (2.6)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (2.8)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Once in a while (1)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (0.6)

Leader B

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Sometimes (2.1)
Idealized Behaviors	Sometimes (2.3)
Inspirational Motivation	Sometimes (2.3)
Intellectual Stimulation	Sometimes (2.3)
Ind. Consideration	Sometimes (2.2)

Passive

Transactional Leadership

Contingent Reward	Sometimes (2.3)
Management-by-Exception (Active)	Sometimes (2.4)
Management-by-Exception (Passive)	Sometimes (1.8)

Active

Non-Transactional

Laissez-faire   Once in a while (1.5)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0)**. The average of your five Transformational Leadership scales was Sometimes (2.2)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Sometimes (2.1)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Sometimes (2.3)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate an provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Sometimes (2.3)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional. and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Sometimes (2.3)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Sometimes (2.2)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Sometimes (2.3)

Management-by-Exception (Active)

The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2.4)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Sometimes (1.8)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (1.5)

Leader C

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Sometimes (2.4)
Idealized Behaviors	Fairly often (2.9)
Inspirational Motivation	Fairly often (2.6)
Intellectual Stimulation	Fairly often (2.7)
Ind. Consideration	Sometimes (2.4)

Passive

Transactional Leadership

Contingent Reward	Sometimes (2.4)
Management-by-Exception (Active)	Fairly often (2.9)
Management-by-Exception (Passive)	Once in a while (1)

Active

Non-Transactional

Laissez-faire   Once in a while (1.2)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0)**.
The average of your five Transformational Leadership scales was Fairly often (2.6)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Sometimes (2.4)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Fairly often (2.9)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate an provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (2.6)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Fairly often (2.7)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Sometimes (2.4)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Sometimes (2.4)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Fairly often (2.9)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Once in a while (1)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (1.2)

Leader D

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Fairly often (3)
Idealized Behaviors	Sometimes (2.5)
Inspirational Motivation	Fairly often (2.9)
Intellectual Stimulation	Fairly often (2.7)
Ind. Consideration	Sometimes (2.5)

Passive

Transactional Leadership

Contingent Reward	Fairly often (3)
Management-by-Exception (Active)	Sometimes (1.8)
Management-by-Exception (Passive)	Once in a while (1.4)

Active

Non-Transactional

Laissez-faire   Once in a while (0.9)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0).**
The average of your five Transformational Leadership scales was Fairly often (2.7)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Fairly often (3)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Sometimes (2.5)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate and provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (2.9)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Fairly often (2.7)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Sometimes (2.5)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (3)

Management-by-Exception (Active)

The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (1.8)

Management-by-Exception (Passive)
Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Once in a while (1.4)

Non-Transactional

Laissez-Faire
Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (0.9)

Leader E

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Fairly often (2.9)
Idealized Behaviors	Fairly often (2.7)
Inspirational Motivation	Fairly often (2.7)
Intellectual Stimulation	Fairly often (2.7)
Ind. Consideration	Fairly often (3)

Passive

Transactional Leadership

Contingent Reward	Fairly often (3)
Management-by-Exception (Active)	Sometimes (2.2)
Management-by-Exception (Passive)	Once in a while (0.7)

Active

Non-Transactional

Laissez-faire   Once in a while (0.7)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance.

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation, attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0)**.
The average of your five Transformational Leadership scales was Fairly often (2.8)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Fairly often (2.9)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Fairly often (2.7)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate and provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (2.7)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Fairly often (2.7)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Fairly often (3)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (3)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2.2)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Once in a while (0.7)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (0.7)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | **Effective**

Passive

Active

Transformational Leadership	
Idealized Attributes	Fairly often (3.3)
Idealized Behaviors	Fairly often (3.2)
Inspirational Motivation	Frequently (3.6)
Intellectual Stimulation	Fairly often (2.7)
Ind. Consideration	Fairly often (2.8)

Transactional Leadership	
Contingent Reward	Fairly often (3.1)
Management-by-Exception (Active)	Sometimes (2.3)
Management-by-Exception (Passive)	Once in a while (1.1)

Non-Transactional

Laissez-faire   Once in a while (0.8)

Highly | **Ineffective**

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0).**
The average of your five Transformational Leadership scales was Fairly often (3.1)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders. they emulate the leaders' behavior. they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0).**
The average of your Idealized Attributes scale was Fairly often (3.3)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0).**
The average of your Idealized Behaviors scale was Fairly often (3.2)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate an provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0).**
The average of your Inspirational Motivations scale was Frequently (3.6)

Intellectual Stimulation
Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Fairly often (2.7)

Individualized Consideration
Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Fairly often (2.8)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (3.1)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2.3)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Once in a while (1.1)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (0.8)

Leader G

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Fairly often (2.8)
Idealized Behaviors	Fairly often (2.9)
Inspirational Motivation	Fairly often (3)
Intellectual Stimulation	Fairly often (2.8)
Ind. Consideration	Fairly often (3)

Passive

Transactional Leadership

Contingent Reward	Fairly often (3.2)
Management-by-Exception (Active)	Sometimes (2)
Management-by-Exception (Passive)	Once in a while (1.4)

Active

Non-Transactional

Laissez-faire	Once in a while (1.2)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance.

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation, attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0).**
The average of your five Transformational Leadership scales was Fairly often (2.9)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Fairly often (2.8)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Fairly often (2.9)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate and provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader gu..es associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (3)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0).**
The average of your Intellectual Stimulation scale was Fairly often (2.8)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0).**
The average of your Individualized Consideration scale was Fairly often (3)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (3.2)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Once in a while (1.4)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.

Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (1.2)

Leader H

(Part of Control Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

Highly | Effective

Transformational Leadership

Idealized Attributes	Fairly often (2.9)
Idealized Behaviors	Fairly often (2.6)
Inspirational Motivation	Fairly often (2.9)
Intellectual Stimulation	Sometimes (2.5)
Ind. Consideration	Fairly often (2.5)

Passive

Transactional Leadership

Contingent Reward	Fairly often (2.8)
Management-by-Exception (Active)	Sometimes (2.2)
Management-by-Exception (Passive)	Sometimes (1.7)

Active

Non-Transactional

Laissez-faire   Once in a while (1.1)

Highly | Ineffective

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0)**.
The average of your five Transformational Leadership scales was Fairly often (2.7)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Fairly often (2.9)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Fairly often (2.6)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate an provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (2.9)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**. The average of your Intellectual Stimulation scale was Sometimes (2.5)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**. The average of your Individualized Consideration scale was Fairly often (2.5)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (2.8)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2.2)

Management-by-Exception (Passive)

Passive-reactive leaders practice Management-by-Exception (Passive). Certain leaders wait to take action only when something goes wrong. They do not search for mistakes. Matters have to be brought to their attention for them to make corrections. Their focus tends to be on leaving things alone as long as it doesn't give them too much trouble.

Management-by-Exception (Passive) should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Management-by-Exception (Passive) scale was Sometimes (1.7)

Non-Transactional

Laissez-Faire

Inactive or laissez-faire leadership is the "negation" of leadership. It is shown when the leader avoids taking a stand on issues, avoids clarifying expectations, and avoids addressing conflicts. Specifically, most effective leaders do it infrequently, and it almost always has negative impact on effectiveness and satisfaction.
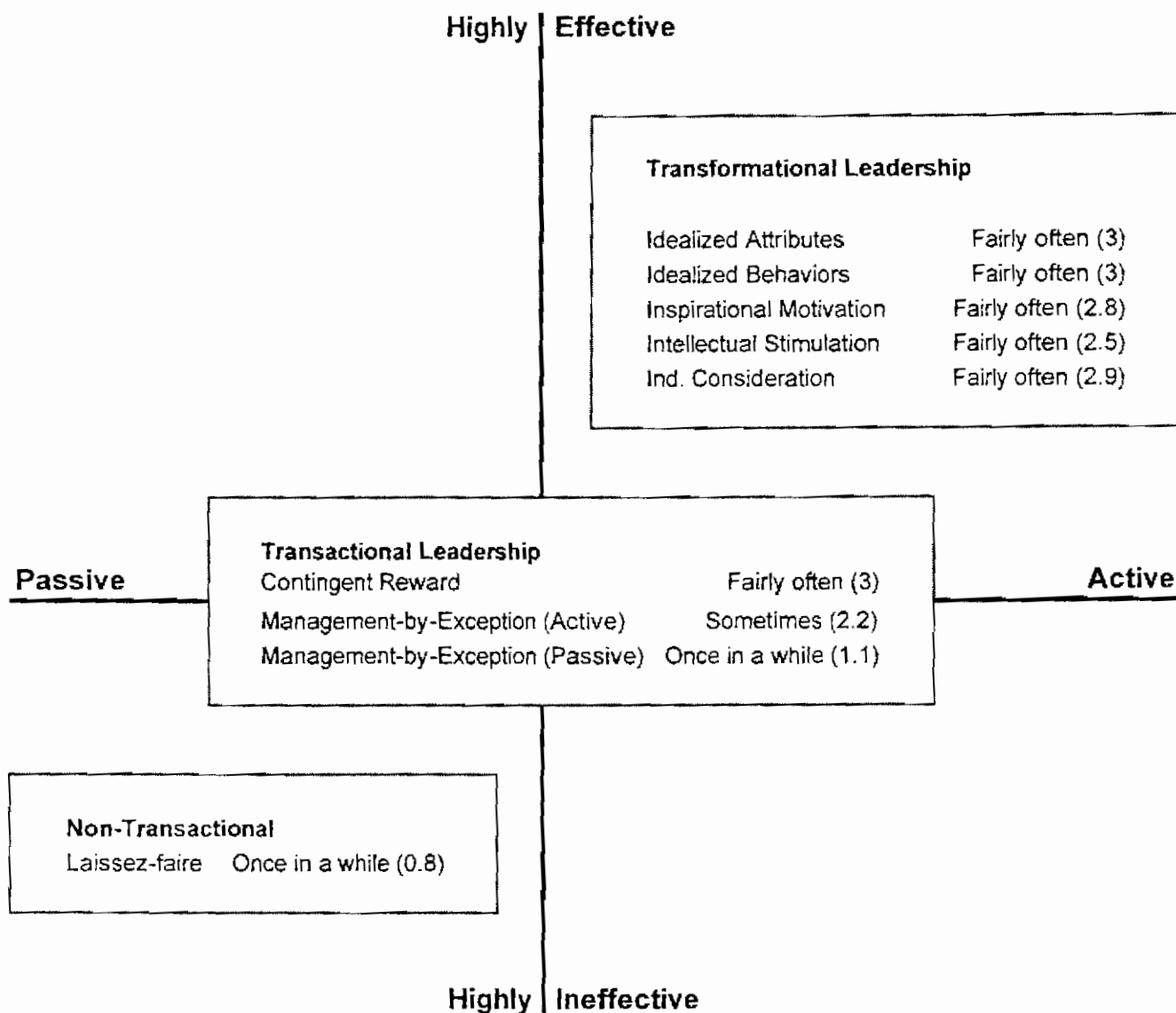
Laissez-faire should be between **Once in a while (1.0) and Not at all (0.0).**
The average of your Laissez-Faire scale was Once in a while (1.1)

Leader I

(Experimental Group)

The Relationship Between MLQ Scales, Leadership Style and Effectiveness

<div align="center">Highly | Effective</div>

Transformational Leadership

Idealized Attributes	Fairly often (3)
Idealized Behaviors	Fairly often (3)
Inspirational Motivation	Fairly often (2.8)
Intellectual Stimulation	Fairly often (2.5)
Ind. Consideration	Fairly often (2.9)

Passive   **Active**

Transactional Leadership

Contingent Reward	Fairly often (3)
Management-by-Exception (Active)	Sometimes (2.2)
Management-by-Exception (Passive)	Once in a while (1.1)

Non-Transactional

Laissez-faire	Once in a while (0.8)

<div align="center">Highly | Ineffective</div>

Note: Ratings to the right of the leadership style names are the average description across all of your raters of how frequently you display that leadership style. The full range of descriptions are as follows:

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

Interpreting Your Results

The graph on the previous page shows the relationship between the MLQ leadership style ratings, indicating how frequently your raters observe the full range of your leadership styles, as well as how effective your performance was judged by them.

The **Passive to Active** dimension shows how the scales relate to how often you interact with your raters.

The **Effective to Ineffective** dimension represents the impact the leadership styles have on your performance.

Fundamental to a **full range** of leadership is that more **effective leaders display each style** to some degree, with more emphasis on Active Transactional and Transformational styles.

Transformational Leadership

Transformational leadership is a process in which the leaders take actions to try to increase their associates' awareness of what is right and important, to raise their associates' motivational maturity and to move their associates to go beyond the associates' own self-interests for the good of the group, the organization, or society. Such leaders provide their associates with a sense of purpose that goes beyond a simple exchange of rewards for effort provided.

The transformational leaders are proactive in many different and unique ways. These leaders attempt to optimize development, not just performance. Development encompasses the maturation of ability, motivation, attitudes, and values. Such leaders want to elevate the maturity level of the needs of their associates (from security needs to needs for achievement and self-development). They convince their associates to strive for a higher level of potential as well as higher levels of moral and ethical standards. Through the development of their associates, they optimize the development of their organization as well. High performing associates build high performing organizations.

The most effective leaders display Transformational Leadership behaviors at least **Fairly often (3.0).**
The average of your five Transformational Leadership scales was Fairly often (2.9)

Idealized Attributes

The leaders who exhibit Idealized Attributes represent the highest level of transformational leadership in that their associates have trust in such leaders, they emulate the leaders' behavior, they assume the values the leaders portray, and they are committed to achieving the leaders' vision, even if sacrifices are necessary. In short, there is full identification of the associates with their leaders and the leaders' use of this identification in the constructive development of their associates. Such leaders are authentic and have a high degree of credibility with their associates.

The most effective leaders display Idealized Attributes behaviors at least **Fairly often (3.0)**.
The average of your Idealized Attributes scale was Fairly often (3)

Idealized Behaviors

The Idealized Behaviors scale shows the extent to which leaders exhibit the behaviors that encourage their associates to share common visions and goals, to identify with their leader, and to develop high levels of trust. These leaders show a strong sense of purpose and perseverance to achieve the most difficult objectives that so often differentiates the exceptional from the ordinary leader. They express the confidence in actions and purpose that help insure the success of the group.

The most effective leaders display Idealized Behaviors at least **Fairly often (3.0)**.
The average of your Idealized Behaviors scale was Fairly often (3)

Inspirational Motivation

Inspirational Motivation represents the appeal of challenging but simple words, symbols, and metaphors and the ability, enthusiasm, and optimism to envisage the future. These are the leadership qualities that move associates to achieve extraordinary levels of accomplishment both in terms of performance as well as in their own development. Transformational leaders excite their associates about the possibility of a different and more challenging future. They don't have to be "hard-selling" salespeople to do so. Rather, they articulate and provide meaning for a mutually attractive future state in a manner that grasps the attention and imagination of their associates. There are an infinite number of future states to choose from. The inspirational leader guides associates to the one that they can identify with optimizing efforts, development, and performance.

The most effective leaders display Inspirational Motivation behaviors at least **Fairly often (3.0)**.
The average of your Inspirational Motivations scale was Fairly often (2.8)

Intellectual Stimulation

Intellectual Stimulation represents the rational aspects of leadership, rather than the empathic, socioemotional, and developmental. The central characteristic of intellectually stimulating leaders is that they approach problems, particularly persistent ones, by questioning assumptions that have been used to previously address the problem. They encourage others to approach the problem from many angles perhaps not previously considered; they enlarge the perspective used by associates to understand problems; and they make mistakes a constructive part of the learning process. The leaders will enhance their associates' capabilities for solving the current problem as well as future problems not yet imagined. Intellectual stimulation is not just being a smart and creative leader, it is helping to make associates smarter and more creative. Such leadership continuously taps into the intellectual capital of their associates.

The most effective leaders display Intellectual Stimulation behaviors at least **Fairly often (3.0)**.
The average of your Intellectual Stimulation scale was Fairly often (2.5)

Individualized Consideration

Through Individualized Consideration, leaders learn about their associates' level of maturity and capabilities. They understand where further development is needed in associates. Among many things, Individualized Consideration represents the empathy leaders show their associates' capabilities, needs, and desires. It places the emphasis on treating each associate as a unique individual, not just an interchangeable part. Frustrations in associates are avoided by such individualization. There is greater readiness for cooperation and less competition among associates. Such individualized treatment reflects the leaders' ability to diagnose their associates' requirements for further development and the leaders' ability to design appropriate strategies to satisfy as well as elevate their associates to higher levels of motivation, potential, and performance.

The most effective leaders display Individualized Consideration behaviors at least **Fairly often (3.0)**.
The average of your Individualized Consideration scale was Fairly often (2.9)

Transactional Leadership

Transactional leadership is a process of gaining compliance from associates through contracts with the leader. The contractual relations may be explicit or implicit. The leader clarifies expectations and may exchange promises of reward or disciplinary threats for the desired effort and performance levels.

Contingent Reward

Contingent Reward leaders employ goal setting to help clarify what is expected of their associates and what the associates will receive for accomplishing the goal(s) and objective(s). The process can be participative, if the associates are able to work with the leaders in that capacity. It can also be more *directive* depending on the developmental level of associates. Basically, it is a proactive facilitation of what associates do, how hard they try, and what they receive for their accomplishments. If the *contingent reward* strategy is executed properly, then the associates should achieve their objectives. Yet, this will not always occur, given the fact that most people's performance is dependent on a lot of external and contextual factors, which may or may not be under either the leaders' or associates' control. This point must be emphasized as part of the exchange between leaders and associates.

Effective leaders display Contingent Reward at least **Sometimes (2.0).**
The average of your Contingent Reward scale was Fairly often (3)

Management-by-Exception (Active)
The more active transactional leaders who display Management-by-Exception (Active) are characterized as monitors who detect mistakes. These leaders look for mistakes and take corrective action when mistakes occur. They make arrangements to monitor their subordinates' performance and to call for corrections when problems are observed. If they detect a problem, these leaders will take appropriate steps to correct it.

If all a leader does is manage-by-exception, then they are likely to create a work force of risk avoiders and individuals who work to standards using "traditional methods." Associates avoid attempts to innovate because they will be taking the risk of making mistakes which may result in their leader's disapproval. Associates of such leaders usually do not perform at high levels. Worse yet, those leaders who adopt a hands-off style of leadership run the risk of associates establishing their own idiosyncratic missions, even if they are in conflict with each other or the overall organization's mission.

Management-by-Exception (Active) can be between **Sometimes (2.0) and Once in a while (1.0).**
The average of your Management-by-Exception (Active) scale was Sometimes (2.2)