



ST CLEMENTS UNIVERSITY

**A REVIEW ON THE EFFECTIVENESS OF THE IMPLEMENTATION OF QUALITY
SYSTEM
ISO 9000 STANDARD IN SUPPORTING
TOTAL QUALITY MANAGEMENT:**

**A CASE STUDY OF THE
BINTULU DEVELOPMENT AUTHORITY'S (BDA) EXPERIENCE**

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ABSTRACT

Quality is fast becoming one of the competitive issues of the 1980s and 1990s. Pressures for improvement have become intense. The result is a heightened interest in quality management at many Malaysian organizations, both public and private, and a growing recognition of quality's strategic importance. The issue of globalization today has pounded more pressures for quality improvement.

Globalization has 'shrunk' the world and 'removed' the territorial borders. Thus, managing business in the global market has become very challenging and competitive. Products and services produced and supplied to enter the global market not only demand for quality but also demand for universal application and meeting international quality standards.

The emergence of global standards like ISO 9000 series have prompted many organizations with no choice but to follow and follow through in order to get registered either to compete in the global market or to be among the world-class organizations in terms of quality drive for supplying or providing products and services either in the global or local markets.

A public service organization, the Bintulu Development Authority (BDA), is one among those many organizations that has the drive and ambition to be among the world-class in providing better and quality services to their customers. In August 1994, BDA launched the implementation of TQM in the organization. In September 1999, BDA officially implemented the international quality system, ISO 9000, organization-wide in pursuit for excellence and to be among the world-class organizations. After nearly two years of its implementation of the quality system, a review is necessary to find out the effectiveness of the quality system in supporting TQM, which was implemented more than five years ago.

In carrying out this study, the areas reviewed to determine the effectiveness of the quality system implemented make use of the seven core principles of TQM: (1) Top Management Support, (2) Strategic Quality Planning, (3) Customer Focus, (4) Training and Recognition, (5) Enhancing Teamwork, (6) Performance Measurement, and (7) Quality Assurance. In this research, primary data were obtained from survey questionnaire and interviews of the relevant management representatives and supervisors. The Chapter 4 details out the approaches in conducting the research survey questionnaire. The finding details of the research are discussed in Chapter 5.

The research has contributed to knowledge on the contribution and the effectiveness of international quality system ISO 9000 in supporting and/or enhancing TQM in public service organizations and on research methodology. The results could also be generalized to other service organizations, particularly those in the public service sector in this country.

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CHAPTER 1: INTRODUCTION TO THE STUDY

1.0 INTRODUCTION

For an organization to change over to a new management approach, it requires experimentation, as well as unconventional experiences and setbacks, and creativity of managers. In the process of doing so, some organizations are better managed than others. In essence, many organizations never fail to try new approaches to management.

Various schools of thought in Management have come a long way, which give a variety of impact and effectiveness of management over time. According to Wright and Noe (1996), at various times different schools of thought have dominated: scientific management, administrative management, human relations, management science, open systems, and competitive advantage (see Figure 1.1 below).

Figure 1.1 -- Schools of Thought: Impact Over Time

Source: Management of Organizations by Patrick M. Wright
and Raymond A. Noe, 1996 (p.11)

As a practical matter, these schools of thought continue to exert influence today on how managers work: plan, organize, lead, and control (or coach others in doing so). As new ways of thinking about management become popular, their influences on day-to-day practices is typically gradual.

Globalization – a deregulated global competition – makes many organizations consider the world as their marketplace. With growing global competition, quality management is becoming increasingly important to the leadership and management of all concerned organizations. Thus, for products and services produced and supplied to enter into the global market demand for universal application and meeting the international quality standards. The emergence of global standards, particularly ISO 9000 series, make those organizations that are most capable of adopting these emerging standards to prosper, while those who cannot will be relegated to the less desirable markets. Therefore, the rationale for total quality can be found in the need to compete in the global market. Thus, positioning for quality is becoming a business game while we remain in the era of *competitive advantage* (see Figure 1.1 above).

In Malaysia, the public sector organizations have been required to improve quality in order to increase productivity and reduce cost through re-engineering of their processes. An effective way to re-engineer the process of the public sector organizations is to adopt the universally accepted ISO 9000 quality management standards. The ISO 9000 series standards have been adopted as the Malaysian Standard, MS ISO 9000. Thus, in guiding the Malaysian public service to implement ISO 9000, Development Administration Circular (DAC) No. 2 of 1996 entitled “Guidelines for Implementing MS ISO 9000 in the Civil Service” was issued. The guidelines explain the concept of ISO 9000 and its application to services in the public sector. In addition, DAC Letter No. 1 of 1977 entitled “Additional Guidelines on MS ISO 9000 Implementation and Scheme for Quality system Certification by Government Agencies” was issued. With both the circulars issued, all government agencies should implement the ISO 9000 quality system before the end of year 2000.^{1.1} Likewise, BDA develops its quality system in a “Big Q”^{1.2} approaches as the way forward as indicated in Figure 1.2 below.

1.1 The Civil of Service of Malaysia: *Towards Excellence Through ISO 9000*; 1997, p. 27.

1.2 The *total* in total quality indicates a concern for quality in the broadest sense – what has come to be known as the “Big Q.” Big Q refers to quality of products, services, people, processes, and environments.

The objective of the implementation of such a quality system in an organization is to familiarize the employees with the requirement and demand of the system during the transformation process. Gradually, the usage of the system would lead to the development of the organization's quality culture.

Many studies that have been undertaken revealed that the implementation of quality tools and/or methods was in support or to complement the organization's quality management (Gitlow, Oppenheim and Oppenheim, 1995; Creech, 1994; Chang and Kelly, 1994; Evans and Lindsay, 1993; Garvin, 1988). Some of the popular quality tools that have been introduced and used to complement quality management are like Just-in-time system (Schonberger, 1982; Evans and Lindsay, 1994), Housekeeping, Quality Control Circles (QCC), Employee Suggestion Scheme (ESS), Quality Assurance (QA), Benchmarking, Statistical Process Control (SPC), FMEA, Re-engineering, and standards like ISO 9000, EMS 14000, SA 8000, OHSAS 18000, and Investment-in-People (IIP), to name a few (see Figure 1.2 above and Figure 1.3 below).

This research was carried out on how the ISO 9000 quality system being implemented in the Bintulu Development Authority (BDA) supports quality management of the organization, in particular supporting the seven core management principles of Total Quality Management (TQM) as introduced by the Malaysian Administrative Modernization and Management Planning Unit (MAMPU).^{1,2}

1.1 BACKGROUND OF THE STUDY

Bintulu Development Authority (BDA), a statutory body of the Sarawak State Government, officially implemented the ISO 9000 quality system organization-wide in September 1999. The formal documentation of the procedures related to two identified core business processes of the quality system started in November 1998. The procedures were used and tested from the initial documentation before the official implementation to ensure their effectiveness within the system. After about two years of cultivating the quality system, including one year after the official implementation, BDA should be very much a TQM organization with all the management support and after the deployment of the quality improvement activities (*kaizen*) within the quality system. The effectiveness of the ISO 9000 quality system and the level of acceptance of the system by the employees need to be monitored.

Prior to the implementation of the ISO 9000 quality system, many other quality tools, methods, and initiatives have been introduced and implemented in BDA. They include QCC, friendly counter service, smiling campaign, organizational re-engineering, and including the establishment of the Human Resource Development section (Biha, 1997). Although no studies have been undertaken, the past initiatives have shown some areas of improvements in the quest of BDA towards achieving the status of a TQM organization. However, questions like these below, for example, still exist:

^{1,2} Ibid, p. 53

1. Why have the employees reluctantly showed full commitment to continuous quality improvement beyond the prime period of its implementation?
2. Has the quality culture been developed in the organization after all the quality initiatives and implementation have been carried out?

The above are some of the questions, among many more, that this study will seek to address. Answers to these questions are important, for an understanding of organizing principles provides insight into the pressures on management and the workforce in any situation. This enables an organization to design its operation to support the employees in the system.

1.2 STATEMENT OF THE PROBLEMS

Quality management in BDA has been very much in the forefront in terms of the number of quality initiatives being implemented. To add to the record, the implementation of ISO 9000 quality system in the organization has been successfully organized. The environment for changes to take place was very conducive. The management support was there. Work teams were formed and coordination among fellow employees was very encouraging. The employees observed and conformed to the quality system as specified in their respective quality procedures. The TQM culture is presumably building up very well in the organization.

Studies done by Gitlow, Oppenheim and Oppenheim (1993) show that the joy in workmanship provides the impetus for employees to perform better and to improve quality for their self-esteem, for the organization, and ultimately for the customers. The study further revealed that people enjoy taking pride in their work but very few people are able to do so because of poor quality management.

Various practical steps and measures, particularly internal quality audit (IQA), have been initiated to ensure that the ISO 9000 quality system is working well in the organization and that the findings of the IQA exercise help the employees to perform their jobs in conformance to the quality system. The commitment of everyone in the organization depends very much on the efforts taken today in building up the quality culture. Thus, the issues surrounding the research generated the two questions:

- (i) Has the quality culture been developed in the organization after all the quality initiatives and implementation have been carried out?
- (ii) Has the implementation of the quality system provided any impact on the seven quality management principles of TQM in BDA?

The above two questions, among many more, are the areas that this study will look into. The research project shall also be designed to provide insights into these issues and other related problems.

1.3 HYPOTHESIS OF THE STUDY

TQM has been implemented in BDA since 1994. The employees are presumed to have a positive attitude towards their works. BDA's quality standard should have improved tremendously over time and be able to achieve the quality of excellence. The implementation of ISO 900 quality system, specifically ISO 9002:1994 series, was taken as a tool to complement and support TQM in the organization. As such, the level of awareness and knowledge among the employees about their system organization-wide is also presumably high and that may result in the improvement of their attitudes and behavior in that cultural setting. However, several IQA exercises conducted on the maintenance of the quality procedures did not reflect this glamorous presumption. In view of these preliminary findings, the hypothesis for this study is that there are cultural and attitudinal challenges in the initial phase of implementation of the ISO 9000 quality system.

1.4 PURPOSE OF THE STUDY

The purpose of this study is to review the various challenges in the initial implementation of the ISO 9000 quality system.

1.5 OBJECTIVES

Consistent with the purpose as stated above, the study has two objectives:

Firstly, there is a general objective, which relates to the IQA on the effectiveness of the implementation of ISO 9000 quality system since 1999.

Secondly, there is the most specific objective on the recommendation for actions to enhance and improve the system and maintenance in the future.

1.5.1 General Objectives

The general objective for this study are two-folds:

- (i) To find out what has happened during the implementation period of reference, and
- (ii) To understand why the above happened in terms of strengths, weaknesses, and discrepancies.

1.5.2 Specific Objectives

The more specific objectives of the study are:

- (i) To identify common trends and patterns from the data and information collected,
- (ii) To derive findings and make conclusions based on the above, and
- (iii) To make recommendations for the way forward.

The scope of the study, sample design, IQA reports, focus group discussions, and questionnaires design details are outlined and discussed in Chapter 4.

1.6 SUMMARY

Positioning for quality is becoming a business game. No organization can afford to be competitive if it does not supply goods and services to the standard quality, especially the international accredited standard of ISO 9000 quality management system. Re-engineering the public sector organizations by adopting the universally accepted ISO

9000 quality management standard can achieve the objective of improving the service quality. The adoption of the quality system requires official implementation, where the success of such initiative can be determined and monitored through IQA exercise. Many studies have revealed that the challenges to the effectiveness of the quality system are critical success factors, which are basically human factors.

The following Chapter 2 will present the organizational background of Bintulu Development Authority (BDA) where this case study was conducted.

CHAPTER 2: BACKGROUND OF THE ORGANIZATION

2.0 INTRODUCTION

This research was conducted in BDA at the courtesy of the said organization. A good research approach is to know to a greater extent how the organization was established from its historical perspective, how it operates contextually in the face of challenges – in serving the growing plural society and providing development -- and not least, to know the direction the organization is heading, while deploying quality management initiatives and activities in search of a better future perspective through its vision and mission. Thus, this tells the importance of this chapter.

2.1 OUTLINE OF THIS CHAPTER

This chapter is divided into three sections. The first section briefly describes the history on the formation of the Bintulu Division, the region where BDA operates. The second section briefly describes the formation of BDA, a government statutory body formed to administer the development of the Bintulu Division and an organization where the research as this case study in discussion was carried out. This section includes the description on BDA's corporate organization structure and philosophy, its objectives, and functions and activities. The third section briefly describes the quality initiatives being carried out by BDA over the years in the quest for quality excellence.

2.2 FORMATION OF THE BINTULU DIVISION

Bintulu is the capital town of the 9th Division of the State of Sarawak, which was once under the rule of the Brunei Sultanate. However, in 1841, Sarawak was ceded to Sir James Brooke, an English adventurer who then became the first Rajah of Sarawak. In 1861, Bintulu, which was still part of Brunei, then also became part of Sarawak.^{2.1}

^{2.1} *An Invitation to Invest in Bintulu*, 1993; p.13

Situated close to Brunei, Bintulu played a very significant role in the history of democracy in Sarawak and Malaysia. In April 1867, Bintulu was the first meeting place of the State Legislative Assembly, the *Council Negeri*.

Since the colonial rule, Bintulu was part of the 4th Division of Sarawak with Miri as the capital town. Bintulu was then a district administratively. The government of the day, with her theme of *politics of development*, separated the Bintulu District out of the 4th Division and officially made the district the 9th Division of Sarawak on January 01, 1987. The 9th Division or the Bintulu Division, as it is now officially called, has a total administrative area of 12,515 square kilometers.^{2.2} Figure 2.1 show the whole area under the Bintulu Division and the position of Bintulu in the heart of the Association of South East Asian Nations (ASEAN).

Figure 2.1 -- Map of Bintulu Division (left top corner) in the Heart of Malaysia's State of Sarawak and the Neighboring South East Asian Nations

The chief administrator of the Division is the Resident (the position is probably equivalent to a city mayor), which reminds the influence of the colonial government still prevails. Colonial rule lasted until September 16, 1963, when Sarawak joined the Federation of Malaysia and gained independence.

2.3 FORMATION OF BINTULU DEVELOPMENT AUTHORITY

Following the discovery of large reserves of natural gas offshore Bintulu in 1969, a feasibility study was conducted in 1975 to find the Tanjung Kidurong (or Cape of Kidurong), the northern corridor of Bintulu, a most suitable site for the first ever deepwater port in Bintulu (and Sarawak) as the export terminal for natural gas (liquefied) to international markets. Also, realizing the industrial potentials of Bintulu following the discovery of the natural gas for commercial extraction, the Bintulu Regional Center Study was carried out in 1978/79 for the Government of Malaysia and the State Government of Sarawak.^{2.3} The Study, among other things, recommended the formation of a regulatory body to coordinate the development of Bintulu. Accordingly, the Sarawak government formed Bintulu Development Authority (BDA) in July 1978. The BDA was established as a corporate body to serve as a government instrument to oversee the township and industrial developments in Bintulu.

2.3.1 Corporate Organization Structure

The corporate structure of BDA consists of the Board of Management, which comprises thirteen people of the highest caliber. The Honorable Chief Minister of Sarawak sits as the Chairman of the Board while the State Secretary of Sarawak sits as the Deputy Chairman. The remaining eleven members comprise of key officials in the State and Federal governments.^{2.4} The selection and inclusion of these key members who hold the echelon leadership in the various government departments and agencies are to blend their

^{2.2} BDA Ordinance 1/1978 (Amendment 1987); p. 4

^{2.3} The Study was conducted by P.G. Pak-Poy & Associates Pty. Ltd. of Australia; 1978/79.

^{2.4} BDA's Handbook, First Edition, 1987; p. 10

knowledge and expertise for the proper planning and development and to enhance the quality living and work of life of the people of Bintulu.

Figure 2.2 below shows the officials representatives from both the State and the Federal Governments sitting the Board of Directors of BDA.

The General Manager (GM) is the Chief Operating Officer (CEO) of BDA, who is assisted by a Deputy General Manager (DGM), three Assistant General Managers (AGMs), and ten line Senior Managers, (including one Corporate Secretary).

2.3.2 Corporate Philosophy: Vision and Mission

The importance of a clear picture of the future, a vision and mission, to guide organizational change need no overemphasis. Without that single, clear picture, it would be impossible for the organization to be altered productively. Change happens as the attributes of the organization are altered in a coordinated way to meet the vision and supported by the mission.

Different organizations describe the future they want to create in different terms. Some organizations use a vision as the guiding picture of the future they desire to create. Others use the concept of strategy, mission, purpose, or game plan. The form of directional device is not important as long as one exists – and works!

2.3.2.1 Vision

Managing in a time of turbulence requires vision – a sense of purpose, a reason for existence, and a guiding philosophy that will motivate and unify a scattered workforce and make it more competitive.^{2.5} According to Christopher (1994), the new road map to success for today's times is vision plus mission plus total quality. Total quality can provide how-to-do it methods. But a driving theme – a shared purpose – will be needed. Vision and Mission will be the starting point. Vision and Mission provide:

- ❑ Focus
- ❑ Direction

^{2.5} "The Vision Thing," Economist, Jan. 4, 1992, p.81

- ❑ Goals
- ❑ Measures
- ❑ Motivation
- ❑ A community of interest and aspiration.

Vision says where we are going and is the “what?” the picture of the future we seek to create. In short, it sets direction into the future. Nanus (1992, pp. 28 – 29) says that the right Vision for the organization:

- ❑ Fits the organization and the times
- ❑ Sets a standard of excellence
- ❑ Clarifies direction and purpose
- ❑ Inspires enthusiasm and commitment
- ❑ Is clear and easy to understand
- ❑ Evokes the unique competence of the organization to create competitive advantage
- ❑ Is ambitious.

Quigley (1993) says that the corporate vision is the most fundamental statement of a corporation’s values, aspirations, and goals. It is an appeal to its employees’ hearts and minds. It must indicate a clear understanding of where the corporation is today and offer a road map for the future. Thus, vision becomes a living force only when people truly believe they can shape their future.

On the contrary, Senge (1993) says visions can die because people become discouraged by the apparent difficulty in bringing the vision into reality. People become disheartened, uncertain, or even cynical, leading to a decline in enthusiasm. Vision also can die if people forget their connection to one another as illustrated in Figure 2.3 below where people headed in different directions (small arrows) with little concern for the direction of the organization’s vision (main arrow).

Figure 2.3 – Diagrammatic Illustration of Individuals in an Organization Working at Cross Purposes

Figure 2.4 -- Illustration of individuals in an organization with a commonality of purpose, direction, and shared vision.

Source: A New Paradigm for Developing Organizations
by C. Kiefer and P. Stroh, 1984

Thus, one of the deepest desires underlying shared vision is the desire to be connected, to a larger purpose and to one another. Accordingly then visions gradually grow as a by-product of interactions of individual visions. However, visions that are truly shared take time to emerge and to take shape. This is when team members become more aligned with a commonality of purpose and direction emerge and individuals’ energies harmonize as illustrated in Figure 2.4 above.

According to Holland (2000), vision is the product of the leadership of the organization. And the entire leadership of the organization must support the vision. That support must be unanimous and unwavering --- and that is not negotiable! Thus, participation in the development of the vision for organizational change is important.

For organizational change to be successful there must be a vision in place. That vision must be both current and flexible. Realizing the importance of vision in bringing about a successful change process, BDA formulates and embarks on a corporate philosophy condensed in her vision (and mission statements)^{2.6}.

□ **BDA's Vision Statement**

“To be a Dynamic and Leading Corporate Organization in Providing Excellent Development and Municipal Services.”

Writing a vision statement, as in the case experienced by BDA, can be the first step in building a shared vision. Implied and as condensed in this vision, BDA strongly aspires to be both a local and development authority that is customer oriented, excellence driven, result-oriented, and sensitive with never-ending quality improvement to deliver and provide high value-added services through a well-balanced strategy of making Bintulu not only as an industrial and investment center but also as social, cultural, and commercial arena that accord very special quality of life.

2.3.2.2 **Mission**

Mission lays out the road map and is the “why?” the organization’s answer to the question. In other words, Mission is a road map, which includes all that is needed to guide the company to its Vision. According to Christopher (1994), a good company Mission will include these fundamentals:

- **Vision.** The realistic, credible, attractive future for the organization.
- **Business Definition.** If needed in addition to Vision.
- **Goals.** The major goals to be reached in the key performance areas or success factors that will determine company success.
- **Measures.** Performances measures chart progress toward the goals, and provide feedback to help those doing the work achieve the goals.
- **Values.** How the organization lives and acts in all that it does.

A mission, in this sense, is a statement of the business that one or an organization is in. According to Asher (1996), the purpose of developing a *mission statement* at the start of an improvement process is to advertise that the intention to change is there. Organizations that use the mission to make the change happens recognize that is a powerful motivational tool. Viewed in the way a mission statement has several key uses:

- It is a reason for changing, for being different;
- It is a reason for keeping going when the going gets tough;
- It is an ever present standard against which to judge action;

^{2.6} BDA's Corporate Philosophy and Direction, 1993

- ❑ It can be used to set priorities for improvement;
- ❑ It can be used by successive levels of managers to discuss roles and responsibilities; and
- ❑ It makes change more likely by highlighting the gap between the present and the future desired state.

Garfield (1986) believes that the establishment of a corporation's values precedes the defining of its mission. According to Quigley (1993), recently it was recognized that a corporation's founders bring a set of fundamental values and beliefs to the birth of the their enterprise, generally long before a specific mission or set of goals is established. Thus, the earlier belief that the corporate mission was considered to be the most fundamental element in a corporation's vision no longer stands alone. In short, the founders of a corporation made their shared values explicit at or shortly after the birth of an organization.

If a mission statement is worth having, it is worth using to drive the improvement process and to demonstrate that the whole executive team is committed to it. A mission can be used to identify an important route, identify top executives with the change process and cement the team together (Asher, 1991; Hardaker and Ward, 1987).

As in the case of BDA, the formulation of the corporate mission statement, as shown below, responds to the vision statement.

❑ **BDA's Mission Statement**

“Together with the People, We Want to Develop Bintulu into a Well-Planned and Harmonious City through the Provision of Quality Development, Social, Economic, and Municipal Services.”

The above mission statement translates a program of action for real change for the employees. In other words, the mission statement is translated into a program of action. Referring to the mission statement “Together with the people...” implies action for teamwork with the community and working towards the aspiration of both the BDA as an organization and the people or the Bintulu community. The clause “...We Want to Develop ...” indicated a strong sense of commitment to develop the township to a quality status. (The word ‘We’ implies strong teamwork or togetherness as the ingredient of building). The mission statement surely translates a program of action to ensure that it is not simply of words but a call for real change. The elements of TQM principles are greatly emphasized in the mission statement in order to achieve the organization's goals.

2.3.3 Corporate Objectives

In all endeavors, BDA is guided by the objectives and/or functions as below:^{2.6}

- To promote, stimulate, facilitate, and undertake economic and social developments;
- To promote and coordinate further industrial and tertiary developments;

^{2.6} BDA Ordinance 1978 (Amendment 1987), p.6

- To promote, develop, and manager residential and industrial estates;
- To promote, assist, and develop trade, commerce and industry;
- To promote the increased productivity of industry and to encourage more efficient utilization of natural resources;
- To provide facilities and amenities for the advancement and well-being of persons living and working within the designated area;
- To make such recommendations to the Chief Minister as the BDA sees it fit in relation to any measure which it considers would achieve an increase in trade and development; and
- To undertake such other functions as the Chief Minister may direct from time to time.

These objectives support the mission of BDA, which are geared towards achieving the vision. The effective implementation of the objectives strongly requires the active process and operational roles of the seven principles of TQM. As such, the roles are left to BDA to make use, develop processes and procedures, and apply them to meet the challenges ahead.

2.4 CORPORATE FUNCTIONS AND ACTIVITIES

BDA functions both as a regional development agency and a local government as separately discussed below:

2.4.1 A Regional Development Agency

Having the whole of Bintulu Division being officially vested to BDA and with that status, BDA has the autonomous power to conduct her affairs within the designated area. BDA is engaged in a wide range of activities from planning to coordination of development activities like the development of residential and industrial estates and commercial buildings. The roles include giving approval of the layout plans on proposals for locality developments and also giving occupation permits for the newly completed buildings. In short, BDA functions more alike a one-stop agency to spearhead and administer local development in the Bintulu Division.

All the above-mentioned functions and activities demand for standard operational procedures and high quality services to meet the expectation of customers and clients. These activities have been *taxing* BDA over the past years in order to meet the customers' satisfaction; and the decision to the quality system and document the quality procedures under ISO 9000 standard was justifiable and timely to meet the challenges ahead.

2.4.2 A Local Authority/Government

Apart from being a regional developer, BDA also functions like a local authority or a local government providing municipal services and landscape development and maintenance services. These functions were taken over from the former Bintulu District Council (BDC), which was dissolved on April 01, 1980.^{2.7} The functions and activities are enforceable, among others, under the following ordinances:

- Local Authority Ordinance (Sarawak Chapter 117),

^{2.7} *An Era Begins*, Advertisement Brochure of BDA-Shahida Development Sdn. Bhd., 1988; p.35

- Public Health Ordinance 1962,
- BDA Ordinance 1978,
- Sarawak Land Code (Chapters 81 and 82),
- Building Ordinance 1994 (Sarawak Chapter 8), and
- Road Transport Act 1987.

In return for all the services rendered to the public and the Bintulu community at large, BDA charges rates to all property owners in the Bintulu Division for landed properties. The preference of the property owners (also known as rate payers) to pay their bills at the end of the month usually creates long queues at the payment counter. Obviously, the rendering of the services requires high quality operational approaches and standard procedures. Again here, the roles of TQM and the ISO 9000 quality system are vital for the effective implementation and operation of the services.

2.5 QUALITY INITIATIVES AND CHALLENGES

Quality improvement activities are now widely practiced in both the private and public sectors in Malaysia. The Malaysian government, in particular, seriously emphasizes that all government employees must have the highest level of quality awareness and obsessively practice TQM with the bottom-line objective of providing the highest quality public services. To that effect, the Federal Government issued a Development Action Circular (DAC) No. 1/1992^{2.7} and endorsed by the State Government of Sarawak accordingly. In response to such call by the government, BDA took positive steps to implement quality activities in the organization.

BDA has quite a substantial history of quality. The efforts to improve quality services at BDA began much earlier than 1994 (Biha, 1997). However, the activities and emphasis on quality have been intensified with the introduction of management tools by both the Federal and State governments through circulars, and public seminars, as well as in-house seminars. As such this sections discusses the introduction of activities related to TQM in three stages: pre-implementation stage, beginning stage, and post-launching stage.

The pre-implementation stage reviews the quality improvement activities undertaken before August 1994. The beginning stage briefly describes the events and/or activities related to the official launching and implementation of TQM at BDA. The post-launching stage discusses some details of TQM activities undertaken where top management support is very prominently seen through the organization.

2.5.1 Pre-implementation Stage

This part discusses some quality improvement activities being initiated prior to August 1994. The compiling and writing of these activities are made possible from records obtained from the General Office Administration (GOA) and Human Resource Development (HRD) sections.

2.5.1.1 Quality Control Circles

^{2.7} Issued by the Office of the Prime Minister of Malaysia, July 30, 1992.

In the 1980s, especially towards the end of the decade, the government introduced a few management tools emphasizing teamwork. Most notably of these tools were the ones related to quality control circles (QCC). This tool was introduced to BDA through government circulars. The top management of BDA then strongly supported the idea and introduced the tool to her corporate citizens organization-wide. Such support shown by the top management strongly indicates that such role of the principle of TQM is taking place and alive in BDA to enhance the development of QCC.

Several courses were conducted in-house and several projects were carried out using this new tool. The efforts were initiated with the aim of providing quality and excellent services to the constant changing demand of the public. Quality records from the HRD Section showed that BDA was active in the implementation of QCC between the years of 1984 to 1987. A few gold and silver medals and trophies in the shelves revealed that BDA's QCC activities received regional and state recognition for the participation in a number of QCC conventions locally. Follow through of such efforts should be initiated to sustain the drive of in search for excellence.

The results initiated by QCC show some progress and effectiveness of quality improvement efforts in BDA. The achievement also acts as a useful guide for the organization to strive for better quality performance; and the achievement also provides feedback to help those doing or involved in the QCC activities to achieve their goals. By and large, QCC have contributed a good measure of BDA's performance much needed to:

- Take corrective actions,
- Find and develop opportunities,
- Encourage cooperation, and
- Bring people together to work in teams.

From a single quality activity alone like the QCC have demonstrated the role and the importance of the seven principles of TQM in order to achieve organizational excellence.

2.5.1.2 Training Department

Realizing the importance of training to enhance the performance of the employees, Training Department was formed in 1992. Today, the department is called Human Resource Development Section (Biha, 1997). Many trainings on quality related activities were carried out then.

Relatively new and small then, the department managed to conduct training needs analysis (TNA) for the whole organization. Now, conducting the TNA is built in the ISO 9000 quality system in compliance with element 4.18 of the ISO 9000 standard.

2.5.1.2.1 Training Allocations

Accordingly, the management had allocated a considerable sum of funds each year for the HRD activities. The funds (budget) allocated since 1994 are as Table 2.1 below:

Year	Training Allocation	Apportionment for Training Related to Quality Activities
1994	RM530,000 ^{2.9}	RM41,000
1995	RM575,000	RM60,000
1996	RM600,000	RM60,000
1997	RM685,000	RM50,000
1998	RM930,000	RM50,000
1999	RM930,000	RM280,000
2000	RM930,000	RM280,000

Table 2.1– Training Allocations and Apportionment for Quality Related Functions and Activities (1994 – 2000)

Source: BDA's Annual Operating Budget (1994 – 2000)

Graph 2.1 – Graph Showing Trend Of Training Allocations Against Apportionment Of Expenses On Quality Related Training And Activities (1994 – 2000)

The Graph 2.1 above shows a trend of gradual increase in yearly training budget against the allocation apportioned for training and related to quality activities between the years of 1994 - 2000.

Referring to Table 2.1 above on the training budget over the seven-year period, a percentage between 7 – 30 percent were apportionment of expenses on training related to quality activities. The sum may be small but relatively high compared to the allocation of expenses on training in other areas like leadership, motivation, and operational activities. Lately, the management has intensified its activities related to quality, which indicates a high concern and giving a high priority on quality excellence of the organization in terms of services and work output performance. Such a rise in the trend is very obvious as indicated in Graph 2.1. A big sum of the expenses was spent on the development of the quality system under ISO 9000 standard.

2.5.1.3 Grid Management

In 1993, Grid Management course was conducted for the senior executives in order to develop a workforce of hardworking and dedicated employees among them, which enhances and encourages excellent performance of the employees. The senior executives were chosen so with the aim of developing them to show and lead by example a positive working culture worthy to be emulated by the subordinates and peers.

^{2.9} Malaysian currency is known as Ringgit and uses the sign RM to mean Ringgit Malaysia. The exchange rate for US\$1.00 is pegged at RM3.82

Grid Management portrays a framework that provides a common “language” which brings about the understanding on how people go about their various leadership styles in achieving organization purpose. Thus, the course was aimed to attain work accomplishment from committed people who will be working together as a team in order to produce excellent work performance. By having employees with the right frame of mind and positive work culture, the stride to achieve the vision of BDA should accelerate because excellent development and services usually come from employees with excellent performance.

2.5.1.4 Smiling Campaign

Also in 1993, a smiling campaign was launched. The objective of this campaign was to inculcate a smiling work culture among fellow employees, especially for those behind the counters when entertaining or greeting their clients or customers – both internal and external.

The smiling campaign was aimed to create a positive first impression against BDA as a customer-friendly organization in providing customer-oriented services. The campaign was basically customer focus, which is one of the management principles of TQM.

2.5.2 The Beginning Stage

The task of implementing TQM can be daunting. The CEO is faced with many questions of *where, when, why, who, what, and how* (5W 1H) to begin. The first decision is *where* to begin, and this can be so difficult that many organizations can never get started. This can be called as TQP – total quality paralysis! The commendable thing about BDA is that it has officially and implemented TQM and has already taken several steps on the road to TQO -- total quality organization.

In BDA, the official launching of TQM on August 8, 1994, by the Deputy State Secretary, marked the beginning of TQM era for this organization. The notable event during the launching was the oath taking ceremony where all the employees pledged their support for TQM in the daily operations of the organization. After the launching, all the managers and executives attended a 3-day TQM Appreciation Course conducted by Institut Tadbiran Awam Negara (National Institute of Public Administration), which is well known by its acronym as INTAN.

2.5.3 Post-Launching Stage

In promoting TQM and energizing quality improvement activities (QIA) at BDA, top management support has been very encouraging (Biha, 1997; p.38). For the running and implementation of QIA, the management has endorsed the formation of two bodies: TQM Council and TQM Secretariat. The Secretariat coordinates and records any QIAs or quality improvement processes (QIP) and disseminates such related information through relevant communication channels within the organization. The employees of BDA have contributed a great deal of ideas to the management through the Secretariat. The Council functions as a steering committee evaluating and endorsing QIAs and QIPs being recommended by the Secretariat.

The notable and commendable QIAs and QIPs that have been implemented since the post launching of TQM was the Counter Services.

2.5.3.1 Counter Services

Counter Services refers to services provided or rendered to the general customers to enable the latter to have access to BDA in terms of payment of their utility bills, making official visits, and to raise certain issues. Counter Services includes Reception Counter, Bills Payment Counter, and Hotline Services.

2.5.3.1.1 Reception Counter

The Reception Counter (RC) is the first point of physical contact with customers and the public at large. At one instance, the counter was very high or taller than the employees manning behind it to render them physically unseen from the front in a distance. On several occasions, the public complained about the “unmanned” counter due to the design and built of the counter.

The top management quickly responded to this issue raised by the TQM Secretariat and within one month the less friendly counter was replaced with a user-friendly one where half the body of the man-behind-the-counter is physically visible.

2.5.3.1.2 Bills Payment Counter

The Bills Payment Counter is for the purpose of accepting payments from traders who renew their trading licenses, rates and assessment payments from rate payers, and compound payments from violators of the By-laws under the Local Authority Ordinance 1958. For this purpose BDA opens one such counter downtown Bintulu mainly for the collection of such payments.

The usual long queues of payers, especially during month's end, had resulted in displeasure among them and made complaints. The TQM Secretariat took the matter up to the TQM Council, which the latter responded positively to the suggestion to improve the system of doing away with the queuing. The waiting room setting was improved to a more client-friendly one. A TV set was provided. Payers and/or clients pick up their numbers as they enter the room. With the numbers given against that currently being served, the payers would be able to assess the timing for their turn. Clients may prefer to go elsewhere before their turn or enjoy the TV programs on comfortable seats in the air-conditioned room.

2.5.3.1.3 Hotline Telephone Services

Providing hotline services is one proactive approach advocated by BDA in order to provide better service to the general public. Two hotlines were provided. The public may call in anytime during office hours to raise issues within their locality or of general concern for immediate attention of authority. The messages received were recorded and referred to the relevant divisions and sections for immediate action. In most cases, the issues were attended in less than 48 hours beating the promise spelt in the client's charter. The most common issues raised through the hotlines are garbage uncollected at

residential areas, falling trees or branches and animal carcasses on streets, and blockage of drains.

BDA has responded to improve the counter services much to the expectation of customers and the general public. On the top of this, BDA has moved a step forward by developing a quality system, which generates documented quality procedures out of the operational work processes involved as a move towards enhancing TQM.

2.6 SUMMARY

The formation of BDA was timely to undertake the economic and social developments in tandem with the rapid development-taking place in the Bintulu Division. Apart from being a regional developer, BDA also functions like a local authority providing and/or rendering services to the public. The need to provide and the demand for quality services require BDA to re-engineer its management and/or operational approaches.

The decision taken to embark on launching and implementing TQM has taken BDA several stems on the road to a TQO. A successful TQM program requires not only commitment but also competence in the mechanics of quality management and the willingness to make the needed changes. Without a strategy to implement TQM through systems, capability and control, the expended effort will lead to frustration. Poor quality management can become like poor gardening – a few weeds removed, only for others to appear a few days later.

In the implementation of TQM, BDA has most of the basic infrastructure already in place: the TQM Council, the TQM Secretariat, the training, and the required facilities. It is very important to ensure the effectiveness of the implementation through regular follow up and evaluation of the programs.

The following Chapter 3 will give a review of the literature on TQM, the seven management principles of TQM, and the relationship and complementary factors between TQM and ISO 9000 in terms of the seven management principles.

CHAPTER 3: LITERATURE REVIEW

3.0 INTRODUCTION

Today, organizations all over the world are striving for quality. The driving force in business organizations for quality is to achieve and maintain the competitive edge. This phenomenon is a global trend.

In Malaysia, the public sector, even with limited resources, has been required to provide the main impetus to the quality drive. Numerous administrative reform measures have been embarked ranging from Total Quality

Management (TQM) at the broadest level to such micro-level measures as the effective method of handling official telephone calls (Abdul Karim, 1999).

Quality can be achieved by re-engineering the process of organizations. Accordingly, public organizations in Malaysia have been required to re-engineer the process by adopting the universally accepted ISO 9000 quality management standard. The ISO 9000 series of standards has been adopted as the Malaysian Standard, MS ISO 9000.

This chapter represents the review of relevant literature on the seven core quality principles of TQM, the definition and overview of the ISO 9000, and the relationship factors between TQM and ISO 9000 quality standards. Thus, this literature review has two objectives, namely:

- i. To research and review existing literatures, research and documented materials on the seven core (7) quality principles of TQM as spelt by MAMPU, and
- ii. To identify and discuss the relationship or complementary factors between TQM and ISO 9000 quality standard.

Accordingly, this chapter has two parts. The first part begins with reviewing the literature on the seven core or quality principles of TQM.

The second part of this chapter identifies and discusses the relationship or the complementary factors between TQM and ISO 9000 quality standard.

3.1 THE CORE PRINCIPLES OF TQM

This section will review and discuss on the seven (7) core principles of TQM, which will be the basis of this research and how the roles of these principles, in the implementation of the BDA's quality system ISO 9000, support and enhance TQM. The seven principles are as outlined by MAMPU (Malaysian Administrative Modernization and Management Planning Unit) in the Development Circular (DAC) No. 1 of 1992 entitled "Guidelines for Total Quality Management in the Civil Service." This circular provides clear guidelines for the implementation of TQM in government agencies on the basis of the seven principles.

The seven core principles are (a) top management support; (b) strategic quality planning; (c) customer focus; (d) training and recognition; (e) enhancing teamwork; (f) performance measurement; and (g) quality assurance, which are illustrated diagrammatically in Figure 3.1 below.

Figure 3.1: The seven core management principles of TQM

3.1.1 Principle #1: Top Management Support

TQM requires commitment from the top. And that commitment does not mean just enthusiasm. Commitment means a willingness to devote resources to TQM, to invest in the program and the willingness to invest now in order to reap the benefits later (Kelly, 1994). A commitment to total quality means a willingness to change the style (and culture) in which the company operates,

which may mean changes in the company's management philosophy or new relationships between managers and their subordinates.

3.1.1.1 Definition of Top Management Support

Jablonski (1992) defines top management support or commitment as a commitment of corporate resources, including the executive's own time, to the improvement process. Substantial amounts of executive time, particularly that of the CEO, are necessary to successfully implement TQM. Committing a subordinate's time and corporate funds to this initiative is not enough. Both management and the workforce assess the importance of priorities in terms of where the CEO spends the majority of his or her time. Peter F. Drucker (1974) said best: "Everything degenerates into work," which Jablonski concurs by saying even that applies to the person at the top.

3.1.1.2 Role of Top Management

It is especially important that senior managers be visible in their quality activities. They should be active in quality planning, and should take lead in communicating quality goals to the organization. They need to serve as quality role models.

In showing top management support, Kelly (1994) outlines that the managers address their role in the following areas:

- *Top managers create quality values and set expectations.*
- *They regularly review progress toward quality goals.*
- *Managers recognize employee contributions to quality.*
- *Senior executives communicate quality values to managers and supervisors and to groups outside the company.*
- *All managers evaluate and improve the effectiveness of their personal leadership and involvement.*
- *Managers and supervisors set specific quality goals with their people.*
- *Quality and operational performance plans are regularly reviewed. Senior managers assist units that are not performing to plan.*
- *The company integrates public responsibilities (regulatory, legal) into quality policies and practices.*
- *Top managers anticipate public concerns and assess the impact of products and services.*
- *The company leads as a corporate citizen within its community.*

Quality improvement through TQM requires a comprehensive transformation in the way the organization operates. This transformation involves changes in policies, philosophies, structures, works systems, and procedures. Such changes can only be effectively with the total support as well as full commitment of the top management.^{3.1} In many public service organizations in Malaysia and in compliance with DAC No. 1 of 1992, evidence of top management support and commitment includes actions such as formulating the organizations quality policy, setting up of a quality structure, and holding the Quality Day. This has been observed and happening in BDA as well.

^{3.1} The Civil Service of Malaysia: *Towards Excellence Through ISO 9000*, Percetakan Nasional Malaysia Berhad, 1996; pp. 53-55

James R. Houghton, the Chairman and CEO of Corning Glass Works, showed and started his commitment to total quality beginning with a vision and then followed by identifying and developing some guiding principles, which focuses on the meaning of quality, the importance of error-free work, the role of prevention, and finally the use of cost of quality. By doing so, he said, what was rather dim in the past is now very clear and even know how to get there.^{3.2} In BDA, the show of top management support, as in the case of Corning Glass Works, took event in December 1994 when the CEO together with top management executives decided to go for a retreat to formulate the organization's vision and mission. The outcomes of the retreat produced both the vision and mission statements as shown and described in Chapter 2.

3.1.2 Principle #2: Strategic Quality Planning

Strategic quality planning plays a critical role in ensuring quality outputs (products or services) of an organization. By undergoing the process of strategic planning, organizations are able to identify their strengths and weaknesses and thereby formulate appropriate strategies in line with the changing environment so as to meet customer requirements. Such a planning effort is to establish and coordinate the philosophy of total quality within the strategic plan.

Planning forms the basis for all managerial activities: organizing, directing, and controlling. Planning is the starting point for ensuring that a total quality concept – quality of design and quality of conformance of the manufactured good or service – is developed. Effective planning is necessary to anticipate and take advantage of future opportunities and to recognize, as well as to avoid, potential problems that may occur. Juran and Gryna (1982), for example, have done extensive studies concerning quality problems to determine the proportion that were operator controllable versus those that were management controllable.

The box score on defects in most controllability studies indicates that over 80 percent are management-controllable and 20 percent are operator-controllable. This ratio does not appear to vary greatly from one industry to another, but it does vary considerably from one process to another. Obviously, no one needs to accept such figures as applying to his or her own company. Any particular situation can be clarified by making a controllability study.^{3.3}

Thus, for good planning, when it permeates all levels of the organization, can set the stage for efficient and successful performance in every critical area of quality assurance. As such, this part of this literature review discusses the important role that planning plays in quality assurance. Figure 3.1 below presents a classification of strategic quality planning and control activities. The model shows that broad product-quality decisions are made at the top management level, objectives and systems to support strategic goals are developed at the middle management level, and detailed procedures for operating control are developed and carried out at the first-line management level.

^{3.2} In Search of Quality, *Unleashing the Force*, 1995; pp. 64-68.

^{3.3} In J.M. Juran and Frank M. Gryna, Jr., *Quality Planning and Analysis*, Second Edition (New York: McGraw-Hill, 1980), P. 107.

Referring to the Evans and Lindsay Model below (Figure 3.2), at the strategic or top-management level, the paramount concern is to meet consumer needs by developing products that are functional, aesthetically pleasing, and generally fit for their intended use. At the tactical planning level, the emphasis is on the design of systems to support product quality and meet strategic goals and objectives; while at the operating level, control and monitoring becomes the central activity. The activities require that cooperative efforts of quality, production, engineering, and service personnel be focused on identifying, isolating, and solving quality problems.

Figure 3.2 – Quality Planning and Control: Product-quality Based

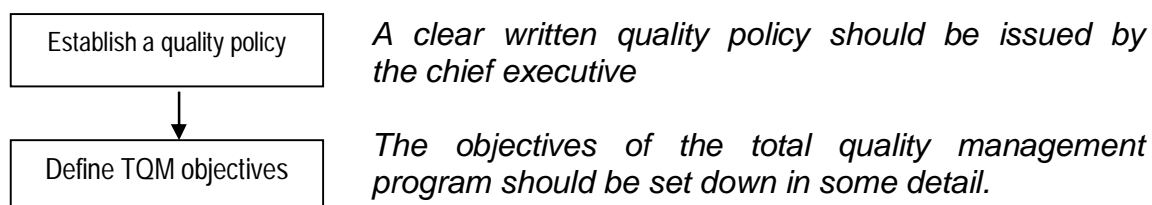
Source: Evans, James R., and Lindsay, William M., (1993), *The Management and Control of Quality*. Second Edition, West Publishing Co., p. 139

3.1.2.1 Quality Planning Process

In quality planning it is always necessary to review existing programs within the organization's functional areas. These may be compared with the results of the preliminary analysis to appraise the strengths and weaknesses in quality throughout the business or operation. Although methods of planning vary greatly among individuals and organizations, planning is generally characterized by several common elements.

Oakland (1995) begins with establishing a quality policy with the CEO issuing a clear written quality policy. Evans and Lindsay referred this to as "vision" and "purpose", which determine the organizational mission. "Vision" refers to guiding values, principles, and the direction of expected growth of an organization, which is generally developed by key managers and other senior executives responsible for planning out that vision. This subject has been extensively discussed in chapter 2. "Purpose" refers to the *raison d'être* of the organization – their reason for existence. The vision and purpose of an organization together lead to the organization's *mission*, which also has been discussed in chapter 2.

Figure 3.3 below showed the various steps and levels in quality planning process.



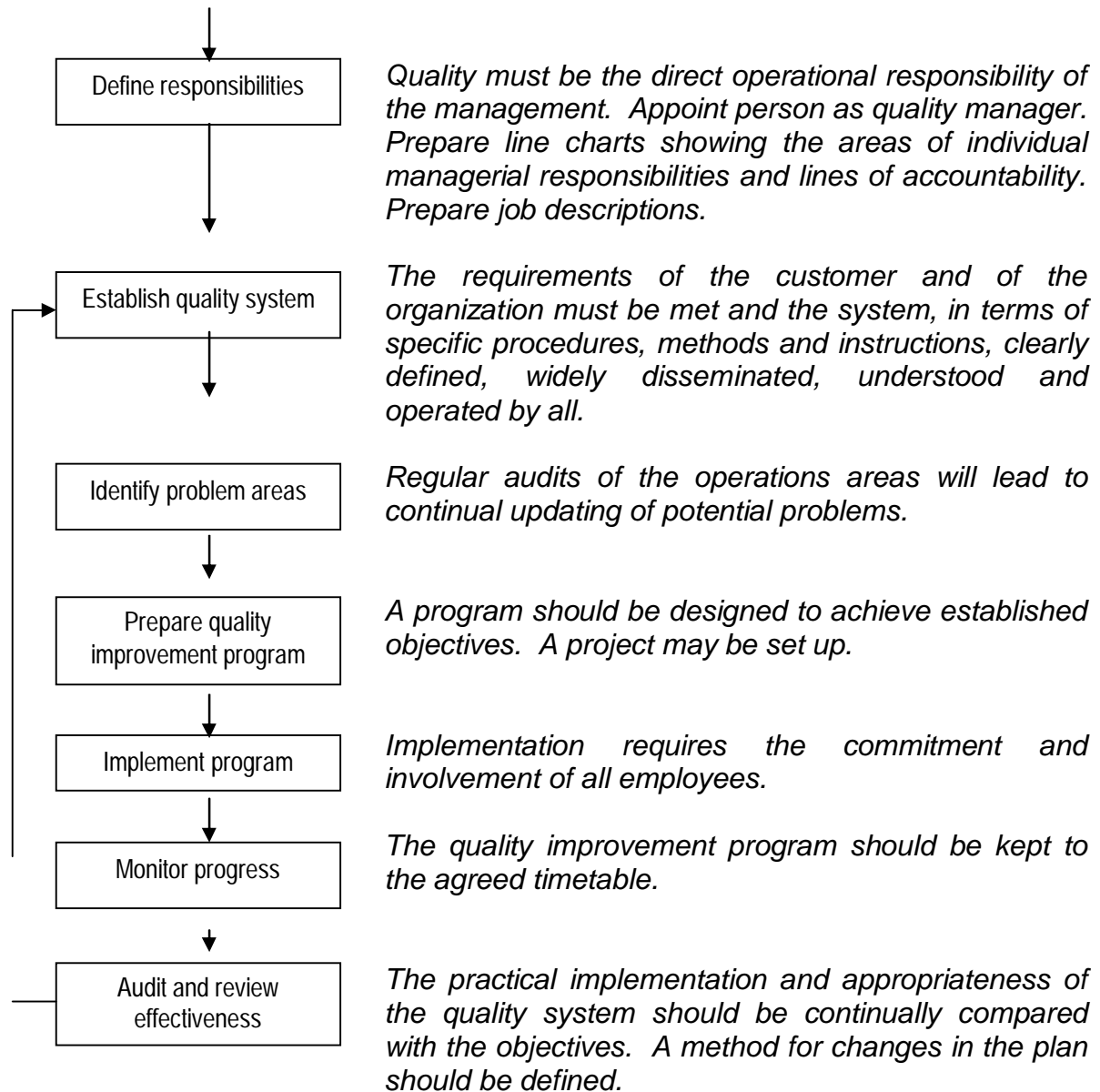


Figure 3.3 – Various steps and levels of quality planning

Source: John S. Oakland, *Total Quality Management: The Route to Improving Performance*, p. 71

3.1.2.2 The Importance of Strategic Quality Planning

Planning for quality – be it strategic, tactical, or operational – is important for a host of reasons. Without planning a manager’s job becomes one of firefighting exercises. Planning establishes a sense of purpose to decision making and enables the manager to meet goals and objectives more easily. Evans and Lindsay (1993) claimed that planning reduces duplication of efforts, minimizes costs of achieving objectives, creates consistency and a coordination mechanism for future activities, and establishes a basis for control.

3.1.2.3 Planning Perspectives

Strategic quality planning takes plan on short- and long-terms focus. Short-term planning (STP) is guided by the need to demonstrate results quickly and

efficiently. It is rather results oriented and benefiting the organization based on established goals. Long-term planning (LTP) focuses primarily on sustenance, growth, and development by impacting the management cycle of the organization. Both periods of strategic planning will be discussed after this. All these efforts are critical for the future success, demonstrating total quality principles, and laying the groundwork for the organization's future efforts.

3.1.2.3.1 Short-Term Planning Perspective

A short-term plan should provide strategy (framework) for implementation of total quality methods. According to McLaughlin (1997), the short-term plan should address the following three areas:

- *Results orientation that quickly benefits the organization by selecting critical systems that cause:*
 - *Bottlenecks*
 - *Inefficient performance*
 - *Losses*
 - *Increased costs*
 - *Poorer than expected customer satisfaction*
 - *Cycle time improvement*
 - *Effective project management*
 - *Time to task completion*

- *Employee and organizational empowerment to meet short-term issues, including:*
 - *Creating "values" that promote a dynamic, viable, positive self-image for the individual and the organization.*
 - *Creating an environment that challenges the individual, is responsive to proactive changes, benefits from and manages change, and results in the ability to shift paradigms.*
 - *Building an organization that is proactive to teamwork, cooperation, collaboration, marketplace "scanning," information management, alliance building, and compromise management.*
 - *Managing decision-making in a responsive (rather than static) mode, where decisions are cooperative ventures.*
 - *Communication in an effective, positive, open, rewarding, and supportive environment.*
 - *Individuals eagerly accept responsibility and accountability, success and failure are celebrated, and blame is minimized as a punishment tool.*

- *Use the Systematic Improvement Process (SIP) as a guide for improving a system or process. The organization can use the process flowchart to improve its operations. The flowchart can be modified to meet the objectives of every improvement project.*

3.1.2.3.2 Long-Term Planning Perspective

LTP is related to the goal and mission of the organization. LTP also conceptualizes the vision of the organization and assist the customers and employees in comprehending the intent, direction, and implementation of total

quality. The LT plan should reflect the corporate culture and stress the dynamic element of change needed for growth and development of the organization in the future. McLaughlin (1997) states that the plan should address the following four areas:

- *Sustained cultural change.* The plan should stress to constant adaptation and modification to requirements and market place environment required for future growth. In other words, total quality approach will enhance the present culture rather than destroy it with responsive orientation and strong management support and commitment to the future growth.
- *Goals and objectives.* The plan should aim to achieve total quality organization-wide and that all resources, training, evaluation, etc., should be detailed out to realize the efforts. At the same time, the plan should reinforce the benefits to be reaped by both the organization and employees for achieving total quality.
- *Customer as well as competition focus.* A customer focus becomes the critical goal for the organization. Both internal and external customers require long-term efforts to ensure consistency and long-term improvement. Internal customers provide the link to overall organizational performance. Sustaining such link removes barriers toward improving customer relationship, communication and feedback, reviews and evaluation, and measurement programs.

Next to knowing the customer is to know the competitor – what they do. Porter (1988) of the Harvard Business School, states that competitive strategy involves positioning a business to maximize the value of the capabilities that distinguish it from its competitors. It follows that a central aspect of strategy formation is perceptive competitor analysis. Porter argues that one of the key functions of the corporate measurement system is to provide information profiles on each key competitor.

- *Total Quality Focus.* Total quality focus needs strong support and commitment through rewards (benefits), motivation and team spirit (esprit de corps), and consistent practice of communication. It helps a lot to structure rewards to recognize team members, management, and individuals, which will build self-esteem, pride of workmanship, and a sense of accomplishment. Developing a reward process must receive the management's support.

3.1.3 Principle #3: Customer Focus

Quality is defined, not by internal perceptions, but by the standards and expectations of the customer. Quality is conformance to customer requirements. To achieve the highest possible customer satisfaction, every employee, supervisor, and manager must develop a passionate commitment to meeting customer requirements, which is the key to quality and profitability (Miller, 1995). New products and services are also most likely to result from a focus on customer needs. Everyone, from the CEO to the newest hired employee, must become customer focused. Customer focus equals competitive advantage.

The purpose of a business is to create a customer. Customers are the lifeblood of all organizations. Customer is the business (Drucker, 1981).

Ampikaipakan and Daim (1995) concurred with Drucker by saying that the customer is the main reason why someone remains in business.

Business must offer good service to customers who are determined to both prevent and *reject* bad service. If business fails to do this and customers have other ways of satisfying their needs; the customers will migrate and business will fail. Thus, managers must start to recognize that improving quality to their customers is not a matter of choice: the health, and ultimately the survival, of the organization depends on it. It is important, therefore, for every organization to recognize the central positioning of quality occupied by its customers and the need to fulfill their satisfaction.

3.1.3.1 The Importance of Customer Focus

This is the single most important factor in the Baldrige Award criteria. The reason is that customer focus is what drives all the other aspects of TQM. No organization can achieve quality in a vacuum. It is the marketplace that should determine quality at every level.

Customer focus also provides a way to zero in on internal quality issues. From this perspective, support departments do not simply perform a function; they serve a customer, who has requirements that generate quality parameters.

3.1.3.2 Facts About Customers

Organizations that treat their customers as their sons-in-law do very well in the long run (Batra and Mahendru, 1994). By treating their customers well and giving them that extra would make their organizations look excellent and keep on attracting more customers. Accordingly, Batra and Mahendru forwarded these six basic facts about customers in the process of sustaining the customer –focus:

- *Customer is the boss.* A customer can take away his business transactions to a place wherever he gets value for his money, better product and service. He does not have to give reasons for his action; it is his money and he can spend where or the way he likes.
- *Customer is the profit; everything else is overhead.* The moral is that every customer is essential to the well being of your business.
- *Put yourself in your customers' shoes.* Employees being themselves as customers know what their likes and dislikes. By thinking good of the customers and start doing good to them will see the difference in profits accounts. Significant improvements and benefits can be produced in this manner.
- *Why customers quit?* An authentic piece of in-depth research as shown in Table 3.1 below on why customers quit done by Ford Motor Company, U.S.A. in the year 1976 in California still holds water, to some extent, today:

PERCENTAGE	REASONS WHY CUSTOMERS QUIT?
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1%	Customers die
3%	Customers move away
5%	Customers form other friendship
9%:	Customers taken away by other competitors
14%	Customers quit because of production dissatisfaction
68%	Customers quit because of the attitude of indifference of employees toward customers.

Table 3.1 – Percentage and Reasons on Why Customers Quit

- *Customer is business; business is people; people are customers.* Business will not prosper without or for disliking people. At the same time, if your business does not have a worthwhile job in your organization, getting both the *right* employees (people) and customers would find difficulty. The CBP (Customers Business People) circle depends on how big one wants to make it -- big ones, medium ones, and/or small ones (as illustrated by Figure 3.4 below).

Figure 3.4 – The CBP Circles

3.1.3.3 Components of Customers

In total-quality setting, the customer is the driver: internal and external customer. External customers define the quality of the product or service delivered. Internal customers help define the quality of people, processes, and environments.

Critical to the concept of the customer-focused organization is the understanding that there are both the internal and external customers. According to Burns (1997), customers are important to the organization and they are in different constituencies:

- The external customers (bill-paying customers)
- The internal customers (staff in downstream processes)
- The team customers (fellow members of team, also a subset of internal customers).

3.1.3.3.1 Internal Customers

Employees' attitudes while servicing external customers reflect the quality of customer service they receive as internal customers. Internal treatment of people is the foundation for causing external customer satisfaction (Burns, 1997). Similarly, Johnson (1997) also said that internal customers are discussed first because external customer care, service, or satisfaction will never occur until the internal customer is served. In other words, both concurred that the paying customer comes second behind the internal customers or organization's own employees.

Internal customers are seldom considered as such in most organizations prior to their initiation of quality efforts. Instead, employees are just considered as one of the assets to be used in the effort to meet the goal. According to Johnson, internal customers deserve proper training as part and parcel of the process of customer focus. Training plan plays a major part in the transformation of the organization:

- *Leadership* – Leadership training is important because visionary leadership have a vision of the future, how he fits into that future, how external customers behave in the future, and the expectations received when that vision becomes the present.
- *Customer-tuned training* – Customer awareness, customer relations, and customer service training is extremely important.
- *Communications Skills* – Supervisors must be able to communicate need, commitment, and attitude to subordinates. They must develop listening skills so that they can communicate effectively. They must know what their customers need and want if they are to satisfy them.
- *Interpersonal Relations* – These skills are mandatory in their dealings with the customers. Learning them requires a genuine fondness for people and sincere effort to do what is best for them. In this aspect, as in the case of BDA, telephone skills and customer service training are very important have been regularly conducted.
- *Quality Knowledge* – Supervisors will undergo quality training as part of management and work teams. To make quality training as useful, supervisors must use their skills and knowledge properly in their work teams.
- *Technical and Product Skills and Knowledge* – The supervisor must be a knowledgeable pro in both areas in order to be capable in leading performance improvement.

Internal customers expect a supportive working environment that is conducive to performance improvement. Skilled personnel with positive attitudes develop when the environment supports such development (see Figure 3.5 below). Learning will not occur as expected in a hostile or unsupportive environment.

Figure 3.5 – Supportive Working Environment Conducive to Performance Improvement for Internal Customers

3.1.3.3.2 External Customers

The external customer is the business. Thus, the internal and the external customers cannot be separated as illustrated in Figure 3.6 below. They must become a working team as the rule of the day (Burns, 1997). The organization tuned to the internal customer has an excellent foundation for external customer satisfaction. Being themselves as customers, employees know what their likes and dislikes. By placing themselves in the shoes of their

customers, they can produce significant improvements and benefits in this manner. Putting oneself in the shoes of the customers is one basic fact about customers as mentioned by Batra and Mahendru in paragraph 3.1.3 (b) above.

The importance of an improved relationship between the internal and the external customers cannot be underestimated. Workers develop a greater appreciation of customers they know and want to serve them to a higher level of satisfaction. No one wants to be known by a friend in terms of the poor quality product or service they produce. This factor by itself tends to improve quality and service.

Figure 3.6 – Relationship between Internal and External Customers in Business

3.1.3.4 Towards Customer Focus

In order to create a customer-focused organization, Miller (1995) suggested taking the following 10 steps:

- *Identify the work team for which you are responsible.*
- *Meet with your team and brainstorm for agreement on all the inputs required to successfully accomplish the team's work.*
- *Define the requirements of high quality input and how you can measure those inputs.*
- *Meet with the supplier of each input, (as a team) and provide them with a graph, which illustrates the performance during a baseline period of supply and explain the requirements for desirable quality input.*
- *Continue to provide your suppliers with periodic feedback and jointly consider how the input can be improved.*
- *Define all the outputs of your team's work and the customer who uses each of those outputs.*
- *Meet with each of your customers, and ask them for their requirements for a high quality product or service. Agree on a way of measuring this quality.*
- *Institute a process for measuring the quality of your output before it reaches the customer and also ask the customer for periodic feedback on your quality, as they perceive it.*
- *Institute a process of continual team management. The team responsible for the process should meet regularly to review the measures of quality performance and to solve ways to improve the current performance.*
- *Always assume there is room for continual improvement.*

A strong commitment and involvement of managers, supervisors, and employees in the customer –focus process would assure quality, cost reduction, and gain competitive advantage of the organization concerned.

3.1.3.5 Delighting the Customer

Imai (1991) said that in today's mass production age, customers have been reduced to the abstract. The person making the product neither knows nor cares who the customers are. Imai explained by the fact that the people who

make the products and those who sell them are separate people. Imai's stance was based on his findings on strong sectionalism and rivalry among production workers, particularly among those working in neighboring processes. However, Kaoru Ishikawa, one of Japanese quality gurus, argued and replied:

"You must not think of your customers as your enemies. You must think of the next process as your customer. You should visit your customer every day to make sure he is satisfied with the product."^{3.4}

On the contrary, Ampikaipakan and Daim (1995) said that business no longer talks of customer service but aim for delighting the customer with service excellence. With that, the customer expects the business to be:

- ❑ Responsible and accountable for the product or service sold.
- ❑ Tactful and diplomatic even when the customer is at fault.
- ❑ Punctual and not be given the run around.
- ❑ Forthcoming with information about new product or technology.
- ❑ Professional in all dealings with the customer.

In meeting such expectations, the business must make a strong commitment to customer satisfaction. A good example of strong commitment in "delighting the customer" is no better than the U.S. based pest control company, which spelt this guarantee to customers:

"You do not pay our initial charges until we totally eliminate every roach, rat, or mouse nesting on your premises. If you are ever satisfied with our results and want to cancel our services we will refund up to one year's service charge and pay the cost of another exterminator of your choice for one year. Should a roach or rodent be seen by one of your guests, WE WILL PAY THEIR BILL, send them a letter of apology, and invite them back as our guest. WE WILL PAY ALL FINES that may be levied against your hotel or restaurant by the health authorities for the presence of roaches or rodents, and further ... we will PAY PROFITS LOST while you are closed, plus \$5,000.00"^{3.5}

The above commitment is surely to the "delight" of customers and at the same time sends a strong message of commitment to the business with zero defects in both the products and services.

Fradette and Michaud (1998) suggested dynamically beyond delighting the customer by enterprises igniting customer events so customers can design their own relationship, create personalized products and services, invent wholly new products and services, and design total solutions. The Prudential Insurance Company, as an example, opens all channels to all customers, makes all the resources of the enterprise available to a single customer, creates corporate memory, makes everyone a customer advocate, and lets those customer advocates manage resources.

3.1.3.6 Partnering With Customers

^{3.4} Source: Masaaki Imai (1991), *Kaizen The Key To Japan's Competitive Success*, p. 51

^{3.5} Source: Ampikaipakan and Daim (1995) , *Get It Right Corporate Conduct*, p. 60

So much has been said about the approach on delighting the customers. However, in the march of time, the approach on customer focus has gradually changed the three circles of Figure 3.6 above: the business circle, the internal and the external customers' circles. From delighting the customers, business circle and the customers' circles are becoming more proactive and aggressive than ever. In an organization, businesses are focusing on service to delight not only customers but also staff within the organization (Stanton, 2000) and managing customer relationship in order to create profitable customer delight (Plowman, 2001), and developing strategic partnership with customers (Steward, 1999).

At the turn of the century, businesses knew their customers even at distant. The creation of knowledge bases, sometimes called data warehouse or information and customer knowledge bases forge more meaningful relationships. They practiced customer relationship management (CRM) through advanced technology, processes centered on the customers and channels as well as methodologies and software combined to affect behaviors of organizations, internally, and their customers/channels, externally (Swift, 2000). Customer service on the internet is one of those rarities through technology; however, a dynamic customers service web site can dramatically increase customer loyalty and provide a competitive edge that all companies strive to achieve (Sterne, 2000).

3.1.4 Principle #4: Training and Recognition

According to MAMPU, successful implementation of TQM depends on the support and participation of a skilful and knowledgeable workforce with positive attitudes and values towards work. This requires continuous training and recognition of system that motivates the workforce to produce high quality outputs.

For traditional organizations, investment in training is useful. For TQM organizations, where employee involvement in decision-making, work-team self-direction, customer focus, partnership, and continuous improvement rise from clichés to core realities, training is more than useful – it is essential and very important.

Training requires investment of capital resources. Thus, investment training needs to compete with an endless list of alternative investment possibilities: plants, equipment, product design and redesign, process improvement, corporate acquisitions, advertising, and so forth. Therefore, training is not only a good investment, but that it is often a better investment than many of the alternative investment possibilities. The ultimate success of investment alternatives depends on the ability and dedication of organization's people, and that the ability and dedication are part of a function of training (Anschutz, 1996).

3.1.4.1 Beginning of Training

Most scholarly dissertations on the history of communication begin with a description of the early cave wall paintings or drawings, which serve as a documentary record and textbook of the time (Miller, 1996). Such wall paintings were effective instructional illustrations of such skills like fishing and hunting.

Archaeological excavations in unearthing the civilizations of the past reveal the astounding architectural and masonry accomplishments of the craftspeople like the clay bricks embodied in the pyramids, ancient temples, shrines, and forts (including the Great Walls of China, for example) are memorials to the stonemasons, brick masons, artists, carpenters, and the scientists of ancient times. Their works could have not been accomplished without training; without transfer of knowledge from one person to another or from one person to many people. In these early civilizations, literacy reached neither the craftspeople nor the peasantry. The skills and knowledge of the crafts could be transferred only by direct instruction from the skilled craftspeople to the not so skilled. An apprenticeship system was developed whereby an experienced person passed long knowledge and skills to the novice, or who after a period of apprenticeship became a journeyman or yeoman. In all walks of life and in the march of time, knowledge passed down from one person to another. And that process is still in the domain.

3.1.4.2 what is Training?

Training and development are often thought as in tandem, but in the context of human resource management, these activities have distinct meanings. **Training** is the organization's efforts to help employees *learn* job-related knowledge, skills, and behavior. **Development** refers to the organization's efforts to help employees *acquire* knowledge, skills, and behaviors that improve their ability to meet changes in job requirements and customer needs. Thus, training is directly job related, whereas development addresses the broader need to be prepared to deal with change throughout one's career. A good example to explain the distinction between these two terminologies (McCune, 1994) is the case of Praxair, a Buffalo-based manufacturer of gases for industrial purposes, instructs truck drivers handling nitrogen, argon, and oxygen to company sells (training) and instructs managers in teamwork and leadership (development).

3.1.4.3 Training Required for the Implementation of TQM

Training in TQM is essential. Naturally, there are many kinds of training available and required to enhance TQM in any organization. Implementation cannot succeed unless everyone, *all levels and every department in the organization*, understands TQM concepts, practices, and implementation methods. The training must aim for comprehensive understanding of each of the four elements of TQM: empowerment, process improvement, customer obsession, and strategic planning.

Thus, for an organization that is considering implementing TQM within the organization, for instance, Cohen and Brand (1993) suggested a few ways depending on the preferences of the organization concerned. First, for organization that has little or no knowledge of TQM, the employees, particularly the top managers, are recommended to do some reading to see what it is all about. Recommended reading favorites for the beginning phase include the followings:

- Deming, *Out of the Crisis*;
- Walton, *The Deming Management Method*;
- Scherkenbach, *The Deming Route to Quality and Productivity*;
- Crosby, *Quality is Free*;
- Imai, *Kaizen*;

- Dobyns and Crawford-Mason, *Quality or Else*;
- Goldratt and Cox, *The Goal*; and
- Schonberger, *Building a Chain of Customers*.

These books give an overview and enough specifics on the potential and problems in beginning to try to apply TQM in an organization. The reading would enable the reader(s) to generate interest and give a head start before convincing others to enroll in the effort. This small step-by-step approach is preferred in training because people learn better in small increments.

A second method is to talk with others inside and outside the organization to learn from their successes and failures. This information would give some ideas for the kind of projects to be carried out in one's own organization.

Finally, training is necessary by attending a course with other managers for an orientation and familiarization to the concepts, tools, and approaches used. Once the basics are learnt and thereby convinced, similar training could be introduced to other employees. The kind of training approach to develop a "critical mass" of trained employees is to gain cooperation from those who understand the concepts of total quality.

3.1.4.4 Training for Quality

Employees are the customers to training. They should be surveyed to determine their needs and to try to find out ways to fulfill those needs. Their individual attitude embodies the Total Quality approach to training; as such an employee can and should be continually learning how to do his job better. By conducting training needs analysis (TNA) is one good example of approach to determine the training needs of employees as has been implemented by BDA in the past two years (1999 and 2000). As in the case of BDA, conducting TNA has been built in the quality system as a requirement of element 4.18 of the ISO 9000:1994 standard.

For better or improved training, Kelly (1994) suggested eight strategies or ideas as below:

- *Break up the training.* The strategy referred here is to design training programs in modules because people learn better in small increments. This strategy concurs to the step-by-step approach as recommended by Cohen and Brand (1993).
- *Set training objectives.* Training should always be aimed at concrete payoffs in terms of employee results and effectiveness. Thus, this strategy is to decide on the training objectives to be accomplished before training of the employees is carried out.
- *Train sufficient numbers.* Training the "critical mass" of trained employees help a lot in gaining the cooperation from those who understand the concepts of total quality rather than training a few.
- *Everyone should win.* The purpose of training is to develop skill, knowledge, and attitude in order to have everyone succeed in work. Thus, conducting TNA is very helpful in determining the individual's training needs.
- *Use self-managed learning.* A well-designed self-managed course allows employees to learn at their own pace. It makes the most efficient use of training resources and contributes to the just-in-time learning concept by letting employees learn when they have immediate use for a skill.

- *Plan for skill transfer.* New skills are not worth much if they are not applied on the job and put into practice. As such, always reinforce skills when they are first used. This concurs exactly to what Harvey Mackay said by “owning one percent of something is worth more than managing 100 percent of anything.”
- *Make use of case studies.* All skills and concepts should be directly applied to a case so that trainee employees can see the relevance. The best case studies are those drawn from the employees’ own experiences.
- *Provide rewards for completing training.* Symbolic recognition for completing a course such as a certificate or a celebration involving all trainee employees can be effective in maintaining their motivation and enthusiasm.

3.1.4.5 Tips to More Effective Quality Training

For effective training on quality management, Kelly (1994) suggested the following seven (7) strategies and/or approaches:

- (i) *Link training to business strategy.* On this approach, if technology is seen having an impact on one’s business, then technical training will be important. Likewise, if one has set a goal of getting closer to the customers, then training on customer relations (including communications) will be needed.
- (ii) *Assess training needs.* This approach can be done by gathering data from managers and employees about the areas in which training is needed. A few good approaches to gather such data are through employees’ attitude survey, training needs identification and analysis, and interviews (either team or focus group interview).
- (iii) *Know when not to train.* Training is not always the solution to poor performance. Sometimes job redesign or transfer/rotation works better. Sometimes the employee needs to communicate better with his supervisor. Sometimes motivation is the problem.
- (iv) *Tailor training to company needs.* There are many off-the-shelves training packages or programs available from vendors or consultants; however, a training program that is shaped to one’s organizational particular need is preferable, which will be more effective. For this reason, many organizations have turned to in-house training rather than purchase services from vendors. BDA is no exceptional in this approach when it set up a HRD Section in 1993 and having a pool of qualified and experienced trainers and facilitators.
- (v) *Use just-in-time (JIT) training.* The JIT training concept involves training in small increments as close as possible to the time when the skill will be used. This approach will vastly increase the effectiveness of the training. A good example of JIT training is to take one quality improvement team (QIT) at a time and put them through the course before they begin to operate. The team members will be able to make use of the skills learnt immediate and reinforced.
- (vi) *Use employees as trainers.* An on-the-job training, especially on technical skills could be taught better as the training is more focused. The experienced fellow employee will be able to pass down his

experience and knowledge effectively and who will also stand up as a resource person to the trainee. Having a pool of own in-house trainers from experienced employees, as in the case of the HRD Section in BDA, for example, these experienced employees can conduct the entire quality training. This approach is not only cost-effective but also enhances the credibility of the employee as in-house instructor.

- (vii) *Follow up training with coaching.* Training is one thing and coaching is another. One organization sends the trainer who trains or teaches problem-solving skills out to work with QITs in the field. The trainer keeps the employees on track and helps them achieve early successes.

3.1.4.6 What and Why Recognition is Important?

Recognition is an appreciation of the contributions of the employees and work teams to the being of the organization as a whole.

The contributions of employees over the years cannot be ignored. Due recognition and appreciation in various forms should be accorded to them. As in the case of Malaysia (Mohd. Khalid and Gopalakrishnan, 1999), a large number of government agencies have given recognition and appreciation in various forms to their employees who excel in their performance. Most common in the government service under the New Enumeration Scheme (NES) is by giving merit increment in the salaries of the employees who excel in their jobs. Apart from such recognition in public service, the CEOs can recommend such employees for the Excellent Service Award by the State government for an Excellent Service Medal. The Drainage and Irrigation Department (DID) recognized the performance of its employees by giving various kinds of awards: DID Innovation Award, Best Office Award, Excellent Drainage Scheme Award, and Excellent Land Work Award. BDA recognizes the performance of its employees, this far, by giving merit increments in their salaries. On the top of that, the recipients each are given share of the *Amanah Saham Nasional* (National Trust Shares) worth RM600.00. Dinner was also given as an annual event to say “thank you” for their services to all employees at large.

3.1.5 Principle #5: Enhancing Teamwork

Another crucial part of service framework is teamwork. Excellent service sometimes is the result of individual heroics. However, there is a great difference between an individual and a team. Imagine one walking a dark path alone, how would one feel? At the same time, imagine one walking the same path with friends; experience would be able to tell the difference. Gone are the days of the lone ranger – teams and teamwork are more productive and more fun than working alone.

Organizations that exist in competitive markets demand a high level of performance from their employees. Organizations need employees who are highly committed and willing to work in new ways – teamwork.

Teamwork is made of people working in a team. The team members help crystallize team mission, goals, and values that lead to the formation of the

team in the first place. They work for a commonality of purpose as have been described at length under the heading of Vision and Mission in chapter 2. In essence, the team should work as implied. The ideals of teamwork should provide practical techniques essential for synergy to conduct productive meetings; to define and coordinate roles; to solve (tough) problems; to make sound decisions; to manage conflicts; and to open up communication channels in all directions as demonstrated in Figure 3.7 below:

Figure 3.7 – Essential Techniques of Teamwork

Pat Williams (1997) said that virtually every person on this planet should either be or should be involved in team building, because we are designed to function in interdependent relationships with other people. We were made to be team players. A family is a team. A business is a team. A hospital staff is a team. A government office is a team, and BDA is a team.

3.1.5.1 Definitions of Team

A team can be defined as a collection of individuals formed to carry out a set of tasks or to accomplish a goal. Team members have mutually interdependent purposes, so that the success of one team member is contingent on the success of others (Rees, 1991).

On the other hand, Robbins and Finley (1995) defined team as *people doing something together*. Both further refined the definition by saying that the *something* that a team does is not what makes it a team; the *together* part is. In concurrence, Spiegel and Torres (1995) also defined team as a group of individuals who work together, who have the same work *objectives*, and whose work is *mutually dependent*.

3.1.5.2 Stages of Team Development

The stages of team development have been profiled by a number of analysts. The simplest and perhaps the most widely used profile is Allan Drexler's four stages of team development (Anschutz, 1996).

Stage 1: The “forming” stage. In this stage, members go through a process of defining their collective task, agreeing on individual roles and responsibilities, and then generally settling in and getting to know one another.

Stage 2: The “storming” stage. This is the stage of jousting for position, a test of wills to see which plan of action or process will prevail, and sometimes forming cliques or alliance within the team.

Stage 3: The “norming” stage. At this stage, things begin to settle down and stabilize. Collective task, individual roles, and team's plan of action have been agreed upon. Members work smoothly and harmoniously together, and opposing coalitions gradually disband. Teams gradually begin to manage their own relationships (with adjacent teams and other corporate functions).

Stage 4: The “performing” stage. This is the stage where team reaches its maturity when members have strong loyalty to the team and to one another; performance is high, and all striving for continuous improvement. Members think themselves as partners in a mini-business, perceiving team goals as their personal goals and growth.

3.1.5.3 Dimensions of Teamwork

According to Rees (1991), teamwork has two dimensions: task and social. The task dimension refers to the work that team members are to perform – the jobs they have to do and how they do these jobs. On the other hand, social dimension refers to how team members feel toward one another and their membership on the team.

At any given point in time in the team’s work, both the task and social dimensions operate. For example, when team members make decision and develop ideas, they simultaneously develop ways to get along together. Team members develop a sense of belonging and commitment. The team works as though there exists a strong center that holds and bonds both dimensions together in balance (see Figure 3.8 below). Teamwork does not exist without either one. Reese concluded that these two dimensions are inseparable.

Figure 3.8 – Dimensions of Teamwork

3.1.5.4 Characteristics of Effective Teams

Team development is the single most powerful tool that can bring a team together in pursuit of common goals. From an ideal perspective, effective teams are cohesive, efficient, and productive. According to Spiegel and Torres (1995), some of the characteristics, which are vital for the development of effective teams, are as follows:

- ❑ **Team members share a common identity.** By sharing a common identity team members identify themselves as belonging to the team.
- ❑ **Team members have common goals and objectives.** Effective teams have clearly defined directions and measurable outcomes.
- ❑ **Team members share common leadership.** Effective team leaders facilitate and support team efforts.
- ❑ **Team members share success and failures.** Team members are held jointly responsible for the achievement of their objectives.
- ❑ **Team members cooperate and collaborate.** Teams must perform complex tasks that require high degrees of interdependence and cooperation among team members.
- ❑ **Teams have membership roles.** Effective team members know their roles and how they relate to the task.
- ❑ **Teams make decisions effectively.** Effective teams make use decision-making processes that facilitate task accomplishment.
- ❑ **Teams are made of diverse people.** Effective teams are made up of individuals who have different backgrounds and work experiences.

3.1.5.5 Ten Essentials of Teamwork

The move toward more employee participation has resulted in the formation of many kinds of decision-making work teams. These teams are chartered, among other things, to improve quality, increase efficiencies, and strive for total customer satisfaction. Employees are being asked to do things they have not done before, and their leaders are being asked to try new ways on managing. In handling the tasks at hand requires good teamwork and networking of the individual employees in the team. In addition, each individual employee must have a sense of belonging or membership, and all employees must accept certain behaviors based on group norms, procedures, and constraints.

What makes a collection of people become a team? What keeps team members working well together? What do groups need to function productively? In addressing the questions, group dynamic studies by Rees (1991) show that teams or groups have certain key needs (see Figure 3.9 below) to stay alive and function well. These needs must be met in order to function productively:

- **Common goals.** Members of a team need a reason for being and working together. The goals of a team rationalize their existence.
- **Leadership.** Teams need leaders and members who can lead when necessary.
- **Interaction and involvement of all members.** To achieve group synergy and group spirit, all teams members must contribute actively.
- **Maintenance of individual self-esteem.** The good of the group should not prevail to the point that members lose self-esteem. The contribution of each member must be heard, valued, and acknowledged.
- **Open communication.** Team members need to feel they can speak their minds. The channels of communication must be available and open to everyone, especially to the leader.
- **Power within the group to make decision.** The work of the team should center on the things it has the power to influence.
- **Attention to both process and content.** To enable team members to function well together as a group, attention must be given to both the process used to do the work and to the content of the work or the task at hand of the group.
- **Mutual trust.** Trust depends on how the leader and members treat one another. Both the leader and team members may need to discuss how their behaviors and attitudes affect trust.
- **Respect for differences.** Team members need to feel they can disagree and be different from others without being punished.
- **Constructive conflict resolution.** Conflict is natural and must be addressed in a healthy way when it surfaces.

Figure 3.9 – Key Needs of Teams

Source: Fran Rees, How to Lead Work Teams, Facilitation Skills; Pfeiffer & Co., p.39

3.1.5.6 Advantages and Reasons for Organizations Turning to Teams

Organization leaders are realizing that employees at all levels must be contributing and participating members of the workforce if their organizations are to be competitive in the world marketplace. Leaders are becoming aware

that teams offer many advantages over traditional ways of organizing labor (Rees, 1991):

- **Teams increase productivity.** Team members are part of the business thinking enterprise, as they are closer to one another and to the customers. They can see teamwork as a strategy and opportunities for improving efficiency, cost-reduction, and increasing productivity.
- **Teams improve communication.** Team members can intensify their focus on the task at hand with the business of sharing of information and the delegation of work. Regular communication among members would reduce the barrier that may impede clear instruction and delegation of work.
- **Teams work much better than ordinary groups.** There is just too much to know for one person or one discipline to know all. A “Jack of All Trade” would not be able to compete against a team of versatile members in terms of productivity; skills and tasks are widely distributed among all team members; team members are held accountable for maintaining and improving the process for which they are responsible; and team members share leadership and management responsibilities, which will reduce the number of supervisory personnel.
- **Teams make better use of resources.** Team development is the single most powerful tool that can bring a team together in pursuit of common goals. Team members inculcating good teamwork are more focused on the task at hand. Such teams focus its most important resource, its brainpower, directly to the tasks. Also, it is important for managers and team leaders to recognize that each team will have a unique set of circumstances that will affect its individual development process.
- **Teams enhance creativity and efficiency at problem solving.** Teams are better for a host of reasons: they are motivated, they are colder to customer, and they combine multiple perspectives.
- **Teams mean higher-quality decision.** Good leadership comes from good knowledge. The essence of the team idea is shared knowledge --- and its immediate conversion to shared leadership.
- **Teams mean better quality goods and services.** The quality circle was an early expression of the idea that quality improvement requires everyone’s best ideas and energies. Team increase knowledge, and knowledge applied at the right moment is the key to continuous improvement.
- **Teams mean improved process.** Processes occur across functions. Only a team that straddles all the functions of the organization contributing to a process can see what is happening and design ways to remove obstacles, speed up cycles, and apply organizational strength where it matters most to the customer. This is one of the valid reasons for BDA to opt for the registration of its quality system under the ISO 9000 standards.
- **Teams differentiate while they integrate.** Teams allow organizations to blend with different kinds of knowledge together without these differences rupturing the fabric of the organization.

In summing up the above advantages, it is very prominent that teamwork is the imperative for great service. Teamwork generates control and power. Although power is traditionally defined in terms of dominating other in getting them to behave in certain ways, research has shown the cooperative, constructive face of power. Professor Dean Tjosvold (1993), an accomplished researcher on teamwork, explains:

Feeling powerful comes from the confidence that one has the abilities and wherewithal to move forward, solve problems, and be successful. In a cooperative team, people feel more powerful because they know that they can use their team members' resources as well as their own. In contrast, when confronted alone with a complex, difficult challenge, people can be demoralized, having to rely only on their own abilities.^{3.7}

On the other hand, the great automobile magnet Henry Ford once said, "There are three keys to making a successful team: One, coming together is the beginning. Two, working together is progress. Three, staying together is success."

3.1.5.7 Lessons from the Kingdom of Creatures

Nature is brimming with lessons about the importance of teamwork. The kingdom of ants and bees show us how team members are specialized with each performing a different function. For example, in the kingdom of the Amazonian leaf-cutter ants some are leaf-cutters, others carry the leaves to the nest, and there are also soldiers who defend against ant-eating insects. These are teams of tiny ants that ride on the leaves to protect against parasites. Also, there is the queen who lays the eggs, and there are workers who tend to the queen and the larvae. By cutting the nesting in cross-section, one would be able to see from the outside right to the inside the incredible power of a vast team of leaf-cutters ants bustling and working in a perfect teamwork.

The awesome power of teamwork in nature as shown by the ants is a model we should all emulate in our own team experience. By combining all the amazing power of individual strengths, individual functions, individual abilities, and we harness them to operate in sync with each other, all moving toward a single goal. The team that could accomplish such complete synergy becomes an awesome and unstoppable force.

3.1.6 Principle #6: Performance Measurement

A driver traveling to a destination will rely on the gadgets of performance indicators fixed on the dashboard in front of him. The speedometer tells his running speed and the distance covered over time. The thermometer tells the heat of the engine while it runs, and the fuel gauge tells the level of gas in stock to travel the distance. Apart from that, he needs to ascertain that the switches and the headlights and signal lights are in working order. The general condition of the car he is to drive on needs a comprehensive assessment, which will build his confidence to proceed with his journey. Similarly, once an organization establishes a vision where it wants to be in the future, it can then assess where the organization is now in relation to that vision. Like an assessment made on the car, an assessment on an organization creates a picture of the current situation using information from various sources and aspects like culture and systems as they relate to the customers needs. Current capabilities are compared against the vision. By going through this assessment exercise an organization can only identify the gap between the current condition and the desired future and determine areas

^{3.7} Tjosvold, D. (1993): *Teamwork for Customers*, Jossey-Bass Publisher, San Francisco, p. 48

where improvement is needed. The results of the assessment and/or measurement become the road map for change.

3.1.6.1 The Importance of Measurement

Measurement is one of the most critical functions in quality assurance. Without a means of measuring quality, it is impossible to control or improve it. Deming taught the Japanese to measure variation using basic statistical principles. Indeed, understanding and using elementary statistical tools is the foundation of his philosophy. The application of statistics to quality has become an area of much interest and an activity within the statistical community. Indeed, statistics is basic to the understanding and implementation of quality assurance. Frank H. Squires, himself a well-known expert in quality, has credited W. Edwards Deming with keeping statistics in the forefront on the worldwide quality improvement movement. Squires states:

The triumph of statistics is the triumph of Dr. Deming. When others have wavered or been lukewarm in their support for statistics, Dr. Deming has stood firm in his conviction that statistics is the heart of quality control. Indeed, he goes further and makes statistical principles central to the whole production process.^{3.8}

On that note from Squires, it is important that all managers, supervisors, and production and clerical workers must have some knowledge of the technical aspects of statistical quality control. Evans and Lindsay (1993) further concurred that successful companies around the world have shown that if a total quality control philosophy is to be implemented, it is essential that employees at every level be trained in basic statistical problem-solving techniques.

3.1.6.2 Measurement in Service Organizations

While the quality of goods can be measured objectively, service quality is abstract and elusive. One approach for assessing service quality is to measure consumer's perception. Perceived quality is the consumer's judgment about a product's overall excellence. Research done by Parasuraman, Zeithaml, and Berry (1986), has shown that five key dimensions used by consumers in service quality are

- *Tangibles*: physical facilities, equipment, and appearance of personnel.
- *Reliability*: ability to perform the promised service dependably and accurately
- *Responsiveness*: willingness to help customers and provide prompt service
- *Assurance*: knowledge and courtesy of employees and their ability to inspire trust and confidence
- *Empathy*: caring, individualized attention the firm provides its customers.

Using some type of survey questionnaire typically performs measurement of service quality attributes. Such an instrument would measure both consumer's expectations and perceptions about a service. For example, to

^{3.8} Frank H. Squires, "The Triumph of Statistics," *Quality*, February, 1982, p. 75.

measure expectation, one might solicit responses on a “strongly disagree” to “strongly agree” statements such as the following:

- I feel I am part of a team in my organization.
- Everyone in my organization contributes to a team effort in servicing customers.
- I feel a sense of responsibility to help my fellow employees do their jobs well.

Measurement of perceptions about a particular organization would solicit responses to statements such as the following:

- This organization has a strong visionary team.
- The physical landscaping and beautification activities are visually very appealing.
- This organization provides its services at the time it promises to do so.

By examining scores of items associated with particular quality dimensions, a service organization can determine gaps in their service levels and determine the relative importance of the various dimensions in influencing customers' quality perceptions.

3.1.6.3 Performance Evaluation of Quality Activities

The importance of result-oriented management needs no emphasis. A systematic and comprehensive system of performance measurement is critical to ensure that quality activities are implemented efficiently and in accordance with the objectives determined. Information gathered through performance evaluation will facilitate the organization in planning and evaluating resource utilization and effectiveness of the programs (quality activities). In establishing an effective performance evaluation system, government organizations in Malaysia have taken steps in ascertaining characteristics of quality output that need to be controlled, determine objectives or quality standards that are required, establishing mechanisms for data collection and prepare feedback channels (Mohd. Khalid and Gopalakrishnan, 1999). A large number of organizations have set up indicators based on annual work targets as well as requirements of specific programs such as Modified Budgeting System, Micro-Accounting System, and the guidelines on management and quality enhancement. In BDA, for example, the CEO has introduced the ‘Morning Prayer’ session to all Divisions and Sections within the organization to discuss on matters relating to work performance for any quality activity undertaken by each division and section in the effort to monitor the effectiveness of such activity in serving the customers better.

3.1.7 Principle #7: Quality Assurance

According to MAMPU, Quality assurance focuses on planned and systematic actions for the prevention of quality problems to ensure the production of defect-free output. The quality of products and services is assured when work

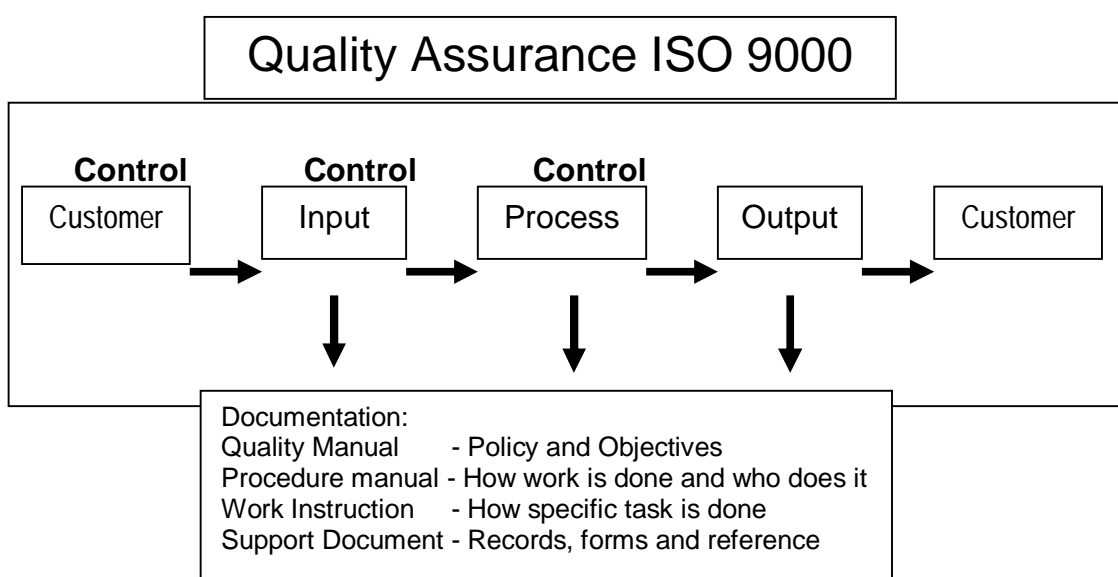
processes and quality standards are clearly defined and well documented. As a Malaysian example, the Department of Chemistry possesses comprehensive documents to ensure the quality of its processes and outputs. Among the quality documents prepared are the Department's Quality Manual, Quality Manual for the Laboratory, and Manual on Standard Operating Procedures, Manual of Work Schedules, Desk Files, and Manual of Work Procedures.^{3.9}

According to Asli (1999), in overcoming the limitations of quality inspection and quality control approaches, many organizations have turned to quality assurance as an alternative. Quality focuses on the process of producing the product rather than on the characteristics of the product. The underlying principle in quality assurance is the right methods will produce right results. Therefore, quality assurance involves the planning and the management of the right method in the production of goods or provision of services.

3.1.7.1 Why Quality Assurance?

The emphasis in quality assurance is to stop rejects or minimize defects and to increase efficiency. To effect quality assurance, a defined and effective quality system that prescribes how the job should be done to produce the best results needs to be put in place. Thus, ISO 9000 defines what such an effective system should consist of.

The emphasis of ISO 9000 is on the prevention of the occurrence of defects. The fundamental principle is doing the right thing right, the first time and every time. Through ISO 9000, it is envisaged that efficiency will be achieved by working to documented policies and procedures, continuous review of critical process points, and maintenance of records to show that what is planned is being carried out. Accordingly, to ensure the effectiveness of the quality assurance system, controls need to be exercised at all stages of input, process, and output of the job function as may be explained in the concept Figure 3.10 below.



^{3.9} The Civil Service of Malaysia, *Towards Excellence Through ISO 9000*, published by MAMPU, printed by Percetakan Nasional Malaysia Berhad, 1996, p.60.

Figure 3.10 – Concept of Quality Assurance under ISO 9000

Source: Musalmiah Asli (1999), *Enhancing Standards: The ISO 9000 Way*.
Pelanduk Publications, Kuala Lumpur. p.117

3.1.7.2 Quality Assurance Planning for Services Organizations

Kacker (1988) said that many aspects of services are identical to manufacturing. Thus, quality assurance planning (QAP) process for services is often the same as for manufacturing. The major goals of service QAP are to produce services that satisfy customer needs and expectations, to produce the required services efficiently, and to plan for quality control and quality improvement under operating conditions as may the process be as shown in Figure 3.10 above.

However, in contrary to Kacker, some aspects of services are quite different from manufacturing and require special attention. In service organizations, there are no defined products as there are in manufacturing firms. For example, all banks offer tangible goods such as loans, checking, ATM, and so forth, the real differentiating factor is the services provided. Thus, QAP for services must carefully define the criteria that determine fitness for use and customer satisfaction (Juran, 1982). To do this, managers must involve greater interactions with customers – talk and listen – to identify their needs and expectations.

Another major activity in QAP for service is developing procedures to produce the service efficiently, which includes doing things right the first time (Price, 1985), minimizing process complexities, and making the process immune to advertent human errors (Evans and Lindsay, 1993). For example, poor service can result in breakdowns of ATM (automatic teller machines) and the way tellers or managers treat their customers. Thus, it is just very important for those involved in internal activities to understand how they add value to the customer.

3.2 RELATIONSHIP AND COMPLEMENTARY FACTORS BETWEEN TQM AND ISO 9000 STANDARD

This part of Chapter 3 will identify and discuss briefly the relationship and complementary factors between TQM and ISO 9000 quality standard. Although companies implement TQM for a variety of reasons, the outcome is the same: an improved competitive position and a common vocabulary. Organizations that fail to speak the language and develop the system to ensure quality goods and service will not survive. For that reason, among others, BDA implemented TQM throughout its entire organization and develop its quality system through ISO 9000 standards, specifically ISO 9002:1994 series. This is exactly what Jablonski (1992) said that the need for quality today is no longer a veiled threat; there is no veil.

In an organization, which has implemented TQM, the adoption of ISO 9000 will further complement and supplement such efforts. TQM is an overall quality management system that emphasizes on the seven core principles:

top or senior management support, strategic quality planning, customer focus, enhancing team work, training and recognition, quality assurance, and performance measurement, as has been discussed at length under part one of this chapter.

On the other hand, ISO 9000 focuses on process management to ensure quality assurance. Both process and human resource aspects will need to be addressed in order for an organization to function efficiently and effectively. TQM integrates both aspects to develop a total quality culture.

3.2.1 Relationship and Complementary Factors: Macro-View

An ideal quality system should include preventive measures and a culture of continuous improvement. Apart from that, it should also focus to getting closer to the customers, working with suppliers, developing people, and using statistical techniques for performance measurement and review. Hence, from the general point of view or macro-view point, ISO 9000 complements and supplements TQM (Pike and Barnes, 1994 and McLaughlin, 1997). The relation between ISO 9000 and TQM based on Pike and Barnes Model is as shown in Figure 3.11 below.



Figure 3. 11 – Relationship Between ISO 9000 and TQM

Source: John Pike & Richard Barnes, *TQM In Action*, 1994

3.2.2 Relationship and Complementary Factors: Micro-View

This section of this chapter will identify and discuss the complementary factors between TQM and ISO 9000 in relation to each of the seven core principles of TQM that has been identified. Figure 3.12 below clearly shows this relationship between TQM and ISO 9000, which are provided and governed by the management philosophies and specific basic elements required for a quality management system of both the quality projects

Figure 3. 12 : The Relationship Between MS ISO 9000 and TQM

3.2.2.1 Top Management Support

If support and/or commitment of the top management is not a priority, any initiative is doomed to failure. Lip service to quality improvement is the kiss of death (Evans and Lindsay, 1993). The setting up of the Corporate Quality Council should consist of top executives and managers, to represent the top management. The council sets quality policy and reviews performance goals within the organization.

Similarly, in the implementation of ISO 9000, top management must actively commit to and participate throughout the registration process of the project. The council is composed of senior and business unit operations management and other senior organizational stakeholders who can champion, coach, and assist the registration process (Hutchins, 1994). Top management drives ISO 9000 registration and its maintenance, and actively supports the ISO 9000 registration initiative by

- Championing and sponsoring the ISO 9000 initiative,
- Promoting the benefits of ISO 9000 registration,
- Defining expectations, needs, and requirements clearly,
- Allocating resources,
- Responding to requests quickly,
- Facilitating internal and external ISO 9000 coordination,
- Providing feedback,
- Supplying advice and support,
- Providing training,
- Resolving conflicts, and
- Intervening, if necessary.

In ISO 9000, management responsibility under the clause (or element) of 4.1 is a requirement of the quality system, which covers and deals with company wide issues like:

- Quality policy,
- Organization,
- Responsibility and authority,
- Resource,
- Management responsibility, and
- Management review.

In short, management responsibility prescribes broad quality system requirements for the purpose of controlling quality from writing quality policies, procedures, and work instructions.

3.2.2.2 Strategic Quality Planning

This is the organization's planning process for achieving or retaining quality leadership and how the organization integrates quality improvement planning into overall business planning. The planning process defines how the plan will be implemented, and how resources will be committed to key elements of the plan.

In ISO 9000, strategic quality planning for the organizational and management quality system requirements are clearly defined in the following clauses:

- 4.1 Management responsibility
- 4.2 Quality system
- 4.3 Contract review
- 4.4 Document and data control
- 4.16 Control of quality records
- 4.17 Internal quality audit
- 4.18 Training
- 4.20 Statistical techniques.

3.2.2.3 Customer Focus

An essential attribute of TQM is the understanding that customer is the final arbiter of quality. TQM is based on the premise that quality is driven and defined by the customer. Product and service attributes that create apperception of quality will increase customer satisfaction and, ultimately, customers demand: quality is fitness for use (Juran, 1982), and quality means conforming to requirements (Crosby, 1984).

In talking about customer focus, both the internal and external customers must be recognized. Employees must view themselves as both customers of and suppliers to other employees in assuring quality to external customers who purchase the product or service. ISO 9000 standards (ISO 9001/9002/9003) are customer and supplier requirements. Many well-known customers-supplier certification initiatives such as those in the auto industry are using ISO 9001 as the foundation for their customer-supplier partnership (Hutchins, 1994). There are also organizations that come to an extent where they re-deploy workers in multidisciplinary teams to concentrate on getting the right products and services to the customer just in time. Once ISO 9000 quality system are developed and documented, teams can develop and document quality systems.

3.2.2.4 Enhancing Teamwork

In TQM, everyone must participate in the improvement efforts. The person in any organization that best understands his or her job and how it can be improved is the one performing it. Employees must be empowered to make decisions that affect quality and develop and implement new and better systems. The effectiveness of the organization's efforts is to develop and realize the full potential of the workforce, including management, and to maintain an environment conducive to full participation, quality leadership, and personal and organizational growth. The organization must encourage employee involvement, empowerment, teamwork, and innovation.

Similarly, ISO 9000 requires significant people involvement, especially in functional areas that must monitor, maintain, and improve quality systems. In small organization, one ISO team may be sufficient to guide the ISO 9000 registration effort. In a large organization like BDA, for example, multiple teams headed by several assistant quality management representatives (AQMRs) with the minimum position level of managers, are needed to facilitate the effort. Each major department or functional area that are affected by an ISO 9000 elements or clause may have a team to develop and write ISO 9000 process specific procedures. Functional groups should become involved because they are responsible for their own work processes and they know how work is really being conducted.

3.2.2.5 Training and Recognition

In the implementation of TQM, every employee, from entry-level of workers to the CEO, requires training in TQM philosophies and techniques. This is evident in the philosophies of Deming, Juran, and Crosby. Training is necessary to reach a common understanding of goals and objectives and the means to attend them. Training usually begins with awareness in quality management principles and is followed by particular skills in quality improvement. Training must be viewed as a continuous effort, not a one-time project. This requires the commitment of significant resources.

Similarly, in the implementation of the ISO 9000 in any organization, the ISO 9000 team requires specific ISO 9000 training. All employees of the organization should be briefed on the ISO 9000 initiatives, which includes the concept and purpose. Technical knowledge and skills required by the ISO 9000 team include ISO 9000 fundamentals, process flow-charting, internal auditing, problem solving, basic statistical process control techniques, and process control.

Under the ISO 9000 standard, training becomes mandatory by virtue of clause 4.18 where training needs identification and analysis are required. Similarly, like in TQM, commitment of significant resources is needed and that training records of the employees need to be maintained as objective evidences.

3.2.2.6 Performance Measurement

Measurement based on facts must be established to assess quality improvement. A systematic process to measure and evaluate quality continuously is necessary. Quality measures must become part of the reports that are regularly provided to middle and upper management. Line workers or employees and supervisors also require quality reports so that problems can be identified, analyzed, and solved. Such approaches in the quality system under TQM and ISO 9000 requirement are present. In ISO 9000, the following clauses are very relevant to this magnitude of performance measurement:

- 4.16 Control of quality record
- 4.17 Internal quality audit
- 4.20 Statistical techniques.

3.2.2.7 Quality Assurance

In TQM, quality assurance is the systematic approach used by the organization for assuring quality of goods and services based primarily on process design and control, including control of procured materials, parts, and services. Customer needs must be converted into appropriate product and process requirements. The organization must create methods for designing, developing and validating the products, processes, and services in a timely manner. The integration of process control with continuous quality improvement is also examined. When a product process, or service does not meet specifications, the root causes of the problem must be determined and corrected to prevent future problems. Process control methods should be used for continuous improvement.

Documentation to support the quality system must be maintained and shared throughout the organization. In addition, the quality of support services must be assured, assessed, and improved. This includes external suppliers as well as internal support.

In the same way as in TQM, under the ISO 9000 standard, the “inspection and testing” quality system requirements deals with specific functional quality assurance issues under clause and sub-clauses:

- 4.10 Inspection and testing
- 4.10.1 General
- 4.10.2 Receiving inspection and testing
- 4.10.3 In-process inspection and testing
- 4.10.4 Final inspection and testing
- 4.10.5 Inspection and test records.

In the general aspects of quality assurance, apart from clause 4.10, the following clauses are also relevant:

- 4.9 Process control
- 4.11 Control of inspection, measuring, and test equipment
- 4.12 Inspection and test status
- 4.12 Control of non-conforming products
- 4.14 Corrective and preventive action.

3.3 SUMMARY

TQM is an integrative management concept for continuously improving the quality of goods and services delivered through the participation of all-levels and functions of the organization. Thus, in internalizing quality programs in an organization in the effort to improve quality management and in order to achieve and maintain in a competitive edge is an enormous task. In such a process, change will happen and continue to prevail in such a manner. Change, and not status quo, is a matter of survival. In an effort to address a variety of organization problems, irrespective of the complexity of the problems, improving performance levels as well as tackling customers' complaint and/or criticism, many organizations have turned to a set of practices known under the general rubric of quality management. Thus, successful implementation of TQM depends on a long-term perspective where the seven core principles need a proper addressing.

The ISO 9000 is a management system that will enable an organization to produce products and services with consistent quality. Thus, the ISO 9000 series of standards has been adopted worldwide as a guide for quality practice, which should complement TQM, particularly in areas of inspection. They provide guidelines as the global economy continues to expand. As such, the requirements for periodic management review, internal quality audit, and corrective and preventive action under ISO 9000 provide tremendous opportunities for the organization to further improve and reengineer its processes.

Equally important to this chapter is literature review on research methodology. This will be discussed in the next chapter, where Chapter 4 is on Research Methodology.

CHAPTER 4 RESEARCH METHODOLOGY

4.0 INTRODUCTION

There are various research methods and techniques available to researchers. A research method is a systematic and orderly approach taken towards the collection of data. In contrast, research techniques are set-by-step procedures in data collection.

Chapter 4 begins with a literature review on the various methods used in research, which will include the process, methodology, and analytical methods of conducting research evaluation, especially in the context of this study. The objective of this chapter is to provide a rational argument for choosing a specific method and/or technique for the research. The research objectives and an outline of method and procedure will be described following the review of relevant literature. The scope of the study, sample size and design, interview survey, analysis of the questionnaires, as well as limitations of the study will be also outlined in this chapter.

4.1 REVIEW ON VARIOUS METHODS USED IN RESEARCH

There are four basic methods in research: case study, historical review, experiment, and survey (Jankowicz, 1991). There is no definite rule for one to follow in selecting one method over another. The choice varies according to the nature and any other constraints affecting the collection of data.

The purpose of this section is to give a brief discussion on each of the methods, their advantages, and why the survey method is chosen for the research.

4.1.1 The Historical Research Method

Historical research involves studying, understanding, and explaining past events. The purpose of historical research is to arrive at conclusions concerning causes, effects, or trend of past occurrences that may help to

explain present events and anticipate future events. This method is suitable, for example, for those relating to financial and accounting subjects (as for example, Orbell, 1987), and market and product performance. Historical research should be guided by a hypothesis and the steps involved in conducting the research are generally like other types of research.

The setback with the historical research method is on data collection. In most cases, data are limited to that are already available, i.e., secondary data. However, one can extend the data collection to include primary data by interviewing someone relevant other than an eyewitness, and original documents or manuscripts. The main problem with primary data obtained from interviews is that it may be incomplete; the interviewee may find it difficult to verify his account as the human memory is incapable of relating the past events correctly.

4.1.2 The Case Study Method

The case study represents a comprehensive description and explanation of the many components of a given social situation. Yin (1984) gave three situations in which one can choose the case study method:

- If one's research is following a specific theory, and it is likely that an organization has those factors or circumstances for the critical test of theory;
- In order to identify the distinguishing characteristics of the extreme or rare situation in which an organization is in; and
- If it is believed that the circumstances are sufficiently interesting and that something important will be learnt from the study.

A community study conducted by Warner (1949) on "Jonesville" was a good example of a case study, which clearly fits into one of the situations given by Yin as above (no doubt Warner's study was more than three decades earlier than Yin's).

Whereas most research aims directly at generalized understanding, the case study is directed initially at the comprehensive understanding of a single, idiosyncratic case. Most research attempts to limit the number of variables, the case study seeks to maximize them. One seeks to collect and examine as many data as possible regarding the subject of his study, as for example in the case of Warner's Jonesville community study, one will learn about the history of the community, its religion, political, economic, geographical, and racial makeup, and so forth. Ultimately, on executing a case study typically seeks insights that will have a more generalized applicability beyond the single case study. Alternatively, asking the same questions in several related organizations can carry out a comparative case study. It is important to note that the sampling of different organizations is not because that one wishes to generalize the study. Instead, it is to replicate the study and to explore the possibility of different issues involved.

The advantage of a case study is that it is comprehensive and informative about an organization (Jankowicz, 1991). However, the problem with case study is that the research design is subject to influence and interruptions arising from day-to-day events happening in the organization. If the research

demands multiple sources of evidence from the organization, then it could be very time consuming. Also, there may be a problem of gaining accessibility to the various departments.

4.1.3 The Experiment Study Method

The experimental study method is the only method of research that can truly test hypotheses concerning cause-effect relationships. In an experimental study, one independent variable (at least) is manipulated and its effects upon another one or more dependent variables is observed and measured, while other relevant variables, which have an influence on the relationship are controlled or eliminated.

The steps in the experimental study method are basically the same as for other types of research:

- i. Selection and definition of a problem
- ii. Selection of subjects and measuring instruments
- iii. Selection of design
- iv. Execution of procedures
- v. Analysis of data
- vi. Formulation of conclusions

In an experiment, the data are gathered by observation of a tightly predefined range of behavior under controlled conditions. In the simplest, one's attention is confined to two variables to determine a pattern of association between the two. In this situation, one can determine only the relationship between variables but not the direction of the relationship.

In order to determine the direction of the relationship, one should undertake two further steps. The first is to arrange events for the correct sequence of association (which variable make a difference if it happens first, and which does not). The second is to eliminate the possible influence of other variables. Elimination is possible if one has sufficient knowledge on the respondents, and the power to arrange respondents (for example, the freedom to move respondents into the appropriate groups). Gill and Johnson (1991) referred to this particular technique as Action Research.

In reality, the task to move respondents into appropriate groups may not be possible. The first is to draw a purposive sample by deliberately deciding to observe only those respondents known to have those factors requiring control. The second is to sample randomly from two different groups and assume that the effects of the various factors involved would cancel each other out (Jankowicz, 1991). The problem with these two alternatives is that each one needs to start with a fairly large population and know a lot about respondents involved.

4.1.4 The Survey Method

The survey method can be applied in a much wider variety of topics and designs. Survey research can be used profitably in the examination of many social topics and can be especially effective when combined with other methods.

Typically, survey method examines a sample from a population. In contrast to the experiment method, a survey is concerned primarily with addressing the particular characteristics of a specific sample of respondents. The format of the survey research often permits the rigorous, step-by-step development and testing of such logical explanations through the examination of hundreds (and even thousands) of survey respondents; moreover, it is possible to test complex propositions, involving several point in time (cross-sectional), or at varying times (longitudinal study) for comparative purposes.

The main purpose of using the survey method is to ensure that any subsequent assessment of the attributes of that sample population are accurate, and the findings can be generalized. In other words, they have population validity. On this note, according to Babbie (1973), survey promotes this general special scientific aim in two special ways:

- i. A large number of cases studied in a given survey, the analyst can replicate findings among several subsets of the survey sample. For example, the replication of a finding among different subgroups strengthens the assurance that it represents a general phenomenon in society.
- ii. The careful reporting of the methodology of a given survey promotes replication later by other researchers and/or among other samples and subgroups. In this manner, the generalizability of the findings can be tested and retested.

Thus, survey is defined as a method of primary data collection based on communication with a representative sample of individuals. It involves designing and administering a questionnaire. The decision about how respondents are to be contacted and the requisite information to be elicited depends on three factors:

- ❑ The size of the sample
- ❑ The geographical dispersion of the sample
- ❑ The complexity of the information required

There is a choice between postal survey (self-administered by the respondent) and face-to-face interview (self-administered personally or through another party). The survey could also be conducted through the telephone (Frey, 1989). However, the complexity of the information required might necessitate personal contact.

The survey method has the advantages of providing a quick, inexpensive, efficient, and accurate means of assessing information about the population.

The main problem with the survey method is that one is dealing with reports (verbal or written), and reports are limited to what is willing and able to report in the first place. Two major types of error can occur (Figure 4.1 below):

- ❑ Random sampling error – the deviation of an observed value from its expected value due to the inherent randomness of the situation under study. Increasing the sample size could minimize this error.
- ❑ Systematic error – results from some imperfect aspects of the research design or from a mistake in the execution of the

research. There are two types of systematic errors: respondent error and administrative error.

Figure 4.1 outlines the various form of survey error.

Figure 4.1 – Tree Diagram of Total Survey Error
Source: Zikmund (1988, p.144)

4.2 PURPOSE AND OBJECTIVES OF THE STUDY

4.2.1 Purpose

The purpose of this study is to assess the effectiveness of the implementation of the quality system ISO 9000 on BDA's total quality management

4.2.2 Research Objective

Consistent with the purpose as stated above, the study has two objectives:

Firstly, there is a general objective, which is related to the assessment of the implementation of the quality system ISO 9000 standard.

Secondly, there is a more specific objective of developing recommendations to enhance and improve the quality system in the future.

4.2.2.1 General Objective

The general objective for this study includes the following:

- To assess quantitative impact/effectiveness of the implementation of the quality system ISO 9000 in BDA;
- To survey and measure the qualitative impact/effectiveness of the implementation of the quality system on TQM of BDA; and
- To identify the challenges in implementing the quality system ISO 9000 in BDA, i.e., for explaining the effectiveness and impact concluded above.

4.2.2.2 Specific Objective

The more specific objective of the study includes the following:

- (i) To derive at findings and make conclusions from the primary and secondary data; and
- (ii) To make recommendations for the way forward.

4.3 METHOD USED IN THIS RESEARCH

The survey method is chosen over the other three methods mentioned above. The research demands for information from the various departments, divisions, section, and target or focus groups within the organization. Furthermore, there is a need to generalize this study, thus eliminating the case study and historical review methods.

As mentioned earlier on above, the experiment method focuses on the causal effect between variables, whereas the survey method addresses the relationship among variables. Thus, the experiment method is also not suitable for this research, and the survey method would be the most appropriate method for this research.

In this study, the research adopted the survey method using two types of approaches:

Firstly, there is the use of secondary data and information from internal quality audit (IQA) reports of 1999, 2000, and 2001.

Secondly, there will be interviews of focus groups, supplemented by a questionnaire survey.

The survey is used to obtain information for analysis and pattern mapping which lend themselves to interpretation and comparison. The survey will obtain facts and opinion from representative selection of the population being researched. From that sample, the researcher will then be able to present findings as being representative of the population as a whole.

4.4 SCOPE OF THE STUDY

Scoping is an important aspect in the design of this study. Determining the scope is important because common agreement and understanding is needed on what and who should be included and excluded in the study. In this context, scoping refers especially to the geographical, temporal, and respondent scopes.

4.4.1 Geographical Scope

For the purpose of this study, the geographical scope will be the three office sites of BDA in Bintulu, that is, excluding those offices in Tatau District and the Sebauh Sub-district.

4.4.2 Temporal Scope

The reference period for the study will be from September 1999 to the survey date, i.e., end of August 2001.

4.4.3 Respondent Scope

The study will cover all staff in the Management Review Committee (MRC), the Steering Committee (SC), Assistant Quality Management Representatives (AQMRs), and other activity-based committees for the focus groups interview (see Figure 4.1 below). The scope also includes of randomly selected employees from all relevant workplaces in a questionnaire survey.

Figure 4.2 - Focus Group of Survey Research

4.5 SAMPLING: SAMPLE SIZE AND DESIGN

Sampling is the process of selecting a number of units for a study in such a way that the units represent the larger group from which they were selected.

The purpose of sampling is to gain information about a population. The individuals who are selected comprise a sample; the larger group is referred to as a population. Rarely is a study conducted that includes the total population of interest as subjects. If a sample is well selected, research results based on the same sample will be generalizable to the population. The degree to which the sample represents the population is the degree to which results for one are applicable to the other.

When conducting research, the ideal is to go for random sampling with a relatively large sample size. Without random sampling, it is difficult to conceive how the research can have the necessary viability and validity. In reality, one is faced with few constraints (for example, financial, administrative, and time). In general, the minimum number of subjects believed to be acceptable for a study depends upon the type of research involved. For descriptive research, a sample of 10 percent (%) of the population is considered a bare minimum. For a smaller population, 20% or more may be required. For correlation studies at least 30 subjects are needed to establish the existence or nonexistence of a relationship. For casual-comparative studies and many experimental studies, a minimum of 30 subjects per group is generally recommended. Experimental studies with tight experimental controls may be valid with as few as 15 subjects per group (Roscoe, 1975). Dixon, Bouma, and Atkinson (1987) suggested the following rule of thumb:

- The minimum sample size is 30. This is to ensure that there is sufficient sample for analysis.
- There should at least 5 cases in each cell of the analytical table.

As far as this study is concerned, the above criteria have been complied with.

In deciding who should be interviewed, it was decided that this includes all Committees, staff and a sample of all other staff at all level of the respective departments, divisions, and sections of BDA’s organization structure or chart within the Bintulu proper where the quality system ISO 9000 is implemented effectively. This is to ensure a fairly representative picture of the total population of the samples, which are relevant to this study only.

Because of the non-response, the sample design included a “larger than need” sample size to allow for 33% non-response.

BDA has a total of 629 employees. Out of the numbers, a total of 33 employees are employed in the Sebauh sub-district and the Tatau District. In both localities, the Quality System under the ISO 9000 standard has neither been extended nor implemented. Having that in mind, this study will focus on the 596 employees, which forms the population of the study, whereby the Quality System ISO 9000 is binding upon them to implement. Out of total population (for all categories), the sample size of 199 for the questionnaire survey (planned/actual) is shown Table 4.1 below:

Department, Division, Sections, and Units ^{4.1} Planned / Actual	HRM / CPQ	PERBIND A/ TUMBINA/ MWS	PDD/BE D	POA/S EC	Total
Planned	20	125	29	25	199
Actual	17	93	23	24	157
Percentage of Response	85	74.4	79.3	96	78.9

Table 4.1 – Planned and Actual Respondents of Survey

From the total above, the actual non-response of 21.1% from the sample population (various workplaces: divisions, department, sections, and units) is lower than the 33% allowed.

For the activity-based committee, the planned/actual figures are as Table 4.2 below:

Activity-based Committee Planned / Actual	Quality Control Circles (QCC)	5S – Good Housekeeping Committee	Employee Suggestion Scheme (ESS)	Total

^{4.1} Legend to the acronyms used Table 4.1:

HRM: Human Resource Management Division; **CPQ:** Corporate Planning and Quality Management Division; **PERBINDA:** Municipal Services Division; **TUMBINA:** Plants (Flora) and Wildlife (Fauna) Section; **MWS:** Maintenance and Workshop Division; **PDD:** Project Development Division; **BED:** Building and Engineering Design Division; **POA:** Property and Office Administration Division; **SEC:** Office of the Company Secretary

Planned	20	14	13	47
Actual	18	13	13	44
Percentage of Response	90	92.8	100	93.6

Table 4.2 – Planned/Actual Respondents of Activity-based Committee

From the total above, the actual non-response of 6.4% from the activity-based committees is very much lower than the 33% allowed.

For the focus groups interview, the planned/actual figures are as in Table 4.3 below:

Types of Committee Planned / Actual	Management Review Committee (MRC)	Steering Committee (SC)	Assistant Quality Management Representatives (AQMRs)	Total
Planned	8	8	12	28
Actual	8	7	9	24
Percentage of Response	100	87.5	75	85.7

Table 4.3 – Planned/Actual Response of Various Types of Committee

From the total above, the percentage of non-response from the various established committees is 14.3%, which is again very much lower than the 33% allowed.

4.5.1 Questionnaire Design

Whether working from a rigorously deduced theory or from a set of tentative suspicions or curiosities, the researcher at some points is faced with a set of unspecified, abstract concepts that he believes will assist his understanding of the world around him. In survey research, these concepts must be converted into questions in a questionnaire in order to permit the collection of empirical data relevant to analysis (Babbie, 1973).

Designing a questionnaire can be a difficult task. A properly designed questionnaire elicits the precise information that the researcher wants. A poorly designed questionnaire yields data that are not only confusing, but also difficult to analyze, and of little value.

In designing a questionnaire, the first step is to clearly define the focus of the research (Moser and Kalton, 1972). The content of the questionnaire should elicit the responses that one is most interested in, without much extraneous information.

In the realm of questions, the researcher has two options of questionnaire design: open-ended and closed-ended. Open-ended question allows the respondent to provide his own answer to the question using his own words. A drawback to the open-ended question is that the respondent may not understand exactly what is required, or will give answers that are essentially irrelevant to the researcher's intent. Summarizing the data can also be difficult, and there is a need to decide how to classify the different answers.

In the case of closed-ended questions, the respondent is asked to select his answer from among a list or a set of alternatives provided by the researcher. Closed-ended questions are very popular in survey research since they provide a greater uniformity of responses. These responses are, therefore, easier to summarize and analyze. However, the information from a closed-ended questionnaire is not as "rich" as the information from the open-ended questionnaire.

In terms of what information to collect for the survey, a common set of questionnaire was developed for the following respondents:

4.5.1.1 Focus Group Interview

For the focus group interview (involving 24 respondents), qualitative feedbacks on challenges were collected to supplement and further clarify the qualitative score on "impact."

4.5.1.2 Questionnaire Survey

The quantitative responses in terms of effectiveness (effect) were collected through questionnaire survey, which had 199 responses.

Appendix 4.1 shows a set of the questionnaire used in this survey.

4.7 LIMITATIONS OF THE STUDY

There are certain limitations involved in the conduct of sample survey, which need to be highlighted so that the findings in the report can be read in the right perspective.

In the case of this study, the prominent limitations encountered are and not limited to as below:

- (a) The planned number of respondents and distributed with questionnaire is 199. The final response is 78.9%, which means that 21.1% is 'non-response'. The non-response could contribute to the representativeness of the information gathered, whereby the questionnaire was never returned to the administrator (despite several reminders) or simply *lost* in the internal mail.

Common in most statistical surveys, there is a certain degree of errors arising from the respondents. In this study, the errors include the followings:

- (i) **Understanding the Questionnaire**

During the interview and administration of the questionnaire, a number of respondents have problems in understanding the requirements of the questions, particularly those with limited English vocabulary and those educated in the Malay medium of instruction.

Reasonable clarifications and explanations were given to the respondents having this kind of problems in order to facilitate them in filling with the correct response. The extent of this problem is unknown to those respondents who did not ask any question.

(ii) **Translation Problem**

In a number of cases, responses to questions posed in the questionnaire were answered and/or written in the Malay language. A considerable amount of time was taken to translate the Malay language to English. The extent of accuracy of the translation could contribute to the representativeness of the information gathered.

(iii) **Halo-Effect**

As commonly experienced in many surveys, there is a 'halo-effect' under which respondents are biased towards giving favorable or positive answers and compared with giving unfavorable or negative answers.

The above-mentioned non-sampling errors arising from the quality of information gathered as given by the respondents will affect the results and findings of the study.

4.8 SUMMARY

This chapter has addressed the different methods and techniques used in the survey. Also presented in this chapter are the research objectives, methods, coverage, survey and questionnaire design and sample size, scope of the study, an outline of interview survey, and data analysis framework of the survey.

Because of the familiarity with the technique and relevancy, the survey method is chosen for this study, which was used for both the focus interview (to collect qualitative feedbacks on "impact") and questionnaire survey (to collect quantitative responses on "effect").

The next chapter, Chapter 5, will present the results of the study on the analysis, findings, and discussion points.

CHAPTER 5 – RESULTS: ANALYSES, FINDINGS, AND DISCUSSIONS

5.0 INTRODUCTION

The purpose of this stage of the research is to present the analysis and findings on the effectiveness and challenges generally experienced by the organization in three different timings – before, during, and after – in the implementation of the quality system under ISO 9000 in supporting the seven core principles of TQM. The respondents rate the extent of effectiveness (effect and impact) of the challenges over the three different timings by giving scores ranging from 1 (very low), 2 (low), 3 (moderate), 4 (high), and 5 (very high).

This review covers the analysis of the data and information collected from the surveys in the seven core principles of TQM as follows:

- i) Top Management Support,
- ii) Strategic Quality Planning,
- iii) Customer Focus,
- iv) Training and Recognition,
- v) Enhancing Teamwork,
- vi) Performance Measurement, and
- vii) Quality Assurance.

The analysis also discovered that there are many challenges for each type of the seven core principles of TQM. However, for ease of analysis only the top three challenges of each core principle are identified for clarifying the reasons underlying the effectiveness and impact score.

It is important to understand the difference between ‘effectiveness’ and ‘impact’ as defined for this study. Explaining the difference will help better understanding of the analysis later. The key differences, although there are commonalities, between the two are as follows:

- ‘Effective’ is more objective in achieving something which is fixed. In terms of timing in outcome, the result is more immediate.
- ‘Impact’ is more subjective against individual’s based belief or opinion. In terms of timing in outcome, the result is long-term, wider perspective, and deeper (i.e., how deep it is on the person).

The findings of the analysis on the core principles are discussed and presented below under three different timings of implementation of the quality system: *before*, *during*, and *after*.

5.1 ANALYSIS ON TOP MANAGEMENT SUPPORT

Analysis on this core principle of ‘Top Management Support’ reveals a total of 13 different types of challenges were recorded for the timing ‘*before* the implementation’ of the quality system with a total of 174 responses. For the timing ‘*during* the implementation’, a total of ten (10) challenges were recorded with a total of 134

responses. And for the timing '*after* the implementation', a total of nine (9) challenges were recorded with 104 responses (Appendix 5.1).

As mentioned earlier in the introduction above, for ease of analysis only the top three challenges are identified for clarifying the reasons underlying the effectiveness and impact score. Thus, the findings of the analysis of this core principle, top management support, will be discussed in that manner.

5.1.1 *Before* the Implementation

The analysis for '*before* the implementation' reveals the general opinion within the organization on the effectiveness (effect and impact) of top management support in the implementation of the quality system. The effectiveness achieved for the total average (weighted) shows a negative score (Table 5.1). This trend is normal, in many instances, for the introduction of any new quality activity in an organization. It takes time for anything that is new to be accepted and assimilated as part of the organization's culture. A positive impact can only be seen over time (long-term). More over, the implementation of the quality system ISO 9000:1994 in the organization was by virtue of the government circular, which makes it mandatory for all government departments and agencies to do so before the end of year 2000. (The implementation of the system was not the original idea of the top management). Also, the quality system was new to everyone in the organization, and as such, it takes time for everyone to see the impact of the system within the organization.

The analysis further reveals that the score on the effectiveness was strongly influenced by three challenges: 'lack of knowledge and experience on the quality system', 'lack of commitment,' and 'complacency' (Table 5.1). This finding carries some weight because the relevant government circulars (Development Action Circulars No. 2/96 and No. 1/97) have requested all government organizations and agencies to implement the system within their organizations as early as 1996. The first few years of *dormancy* of the top management to implement the quality system was a reflection of their 'lack of knowledge and experience' about the quality system and also a 'wait and see' attitude for other organizations to implement first rather than to be a leader. This course of action reflects the 'lack of commitment' and 'complacency' on the part of top management. (This has been discussed in Chapter 1, p. 3). However, it took BDA to implement the system and got certified four years later. Due consideration should also be given that other challenges (as listed in Appendix 5.1) do influence the top management support, in one-way or another.

5.1.2 *During* the Implementation

The analysis for '*during* the implementation' reveals a positive change in the effectiveness and impact of top management support. The presence of top management during the implementation is very important to show commitment and support for any

quality activity. Such a gesture of top management support normally would have effectiveness and impact on any quality activity implemented. Accordingly, the analysis reveals the increase of the effectiveness and impact of top management support on the total average (weighted) by a score of 3.26 (7.95%). Such a nominal increase was influenced by the challenges on the part of management, which are the ‘lack of guidance and supervision’, ‘lack of knowledge and experience’, and ‘lack of role play (leadership)’. Some of the challenges are similar and confirm to what Kelly (1994) had listed as very important elements of top management support for the success of any quality activity being implemented. Such a score of effectiveness and impact achieved is not singly influenced by the top three challenges as identified. Other challenges during the implementation like those listed in Appendix 5.1 also do contribute to such score.

Most prominent in the analysis is that the challenge factor of “lack of knowledge and experience”, which seems to prevail in both ‘before and during the implementation’. The score given on the effectiveness for quantitative aspect before the implementation was 2.89, which equals to the score achieved on the qualitative aspect (impact) during the implementation. This finding reveals that top management lack the seriousness and drive to address the challenge of “lack of knowledge and experience” on their part about the quality system even during the implementation stage, whereby the impact achieved is negative (Table 5.1).

On the whole, the effectiveness and impact achieved for the total weighted average of the top three challenges during the implementation shows a positive achievement for the general organization with the exception of the challenge on the ‘lack of knowledge and experience’ on the quality system (which gives a negative score).

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Lack of knowledge and experience on the quality system	2.89	3.07	+ve
	2. Lack of commitment	4.5	3.25	-ve
	3. Complacency	3.05	3.15	+ve
	Total Average (weighted)	3.36	3.14	-ve
DURING	1. Lack of guidance and supervision	2.91	3.24	+ve
	2. Lack and knowledge and experience	3.00	2.89	-ve
	3. Lack of role play	3.27	3.53	+ve
	Total Average (weighted)	3.02	3.26	+ve
AFTER	1. General awareness and knowledge	3.19	3.52	+ve
	2. Develop a monitoring system for quality	3.62	3.62	=
	3. Strong support and commitment to resources and time	3.50	3.78	+ve
	Total Average (weighted)	3.40	3.62	+ve

Table 5.1- Findings on top three challenges of core principle #1: Top Management Support

5.1.3 *After the Implementation*

The effectiveness and impact of any activity that has taken place are normally seen post-activity. The extent of effectiveness and impact takes time to be seen; and again the duration of time taken depends on the response received to such an activity.

The analysis for '*after the implementation*' reveals that the challenges of top management support are in the areas of 'general awareness and knowledge', 'development of a monitoring system for quality', and 'support and commitment to resources and time' (Table 5.1).

The finding reveals that there is a positive increase in the general awareness and knowledge of top management after the implementation of the quality system. Such level of awareness has contributed to a very strong support and commitment to resources and time (quantitative score of 3.50 and qualitative score of 3.78). Accordingly, the average quantitative score for the challenge factor of 'Development of Quality Monitoring System' equals to the average qualitative score (3.62). This score means that there has been no development and no improvement in the monitoring system within organization. The organization has a strong drive for quality improvement; however, the efforts and quality culture are wasted when a monitoring system has not been developed and maintained. With poor monitoring system developed, the organization would find it difficult to plot a progress milestone chart.

On the whole, the effectiveness achieved (quantitative and qualitative) for the weighted average of the top three challenges for *after the implementation* indicates some achievement for top management support.

5.1.4 **Effectiveness and Impact: Total Weighted Average**

The Graph 5.1 below shows the extent of effectiveness and impact of top management support over the three different timings whereby top three challenges discovered in each of the timings have strong influence over the achievement. In terms of effectiveness for '*before the implementation*', the low score achieved for the impact is typical in many organizations. It takes time to accept and develop a new culture in an organization. It also takes a lot of sacrifices and consensus.

The effectiveness of top management support was low (negative) during the implementation. The score achieved (3.02) indicates that the objective of the organization cannot be achieved faster than expected. This organization has a weak leadership. However, one must note that at this stage management is facing a process of change and transformation. On the other hand, the

impact score for '*during* the implementation' was much higher than the effectiveness expected.

Graph 5.1 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Top Management Support

The analysis reveals the effectiveness and impact for '*after* the implementation' was higher. The score of effectiveness and impact for top management support was even higher (Graph 5.1), which means that there is a gradual increase in the 'top management support' despite the challenges identified. In short, the level of awareness among top management managers has increased greatly on the need and importance of having a documented quality system in the organization.

5.2 ANALYSIS ON STRATEGIC QUALITY PLANNING

The analysis on the core principle of 'Strategic Quality Planning' reveals a total of 10 different types of challenges were recorded for the timing '*before* the implementation' with a total of 189 responses. For the timing '*during* the implementation', a total of 12 challenges were recorded with a total of 165 responses. And for a timing '*after* the implementation', a total of 12 challenges were recorded with 163 responses (Appendix 5.2).

For ease of analysis, only the top three challenges are identified for clarifying the reasons underlying the effectiveness and impact score of 'strategic quality planning' for the three different timings of implementation of the quality system.

5.2.1 *Before* the Implementation

The analysis for '*before* the implementation' reveals the effectiveness of strategic quality planning culture in the organization scored a lower total average (2.86) as shown in Table 5.2. However, the score on impact was higher (3.48). This finding is interesting to note.

The score of effectiveness and impact achieved are largely influenced by the challenges such as 'unclear TQM objectives', 'lack of practice of professionalism', and 'quality policy not well emphasized' (Table 5.2). This finding reveals that the organization is rather *floating* with unclear direction, purpose, and lacking in values.

Some of the challenges recorded partly concur with the product-quality based model designed by Evans and Lindsay (1993). The model (as discussed in Chapter 3, p. 39) shows that broad product-quality decisions are made at the top management level, objectives and systems to support the strategic goals and objectives are developed at the middle management, and detailed procedures for operating control are carried out at first-line management level. As such, the finding reveals that the management of this organization, at the respective levels, did not emphasized enough the organization's policy and quality objectives in order to be fully understood organization-wide. If they do, the policy and/or the objectives are not well understood down the line. Other

challenges to this situation are the 'lack of formulation of strategies' and 'lack of follow-up and feedback' (Appendix 5.2). All these findings reveal the lack of practice of professionalism among managers at the various levels within the organization. With the lack of professionalism, this organization will have an uphill task of achieving the status of knowledge-based employees (or k-workers) because knowledge, skills, and training provided are not practiced. This kind of culture is not organizational fitting and if not addressed, it may run the organization down with the development of unhealthy attitude.

In fact, the organization has been introduced with the practice of strategic quality planning through the implementation of TQM in 1994. Soon later, the organization was introduced and initiated some quality improvement activities (QIAs) like the Japanese 5S version of good housekeeping. Prior to the implementation of TQM, the organization was very active in QCC (problem-solving) activities in mid-1980s (Biha, 1987). Prior knowledge and some skills on the implementation of the QIAs introduced earlier may have bearing on the effectiveness and impact of strategic quality planning in the organization.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Unclear TQM Objectives	2.64	3.48	+ve
	2. Lack of Practice of Professionalism	2.77	3.38	+ve
	3. Quality Policy Not Emphasized	3.18	3.55	+ve
	Total Average (weighted)	2.86	3.48	+ve
DURING	1. Strong support of facilities and resources	3.16	3.34	+ve
	2. Lack of support and coordination efforts	3.17	3.58	+ve
	3. Poor guidance	3.08	3.35	+ve
	Total Average (weighted)	3.13	3.41	+ve
AFTER	1. Lack of monitoring system and follow-up	2.97	3.55	+ve
	2. Lack of feed back on results	3.18	3.44	+ve
	3. Lack of effective control measures	3.05	3.67	+ve
	Total Average (weighted)	3.06	3.54	+ve

Table 5.2- Findings on top three challenges of core principle #2: Strategic Quality Planning

5.2.2 During the Implementation

Having been exposed to QIAs, it is assumed that the organization has developed and established planning culture within, which form the basis for all

managerial activities like organizing, directing, and controlling. For that reason, a total of 12 managers (mainly division and sections heads) were appointed as Assistant Quality Management Representatives (AQMRs) in the implementation of the quality system with the intention that they would coordinate the implementation and accelerate the development of the quality system within their respective workplaces and down the line more effectively. This planning approach, as claimed by Evans and Lindsay (1993), would reduce duplication of efforts, minimize cost of achieving objectives, create consistency and coordination mechanism for future activities, and establish a basis for control. However, the analysis for '*during* the implementation' reveals the effectiveness and impact of strategic quality planning in the organization achieve a lower total weighted average compared to the score achieved for '*before* the implementation'.

The analysis further reveals that the challenges that strongly influence the effectiveness (effect and impact) are 'strong support of facilities and resources', 'lack of support and coordination efforts', and 'poor guidance'. The score achieved on the effectiveness and impact of the challenge factor 'strong support of facilities and resources' is high. However, the lack of support and poor coordination efforts and poor guidance given during implementation of the quality system, the challenge factor of support of facilities and resources given would be of little help. The two former challenges generated by the human factor seem prevail over it.

The QIAs that have been introduced in the organization should develop a corporate culture leading for change much needed for growth and development of the organization into the future. This approach is what McLaughlin (1997) describes as 'sustaining cultural change'. Ironically, the finding in this analysis does not strongly reveal such an outcome. The knowledge, skills, and experience generated from the QIAs that had been introduced prior to the implementation of the quality system neither last nor develop into a culture within the organization. The challenge factor 'lack of practice of professionalism' may hold water among the managers within the organization. In other words, there should be consistent practice or exercise of professionalism within the organization, especially among managers in order to sustain cultural change.

A very simple approach to strategic quality planning introduced to the organization was the *Deming Cycle* of the PDCA (**P**lan, **D**o, **C**heck, **A**ct). This approach has been introduced to almost all the employees during the introduction of QCC in the mid- and late 1980s. Knowledge learnt on such practices was wasted when not applied. Such a reaction confirms the 'lack of practice of professionalism', which is a deviation from the established norm of excellent organization.

5.2.3 After the Implementation

Generally, after all the implementation of the QIAs and the quality system in- placed, a culture on strategic quality planning should have developed well and improvised within the organization. However, the analysis for '*after* the implementation' reveals a very minimal increase in the total weighted average score on the effectiveness and impact as compared to the timings *before* and *during* the implementation. The challenges contributing to this level of achievement are the 'lack of monitoring system or follow-up', 'lack of feedback on results', 'lack of effective control measures'. The organization still need a

lot of efforts in the area of strategic quality planning by all the challenges recorded '*before, during, and after* the implementation'. In consonant with sustaining cultural change, the organization needs consistent exercise of professionalism among managers and supervisors. Consistency exercise requires effective controlling measures like the development of a monitoring system and regular feedback on results.

5.2.4 Effectiveness and Impact: Total Weighted Average

Graph 5.2 below shows the score of effectiveness and impact of 'strategic quality planning' over three different timings of implementation of the quality system. The challenges that influence the score achieved are as shown in Appendix 5.2, whereby the top three challenges were analyzed and the findings discussed.

The finding on the score for the overall total weighted average reveals that the top three challenges have a very strong influence on the effectiveness and impact on strategic quality planning. Despite after the implementation, the effectiveness and impact of strategic quality planning does not achieve a high score (up to 4.0).

Graph 5.2 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Strategic Quality Planning

The finding can be summarized by saying that the organization requires a strategic quality planning and the culture must sustain by addressing the top three challenges, among others, that have been discovered.

5.3 ANALYSIS ON CUSTOMER FOCUS

The analysis on the core principle of 'customer focus' reveals a total of eight (8) different types of challenges were recorded for the timing '*before* the implementation' with a total of 166 responses. For the timing '*during* the implementation' a total of seven (7) challenges were recorded with a total of 134 responses; and for a timing '*after* the implementation', a total of seven (7) challenges were recorded with a total of 153 responses (Appendix 5.3).

5.3.1 Before the Implementation

The analysis on 'Customer Focus' for a timing '*before* the implementation' reveals the level of effectiveness and impact of the core principle, which achieved a score of 2.71 (quantitative) and 3.18 (qualitative) calculated based on total weighted average (Table 5.3). The effectiveness and impact of the core principle is between low and medium based on the score achieved. The score reflects the organization lacks the deep concern and focus on customers before the implementation of the quality system.

Customer focus equals competitive advantage. However, the score of effectiveness and impact achieved in this study does not reflect such a competitive advantage. The finding reveals that the business and the organization are less focused on customers. This situation arises because public municipal service of this nature, as provided by BDA, is government monopolized and the public is left to consume the services

provided. Commitment to customer satisfaction is either less discussed or focused and again left to the public to raise the issues against the organization. The ‘fire fighting’ approach to address public dissatisfaction has been a prevailing culture in the organization. The challenges discovered to strongly influence the effectiveness and impact on customer focus are ‘quality of customers service’, ‘lack of sensitivity to customers’ needs’, and ‘poor relationship with customers’ among others as listed in Appendix 5.3.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Quality of customers' service	2.79	3.22	+ve
	2. Lack of sensitivity to customers' needs	2.56	3.17	+ve
	1. Poor relationship with customers	2.81	3.12	+ve
Total Average (Weighted)		2.71	3.18	+ve
DURING	1. Lack of sensitivity to customers' needs	2.95	3.38	+ve
	2. Poor communication skills	2.69	3.14	+ve
	3. Attitude towards customers	3.29	3.14	-ve
Total Average (Weighted)		2.94	3.24	+ve
AFTER	1. Monitoring and enforcement of customer service system	3.25	3.39	+ve
	2. Lack of recognition of customers' right	3.64	3.50	-ve
	3. Lack of communication skills	3.33	3.19	-ve
Total Average (Weighted)		3.35	3.37	+ve

Table 5.3- Findings on top three challenges of core principle #3: Customer Focus

The types of challenges identified confirm the poor score achieved on the practice of Customer Focus within the organization. The employees lack the awareness and general knowledge about the importance of customers and customer service. The kind of service monopoly provided by the organization has rendered the poor reception and perception of a good customer service, which contradicts to the spirit of 'customer is the business' (Drucker, 1981). And in consonant to customer focus principle, the implementation of the quality system ISO 9000: 1994 two elements (4.3 Contract Review and 4.19 Servicing) strongly emphasized on customer focus. Particularly, the general requirements of element 4.19 are service process, systems, and documentation properly addresses service requirements. After-sales service is documented so that customer requirements are satisfied. Internal and external customers are surveyed to determine customer satisfaction. In terms of responsibilities, customer service accountabilities are defined for all appropriate personnel. Accordingly, in ISO 9000: 2000 version, the quality system aimed at continually improving performance over long-term by focusing on customers as specified under *Principle 1 – Customer Focus* organization.

5.3.2 During the Implementation

A total of seven (7) challenges were recorded to influence the effectiveness and impact of customer focus *during* the implementation. The analysis reveals a very low increase in the level of effectiveness and impact achieved '*during* the implementation' compared to the timing '*before* the implementation'. The challenges identified and believed to strongly influence the effectiveness are the 'lack of sensitivity to customers', 'poor communication skills', and 'poor attitude towards customers'.

Generally, the employees feel that the organization faces the challenge of 'poor attitude towards customers' as indicated by a negative score achieved '*during* the implementation'. The 'poor attitude towards customers' has been the organization's fit over a long period of time *before* the implementation and as such it takes a lot of time and efforts to change. Therefore, the employees need to go a lot of training on the awareness and the importance of customer service. Training should also include on communication (including on customer focus) and also to address the challenge of poor communication skills and the poor attitude (reception and perception) towards customers.

5.3.3 After the Implementation

The analysis for the timing '*after* the implementation' reveals the poor achievement on the effectiveness and impact of 'customer focus' within the organization. The challenges that largely influence such a low level of achievement are 'monitoring and enforcement of customer service system', 'recognition of customers' right', and 'poor communication skills'.

The challenge of 'poor sensitivity to customers' that prevail both *before* and *during* the implementation strongly demand for 'recognition of customers' right' as revealed *after* the implementation. The score of negative effectiveness and impact achieved for the timing '*after* the implementation' reflects poor service and may mean a high number of public (customers) complaints against the services provided. Records on public complaints compiled for the year 2001 confirm this finding (Appendix 6.1). Even after the organization has been certified as complying to ISO 9000:1994, the number of

public complaints against BDA's various services provided seem not to reduce or recede.

The challenge of 'poor communication skills' that prevails both *during* and *after* the implementation reveals a serious weakness of communication within the organization. Good communication among internal customers provides the link to overall organization performance. Therefore, the communication with both the internal and external customers needs require immediate attention to ensure consistency and long-term improvement.

Generally, the employees strongly believe that effectiveness and impact of 'customer focus' could be felt and improved by developing a customer service monitoring system or procedure and enforcing such a system organization-wide. By doing so and sustaining the communication link between the internal and external customers would reduce and remove barriers towards improving customer relationship, communication and feedback, review and evaluate the performance of customer focus activities within the organization.

5.3.4 Effectiveness and Impact: Total Weighted Average

Graph 5.3 below summarizes the score of effectiveness and impact of 'Customer Focus'. The analysis carried out (as calculated based on total weighted average) reveals that the top three challenges of 'customers focus' for the three timings achieved a very low effectiveness and impact within the organization. The findings strongly indicate that the organization requires intensive training for the organization on customer awareness and the importance of quality service from both the employees' and customers' perspectives and perceptions.

Graph 5.3 – Effectiveness and Impact: Total Weighted Average of the
Top Three
Challenges in Three Different Timings for Customer Focus

5.4 ANALYSIS ON TRAINING AND RECOGNITION

Analysis on this core principle of 'Training and Recognition' reveals a total of nine (9) different types of challenges were recorded for the timing '*before* the implementation' of the quality system with a total of 150 responses. For the timing '*during* the implementation', a total of 10 challenges were recorded with a total of 150 responses. And for the timing '*after* the implementation', a total of 11 challenges were recorded with a total of 124 responses (Appendix 5.4).

For ease of analysis, only the top three challenges are identified for clarifying the reasons underlying the effectiveness and impact score. Thus, the findings of the analysis, as below, will be discussed in that manner.

5.4.1 Before the Implementation

The analysis for the timing '*before* the implementation' reveals that the level of effectiveness and impact of core principle 'Training and Recognition' achieves an average score within the median (between low and medium). The score indicates that the effectiveness of training during this timing has not excelled well and has not given an impressive impact within the organization. In other

words, the organization is neither very serious about training nor the employees take training very lightly. However, based on the yearly budget provided and as discussed in Chapter 2 (Table 2.1, p.26), the amount of allocation given for training of employees and for training related to quality functions and activities is one of the biggest among individual state government agencies in the county. Thus, the question to say that the organization is not serious about training its employees does not arise. The findings, based on the list of challenges recorded (Appendix 5.4), reveal that the employees have cultural and attitudinal problems. On the other aspect, due recognition for training and for such an activity may have not been given accordingly. The challenges discovered to contribute to such a situation, apart from those listed in Appendix 5.4, are ‘unclear policy on training and recognition’, ‘lack of training objectives’, and the ‘lack of assessment’.

A separate interview was conducted to confirm these findings with the Human Resource Development (HRD) Section. The HRD confirms that assessment was carried out every time before and after training. The outcome of the assessment was forwarded and made known to both the management and to the employees concerned. However, on many occasions, the management ‘sat’ on it and gave neither feedbacks nor direction. At the same time, on several occasions, respective section heads and supervisors have been informed on the outcomes of such assessments; there was no action or follow-up on the part of these supervisors to evaluate the report or to assess further in terms of performance of their subordinates. When this situation prevails, the challenge discovered for the ‘lack of assessment’ as generally assumed within the organization may be justified. The response would gradually lead to a situation where training objectives may not be achieved. Again, like a domino theory, all these situations may be contributed by the challenge of ‘unclear policy on training and recognition’ but a passive attitude of all concerned seem to show very clearly. (The HRD Section may have given up after all the futile efforts).

5.4.2 During the Implementation

The analysis for ‘*during* the implementation’ reveals a very nominal increase in the score achieved in terms of total weighted average. Despite the nominal increase, the analysis reveals some increment in the effectiveness and impact of training and recognition (Table 5.4).

The challenges that influence such level of effectiveness and impact are the ‘lack of training needs analysis (TNA) and poor understanding the needs for training’, ‘poor coordination of training’, and ‘budget for training’. In other words, a high level of effectiveness and impact of the core principle may be achieved if there is proper TNA and coordination of training done. Then, further improvement may be achieved if coupled with higher and proper expenditure on the budget for training.

TIMING	CHALLENGES	EFFECTIVENESS (Average)	DIFFERENCE BETWEEN
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		Quantitative (Effect)	Qualitative (Impact)	QUANTITATIVE AND QUALITATIVE
BEFORE	1. Unclear policy on training and recognition	2.41	3.22	+ve
	2. Lack of training objectives	2.81	3.11	+ve
	3. Lack of assessment	2.86	3.14	+ve
Total Average (weighted)		2.69	3.16	
DURING	1. Lack TNA and poor understanding on the needs for training	2.71	3.17	+ve
	2. Poor coordination of training	3.14	3.50	+ve
	3. Budget for training	3.00	3.28	+ve
Total Average (weighted)		2.93	3.31	
AFTER	1. Lack TNA and poor understanding on the needs for training	3.30	3.33	+ve
	2. Monitoring, follow-ups, and feedbacks on training	3.08	3.30	+ve
	3. Poor coordination of training	3.50	3.31	-ve
Total Average (weighted)		3.24	3.31	

Table 5.4 -- Findings on top three challenges of core principle #4: Training and Recognition

Based on this analysis, the HRD section reveals that TNA has been exercised throughout the organization in compliance and by virtue of element 4.18 of the quality system ISO 9000:1994. However, the employees poorly responded to the TNA questionnaire given out to them. Many were not returned and that rendered difficulty for the HRD Section to identify the actual training needs and to coordinate such training. On the top of that, the employees do not see the actual need for training per se, especially those who have served long enough in the organization. Such reactions can be summarized by saying that many may take up training as a respite from work.

5.4.3 After the Implementation

For the timing 'after the implementation', there is very little effectiveness and impact achieved on the core principle concerned compared to the achievement during the implementation. The challenges recorded to influence the level of achievement are the 'lack of TNA and poor understanding on the needs for training', 'monitoring, follow-up, and feedbacks on training', and 'poor coordination of training'.

The analysis reveals that the challenges that prevail in both the timing, *during* and *after* the implementation, are the need for TNA and coordination of training. Thus, the finding signals that proper TNA need to be carried out organization-wide in order to enable the HRD section identify and coordinate the relevant training effectively. Monitoring performance post-training is very important. Feedbacks from such monitoring would be used to gauge the effectiveness of training and as a milestone for further or future training. Return on training investment (ROTI) largely lies on feedbacks of performance post –training.

5.4.4 Effectiveness and Impact: Total Weighted Average

The Graph 5.4 below can be interpreted in two ways: One, a low effectiveness (quantitative) gives a high impact (qualitative) over time, which is a plus to the organization; Two, the effectiveness and impact of the challenges achieved in both the timings *during* and *after* are equal, which indicate that further improvement can be achieved (apart from being maintained) by addressing the challenges discovered in both the timings.

Graph 5.4 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Training and Recognition

TNA and coordination (two common challenges discovered in both the timing of *during* and *after*) need to be carried out and done effectively. TNA is to identify the training needs and to enable the design of the relevant courses and training approaches and methodology. Whatever forms of training proposed must have objectives with the aim to achieve concrete payoffs in terms of employee results and effectiveness or ROTI. In this study, there has been very little emphasis on recognition on training. The HRD Section points out that they have been unable to propose specific recognition when opportunities for training and learning have not been fully and seriously utilized and performance directly related to training has been difficult to detect. On this note, training must have link to business strategy in order to have impact on the organization's business (Kelly, 1994) and in order to be able to plan out the kind of recognition, which will have impact on the general performance of employees.

Training approach must also consider coaching and mentoring in order to keep employees on track and help them achieve early success. Immediate application of new skills and putting them into practice on the job would enhance effective quality training.

5.5 ANALYSIS ON ENHANCING TEAMWORK

The analysis on the core principle of 'Enhancing Teamwork' records a total of 11 challenges for the timing '*before* the implementation' with a total of 163 responses. For the timing '*during* the implementation', a total of nine (9) challenges were recorded with a total of 153 responses. And for the timing '*after* the implementation', a total of eight 11 challenges were recorded with a total of 152 responses (Appendix 5.5).

5.5.1 Before the Implementation

The analysis for the timing ‘before the implementation’ reveals the following top three challenges to have influence in the implementation of the quality system in the organization: ‘Lack of teamwork and cooperation’, ‘Poor leadership role’, and ‘Communication barriers or channels’ (Table 5.5). The impact of such challenges is quite high to the organization. Such a situation arises because at the initial stage, the management did not introduce the *common language* in the organization. Everyone was confined to individual works at one’s respective workplaces within one’s own defined responsibilities and authorities and get the task done as quickly as possible. There lacks the commonality of purpose and vision or mission to forge ahead in team effort. There were no plans developed for achieving the team’s vision, mission, and objectives. Because of the lack of commonality of purpose as the ‘guiding factor’, individuals do not easily sacrifice their personal interest against the larger team’s vision. In fact, there was teamwork but lacks the *esprit de corp* in its real meaning and purpose. The cooperation did not work to the kind of cooperation which Mintzberg (1991) describes as the *pulling together of ideology*, that is, the culture of norms, beliefs and values that ‘knit a disparate set of people into a harmonious, cooperative entity’.

The analysis also reveals ‘poor leadership role’ as one of the challenges that has strong effect and impact on teamwork based on the score achieved. Leadership role lies with the managers and immediate supervisors, which also includes those at the management level. The analysis indirectly tells that those in the leadership position of various teams in the organization have not put enough efforts in their roles as leaders or supervisors. The finding strongly indicates that leaders lack the initiative and motivation for their subordinates. Leaders need plenty of stamina to lead and committed to finding and implementing a strategy or strategies that would profoundly impact customers, shareholders, and fellow employees.

In consonant with the saying “leadership by example”, leaders should hold themselves mutually accountable for the strategy’s success. They should not “try to be a team”, but rather they should deliver team performance. Team discipline that is people driven sometimes perform much better together with the leader because *they* want to, not just because a boss want them to. This kind of team discipline fits the *leadership by example*. Thus, team performance measurement is part and parcel of the leadership role. However, this study does not directly show the effective role of leadership and performance contributed by it.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Teamwork and cooperation	2.65	3.25	+ve
	2. Leadership role	3.08	3.42	+ve

	3. Communication barrier/channel	2.65	3.29	+ve
	Total Average (weighted)	2.79	3.32	
DURING	1. Teamwork and cooperation	2.83	3.38	+ve
	2. Involvement and participation	3.21	3.18	-ve
	3. Leadership role	3.36	3.32	-ve
	Total Average (weighted)	3.02	3.29	
AFTER	1. Teamwork and cooperation	3.21	3.60	+ve
	2. Involvement and participation	3.27	3.42	+ve
	3. Attitude	3.05	3.29	+ve
	Total Average (weighted)	3.19	3.48	

Table 5.5 -- Findings on top three challenges of core principle #5: Enhancing Teamwork

Another challenge recorded to have effect in enhancing teamwork is 'communication barrier/channel', which has a higher impact (3.42). The score achieved tells the importance of communication within the organization. When barrier in the channel of communication is recorded as a challenge, three assumptions can be the factors: One, either the supervisors are not open to or the subordinates are not receptive to communication from subordinates or vice versa; Two, the supervisor may not communicate further upwards to the management, and Three, there was lack of venue or opportunity for two-way communication. In any or either case is a matter of attitude and culture developed within the organization. Again, in any one case of the assumptions, the messages and the organization's big picture would not be made known down the line.

On the other hand, the supervisors and managers would be able hear grievances or views from below. When communication becomes a barrier, the sharing of organization's vision would be painfully slow in taking action, the operation would not be fully efficient, and professionalism would not produce the proficiency expected.

5.5.2 During the Implementation

A total of nine challenges were recorded to influence the effectiveness and impact on 'enhancing teamwork'. Among the nine recorded, the top three challenges recorded are 'teamwork and cooperation', 'involvement/willingness to participate', and 'leadership role'.

This analysis reveals that the two challenges, 'teamwork and cooperation' and 'leadership role', prevail *before* and *during* the implementation. When an organization launches the quality system describing the processes and benefits derived from it, a period of enthusiasm and hard work would normally follow (Tearle, 1994). Similar happenings were experienced in BDA. The employees were suddenly engaged in teamwork and cooperation to get things

moving. Almost everyone was in the mood to see the quality system working in the organization. Such a reaction was indicated in the score achieved on the impact of the challenge recorded (from 2.83 to 3.38), which indicates a high enthusiasm among the team members.

Then, gradually problems associated with implementation emerged. There was no support from their supervisors, especially the AQMRs (assistant quality management representatives). Old attitude dies hard. Teams gradually become de-motivated. Initially, there was a lot of communication, but when there was disagreement among team members very little communication took place. Everyone expects another to make progress. Many excuses were given. They have insufficient time to spend on the program implemented. Some even say to the extent that developing a procedure in the quality system does not fall in their job specifications. Other priorities, such as doing one's job, become more important. There was resistance to the additional work required to make the quality system work. Thus, the challenge of 'involvement and the willing to participate' find resistance to occur in the organization when 'teamwork and cooperation' and 'leadership role' do not function fully. In this situation, people gradually become frustrated and stressed. Definitely, this reaction gives a high negative impact in the organization as shown by the score achieved (from 3.21 to 3.18 in Table 5.5).

5.5.3 After the Implementation

A total of 11 challenges were recorded to influence 'enhancing teamwork' for the timing 'after the implementation'. Among the 11 challenges recorded, the top three are 'teamwork and cooperation', 'involvement/willingness to participate', and 'attitude'.

After the implementation, the organization should be exposed to the demands of the new quality system, to new ideas, forward-looking, and would seek for opportunities to improve and innovate. The organization should be a learning team to look for the best way to gain a competitive advantage, improve adaptability to deal with change, and to build competence and confidence. However, this analysis reveals that getting good teamwork and cooperation among team members are still slow despite the gradual increase in momentum as shown in the score achieved. Similarly, the increase in the score achieved by 'involvement/willingness to participate' seems to go in tandem with the score achieved by 'teamwork and cooperation'. Teamwork almost does not exist when there is no involvement or the willingness to participate. Both the challenges of teamwork seem to be a delicate and prevailing issue through out the three timings of implementation of the quality system. Such a situation could be a result of the next challenge recorded, that is, 'attitude', which may have been ingrained within the organization for a much longer period. Thus, the impact of the challenges recorded (based on total weighted average) shows a much higher score achieved (above the scale of 3.0) as shown in Graph 5.5 below.

5.5.4 Effectiveness and Impact: Total Weighted Average

The Graph 5.5 below the shows the aggregate of effectiveness and impact calculated based on total weighted average. The finding reveals that in enhancing teamwork, the 'ingredients' necessary (apart from or some of those recorded in Appendix 5.5) are teamwork and cooperation, leadership role, communication, and attitude. These

challenges identified have strong and positive impact in the long run and long lasting effect (as experienced based on the findings) if not addressed immediately. Positive attitude would develop if the other challenges identified could be addressed accordingly.

From the challenges recorded or identified, enhancing teamwork lies in the power of numbers and their performance. The performance of the numbers of the team against the challenges identified can be easily compared and detected where the team is now to where it was six months ago, or to where it wants to be six months in the future. Therefore, it is best to measure the team's progress towards its business goals and the team's effectiveness at the same time. As such, it is important that the team must measure its own dynamics and communication at the start of its quality activity.

Graph 5.5 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Enhancing Teamwork

5.6 ANALYSIS ON PERFORMANCE MEASUREMENT

Performance measurement on an organization requires comprehensive assessment to determine the current capabilities against the required standard or vision.

The analysis on the core principle of 'Performance Measurement' reveals a total of 11 different types of challenges were recorded for the timing "*before* the implementation' with a total of 186 responses. For the timing "*during* the implementation', a total of nine (9) challenges were recorded with a total of 179 responses. And for the timing '*after* the implementation', a total of nine (9) challenges were recorded with 142 responses (Appendix 5.6).

5.6.1 *Before* the Implementation

The analysis reveals that effectiveness and impact of 'Performance Measurement' achieve a much higher score than those achieved by other core principles analyzed prior to this for the timing '*before* the implementation'. The challenges, (apart from those identified and listed in Appendix 5.6), that influence the effectiveness of Performance Measurement are 'quality culture', 'lack of documented procedure or standard', and 'poor quality planning approach' (Table 5.6).

Generally, the employees strongly believe that 'work culture' has a higher impact for a successful implementation of the quality system with the organization. In other words, if the organization begins with a positive work culture, a positive impact would be expected as an outcome over time. Likewise, if the work culture sets with a negative beginning, a negative impact would be expected too.

With the lack of documented procedure, the organization has no standard to follow and the quality of services provided or output produced would vary greatly with wide

deviation. The score reflects such an achievement impact. Such a situation can be improved with quality systems documented and controlled. Control involves the issue, approval, review, and modification of documents.

The third challenge identified to strongly influence performance measurement is ‘poor quality planning’ for the timing ‘before the implementation’. When planning is poor it has a high impact on the quality system in terms of satisfying customers requirements in the long run through the delivery of quality products and / or services. Quality planning would ensure operational consistency and prevent non-conformances, which involves all operational personnel (including professionals, administrative, service, and production). Thus, quality planning plays a very important role, which involves in the control and improvement of quality through the acquisition of new products, processes, equipment, people, or other resources for the organization as well as identifying measurement or process capability requirements.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Poor quality culture	2.76	3.22	+ve
	2. Lack of documented procedure or standard	2.92	3.27	+ve
	3. Poor quality planning	2.88	3.21	+ve
Total Weighted Average		2.85	3.23	
DURING	1. Attitude	2.86	3.65	+ve
	2. Poor supervision	2.82	3.32	+ve
	3. Poor teamwork spirit	2.94	3.51	+ve
Total Average (weighted)		2.87	3.50	
AFTER	1. Feedback, evaluation, and monitoring system	2.98	3.44	+ve
	2. Attitude	2.80	3.48	+ve
	3. Commitment	2.74	3.33	+ve
Total Average (weighted)		2.84	3.42	

Table 5.6 -- Findings on top three challenges of core principle #6: Performance Measurement

5.6.2 During the Implementation

A total of nine (9) challenges were recorded to influence the effectiveness and impact of ‘Performance Measurement’ for the timing ‘during the implementation’ (Appendix

5.6). The top three challenges identified to strongly influence the effectiveness and impact are ‘attitude’, ‘poor supervision’, and ‘poor teamwork spirit’. In terms of effectiveness over time (and based on total weighted average), these challenges score a higher level of achievement compared to the timing ‘before the implementation’ (Table 5.6).

Poor supervision and poor teamwork spirit should not be allowed to set and prevail in the organization. The challenges would *build* up the attitude of the employees and would gradually become the organization’s work culture. (The three challenges have a very strong impact on the implementation of the quality system).

The analysis reveals that the employees generally feel that the top three challenges identified form a set of organization fit. This set of challenges should be a priority agenda to address.

5.6.3 After the Implementation

A total of nine (9) challenges were recorded to have influence on the effectiveness of ‘Performance Measurement’ for the timing ‘after the implementation’. However, the score achieved is not higher than that achieved by the challenges recorded ‘during the implementation’. The challenges identified to have influence on the effectiveness are the ‘poor monitoring, evaluation, and feedback’, ‘attitude’, and ‘poor communication’.

5.6.4 Effectiveness and Impact: Total Weighted Average

Graph 5.6 below summarizes the score of effectiveness and impact of ‘Performance Measurement’ principle prevailing within the organization. The finding of this analysis indicates that the effectiveness of the principle is low with medium-to-high impact. This finding can be interpreted by saying that the challenges identified during the various timings of implementation have a high impact to the organization’s quality performance (either positive or negative). This is to say that by addressing the weaknesses found for each challenge would improve the performance in the long run, and if otherwise or left status quo, would not help the organization to the level expected any much faster.

Graph 5.6 -- Effectiveness and Impact: Total Weighted Average of the
Top
Three Challenges in Three Different Timings for Performance
Measurement

From the findings, it can be summarized that the organization must establish performance measurement. That practice should be consistent and developed into a culture organization-wide because the end-result measures total satisfaction of employees, customers, and other stakeholders. The finding can be resolved through open discussion with employees and subordinates so as to enable them understand their strengths and weaknesses. There is a strong need for them to improve their work processes and procedures so as to enable them implement their work and decisions effectively, either individually or as part of a work team. The goal is to achieve the level of employees’ involvement and boost their morale.

5.7 ANALYSIS ON QUALITY ASSURANCE

The analysis on 'Quality Assurance' reveals that a total of six (6) challenges recorded for the timing '*before* the implementation' with a total of 197 responses. For the timing '*during* the implementation', a total of nine (9) challenges were recorded with a total of 198 responses. And for the timing '*after* the implementation', a total of eight (8) challenges were recorded with a total of 193 responses (Appendix 5.7).

5.7.1 Before the Implementation

The analysis for '*before* the implementation' records a total of six (6) challenges to have strong influence in the quality performance of the organization prior to the implementation of the quality system. The top three challenges identified are the 'lack of quality procedure', 'poor knowledge on quality', and 'lack of sense of urgency or deadline' (Table 5.7).

The finding on the 'lack of quality procedure' tells the obvious thing. Prior to the implementation of the quality system, there were no documented work procedures on how to execute certain work task, with the exception of standing general orders of public service and circulars issued by the management from time to time. With the lack of standard procedures, the approach in executing work has not been standardized and also done very much to individuals based on experience. The finding on this challenge is supported by the next finding, 'poor knowledge on quality'. The lack of standardized procedure reflects the ignorance of the organization on the general requirements of total quality. With poor knowledge on quality, the organization would not be able to define the limitations of approach to work and the probability of success within the parameters of quality.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Lack of quality procedure	3.12	3.65	+ve
	2. Poor knowledge on quality	2.59	3.03	+ve
	3. Lack the sense of urgency or deadline	2.60	3.19	+ve
Total Average (weighted)		2.79	3.32	
DURING	1. Poor knowledge on quality	2.81	3.31	+ve
	2. Poor supervision	2.59	3.34	+ve

	3. Attitude	2.78	3.41	+ve
	Total Average (weighted)	2.72	3.35	
AFTER	1. Monitoring, assessment, and feedback	2.96	3.37	+ve
	2. Work culture	3.05	3.33	+ve
	3. Recognition and appreciation of performance	3.05	3.58	+ve
	Total Average (weighted)	3.01	3.43	

Table 5.7 -- Findings on top three challenges of core principle #7: Quality Assurance

The third challenge identified, 'the lack of sense of urgency or deadline' goes together with the first two challenges that have been identified and discussed above. When an organization lacks documented procedures and has poor knowledge on quality, time no longer becomes the essence in getting the job done or deadline.

The analysis reveals that these three challenges identified have a positive effectiveness and impact in the implementation of the quality system within the organization.

5.7.2 During the Implementation

The analysis for '*during* the implementation' records a total of nine (9) challenges that have strong influence on the quality performance in the implementation of the quality system in the organization (Appendix 5.7). The top three challenges out of the nine identified are the 'poor knowledge on quality', 'poor supervision', and 'attitude'.

The challenges identified that prevail in both the timings *before* and *during* the implementation are 'poor knowledge on quality'. For obvious reason, poor knowledge on quality will find the implementation of quality activities a great hindrance. Practicing quality assurance is still a distance journey to travel in this organization based on the findings. This situation certainly has a very high effect and impact on quality as indicated in the score achieved. The organization needs to step up its efforts in conducting awareness training on quality and carrying out more practical quality improvement activities. Besides that, the employees need to read a lot about quality on their individual efforts. Visiting organizations that are in the forefront on quality movements would be meaningful and provide good benchmarks.

The next two challenges identified, 'poor supervision' and 'attitude', may have a very strong correlation with one another and even with the 'lack of knowledge on quality'. When proper supervision is not exercised, quality assurance almost doesn't exist. There can be a lot of delays and counter arguments and claims in getting the job done satisfactorily. The organization's Annual Reports between the periods of 1995 to 2000 support this statement whereby, on average, total operating expenditures, especially

on projects development only achieved up to 65 percent. The situation is worsened when attitude (poor) steps in. These two challenges identified have a very high impact in the implementation of the quality system as shown by the score achieved in this analysis (Table 5.7).

5.7.3 After the Implementation

The analysis for 'after the implementation' records a total of eight (8) challenges that have strong influence in the quality performance of the organization prior to the implementation of the quality system (Appendix 5.7). The top three challenges out of the eight identified are the 'monitoring, assessment, and feedback', 'work culture', and 'recognition and appreciation of performance'.

Undertaking exercise on quality assurance would be more effective for a research-oriented organization because certain work processes are investigative in nature, which include design reviews, work plans, drawings and specifications revision, and control changes. However, it does not require BDA to be research-oriented to exercise quality assurance process in the quest for quality excellence. As identified, BDA needs to exercise monitoring, undertake assessment, and provide feedbacks as good proposals for quality assurance. As such, quality assurance would have high impact when work performance is regularly monitored, assessed, and given feedbacks. The score achieved by this first challenge identified is higher revealing that the effectiveness of quality assurance would provide a high impact in the long run.

The analysis on the next two challenges identified, 'work culture' and 'recognition and appreciation of performance' reveals that the performance of quality assurance is affected by work culture. And work culture could either be giving due recognition and appreciation for good performance or the practice of carrying out regular monitoring, assessment, and giving regular feedbacks. Such an exercise undertaken and developed into a work culture would provide a high impact on the effectiveness of quality assurance in the long run. Such as culture would benefit BDA's quality performance in the quality journey.

5.7.4 Effectiveness and Impact: Total Weighted Average

Graph 5.7 below summarizes the score of effectiveness and impact of Quality Assurance given the challenges encountered and calculated based on total weighted average. The finding reveals that for Quality Assurance to be effective requires a comprehensive quality procedure to follow through to ensure standardization of work performance. Poor knowledge on quality is insensitive to urgency and meeting deadlines, which further reflects on the quality of supervision and the development of attitude among employees within the organization. Accordingly, the development and practice of positive organization fits like conducting monitoring and assessment exercises and giving feedbacks, and also by giving recognition and appreciation to performance where relevant and due pave way for organization's positive work culture.

Graph 5.7 -- **Effectiveness and Impact: Total Weighted Average** of the Top Three

Challenges in Three Different Timings for Quality Assurance

The finding further reveals that the challenges identified in each timing have a strong impact on quality assurance in the long run. Addressing the weaknesses identified would lead BDA heading towards a purposeful quality journey in achieving the organization's vision, mission, and objectives in a much faster time. The score achieved on the qualitative aspect in Graph 5.7 has developed such a positive trend.

5.8 FINDINGS AND DISCUSSIONS

The result of the study supports the view that the effectiveness of the implementation of the quality system ISO 9000 standard in supporting TQM in an organization is strongly influenced by the challenges of the seven (7) core principles of TQM discovered within the three timings: *Before*, *During*, and *After*. The score given for the effectiveness of the challenges (calculated based on weighted average) falls within the median between moderate (3) and high (4). This is considered within the high range of achievement.

Overall, the findings of the study reveal that there are some improvements in all the seven core principles of TQM within the organization; however, there are exceptions in the following five (5) areas:

5.8.1 Top Management Support

Top Management Support is very crucial through out the implementation of the quality system. The findings reveal that top management is not giving enough support based on the score achieved *before* and *after* the implementation. The quantitative score achieved *before* the implementation was 3.36 as compared to 3.40 achieved *after* the implementation (Table 5.8). There was a meager increase by 0.04 (1.19%), which is almost insignificant. The qualitative score achieved *before* the implementation was 3.14 as compared to 3.62 achieved *after* the implementation. There was an increase by 0.48 (15.29%). In short, these finding reveal that the effective domain of the top management support has not been *stretched* to its full potential in many areas. The display of leadership and professionalism is still at a very low level. Based on these findings, the organization as a whole need to have a further review on the direction, purpose, and values of all the teams within as to the way the top management and their respective leaders are leading the teams while steering the organization along the quality journey. In short, the role and responsibilities of those in the top management and supervisory levels need further review, which also include their commitment, competencies, communication, leadership, atmosphere created in the team, the way discussion and decisions were made, and their customer-orientation.

Core Principles	Score Achieved Before and After the Implementation of the Quality System			
	Before		After	
	Quantitative	Qualitative	Quantitative	Qualitative
1. Top Management Support	3.36	3.14	3.40	3.62

2. Customer Focus	2.71	3.18	3.35	3.37
3. Training and Recognition	2.69	3.16	3.24	3.31
4. Enhancing Teamwork	2.79	3.32	3.19	3.48
5. Performance Measurement	2.85	3.23	2.84	3.42

Table 5.8 – Findings on the Effectiveness of Five Areas of Core Principles of TQM in the Implementation of the Quality System

5.8.2 Customer Focus

As discussed in Chapter 3, customer is the driver in total-quality setting. Customer is business; business is people; and people are customers. This is the area where this organization should concentrate while in business and in order to remain in business.

The quantitative score achieved *before* the implementation was 2.71 as compared to 3.35 (23%) achieved *after* the implementation (Table 5.8). The qualitative score achieved *before* the implementation was 3.18 as compared to 3.37 (5.97%) *after* the implementation. These increments recorded are just gradual and rather very slow considering the importance of customers to the business. The increment reveals that very little effort is given to customer focus. This study also reveals that attitude of employees towards customers has not improved but getting worst of than before (negative) *during* the implementation (Table 5.3). The attitude factor has contributed to the poor focus on customers. This is again another factor where top management needs to review their direction, purpose, and values, which include commitment, competencies, communication and leadership of their entire teams and workforce.

5.8.3 Training and Recognition

Training and recognition are very important in the aspects of human contributions to organizational productivity. Training and development of professionals enhance human performance in their organizations. Such efforts to improve human performance must be valued and recognized. The findings reveal that the quantitative score achieved *before* the implementation was 2.69 as compared 3.24 achieved *after* the implementation. There was a slight increase by 0.55 (20.44%), which can be considered as gradual over time. The qualitative score achieved *before* the implementation was 3.16 and the score achieved *after* the implementation was 3.31. There was a meager increase by 0.15 (4.75%).

Building professionals is a time-consuming effort. Based on this finding, training seems not very effective and lacks focus and that will take a much longer time to enhance performance and productivity. There are many reasons to this lackadaisical performance. For one thing, the study reveals that training was poorly coordinated as recorded *after* the implementation (Table 5.4). There could be many underlying reasons for this to situation to prevail. Attending training, especially outside the organization (external training), may be taken as a respite from office work. And that training may be not effectively linked to other organizational initiatives. All these problems warrant additional attention because each may dramatize the need to move

beyond traditional training – and training as a stand-alone training change strategy – to focus on more holistic approaches to enhancing human performance.

5.8.4 Enhancing Teamwork

The findings reveal that the score achieved for teamwork in BDA is still within the normal distribution. There is nothing outstanding or exemplary about the achievement. The difference (increment) in the quantitative score achieved *before* and *after* the implementation was 0.4 (16.49). On the other hand, the quantitative score achieved (increment) *before* and *after* the implementation was 0.16 (4.82%). The findings for the timing *during* the implementation (Table 5.5) reveal that there was a decline (negative) in both the involvement and participation and leadership role in teams. These overall findings directly reveal that there is very little efforts and initiatives to get all the teams within the organization to work effectively and efficiently. Attitude factor contributes very much to this situation.

6.8.5 Performance Measurement

As discussed in Chapter 3, Performance Measurement is one of the most critical functions in quality assurance. Monitoring business process is one approach in measuring performance, which will give a competitive comparison over other methods or processes. This method will enable the organization to gather information and make analysis of such efforts (Anschutz, 1996). The analysis of the efforts may cover the following areas, which are largely related to performance:

- (i) Customer support services,
- (ii) Product-service quality,
- (iii) Internal operations performance,
- (iv) Employee related services;
- (v) Supplier performance, etc.

The findings reveal that this is one factor that was not carried out in a very strategic and professional manner in this organization. With the exception of Enhancing Teamwork, the analysis reveals that rest of the core principles of TQM specify that some form of monitoring, evaluation, and feedback were neither done (lacking) nor done in a very unprofessional approach (haphazard). The findings also reveal that the score achieved for Performance Measurement was negative (2.84) *after* the implementation (Table 5.8) as compared to *before* the implementation. This result directly tells that quality standard is either declining or no better of than it was before. Certainly, in addressing the negative result the organization need to review all its processes before the organization comes to a state of “malaise”.

There lack any information or comprehensive data on any project or quality initiatives being carried out, which greatly contradicts to either Dr. Deming or Squires (1982, p. 75) who are both well-known experts in quality, stood firmly in the conviction that statistics is the heart of quality control. The lack of feedback and statistical data available in this organization, as identified in this study will not be able tell how the organization’s plans are carried out. Thus, carrying out performance measurement will enable the organization to identify changes in overall performance and correlate those changes with improvements in product or service quality and operational performance.

5.9 FINDINGS AND DISCUSSIONS ON HYPOTHESES

During the three timings of implementation of the quality system, the challenges recorded are mainly of cultural and attitudinal types, particularly *before* the implementation. Based on the result of the findings, the first hypothesis saying that there are cultural and attitudinal challenges in the initial phase of implementation of the quality can be accepted.

The analysis also discovered a variety of challenges for each type of seven core principles as shown in the appendices from Appendix 5.1 to Appendix 5.7. The findings reveal that the impact of these challenges on the implementation of the quality system, both quantitative and qualitative, is variable, as shown in tables from Table 5.1 to 5.7. The impact of the challenges also vary in nature with a mixture of positive and negative impacts over the different timings of implementation as particularly shown in Tables 5.1, 5.3, 5.4, and 5.5. Based on these findings, the second hypothesis saying that the impact of the implementation of the quality system in BDA, both quantitative and qualitative, is variable can also be accepted partially accepted.

5.10 SUMMARY

The findings of the study have revealed that the effectiveness of the implementation of the quality system is strongly influenced by the challenges faced by the seven core principles of TQM. Attitudinal and cultural challenges seem to be the core effective domain contributing to the effectiveness in the implementation of the quality system. The findings also reveal that BDA's performance is not yet a quality organization of pride. Accordingly, both the hypotheses have been accepted based on the results of the study.

The next final Chapter 6 will summarize and conclude the research, and give recommendations for the way forward.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS FOR THE WAY FORWARD

6.0 INTRODUCTION

This chapter gives a summary of the significant results of the research and the contributions to knowledge based on the findings and discussion of the previous chapters.

This chapter also discusses some suggestions for future research and some recommendations for the way forward.

6.1 SUMMARY AND DISCUSSIONS

Based on the findings and discussions of the previous chapters, this research has five (5) key conclusions. They are also related to the suggestions and recommendations to the way forward.

6.1.1 Training is detected and suspected to be relatively weak and corrective actions are needed in some specific areas. TNA should be carried out in order to come up with proper training plans. However, employees have a strong preference to attend outside (external) training and external consultants to deliver in-house training. Internal professionals who have been on the job for a considerable period of time with all the relevant experience are not deployed. There prevail a mindset considering internal professionals as *inferior* to the external professional or consultants.

This organization is facing a serious attitude problem among employees. In areas of attitude, counseling is needed. Professionals at managerial level need to develop and apply their counseling skills; (there is no necessity to get outside consultant to do counseling for fellow employees).

6.1.2 There is a strong need to restructure the way the organization and the employees work. Employees at managerial level are separated from the rest of the employees by giving them separate rooms as a privilege. Organization with strong teamwork share common workplaces together with their supervisors and other co-employees. This kind of work setting is very common and prominent in quality-driven organization, especially among Japanese firms (in Malaysia).

6.1.3 Processes in strategic quality planning or corporate planning, as it is termed in BDA, should have linkages to performance, training, and reward. Other work processes have been long established and slow changing, which have resulted in the organization lacking in innovation (at micro-level) and/or breakthrough (at macro-level). Strategic or corporate planning should include a new way of doing things (than the used to or the traditional way). This is what Peters and Waterman (1982) said as to build some sort of a major new corporate capability – that is, to become more innovative, to be better marketers, to permanently improve labor relations, or to build some other skill which that organization neither do possesses nor practices regularly.

6.1.4 In order to develop a quality work culture in this organization, each section and each individual employee must come with a plan on how to enhance and sustain a quality and performance-based culture within the organization. This method can begin with strategic quality planning for each section or department. Each individual employee can come up with his or her plan of action, which then in aggregate becomes the section's or the department's work plans.

6.1.5 The findings reveal a strong need for this organization to develop a feedback culture organization-wide in order to capture lessons learnt. A lot of activities

and processes lack information and valuable data when monitoring, feedbacks, and evaluation are not done professionally. Results of quality activities serve as lessons learnt.

Based on the average score achieved for the challenges identified as discussed in Chapter 5 and as shown in Tables 5.1 to 5.7, none of the scores achieved reached the rate of 4 (high) calculated based on weighted average for the timing *before*, *during*, and *after*. Taking the assumption that each level of score is 20% and that will mean a score from 1 to 5 is equivalent to 100% achievement. By combining all the quantitative and qualitative scores achieved by the challenges of the seven core principles for the three different timings, the overall achievements are as shown in Table 6.1 below. Based on the scores and the assumption made for the timing *before* the implementation, this organization achieves a score of 2.77 (55.4%) for quantitative and 3.12 (62.4%) for qualitative. For the timing *during* the implementation, this organization achieves a score of 2.94 (58.8%) for quantitative and 3.35 (67.0%) for qualitative. And for the timing *after* implementation, the score achieved is 2.39 (47.8%) for quantitative and 2.64 (52.78%) for qualitative. Based on the total score achieved this far, it can be concluded that BDA's quality drive and initiatives this far is between 50% to 60%, which is very low when compared to the achievements of world-class organizations between 80% to 95%. The result tells that BDA still has a long way to achieve world-class standard unless the weaknesses highlighted in the findings, among other things, are addressed seriously and immediately.

TIMING	TOTAL WEIGHTED AVERAGE SCORE			
	Quantitative	Percentage Equivalent	Qualitative	Percentage Equivalent
Before	2.77	55.4%	3.12	62.4%
During	2.94	58.8%	3.35	67.0%
After	2.39	47.8%	2.64	52.78%

Table 6.1 – Total Achievement of BDA's Quality Drive and Initiatives Derived From the Score Achieved by the Challenges of the Seven Core Principles of TQM

6.2 LESSONS LEARNT

There are many learning points obtained from this research. This research exercise alone has been great academic experience being undertaken. However, two most prominent and obvious learning points are

- (i) *Before* and *during* the implementation of the quality system, people are turned into chaotic position (or disoriented) when new or different work procedures and processes are in placed. Under both situations it takes time for people to change or make change to happen.
- (ii) In terms of performance measurement, either of a team or individuals, a tracking and feedback system must be developed in order to measure the performance of every individual employee. With data and record performance

available, such information would assist future approaches and decision-making much easier and meaningful.

6.3 GENERALIZATION OF THE RESEARCH FINDINGS

Even though that this research is conducted locally in Bintulu and in one single organization, it is felt that the findings, particularly of Chapter 5, could be generalized to other service organizations, especially the public service sector around Bintulu and other public service organizations in the state of Sarawak. The significance of the challenges of the core principles of TQM may differ, in one way or another, among different types of service organizations kind or of services offered. For example, organizations like the Miri Municipal Council (MMC) and the Kuching North Municipal Council (KNMC) may face similar challenges in some areas on Customer Focus.

6.4 IMPLICATIONS FOR PRACTICE

Perhaps the strongest conclusion that emerges from this research analysis is the need for top management to become involved in quality activities. This is a widely accepted truth. Strategic quality planning and management poses special challenges. It requires a clear sense of direction, a recognition that quality control and quality assurance are at best partial solutions, a sensitivity to quality's multiple dimensions, and the support of functions throughout the organization.

If managers hope to succeed, they must first move aggressively to improve their understanding of quality practices and performance. If quality is to be managed, it must first be understood (Garvin, 1988; p. 221). They need to acquire more detailed information about, say, consumers' views, quality performance and levels of other organizations, and especially the sources of their own quality performance. Such efforts are likely to be costly and time-consuming, but they are essential if real progress is to be achieved.

6.5 SUGGESTIONS FOR FUTURE RESEARCH AND THE WAY FORWARD

This is the first research or research attempt ever been taken upon the implementation of the quality in this organization.

Based on the above conclusion, these are some of the suggestions and/or recommendations for the way forward:

- Monitoring and evaluation on quality activities have not been carried out in the manner it should be done. Giving feedbacks on such activities have not been developed as a culture in the organization resulting in the lack of data and performance measurement. As such monitoring, evaluation, and feedbacks have become the issue in most of the challenges of the core principles of TQM in the implementation of the quality system. A functional quality procedure should be developed in the organization's quality system whereby all quality activities should be comprehensively monitored by providing feedbacks and evaluation together with all the relevant data and information. Further research

should be carried after a lapse of considerable time in order to ascertain the effectiveness of quality activities being carried out in pursuit for quality excellence along the quality journey of this organization.

- Further research should be carried out to ascertain how corporate image has been affected by the prevailing customer service (with all the complaints pouring in based on data in Appendices 6.1 and 6.2) after the introduction and implementation of the quality system. The research should also determine how the corporate image is influenced by the effectiveness and functionality of the quality system.

- Traditional approach to training should not be the only methodology to acquire and improve knowledge, skills, and attitude of the general employees. Coaching and mentoring should be considered seriously in view of the fact that this organization has a considerable number of professionals and supervisors who have more than 15 years of experience each. Further research should be carried out to ascertain the effectiveness of training after a lapse of a considerable time after the implementation of these two training methodologies.

6.6 SUMMARY

This chapter gives the overall summary of the research. This study has managed to identify the challenges (Appendices 5.1 to 5.7) of the seven core principles of TQM that contribute to the effectiveness of the implementation of the quality system ISO 9000:1994 in the organization (BDA). This research has also contributed to enrich knowledge on the challenges of the core principles of TQM in the implementation of the quality system. Besides contributing to knowledge, the findings also could be generalized to other service industries, particularly the public service sector.

The study on the challenges of the seven core principles of TQM in the public sector organization is still at its infancy. Therefore, further research should be conducted to enrich the existing knowledge in this area. Such efforts may be costly and time-consuming, but they are essential in order to achieve real progress.

CHAPTER 4 RESEARCH METHODOLOGY

4.0 INTRODUCTION

There are various research methods and techniques available to researchers. A research method is a systematic and orderly approach taken towards the collection of data. In contrast, research techniques are set-by-step procedures in data collection.

Chapter 4 begins with a literature review on the various methods used in research, which will include the process, methodology, and analytical methods of conducting research evaluation, especially in the context of this study. The objective of this chapter is to provide a rational argument for choosing a specific method and/or technique for the research. The research objectives and an outline of method and procedure will be described following the review of relevant literature. The scope of the study, sample size and design, interview survey, analysis of the questionnaires, as well as limitations of the study will be also outlined in this chapter.

4.1 REVIEW ON VARIOUS METHODS USED IN RESEARCH

There are four basic methods in research: case study, historical review, experiment, and survey (Jankowicz, 1991). There is no definite rule for one to follow in selecting one method over another. The choice varies according to the nature and any other constraints affecting the collection of data.

The purpose of this section is to give a brief discussion on each of the methods, their advantages, and why the survey method is chosen for the research.

4.1.5 The Historical Research Method

Historical research involves studying, understanding, and explaining past events. The purpose of historical research is to arrive at conclusions concerning causes, effects, or trend of past occurrences that may help to explain present events and anticipate future events. This method is suitable, for example, for those relating to financial and accounting subjects (as for example, Orbell, 1987), and market and product performance. Historical research should be guided by a hypothesis and the steps involved in conducting the research are generally like other types of research.

The setback with the historical research method is on data collection. In most cases, data are limited to that are already available, i.e., secondary data. However, one can extend the data collection to include primary data by interviewing someone relevant other than an eyewitness, and original documents or manuscripts. The main problem with primary data obtained from interviews is that it may be incomplete; the interviewee may find it difficult to verify his account as the human memory is incapable of relating the past events correctly.

4.1.6 The Case Study Method

The case study represents a comprehensive description and explanation of the many components of a given social situation. Yin (1984) gave three situations in which one can choose the case study method:

- If one's research is following a specific theory, and it is likely that an organization has those factors or circumstances for the critical test of theory;
- In order to identify the distinguishing characteristics of the extreme or rare situation in which an organization is in; and

- If it is believed that the circumstances are sufficiently interesting and that something important will be learnt from the study.

A community study conducted by Warner (1949) on “Jonesville” was a good example of a case study, which clearly fits into one of the situations given by Yin as above (no doubt Warner’s study was more than three decades earlier than Yin’s).

Whereas most research aims directly at generalized understanding, the case study is directed initially at the comprehensive understanding of a single, idiosyncratic case. Most research attempts to limit the number of variables, the case study seeks to maximize them. One seeks to collect and examine as many data as possible regarding the subject of his study, as for example in the case of Warner’s Jonesville community study, one will learn about the history of the community, its religion, political, economic, geographical, and racial makeup, and so forth. Ultimately, on executing a case study typically seeks insights that will have a more generalized applicability beyond the single case study. Alternatively, asking the same questions in several related organizations can carry out a comparative case study. It is important to note that the sampling of different organizations is not because that one wishes to generalize the study. Instead, it is to replicate the study and to explore the possibility of different issues involved.

The advantage of a case study is that it is comprehensive and informative about an organization (Jankowicz, 1991). However, the problem with case study is that the research design is subject to influence and interruptions arising from day-to-day events happening in the organization. If the research demands multiple sources of evidence from the organization, then it could be very time consuming. Also, there may be a problem of gaining accessibility to the various departments.

4.1.7 The Experiment Study Method

The experimental study method is the only method of research that can truly test hypotheses concerning cause-effect relationships. In an experimental study, one independent variable (at least) is manipulated and its effects upon another one or more dependent variables is observed and measured, while other relevant variables, which have an influence on the relationship are controlled or eliminated.

The steps in the experimental study method are basically the same as for other types of research:

- vii. Selection and definition of a problem
- viii. Selection of subjects and measuring instruments
- ix. Selection of design
- x. Execution of procedures
- xi. Analysis of data
- xii. Formulation of conclusions

In an experiment, the data are gathered by observation of a tightly predefined range of behavior under controlled conditions. In the simplest, one’s attention is confined to two variables to determine a pattern of association between the two. In this situation, one can determine only the relationship between variables but not the direction of the relationship.

In order to determine the direction of the relationship, one should undertake two further steps. The first is to arrange events for the correct sequence of association (which variable make a difference if it happens first, and which does not). The second is to eliminate the possible influence of other variables. Elimination is possible if one has sufficient knowledge on the respondents, and the power to arrange respondents (for example, the freedom to move respondents into the appropriate groups). Gill and Johnson (1991) referred to this particular technique as Action Research.

In reality, the task to move respondents into appropriate groups may not be possible. The first is to draw a purposive sample by deliberately deciding to observe only those respondents known to have those factors requiring control. The second is to sample randomly from two different groups and assume that the effects of the various factors involved would cancel each other out (Jankowicz, 1991). The problem with these two alternatives is that each one needs to start with a fairly large population and know a lot about respondents involved.

4.1.8 The Survey Method

The survey method can be applied in a much wider variety of topics and designs. Survey research can be used profitably in the examination of many social topics and can be especially effective when combined with other methods.

Typically, survey method examines a sample from a population. In contrast to the experiment method, a survey is concerned primarily with addressing the particular characteristics of a specific sample of respondents. The format of the survey research often permits the rigorous, step-by-step development and testing of such logical explanations through the examination of hundreds (and even thousands) of survey respondents; moreover, it is possible to test complex propositions, involving several point in time (cross-sectional), or at varying times (longitudinal study) for comparative purposes.

The main purpose of using the survey method is to ensure that any subsequent assessment of the attributes of that sample population are accurate, and the findings can be generalized. In other words, they have population validity. On this note, according to Babbie (1973), survey promotes this general special scientific aim in two special ways:

- iii. A large number of cases studied in a given survey, the analyst can replicate findings among several subsets of the survey sample. For example, the replication of a finding among different subgroups strengthens the assurance that it represents a general phenomenon in society.
- iv. The careful reporting of the methodology of a given survey promotes replication later by other researchers and/or among other samples and subgroups. In this manner, the generalizability of the findings can be tested and retested.

Thus, survey is defined as a method of primary data collection based on communication with a representative sample of individuals. It involves designing and administering a questionnaire. The decision about how

respondents are to be contacted and the requisite information to be elicited depends on three factors:

- The size of the sample
- The geographical dispersion of the sample
- The complexity of the information required

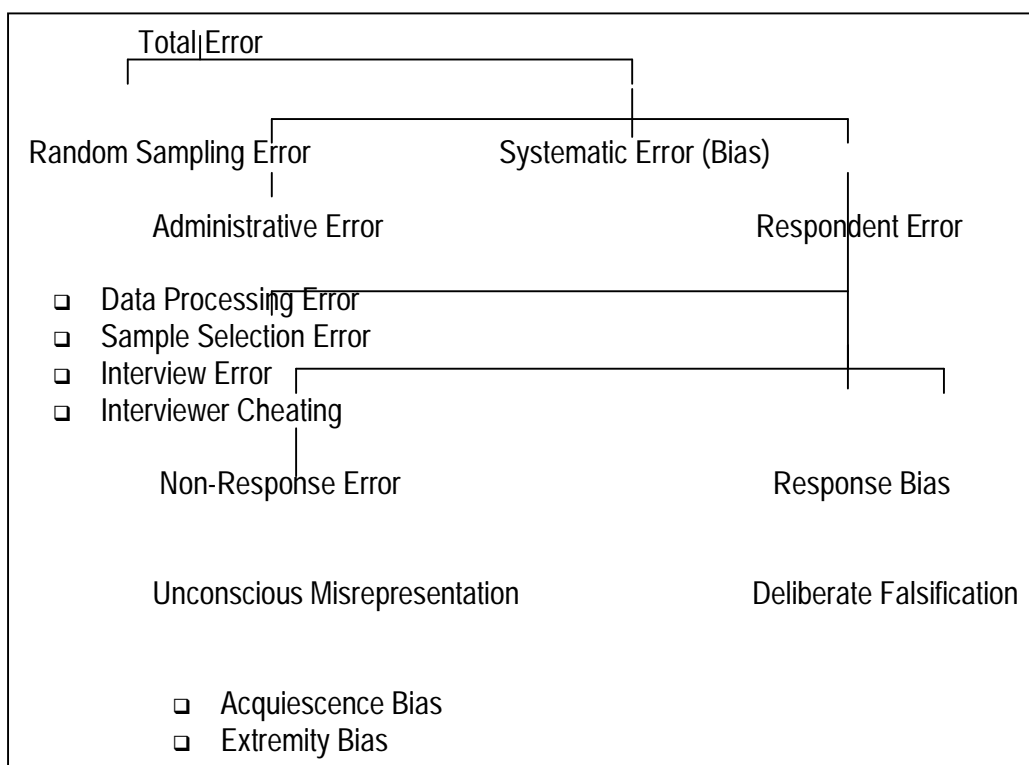
There is a choice between postal survey (self-administered by the respondent) and face-to-face interview (self-administered personally or through another party). The survey could also be conducted through the telephone (Frey, 1989). However, the complexity of the information required might necessitate personal contact.

The survey method has the advantages of providing a quick, inexpensive, efficient, and accurate means of assessing information about the population.

The main problem with the survey method is that one is dealing with reports (verbal or written), and reports are limited to what is willing and able to report in the first place. Two major types of error can occur (Figure 4.1 below):

- Random sampling error – the deviation of an observed value from its expected value due to the inherent randomness of the situation under study. Increasing the sample size could minimize this error.
- Systematic error – results from some imperfect aspects of the research design or from a mistake in the execution of the research. There are two types of systematic errors: respondent error and administrative error.

Figure 4.1 outlines the various form of survey error.



4.2 PURPOSE AND OBJECTIVES OF THE STUDY

4.2.1 Purpose

The purpose of this study is to assess the effectiveness of the implementation of the quality system ISO 9000 on BDA's total quality management

4.2.2 Research Objective

Consistent with the purpose as stated above, the study has two objectives:

Firstly, there is a general objective, which is related to the assessment of the implementation of the quality system ISO 9000 standard.

Secondly, there is a more specific objective of developing recommendations to enhance and improve the quality system in the future.

4.2.2.1 General Objective

The general objective for this study includes the following:

- To assess quantitative impact/effectiveness of the implementation of the quality system ISO 9000 in BDA;
- To survey and measure the qualitative impact/effectiveness of the implementation of the quality system on TQM of BDA; and
- To identify the challenges in implementing the quality system ISO 9000 in BDA, i.e., for explaining the effectiveness and impact concluded above.

4.2.2.2 Specific Objective

The more specific objective of the study includes the following:

- (i) To derive at findings and make conclusions from the primary and secondary data; and
- (ii) To make recommendations for the way forward.

4.3 METHOD USED IN THIS RESEARCH

The survey method is chosen over the other three methods mentioned above. The research demands for information from the various departments, divisions, section, and target or focus groups within the organization. Furthermore, there is a need to generalize this study, thus eliminating the case study and historical review methods.

As mentioned earlier on above, the experiment method focuses on the causal effect between variables, whereas the survey method addresses the relationship among variables. Thus, the experiment method is also not suitable for this research, and the survey method would be the most appropriate method for this research.

In this study, the research adopted the survey method using two types of approaches:

Firstly, there is the use of secondary data and information from internal quality audit (IQA) reports of 1999, 2000, and 2001.

Secondly, there will be interviews of focus groups, supplemented by a questionnaire survey.

The survey is used to obtain information for analysis and pattern mapping which lend themselves to interpretation and comparison. The survey will obtain facts and opinion from representative selection of the population being researched. From that sample, the researcher will then be able to present findings as being representative of the population as a whole.

4.5 SCOPE OF THE STUDY

Scoping is an important aspect in the design of this study. Determining the scope is important because common agreement and understanding is needed on what and who should be included and excluded in the study. In this context, scoping refers especially to the geographical, temporal, and respondent scopes.

4.4.1 Geographical Scope

For the purpose of this study, the geographical scope will be the three office sites of BDA in Bintulu, that is, excluding those offices in Tatau District and the Sebauh Sub-district.

4.4.2 Temporal Scope

The reference period for the study will be from September 1999 to the survey date, i.e., end of August 2001.

4.4.3 Respondent Scope

The study will cover all staff in the Management Review Committee (MRC), the Steering Committee (SC), Assistant Quality Management Representatives (AQMRs), and other activity-based committees for the focus groups interview (see Figure 4.1 below). The scope also includes of randomly selected employees from all relevant workplaces in a questionnaire survey.

Figure 4.2 - Focus Group of Survey Research

4.5 SAMPLING: SAMPLE SIZE AND DESIGN

Sampling is the process of selecting a number of units for a study in such a way that the units represent the larger group from which they were selected.

The purpose of sampling is to gain information about a population. The individuals who are selected comprise a sample; the larger group is referred to as a population. Rarely is a study conducted that includes the total population of interest as subjects. If a sample is well selected, research results based on the same sample will be generalizable to the population. The degree to which the sample represents the population is the degree to which results for one are applicable to the other.

When conducting research, the ideal is to go for random sampling with a relatively large sample size. Without random sampling, it is difficult to conceive how the research can have the necessary viability and validity. In reality, one is faced with few constraints (for example, financial, administrative, and time). In general, the minimum number of subjects believed to be acceptable for a study depends upon the type of research involved. For descriptive research, a sample of 10 percent (%) of the population is considered a bare minimum. For a smaller population, 20% or more may be required. For correlation studies at least 30 subjects are needed to establish the existence or nonexistence of a relationship. For casual-comparative studies and many experimental studies, a minimum of 30 subjects per group is generally recommended. Experimental studies with tight experimental controls may be valid with as few as 15 subjects per group (Roscoe, 1975). Dixon, Bouma, and Atkinson (1987) suggested the following rule of thumb:

- The minimum sample size is 30. This is to ensure that there is sufficient sample for analysis.
- There should at least 5 cases in each cell of the analytical table.

As far as this study is concerned, the above criteria have been complied with.

In deciding who should be interviewed, it was decided that this includes all Committees, staff and a sample of all other staff at all level of the respective departments, divisions, and sections of BDA's organization structure or chart within the Bintulu proper where the quality system ISO 9000 is implemented effectively. This is to ensure a fairly representative picture of the total population of the samples, which are relevant to this study only.

Because of the non-response, the sample design included a "larger than need" sample size to allow for 33% non-response.

BDA has a total of 629 employees. Out of the numbers, a total of 33 employees are employed in the Sebauh sub-district and the Tatau District. In both localities, the Quality System under the ISO 9000 standard has neither been extended nor implemented. Having that in mind, this study will focus on the 596 employees, which forms the population of the study, whereby the

Quality System ISO 9000 is binding upon them to implement. Out of total population (for all categories), the sample size of 199 for the questionnaire survey (planned/actual) is shown Table 4.1 below:

Department, Division, Sections, and Units ^{4.1}	HRM / CPQ	PERBIND A/ TUMBINA/ MWS	PDD/BE D	POA/S EC	Total
Planned	20	125	29	25	199
Actual	17	93	23	24	157
Percentage of Response	85	74.4	79.3	96	78.9

Table 4.1 – Planned and Actual Respondents of Survey

From the total above, the actual non-response of 21.1% from the sample population (various workplaces: divisions, department, sections, and units) is lower than the 33% allowed.

For the activity-based committee, the planned/actual figures are as Table 4.2 below:

Activity- based Committee Planned / Actual	Quality Control Circles (QCC)	5S – Good Housekeeping Committee	Employee Suggestion Scheme (ESS)	Total
Planned	20	14	13	47
Actual	18	13	13	44
Percentage of Response	90	92.8	100	93.6

Table 4.2 – Planned/Actual Respondents of Activity-based Committee

From the total above, the actual non-response of 6.4% from the activity-based committees is very much lower than the 33% allowed.

^{4.1} Legend to the acronyms used Table 4.1:

HRM: Human Resource Management Division; **CPQ:** Corporate Planning and Quality Management Division; **PERBINDA:** Municipal Services Division; **TUMBINA:** Plants (Flora) and Wildlife (Fauna) Section; **MWS:** Maintenance and Workshop Division; **PDD:** Project Development Division; **BED:** Building and Engineering Design Division; **POA:** Property and Office Administration Division; **SEC:** Office of the Company Secretary

For the focus groups interview, the planned/actual figures are as in Table 4.3 below:

Types of Committee Planned / Actual	Management Review Committee (MRC)	Steering Committee (SC)	Assistant Quality Management Representatives (AQMRs)	Total
Planned	8	8	12	28
Actual	8	7	9	24
Percentage of Response	100	87.5	75	85.7

Table 4.3 – Planned/Actual Response of Various Types of Committee

From the total above, the percentage of non-response from the various established committees is 14.3%, which is again very much lower than the 33% allowed.

4.5.1 Questionnaire Design

Whether working from a rigorously deduced theory or from a set of tentative suspicions or curiosities, the researcher at some points is faced with a set of unspecified, abstract concepts that he believes will assist his understanding of the world around him. In survey research, these concepts must be converted into questions in a questionnaire in order to permit the collection of empirical data relevant to analysis (Babbie, 1973).

Designing a questionnaire can be a difficult task. A properly designed questionnaire elicits the precise information that the researcher wants. A poorly designed questionnaire yields data that are not only confusing, but also difficult to analyze, and of little value.

In designing a questionnaire, the first step is to clearly define the focus of the research (Moser and Kalton, 1972). The content of the questionnaire should elicit the responses that one is most interested in, without much extraneous information.

In the realm of questions, the researcher has two options of questionnaire design: open-ended and closed-ended. Open-ended question allows the respondent to provide his own answer to the question using his own words. A drawback to the open-ended question is that the respondent may not understand exactly what is required, or will give answers that are essentially irrelevant to the researcher's intent. Summarizing the data can also be difficult, and there is a need to decide how to classify the different answers.

In the case of closed-ended questions, the respondent is asked to select his answer from among a list or a set of alternatives provided by the researcher. Closed-ended questions are very popular in survey research since they provide a greater uniformity of responses. These responses are, therefore, easier to summarize and analyze. However, the information from a closed-

ended questionnaire is not as “rich” as the information from the open-ended questionnaire.

In terms of what information to collect for the survey, a common set of questionnaire was developed for the following respondents:

4.5.1.1 Focus Group Interview

For the focus group interview (involving 24 respondents), qualitative feedbacks on challenges were collected to supplement and further clarify the qualitative score on “impact.”

4.5.1.2 Questionnaire Survey

The quantitative responses in terms of effectiveness (effect) were collected through questionnaire survey, which had 199 responses.

Appendix 4.1 shows a set of the questionnaire used in this survey.

4.8 LIMITATIONS OF THE STUDY

There are certain limitations involved in the conduct of sample survey, which need to be highlighted so that the findings in the report can be read in the right perspective.

In the case of this study, the prominent limitations encountered are and not limited to as below:

- (a) The planned number of respondents and distributed with questionnaire is 199. The final response is 78.9%, which means that 21.1% is ‘non-response’. The non-response could contribute to the representativeness of the information gathered, whereby the questionnaire was never returned to the administrator (despite several reminders) or simply *lost* in the internal mail.

Common in most statistical surveys, there is a certain degree of errors arising from the respondents. In this study, the errors include the followings:

(i) Understanding the Questionnaire

During the interview and administration of the questionnaire, a number of respondents have problems in understanding the requirements of the questions, particularly those with limited English vocabulary and those educated in the Malay medium of instruction.

Reasonable clarifications and explanations were given to the respondents having this kind of problems in order to facilitate them in filling with the correct response. The extent of this problem is unknown to those respondents who did not ask any question.

(ii) Translation Problem

In a number of cases, responses to questions posed in the questionnaire were answered and/or written in the Malay language. A considerable amount of time was taken to translate the Malay language to English. The extent of accuracy of the translation could contribute to the representative of the information gathered.

(iii) **Halo-Effect**

As commonly experienced in many surveys, there is a 'halo-effect' under which respondents are biased towards giving favorable or positive answers and compared with giving unfavorable or negative answers.

The above-mentioned non-sampling errors arising from the quality of information gathered as given by the respondents will affect the results and findings of the study.

4.8 SUMMARY

This chapter has addressed the different methods and techniques used in the survey. Also presented in this chapter are the research objectives, methods, coverage, survey and questionnaire design and sample size, scope of the study, an outline of interview survey, and data analysis framework of the survey.

Because of the familiarity with the technique and relevancy, the survey method is chosen for this study, which was used for both the focus interview (to collect qualitative feedbacks on "impact") and questionnaire survey (to collect quantitative responses on "effect").

The next chapter, Chapter 5, will present the results of the study on the analysis, findings, and discussion points.

CHAPTER 5 – RESULTS: ANALYSES, FINDINGS, AND DISCUSSIONS

5.0 INTRODUCTION

The purpose of this stage of the research is to present the analysis and findings on the effectiveness and challenges generally experienced by the organization in three different timings – before, during, and after – in the implementation of the quality system under ISO 9000 in supporting the seven core principles of TQM. The respondents rate the extent of effectiveness (effect and impact) of the challenges over the three different timings by giving scores ranging from 1 (very low), 2 (low), 3 (moderate), 4 (high), and 5 (very high).

This review covers the analysis of the data and information collected from the surveys in the seven core principles of TQM as follows:

- viii) Top Management Support,
- ix) Strategic Quality Planning,
- x) Customer Focus,
- xi) Training and Recognition,
- xii) Enhancing Teamwork,
- xiii) Performance Measurement, and
- xiv) Quality Assurance.

The analysis also discovered that there are many challenges for each type of the seven core principles of TQM. However, for ease of analysis only the top three challenges of each core principle are identified for clarifying the reasons underlying the effectiveness and impact score.

It is important to understand the difference between ‘effectiveness’ and ‘impact’ as defined for this study. Explaining the difference will help better understanding of the analysis later. The key differences, although there are commonalities, between the two are as follows:

- ‘Effective’ is more objective in achieving something which is fixed. In terms of timing in outcome, the result is more immediate.
- ‘Impact’ is more subjective against individual’s based belief or opinion. In terms of timing in outcome, the result is long-term, wider perspective, and deeper (i.e., how deep it is on the person).

The findings of the analysis on the core principles are discussed and presented below under three different timings of implementation of the quality system: *before*, *during*, and *after*.

5.8 ANALYSIS ON TOP MANAGEMENT SUPPORT

Analysis on this core principle of ‘Top Management Support’ reveals a total of 13 different types of challenges were recorded for the timing ‘*before* the implementation’ of the quality system with a total of 174 responses. For the timing ‘*during* the implementation’, a total of ten (10) challenges were recorded with a total of 134 responses. And for the timing ‘*after* the implementation’, a total of nine (9) challenges were recorded with 104 responses (Appendix 5.1).

As mentioned earlier in the introduction above, for ease of analysis only the top three challenges are identified for clarifying the reasons underlying the effectiveness and impact score. Thus, the findings of the analysis of this core principle, top management support, will be discussed in that manner.

5.8.1 Before the Implementation

The analysis for ‘*before* the implementation’ reveals the general opinion within the organization on the effectiveness (effect and impact) of top management support in the

implementation of the quality system. The effectiveness achieved for the total average (weighted) shows a negative score (Table 5.1). This trend is normal, in many instances, for the introduction of any new quality activity in an organization. It takes time for anything that is new to be accepted and assimilated as part of the organization's culture. A positive impact can only be seen over time (long-term). More over, the implementation of the quality system ISO 9000:1994 in the organization was by virtue of the government circular, which makes it mandatory for all government departments and agencies to do so before the end of year 2000. (The implementation of the system was not the original idea of the top management). Also, the quality system was new to everyone in the organization, and as such, it takes time for everyone to see the impact of the system within the organization.

The analysis further reveals that the score on the effectiveness was strongly influenced by three challenges: 'lack of knowledge and experience on the quality system', 'lack of commitment,' and 'complacency' (Table 5.1). This finding carries some weight because the relevant government circulars (Development Action Circulars No. 2/96 and No. 1/97) have requested all government organizations and agencies to implement the system within their organizations as early as 1996. The first few years of *dormancy* of the top management to implement the quality system was a reflection of their 'lack of knowledge and experience' about the quality system and also a 'wait and see' attitude for other organizations to implement first rather than to be a leader. This course of action reflects the 'lack of commitment' and 'complacency' on the part of top management. (This has been discussed in Chapter 1, p. 3). However, it took BDA to implement the system and got certified four years later. Due consideration should also be given that other challenges (as listed in Appendix 5.1) do influence the top management support, in one-way or another.

5.8.2 During the Implementation

The analysis for 'during the implementation' reveals a positive change in the effectiveness and impact of top management support. The presence of top management during the implementation is very important to show commitment and support for any quality activity. Such a gesture of top management support normally would have effectiveness and impact on any quality activity implemented. Accordingly, the analysis reveals the increase of the effectiveness and impact of top management support on the total average (weighted) by a score of 3.26 (7.95%). Such a nominal increase was influenced by the challenges on the part of management, which are the 'lack of guidance and supervision', 'lack of knowledge and experience', and 'lack of role play (leadership)'. Some of the challenges are similar and confirm to what Kelly (1994) had listed as very important elements of top management support for the success of any quality activity being implemented. Such a score of effectiveness and impact achieved is not singly influenced by the top three challenges as identified. Other challenges during the implementation like those listed in Appendix 5.1 also do contribute to such score.

Most prominent in the analysis is that the challenge factor of "lack of knowledge and experience", which seems to prevail in both '*before* and *during* the implementation'. The score given on the effectiveness for quantitative aspect before the implementation was 2.89, which equals to the score achieved on the qualitative aspect (impact) during the implementation. This finding reveals that top management lack the seriousness and drive to address the challenge of "lack of knowledge and experience" on their part about the

quality system even during the implementation stage, whereby the impact achieved is negative (Table 5.1).

On the whole, the effectiveness and impact achieved for the total weighted average of the top three challenges during the implementation shows a positive achievement for the general organization with the exception of the challenge on the ‘lack of knowledge and experience’ on the quality system (which gives a negative score).

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Lack of knowledge and experience on the quality system	2.89	3.07	+ve
	2. Lack of commitment	4.5	3.25	-ve
	3. Complacency	3.05	3.15	+ve
	Total Average (weighted)	3.36	3.14	-ve
DURING	1. Lack of guidance and supervision	2.91	3.24	+ve
	2. Lack and knowledge and experience	3.00	2.89	-ve
	3. Lack of role play	3.27	3.53	+ve
	Total Average (weighted)	3.02	3.26	+ve
AFTER	1. General awareness and knowledge	3.19	3.52	+ve
	2. Develop a monitoring system for quality	3.62	3.62	=
	3. Strong support and commitment to resources and time	3.50	3.78	+ve
	Total Average (weighted)	3.40	3.62	+ve

Table 5.1- Findings on top three challenges of core principle #1: Top Management Support

5.8.3 *After the Implementation*

The effectiveness and impact of any activity that has taken place are normally seen post-activity. The extent of effectiveness and impact takes time to be seen; and again the duration of time taken depends on the response received to such an activity.

The analysis for ‘*after the implementation*’ reveals that the challenges of top management support are in the areas of ‘general awareness and knowledge’, ‘development of a monitoring system for quality’, and ‘support and commitment to resources and time’ (Table 5.1).

The finding reveals that there is a positive increase in the general awareness and knowledge of top management after the implementation of the quality system. Such level of awareness has contributed to a very strong support and commitment to resources and

time (quantitative score of 3.50 and qualitative score of 3.78). Accordingly, the average quantitative score for the challenge factor of 'Development of Quality Monitoring System' equals to the average qualitative score (3.62). This score means that there has been no development and no improvement in the monitoring system within organization. The organization has a strong drive for quality improvement; however, the efforts and quality culture are wasted when a monitoring system has not been developed and maintained. With poor monitoring system developed, the organization would find it difficult to plot a progress milestone chart.

On the whole, the effectiveness achieved (quantitative and qualitative) for the weighted average of the top three challenges for *after* the implementation indicates some achievement for top management support.

5.1.4 Effectiveness and Impact: Total Weighted Average

The Graph 5.1 below shows the extent of effectiveness and impact of top management support over the three different timings whereby top three challenges discovered in each of the timings have strong influence over the achievement. In terms of effectiveness for '*before* the implementation', the low score achieved for the impact is typical in many organizations. It takes time to accept and develop a new culture in an organization. It also takes a lot of sacrifices and consensus.

The effectiveness of top management support was low (negative) during the implementation. The score achieved (3.02) indicates that the objective of the organization cannot be achieved faster than expected. This organization has a weak leadership. However, one must note that at this stage management is facing a process of change and transformation. On the other hand, the impact score for '*during* the implementation' was much higher than the effectiveness expected.

Graph 5.1 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Top Management Support

The analysis reveals the effectiveness and impact for '*after* the implementation' was higher. The score of effectiveness and impact for top management support was even higher (Graph 5.1), which means that there is a gradual increase in the 'top management support' despite the challenges identified. In short, the level of awareness among top management managers has increased greatly on the need and importance of having a documented quality system in the organization.

5.9 ANALYSIS ON STRATEGIC QUALITY PLANNING

The analysis on the core principle of 'Strategic Quality Planning' reveals a total of 10 different types of challenges were recorded for the timing '*before* the implementation' with a total of 189 responses. For the timing '*during* the implementation', a total of 12 challenges were recorded with a total of 165

responses. And for a timing ‘*after* the implementation’, a total of 12 challenges were recorded with 163 responses (Appendix 5.2).

For ease of analysis, only the top three challenges are identified for clarifying the reasons underlying the effectiveness and impact score of ‘strategic quality planning’ for the three different timings of implementation of the quality system.

5.9.1 *Before* the Implementation

The analysis for ‘*before* the implementation’ reveals the effectiveness of strategic quality planning culture in the organization scored a lower total average (2.86) as shown in Table 5.2. However, the score on impact was higher (3.48). This finding is interesting to note.

The score of effectiveness and impact achieved are largely influenced by the challenges such as ‘unclear TQM objectives’, ‘lack of practice of professionalism’, and ‘quality policy not well emphasized’ (Table 5.2). This finding reveals that the organization is rather *floating* with unclear direction, purpose, and lacking in values.

Some of the challenges recorded partly concur with the product-quality based model designed by Evans and Lindsay (1993). The model (as discussed in Chapter 3, p. 39) shows that broad product-quality decisions are made at the top management level, objectives and systems to support the strategic goals and objectives are developed at the middle management, and detailed procedures for operating control are carried out at first-line management level. As such, the finding reveals that the management of this organization, at the respective levels, did not emphasized enough the organization’s policy and quality objectives in order to be fully understood organization-wide. If they do, the policy and/or the objectives are not well understood down the line. Other challenges to this situation are the ‘lack of formulation of strategies’ and ‘lack of follow-up and feedback’ (Appendix 5.2). All these findings reveal the lack of practice of professionalism among managers at the various levels within the organization. With the lack of professionalism, this organization will have an uphill task of achieving the status of knowledge-based employees (or k-workers) because knowledge, skills, and training provided are not practiced. This kind of culture is not organizational fitting and if not addressed, it may run the organization down with the development of unhealthy attitude.

In fact, the organization has been introduced with the practice of strategic quality planning through the implementation of TQM in 1994. Soon later, the organization was introduced and initiated some quality improvement activities (QIAs) like the Japanese 5S version of good housekeeping. Prior to the implementation of TQM, the organization was very active in QCC (problem-solving) activities in mid-1980s (Biha, 1987). Prior knowledge and some skills on the implementation of the QIAs introduced earlier may have bearing on the effectiveness and impact of strategic quality planning in the organization.

TIMING	CHALLENGES	EFFECTIVENESS (Average)	DIFFERENCE BETWEEN
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		Quantitative (Effect)	Qualitative (Impact)	QUANTITATIVE AND QUALITATIVE
BEFORE	1. Unclear TQM Objectives	2.64	3.48	+ve
	2. Lack of Practice of Professionalism	2.77	3.38	+ve
	3. Quality Policy Not Emphasized	3.18	3.55	+ve
	Total Average (weighted)	2.86	3.48	+ve
DURING	1. Strong support of facilities and resources	3.16	3.34	+ve
	2. Lack of support and coordination efforts	3.17	3.58	+ve
	3. Poor guidance	3.08	3.35	+ve
	Total Average (weighted)	3.13	3.41	+ve
AFTER	1. Lack of monitoring system and follow-up	2.97	3.55	+ve
	2. Lack of feed back on results	3.18	3.44	+ve
	3. Lack of effective control measures	3.05	3.67	+ve
	Total Average (weighted)	3.06	3.54	+ve

Table 5.2- Findings on top three challenges of core principle #2: Strategic Quality Planning

5.9.2 *During the Implementation*

Having been exposed to QIAs, it is assumed that the organization has developed and established planning culture within, which form the basis for all managerial activities like organizing, directing, and controlling. For that reason, a total of 12 managers (mainly division and sections heads) were appointed as Assistant Quality Management Representatives (AQMRs) in the implementation of the quality system with the intention that they would coordinate the implementation and accelerate the development of the quality system within their respective workplaces and down the line more effectively. This planning approach, as claimed by Evans and Lindsay (1993), would reduce duplication of efforts, minimize cost of achieving objectives, create consistency and coordination mechanism for future activities, and establish a basis for control. However, the analysis for '*during the implementation*' reveals the effectiveness and impact of strategic quality planning in the organization achieve a lower total weighted average compared to the score achieved for '*before the implementation*'.

The analysis further reveals that the challenges that strongly influence the effectiveness (effect and impact) are 'strong support of facilities and resources', 'lack of support and coordination efforts', and 'poor guidance'. The score achieved on the effectiveness and impact of the challenge factor 'strong support of facilities and resources' is high. However, the lack of support and poor coordination efforts and poor guidance given during implementation of the quality system, the challenge factor of support of

facilities and resources given would be of little help. The two former challenges generated by the human factor seem prevail over it.

The QIAs that have been introduced in the organization should develop a corporate culture leading for change much needed for growth and development of the organization into the future. This approach is what McLaughlin (1997) describes as 'sustaining cultural change'. Ironically, the finding in this analysis does not strongly reveal such an outcome. The knowledge, skills, and experience generated from the QIAs that had been introduced prior to the implementation of the quality system neither last nor develop into a culture within the organization. The challenge factor 'lack of practice of professionalism' may hold water among the managers within the organization. In other words, there should be consistent practice or exercise of professionalism within the organization, especially among managers in order to sustain cultural change.

A very simple approach to strategic quality planning introduced to the organization was the *Deming Cycle* of the PDCA (**P**lan, **D**o, **C**heck, **A**ct). This approach has been introduced to almost all the employees during the introduction of QCC in the mid- and late 1980s. Knowledge learnt on such practices was wasted when not applied. Such a reaction confirms the 'lack of practice of professionalism', which is a deviation from the established norm of excellent organization.

5.9.3 After the Implementation

Generally, after all the implementation of the QIAs and the quality system in- placed, a culture on strategic quality planning should have developed well and improvised within the organization. However, the analysis for 'after the implementation' reveals a very minimal increase in the total weighted average score on the effectiveness and impact as compared to the timings *before* and *during* the implementation. The challenges contributing to this level of achievement are the 'lack of monitoring system or follow-up', 'lack of feedback on results', 'lack of effective control measures'. The organization still need a lot of efforts in the area of strategic quality planning by all the challenges recorded '*before, during, and after* the implementation'. In consonant with sustaining cultural change, the organization needs consistent exercise of professionalism among managers and supervisors. Consistency exercise requires effective controlling measures like the development of a monitoring system and regular feedback on results.

5.2.4 Effectiveness and Impact: Total Weighted Average

Graph 5.2 below shows the score of effectiveness and impact of 'strategic quality planning' over three different timings of implementation of the quality system. The challenges that influence the score achieved are as shown in Appendix 5.2, whereby the top three challenges were analyzed and the findings discussed.

The finding on the score for the overall total weighted average reveals that the top three challenges have a very strong influence on the effectiveness and impact on strategic quality planning. Despite after the implementation, the effectiveness and impact of strategic quality planning does not achieve a high score (up to 4.0).

Graph 5.2 – Effectiveness and Impact: Total Weighted Average of the Top Three

Challenges in Three Different Timings for Strategic Quality Planning

The finding can be summarized by saying that the organization requires a strategic quality planning and the culture must sustain by addressing the top three challenges, among others, that have been discovered.

5.10 ANALYSIS ON CUSTOMER FOCUS

The analysis on the core principle of ‘customer focus’ reveals a total of eight (8) different types of challenges were recorded for the timing ‘before the implementation’ with a total of 166 responses. For the timing ‘during the implementation’ a total of seven (7) challenges were recorded with a total of 134 responses; and for a timing ‘after the implementation’, a total of seven (7) challenges were recorded with a total of 153 responses (Appendix 5.3).

5.3.1 Before the Implementation

The analysis on ‘Customer Focus’ for a timing ‘before the implementation’ reveals the level of effectiveness and impact of the core principle, which achieved a score of 2.71 (quantitative) and 3.18 (qualitative) calculated based on total weighted average (Table 5.3). The effectiveness and impact of the core principle is between low and medium based on the score achieved. The score reflects the organization lacks the deep concern and focus on customers before the implementation of the quality system.

Customer focus equals competitive advantage. However, the score of effectiveness and impact achieved in this study does not reflect such a competitive advantage. The finding reveals that the business and the organization are less focused on customers. This situation arises because public municipal service of this nature, as provided by BDA, is government monopolized and the public is left to consume the services provided. Commitment to customer satisfaction is either less discussed or focused and again left to the public to raise the issues against the organization. The ‘fire fighting’ approach to address public dissatisfaction has been a prevailing culture in the organization. The challenges discovered to strongly influence the effectiveness and impact on customer focus are ‘quality of customers service’, ‘lack of sensitivity to customers’ needs’, and ‘poor relationship with customers’ among others as listed in Appendix 5.3.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Quality of customers’ service	2.79	3.22	+ve
	2. Lack of sensitivity to customers’ needs	2.56	3.17	+ve
	2. Poor			

	relationship with customers	2.81	3.12	+ve
Total Average (Weighted)		2.71	3.18	+ve
DURING	1. Lack of sensitivity to customers' needs	2.95	3.38	+ve
	2. Poor communication skills	2.69	3.14	+ve
	3. Attitude towards customers	3.29	3.14	-ve
Total Average (Weighted)		2.94	3.24	+ve
AFTER	1. Monitoring and enforcement of customer service system	3.25	3.39	+ve
	2. Lack of recognition of customers' right	3.64	3.50	-ve
	3. Lack of communication skills	3.33	3.19	-ve
Total Average (Weighted)		3.35	3.37	+ve

Table 5.3- Findings on top three challenges of core principle #3: Customer Focus

The types of challenges identified confirm the poor score achieved on the practice of Customer Focus within the organization. The employees lack the awareness and general knowledge about the importance of customers and customer service. The kind of service monopoly provided by the organization has rendered the poor reception and perception of a good customer service, which contradicts to the spirit of 'customer is the business' (Drucker, 1981). And in consonant to customer focus principle, the implementation of the quality system ISO 9000: 1994 two elements (4.3 Contract Review and 4.19 Servicing) strongly emphasized on customer focus. Particularly, the general requirements of element 4.19 are service process, systems, and documentation properly addresses service requirements. After-sales service is documented so that customer requirements are satisfied. Internal and external customers are surveyed to determine customer satisfaction. In terms of responsibilities, customer service accountabilities are defined for all appropriate personnel. Accordingly, in ISO 9000: 2000 version, the quality system aimed at continually improving performance over long-term by focusing on customers as specified under *Principle 1 – Customer Focus* organization.

5.3.2 During the Implementation

A total of seven (7) challenges were recorded to influence the effectiveness and impact of customer focus *during* the implementation. The analysis

reveals a very low increase in the level of effectiveness and impact achieved 'during the implementation' compared to the timing 'before the implementation'. The challenges identified and believed to strongly influence the effectiveness are the 'lack of sensitivity to customers', 'poor communication skills', and 'poor attitude towards customers'.

Generally, the employees feel that the organization faces the challenge of 'poor attitude towards customers' as indicated by a negative score achieved 'during the implementation'. The 'poor attitude towards customers' has been the organization's fit over a long period of time *before* the implementation and as such it takes a lot of time and efforts to change. Therefore, the employees need to go a lot of training on the awareness and the importance of customer service. Training should also include on communication (including on customer focus) and also to address the challenge of poor communication skills and the poor attitude (reception and perception) towards customers.

5.3.3 After the Implementation

The analysis for the timing 'after the implementation' reveals the poor achievement on the effectiveness and impact of 'customer focus' within the organization. The challenges that largely influence such a low level of achievement are 'monitoring and enforcement of customer service system', 'recognition of customers' right', and 'poor communication skills'.

The challenge of 'poor sensitivity to customers' that prevail both *before* and *during* the implementation strongly demand for 'recognition of customers' right' as revealed *after* the implementation. The score of negative effectiveness and impact achieved for the timing 'after the implementation' reflects poor service and may mean a high number of public (customers) complaints against the services provided. Records on public complaints compiled for the year 2001 confirm this finding (Appendix 6.1). Even after the organization has been certified as complying to ISO 9000:1994, the number of public complaints against BDA's various services provided seem not to reduce or recede.

The challenge of 'poor communication skills' that prevails both *during* and *after* the implementation reveals a serious weakness of communication within the organization. Good communication among internal customers provides the link to overall organization performance. Therefore, the communication with both the internal and external customers needs require immediate attention to ensure consistency and long-term improvement.

Generally, the employees strongly believe that effectiveness and impact of 'customer focus' could be felt and improved by developing a customer service monitoring system or procedure and enforcing such a system organization-wide. By doing so and sustaining the communication link between the internal and external customers would reduce and remove barriers towards improving customer relationship, communication and feedback, review and evaluate the performance of customer focus activities within the organization.

5.3.4 Effectiveness and Impact: Total Weighted Average

Graph 5.3 below summarizes the score of effectiveness and impact of 'Customer Focus'. The analysis carried out (as calculated based on total weighted average)

reveals that the top three challenges of 'customers focus' for the three timings achieved a very low effectiveness and impact within the organization. The findings strongly indicate that the organization requires intensive training for the organization on customer awareness and the importance of quality service from both the employees' and customers' perspectives and perceptions.

Graph 5.3 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Customer Focus

5.11 ANALYSIS ON TRAINING AND RECOGNITION

Analysis on this core principle of 'Training and Recognition' reveals a total of nine (9) different types of challenges were recorded for the timing '*before* the implementation' of the quality system with a total of 150 responses. For the timing '*during* the implementation', a total of 10 challenges were recorded with a total of 150 responses. And for the timing '*after* the implementation', a total of 11 challenges were recorded with a total of 124 responses (Appendix 5.4).

For ease of analysis, only the top three challenges are identified for clarifying the reasons underlying the effectiveness and impact score. Thus, the findings of the analysis, as below, will be discussed in that manner.

5.4.1 Before the Implementation

The analysis for the timing '*before* the implementation' reveals that the level of effectiveness and impact of core principle 'Training and Recognition' achieves an average score within the median (between low and medium). The score indicates that the effectiveness of training during this timing has not excelled well and has not given an impressive impact within the organization. In other words, the organization is neither very serious about training nor the employees take training very lightly. However, based on the yearly budget provided and as discussed in Chapter 2 (Table 2.1, p.26), the amount of allocation given for training of employees and for training related to quality functions and activities is one of the biggest among individual state government agencies in the county. Thus, the question to say that the organization is not serious about training its employees does not arise. The findings, based on the list of challenges recorded (Appendix 5.4), reveal that the employees have cultural and attitudinal problems. On the other aspect, due recognition for training and for such an activity may have not been given accordingly. The challenges discovered to contribute to such a situation, apart from those listed in Appendix 5.4, are 'unclear policy on training and recognition', 'lack of training objectives', and the 'lack of assessment'.

A separate interview was conducted to confirm these findings with the Human Resource Development (HRD) Section. The HRD confirms that assessment was carried out every time before and after training. The outcome of the assessment was forwarded and made known to both the management and to the employees concerned. However, on many occasions, the management 'sat' on it and gave neither feedbacks nor direction. At the same time, on several occasions, respective section heads and supervisors have been informed on the outcomes of such assessments; there was no action or follow-up on the part of these supervisors to evaluate the report or to assess

further in terms of performance of their subordinates. When this situation prevails, the challenge discovered for the ‘lack of assessment’ as generally assumed within the organization may be justified. The response would gradually lead to a situation where training objectives may not be achieved. Again, like a domino theory, all these situations may be contributed by the challenge of ‘unclear policy on training and recognition’ but a passive attitude of all concerned seem to show very clearly. (The HRD Section may have given up after all the futile efforts).

5.4.2 During the Implementation

The analysis for ‘during the implementation’ reveals a very nominal increase in the score achieved in terms of total weighted average. Despite the nominal increase, the analysis reveals some increment in the effectiveness and impact of training and recognition (Table 5.4).

The challenges that influence such level of effectiveness and impact are the ‘lack of training needs analysis (TNA) and poor understanding the needs for training’, ‘poor coordination of training’, and ‘budget for training’. In other words, a high level of effectiveness and impact of the core principle may be achieved if there is proper TNA and coordination of training done. Then, further improvement may be achieved if coupled with higher and proper expenditure on the budget for training.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Unclear policy on training and recognition	2.41	3.22	+ve
	2. Lack of training objectives	2.81	3.11	+ve
	3. Lack of assessment	2.86	3.14	+ve
Total Average (weighted)		2.69	3.16	
DURING	1. Lack TNA and poor understanding on the needs for training	2.71	3.17	+ve
	2. Poor coordination of training	3.14	3.50	+ve
	3. Budget for training	3.00	3.28	+ve
Total Average (weighted)		2.93	3.31	
AFTER	1. Lack TNA and poor understanding on the needs for training	3.30	3.33	+ve
	2. Monitoring, follow-ups, and feedbacks on training	3.08	3.30	+ve

3. Poor coordination of training	3.50	3.31	-ve
Total Average (weighted)	3.24	3.31	

Table 5.4 -- Findings on top three challenges of core principle #4: Training and Recognition

Based on this analysis, the HRD section reveals that TNA has been exercised throughout the organization in compliance and by virtue of element 4.18 of the quality system ISO 9000:1994. However, the employees poorly responded to the TNA questionnaire given out to them. Many were not returned and that rendered difficulty for the HRD Section to identify the actual training needs and to coordinate such training. On the top of that, the employees do not see the actual need for training per se, especially those who have served long enough in the organization. Such reactions can be summarized by saying that many may take up training as a respite from work.

5.4.3 After the Implementation

For the timing '*after* the implementation', there is very little effectiveness and impact achieved on the core principle concerned compared to the achievement during the implementation. The challenges recorded to influence the level of achievement are the 'lack of TNA and poor understanding on the needs for training', 'monitoring, follow-up, and feedbacks on training', and 'poor coordination of training'.

The analysis reveals that the challenges that prevail in both the timing, *during* and *after* the implementation, are the need for TNA and coordination of training. Thus, the finding signals that proper TNA need to be carried out organization-wide in order to enable the HRD section identify and coordinate the relevant training effectively. Monitoring performance post-training is very important. Feedbacks from such monitoring would be used to gauge the effectiveness of training and as a milestone for further or future training. Return on training investment (ROTI) largely lies on feedbacks of performance post –training.

5.4.4 Effectiveness and Impact: Total Weighted Average

The Graph 5.4 below can be interpreted in two ways: One, a low effectiveness (quantitative) gives a high impact (qualitative) over time, which is a plus to the organization; Two, the effectiveness and impact of the challenges achieved in both the timings *during* and *after* are equal, which indicate that further improvement can be achieved (apart from being maintained) by addressing the challenges discovered in both the timings. Graph 5.4 –

Effectiveness and Impact: Total Weighted Average of the Top Three

Challenges in Three Different Timings for Training and Recognition

TNA and coordination (two common challenges discovered in both the timing of *during* and *after*) need to be carried out and done effectively. TNA is to identify the training needs and to enable the design of the relevant courses

and training approaches and methodology. Whatever forms of training proposed must have objectives with the aim to achieve concrete payoffs in terms of employee results and effectiveness or ROTI. In this study, there has been very little emphasis on recognition on training. The HRD Section points out that they have been unable to propose specific recognition when opportunities for training and learning have not been fully and seriously utilized and performance directly related to training has been difficult to detect. On this note, training must have link to business strategy in order to have impact on the organization's business (Kelly, 1994) and in order to be able to plan out the kind of recognition, which will have impact on the general performance of employees.

Training approach must also consider coaching and mentoring in order to keep employees on track and help them achieve early success. Immediate application of new skills and putting them into practice on the job would enhance effective quality training.

5.12 ANALYSIS ON ENHANCING TEAMWORK

The analysis on the core principle of 'Enhancing Teamwork' records a total of 11 challenges for the timing '*before* the implementation' with a total of 163 responses. For the timing '*during* the implementation', a total of nine (9) challenges were recorded with a total of 153 responses. And for the timing '*after* the implementation', a total of eight 11 challenges were recorded with a total of 152 responses (Appendix 5.5).

5.5.1 *Before* the Implementation

The analysis for the timing '*before* the implementation' reveals the following top three challenges to have influence in the implementation of the quality system in the organization: 'Lack of teamwork and cooperation', 'Poor leadership role', and 'Communication barriers or channels' (Table 5.5). The impact of such challenges is quite high to the organization. Such a situation arises because at the initial stage, the management did not introduce the *common language* in the organization. Everyone was confined to individual works at one's respective workplaces within one's own defined responsibilities and authorities and get the task done as quickly as possible. There lacks the commonality of purpose and vision or mission to forge ahead in team effort. There were no plans developed for achieving the team's vision, mission, and objectives. Because of the lack of commonality of purpose as the 'guiding factor', individuals do not easily sacrifice their personal interest against the larger team's vision. In fact, there was teamwork but lacks the *esprit de corp* in its real meaning and purpose. The cooperation did not work to the kind of cooperation which Mintzberg (1991) describes as the *pulling together of ideology*, that is, the culture of norms, beliefs and values that 'knit a disparate set of people into a harmonious, cooperative entity'.

The analysis also reveals 'poor leadership role' as one of the challenges that has strong effect and impact on teamwork based on the score achieved. Leadership role lies with the managers and immediate supervisors, which also includes those at the management level. The analysis indirectly tells that those in the leadership position of various teams in the organization have not put enough efforts in their roles as leaders or supervisors. The finding strongly indicates that leaders lack the initiative and motivation for their subordinates. Leaders need plenty of stamina to lead and

committed to finding and implementing a strategy or strategies that would profoundly impact customers, shareholders, and fellow employees.

In consonant with the saying “leadership by example”, leaders should hold themselves mutually accountable for the strategy’s success. They should not “try to be a team”, but rather they should deliver team performance. Team discipline that is people driven sometimes perform much better together with the leader because *they* want to, not just because a boss want them to. This kind of team discipline fits the *leadership by example*. Thus, team performance measurement is part and parcel of the leadership role. However, this study does not directly show the effective role of leadership and performance contributed by it.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Teamwork and cooperation	2.65	3.25	+ve
	2. Leadership role	3.08	3.42	+ve
	3. Communication barrier/channel	2.65	3.29	+ve
Total Average (weighted)		2.79	3.32	
DURING	1. Teamwork and cooperation	2.83	3.38	+ve
	2. Involvement and participation	3.21	3.18	-ve
	3. Leadership role	3.36	3.32	-ve
Total Average (weighted)		3.02	3.29	
AFTER	1. Teamwork and cooperation	3.21	3.60	+ve
	2. Involvement and participation	3.27	3.42	+ve
	3. Attitude	3.05	3.29	+ve
Total Average (weighted)		3.19	3.48	

Table 5.5 -- Findings on top three challenges of core principle #5: Enhancing Teamwork

Another challenge recorded to have effect in enhancing teamwork is ‘communication barrier/channel’, which has a higher impact (3.42). The score achieved tells the importance of communication within the organization. When barrier in the channel of communication is recorded as a challenge, three assumptions can be the factors: One, either the supervisors are not open to or the subordinates are not receptive to communication from subordinates or vice versa; Two, the supervisor may not communicate further upwards to the management, and Three, there was lack of venue or opportunity for two-way communication. In any or either case is a matter of attitude and culture

developed within the organization. Again, in any one case of the assumptions, the messages and the organization's big picture would not be made known down the line.

On the other hand, the supervisors and managers would be able hear grievances or views from below. When communication becomes a barrier, the sharing of organization's vision would be painfully slow in taking action, the operation would not be fully efficient, and professionalism would not produce the proficiency expected.

5.5.2 During the Implementation

A total of nine challenges were recorded to influence the effectiveness and impact on 'enhancing teamwork'. Among the nine recorded, the top three challenges recorded are 'teamwork and cooperation', 'involvement/willingness to participate', and 'leadership role'.

This analysis reveals that the two challenges, 'teamwork and cooperation' and 'leadership role', prevail *before* and *during* the implementation. When an organization launches the quality system describing the processes and benefits derived from it, a period of enthusiasm and hard work would normally follow (Tearle, 1994). Similar happenings were experienced in BDA. The employees were suddenly engaged in teamwork and cooperation to get things moving. Almost everyone was in the mood to see the quality system working in the organization. Such a reaction was indicated in the score achieved on the impact of the challenge recorded (from 2.83 to 3.38), which indicates a high enthusiasm among the team members.

Then, gradually problems associated with implementation emerged. There was no support from their supervisors, especially the AQMRs (assistant quality management representatives). Old attitude dies hard. Teams gradually become de-motivated. Initially, there was a lot of communication, but when there was disagreement among team members very little communication took place. Everyone expects another to make progress. Many excuses were given. They have insufficient time to spend on the program implemented. Some even say to the extent that developing a procedure in the quality system does not fall in their job specifications. Other priorities, such as doing one's job, become more important. There was resistance to the additional work required to make the quality system work. Thus, the challenge of 'involvement and the willing to participate' find resistance to occur in the organization when 'teamwork and cooperation' and 'leadership role' do not function fully. In this situation, people gradually become frustrated and stressed. Definitely, this reaction gives a high negative impact in the organization as shown by the score achieved (from 3.21 to 3.18 in Table 5.5).

5.5.3 After the Implementation

A total of 11 challenges were recorded to influence 'enhancing teamwork' for the timing '*after* the implementation'. Among the 11 challenges recorded, the top three are 'teamwork and cooperation', 'involvement/willingness to participate', and 'attitude'.

After the implementation, the organization should be exposed to the demands of the new quality system, to new ideas, forward-looking, and would seek for

opportunities to improve and innovate. The organization should be a learning team to look for the best way to gain a competitive advantage, improve adaptability to deal with change, and to build competence and confidence. However, this analysis reveals that getting good teamwork and cooperation among team members are still slow despite the gradual increase in momentum as shown in the score achieved. Similarly, the increase in the score achieved by 'involvement/willingness to participate' seems to go in tandem with the score achieved by 'teamwork and cooperation'. Teamwork almost does not exist when there is no involvement or the willingness to participate. Both the challenges of teamwork seem to be a delicate and prevailing issue through out the three timings of implementation of the quality system. Such a situation could be a result of the next challenge recorded, that is, 'attitude', which may have been ingrained within the organization for a much longer period. Thus, the impact of the challenges recorded (based on total weighted average) shows a much higher score achieved (above the scale of 3.0) as shown in Graph 5.5 below.

5.5.4 Effectiveness and Impact: Total Weighted Average

The Graph 5.5 below the shows the aggregate of effectiveness and impact calculated based on total weighted average. The finding reveals that in enhancing teamwork, the 'ingredients' necessary (apart from or some of those recorded in Appendix 5.5) are teamwork and cooperation, leadership role, communication, and attitude. These challenges identified have strong and positive impact in the long run and long lasting effect (as experienced based on the findings) if not addressed immediately. Positive attitude would develop if the other challenges identified could be addressed accordingly.

From the challenges recorded or identified, enhancing teamwork lies in the power of numbers and their performance. The performance of the numbers of the team against the challenges identified can be easily compared and detected where the team is now to where it was six months ago, or to where it wants to be six months in the future. Therefore, it is best to measure the team's progress towards its business goals and the team's effectiveness at the same time. As such, it is important that the team must measure its own dynamics and communication at the start of its quality activity.

Graph 5.5 – Effectiveness and Impact: Total Weighted Average of the Top Three Challenges in Three Different Timings for Enhancing Teamwork

5.13 ANALYSIS ON PERFORMANCE MEASUREMENT

Performance measurement on an organization requires comprehensive assessment to determine the current capabilities against the required standard or vision.

The analysis on the core principle of 'Performance Measurement' reveals a total of 11 different types of challenges were recorded for the timing "*before the implementation*" with a total of 186 responses. For the timing "*during the implementation*", a total of nine (9) challenges were recorded with a total of 179

responses. And for the timing ‘*after* the implementation’, a total of nine (9) challenges were recorded with 142 responses (Appendix 5.6).

5.6.1 *Before* the Implementation

The analysis reveals that effectiveness and impact of ‘Performance Measurement’ achieve a much higher score than those achieved by other core principles analyzed prior to this for the timing ‘*before* the implementation’. The challenges, (apart from those identified and listed in Appendix 5.6), that influence the effectiveness of Performance Measurement are ‘quality culture’, ‘lack of documented procedure or standard’, and ‘poor quality planning approach’ (Table 5.6).

Generally, the employees strongly believe that ‘work culture’ has a higher impact for a successful implementation of the quality system with the organization. In other words, if the organization begins with a positive work culture, a positive impact would be expected as an outcome over time. Likewise, if the work culture sets with a negative beginning, a negative impact would be expected too.

With the lack of documented procedure, the organization has no standard to follow and the quality of services provided or output produced would vary greatly with wide deviation. The score reflects such an achievement impact. Such a situation can be improved with quality systems documented and controlled. Control involves the issue, approval, review, and modification of documents.

The third challenge identified to strongly influence performance measurement is ‘poor quality planning’ for the timing ‘*before* the implementation’. When planning is poor it has a high impact on the quality system in terms of satisfying customers requirements in the long run through the delivery of quality products and / or services. Quality planning would ensure operational consistency and prevent non-conformances, which involves all operational personnel (including professionals, administrative, service, and production). Thus, quality planning plays a very important role, which involves in the control and improvement of quality through the acquisition of new products, processes, equipment, people, or other resources for the organization as well as identifying measurement or process capability requirements.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Poor quality culture	2.76	3.22	+ve
	3. Lack of documented	2.92	3.27	+ve

	procedure or standard			
	3. Poor quality planning	2.88	3.21	+ve
Total Weighted Average		2.85	3.23	
DURING	1. Attitude	2.86	3.65	+ve
	2. Poor supervision	2.82	3.32	+ve
	3. Poor teamwork spirit	2.94	3.51	+ve
Total Average (weighted)		2.87	3.50	
AFTER	1. Feedback, evaluation, and monitoring system	2.98	3.44	+ve
	2. Attitude	2.80	3.48	+ve
	3. Commitment	2.74	3.33	+ve
Total Average (weighted)		2.84	3.42	

Table 5.6 -- Findings on top three challenges of core principle #6: Performance Measurement

5.6.2 *During the Implementation*

A total of nine (9) challenges were recorded to influence the effectiveness and impact of 'Performance Measurement' for the timing '*during* the implementation' (Appendix 5.6). The top three challenges identified to strongly influence the effectiveness and impact are 'attitude', 'poor supervision', and 'poor teamwork spirit'. In terms of effectiveness over time (and based on total weighted average), these challenges score a higher level of achievement compared to the timing '*before* the implementation' (Table 5.6).

Poor supervision and poor teamwork spirit should not be allowed to set and prevail in the organization. The challenges would *build* up the attitude of the employees and would gradually become the organization's work culture. (The three challenges have a very strong impact on the implementation of the quality system).

The analysis reveals that the employees generally feel that the top three challenges identified form a set of organization fit. This set of challenges should be a priority agenda to address.

5.6.3 *After the Implementation*

A total of nine (9) challenges were recorded to have influence on the effectiveness of 'Performance Measurement' for the timing '*after* the implementation'. However, the score achieved is not higher than that achieved by the challenges recorded '*during* the implementation'. The

challenges identified to have influence on the effectiveness are the 'poor monitoring, evaluation, and feedback', 'attitude', and 'poor communication'.

5.6.4 Effectiveness and Impact: Total Weighted Average

Graph 5.6 below summarizes the score of effectiveness and impact of 'Performance Measurement' principle prevailing within the organization. The finding of this analysis indicates that the effectiveness of the principle is low with medium-to-high impact. This finding can be interpreted by saying that the challenges identified during the various timings of implementation have a high impact to the organization's quality performance (either positive or negative). This is to say that by addressing the weaknesses found for each challenge would improve the performance in the long run, and if otherwise or left status quo, would not help the organization to the level expected any much faster.

Graph 5.6 -- Effectiveness and Impact: Total Weighted Average of the
Top
Three Challenges in Three Different Timings for Performance
Measurement

From the findings, it can be summarized that the organization must establish performance measurement. That practice should be consistent and developed into a culture organization-wide because the end-result measures total satisfaction of employees, customers, and other stakeholders. The finding can be resolved through open discussion with employees and subordinates so as to enable them understand their strengths and weaknesses. There is a strong need for them to improve their work processes and procedures so as to enable them implement their work and decisions effectively, either individually or as part of a work team. The goal is to achieve the level of employees' involvement and boost their morale.

5.14 ANALYSIS ON QUALITY ASSURANCE

The analysis on 'Quality Assurance' reveals that a total of six (6) challenges recorded for the timing '*before* the implementation' with a total of 197 responses. For the timing '*during* the implementation', a total of nine (9) challenges were recorded with a total of 198 responses. And for the timing '*after* the implementation', a total of eight (8) challenges were recorded with a total of 193 responses (Appendix 5.7).

5.7.1 Before the Implementation

The analysis for '*before* the implementation' records a total of six (6) challenges to have strong influence in the quality performance of the organization prior to the implementation of the quality system. The top three challenges identified are the 'lack of quality procedure', 'poor knowledge on quality', and 'lack of sense of urgency or deadline' (Table 5.7).

The finding on the 'lack of quality procedure' tells the obvious thing. Prior to the implementation of the quality system, there were no documented work procedures on how to execute certain work task, with the exception of standing general orders of public service and circulars issued by the management from time to time. With the lack of standard procedures, the approach in executing work has not been standardized and also done very

much to individuals based on experience. The finding on this challenge is supported by the next finding, 'poor knowledge on quality'. The lack of standardized procedure reflects the ignorance of the organization on the general requirements of total quality. With poor knowledge on quality, the organization would not be able to define the limitations of approach to work and the probability of success within the parameters of quality.

TIMING	CHALLENGES	EFFECTIVENESS (Average)		DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE
		Quantitative (Effect)	Qualitative (Impact)	
BEFORE	1. Lack of quality procedure	3.12	3.65	+ve
	5. Poor knowledge on quality	2.59	3.03	+ve
	3. Lack the sense of urgency or deadline	2.60	3.19	+ve
Total Average (weighted)		2.79	3.32	
DURING	1. Poor knowledge on quality	2.81	3.31	+ve
	2. Poor supervision	2.59	3.34	+ve
	3. Attitude	2.78	3.41	+ve
Total Average (weighted)		2.72	3.35	
AFTER	1. Monitoring, assessment, and feedback	2.96	3.37	+ve
	2. Work culture	3.05	3.33	+ve
	3. Recognition and appreciation of performance	3.05	3.58	+ve
Total Average (weighted)		3.01	3.43	

Table 5.7 -- Findings on top three challenges of core principle #7: Quality Assurance

The third challenge identified, 'the lack of sense of urgency or deadline' goes together with the first two challenges that have been identified and discussed above. When an organization lacks documented procedures and has poor knowledge on quality, time no longer becomes the essence in getting the job done or deadline.

The analysis reveals that these three challenges identified have a positive effectiveness and impact in the implementation of the quality system within the organization.

5.7.2 During the Implementation

The analysis for '*during* the implementation' records a total of nine (9) challenges that have strong influence on the quality performance in the implementation of the quality system in the organization (Appendix 5.7). The top three challenges out of the nine identified are the 'poor knowledge on quality', 'poor supervision', and 'attitude'.

The challenges identified that prevail in both the timings *before* and *during* the implementation are 'poor knowledge on quality'. For obvious reason, poor knowledge on quality will find the implementation of quality activities a great hindrance. Practicing quality assurance is still a distance journey to travel in this organization based on the findings. This situation certainly has a very high effect and impact on quality as indicated in the score achieved. The organization needs to step up its efforts in conducting awareness training on quality and carrying out more practical quality improvement activities. Besides that, the employees need to read a lot about quality on their individual efforts. Visiting organizations that are in the forefront on quality movements would be meaningful and provide good benchmarks.

The next two challenges identified, 'poor supervision' and 'attitude', may have a very strong correlation with one another and even with the 'lack of knowledge on quality'. When proper supervision is not exercised, quality assurance almost doesn't exist. There can be a lot of delays and counter arguments and claims in getting the job done satisfactorily. The organization's Annual Reports between the periods of 1995 to 2000 support this statement whereby, on average, total operating expenditures, especially on projects development only achieved up to 65 percent. The situation is worsened when attitude (poor) steps in. These two challenges identified have a very high impact in the implementation of the quality system as shown by the score achieved in this analysis (Table 5.7).

5.7.3 After the Implementation

The analysis for '*after* the implementation' records a total of eight (8) challenges that have strong influence in the quality performance of the organization prior to the implementation of the quality system (Appendix 5.7). The top three challenges out of the eight identified are the 'monitoring, assessment, and feedback', 'work culture', and 'recognition and appreciation of performance'.

Undertaking exercise on quality assurance would be more effective for a research-oriented organization because certain work processes are investigative in nature, which include design reviews, work plans, drawings and specifications revision, and control changes. However, it does not require BDA to be research-oriented to exercise quality assurance process in the quest for quality excellence. As identified, BDA needs to exercise monitoring, undertake assessment, and provide feedbacks as good proposals for quality assurance. As such, quality assurance would have high impact when work performance is regularly monitored, assessed, and given feedbacks. The score achieved by this first challenge identified is higher revealing that the effectiveness of quality assurance would provide a high impact in the long run.

The analysis on the next two challenges identified, 'work culture' and 'recognition and appreciation of performance' reveals that the performance of quality assurance is affected by work culture. And work culture could either

be giving due recognition and appreciation for good performance or the practice of carrying out regular monitoring, assessment, and giving regular feedbacks. Such an exercise undertaken and developed into a work culture would provide a high impact on the effectiveness of quality assurance in the long run. Such a culture would benefit BDA's quality performance in the quality journey.

5.7.4 Effectiveness and Impact: Total Weighted Average

Graph 5.7 below summarizes the score of effectiveness and impact of Quality Assurance given the challenges encountered and calculated based on total weighted average. The finding reveals that for Quality Assurance to be effective requires a comprehensive quality procedure to follow through to ensure standardization of work performance. Poor knowledge on quality is insensitive to urgency and meeting deadlines, which further reflects on the quality of supervision and the development of attitude among employees within the organization. Accordingly, the development and practice of positive organization fits like conducting monitoring and assessment exercises and giving feedbacks, and also by giving recognition and appreciation to performance where relevant and due pave way for organization's positive work culture.

Graph 5.7 -- **Effectiveness and Impact: Total Weighted Average** of the
Top Three

Challenges in Three Different Timings for Quality Assurance

The finding further reveals that the challenges identified in each timing have a strong impact on quality assurance in the long run. Addressing the weaknesses identified would lead BDA heading towards a purposeful quality journey in achieving the organization's vision, mission, and objectives in a much faster time. The score achieved on the qualitative aspect in Graph 5.7 has developed such a positive trend.

5.11 FINDINGS AND DISCUSSIONS

The result of the study supports the view that the effectiveness of the implementation of the quality system ISO 9000 standard in supporting TQM in an organization is strongly influenced by the challenges of the seven (7) core principles of TQM discovered within the three timings: *Before*, *During*, and *After*. The score given for the effectiveness of the challenges (calculated based on weighted average) falls within the median between moderate (3) and high (4). This is considered within the high range of achievement.

Overall, the findings of the study reveal that there are some improvements in all the seven core principles of TQM within the organization; however, there are exceptions in the following five (5) areas:

5.8.1 Top Management Support

Top Management Support is very crucial through out the implementation of the quality system. The findings reveal that top management is not giving

enough support based on the score achieved *before* and *after* the implementation. The quantitative score achieved *before* the implementation was 3.36 as compared to 3.40 achieved *after* the implementation (Table 5.8). There was a meager increase by 0.04 (1.19%), which is almost insignificant. The qualitative score achieved *before* the implementation was 3.14 as compared to 3.62 achieved *after* the implementation. There was an increase by 0.48 (15.29%). In short, these findings reveal that the effective domain of the top management support has not been *stretched* to its full potential in many areas. The display of leadership and professionalism is still at a very low level. Based on these findings, the organization as a whole needs to have a further review on the direction, purpose, and values of all the teams within as to the way the top management and their respective leaders are leading the teams while steering the organization along the quality journey. In short, the role and responsibilities of those in the top management and supervisory levels need further review, which also includes their commitment, competencies, communication, leadership, atmosphere created in the team, the way discussions and decisions were made, and their customer-orientation.

Core Principles	Score Achieved Before and After the Implementation of the Quality System			
	Before		After	
	Quantitative	Qualitative	Quantitative	Qualitative
1. Top Management Support	3.36	3.14	3.40	3.62
2. Customer Focus	2.71	3.18	3.35	3.37
6. Training and Recognition	2.69	3.16	3.24	3.31
7. Enhancing Teamwork	2.79	3.32	3.19	3.48
5. Performance Measurement	2.85	3.23	2.84	3.42

Table 5.8 – Findings on the Effectiveness of Five Areas of Core Principles of TQM in the Implementation of the Quality System

5.8.2 Customer Focus

As discussed in Chapter 3, customer is the driver in total-quality setting. Customer is business; business is people; and people are customers. This is the area where this organization should concentrate while in business and in order to remain in business.

The quantitative score achieved *before* the implementation was 2.71 as compared to 3.35 (23%) achieved *after* the implementation (Table 5.8). The qualitative score achieved *before* the implementation was 3.18 as compared to 3.37 (5.97%) *after* the implementation. These increments recorded are just gradual and rather very slow considering the importance of customers to the business. The increment reveals that very little effort is given to customer focus. This study also reveals that attitude of employees towards customers has not improved but getting worse than before (negative) *during* the implementation (Table 5.3). The attitude factor has contributed to the poor focus on customers. This is again another factor where top management

needs to review their direction, purpose, and values, which include commitment, competencies, communication and leadership of their entire teams and workforce.

5.8.3 Training and Recognition

Training and recognition are very important in the aspects of human contributions to organizational productivity. Training and development of professionals enhance human performance in their organizations. Such efforts to improve human performance must be valued and recognized. The findings reveal that the quantitative score achieved *before* the implementation was 2.69 as compared 3.24 achieved *after* the implementation. There was a slight increase by 0.55 (20.44%), which can be considered as gradual over time. The qualitative score achieved *before* the implementation was 3.16 and the score achieved *after* the implementation was 3.31. There was a meager increase by 0.15 (4.75%).

Building professionals is a time-consuming effort. Based on this finding, training seems not very effective and lacks focus and that will take a much longer time to enhance performance and productivity. There are many reasons to this lackadaisical performance. For one thing, the study reveals that training was poorly coordinated as recorded *after* the implementation (Table 5.4). There could be many underlying reasons for this to situation to prevail. Attending training, especially outside the organization (external training), may be taken as a respite from office work. And that training may be not effectively linked to other organizational initiatives. All these problems warrant additional attention because each may dramatize the need to move beyond traditional training – and training as a stand-alone training change strategy – to focus on more holistic approaches to enhancing human performance.

5.8.4 Enhancing Teamwork

The findings reveal that the score achieved for teamwork in BDA is still within the normal distribution. There is nothing outstanding or exemplary about the achievement. The difference (increment) in the quantitative score achieved *before* and *after* the implementation was 0.4 (16.49). On the other hand, the quantitative score achieved (increment) *before* and *after* the implementation was 0.16 (4.82%). The findings for the timing *during* the implementation (Table 5.5) reveal that there was a decline (negative) in both the involvement and participation and leadership role in teams. These overall findings directly reveal that there is very little efforts and initiatives to get all the teams within the organization to work effectively and efficiently. Attitude factor contributes very much to this situation.

6.8.6 Performance Measurement

As discussed in Chapter 3, Performance Measurement is one of the most critical functions in quality assurance. Monitoring business process is one approach in measuring performance, which will give a competitive comparison over other methods or processes. This method will enable the organization to gather information and make analysis of such efforts (Anschutz, 1996). The

analysis of the efforts may cover the following areas, which are largely related to performance:

- (i) Customer support services,
- (ii) Product-service quality,
- (iii) Internal operations performance,
- (iv) Employee related services;
- (v) Supplier performance, etc.

The findings reveal that this is one factor that was not carried out in a very strategic and professional manner in this organization. With the exception of Enhancing Teamwork, the analysis reveals that rest of the core principles of TQM specify that some form of monitoring, evaluation, and feedback were neither done (lacking) nor done in a very unprofessional approach (haphazard). The findings also reveal that the score achieved for Performance Measurement was negative (2.84) *after* the implementation (Table 5.8) as compared to *before* the implementation. This result directly tells that quality standard is either declining or no better of than it was before. Certainly, in addressing the negative result the organization need to review all its processes before the organization comes to a state of “malaise”.

There lack any information or comprehensive data on any project or quality initiatives being carried out, which greatly contradicts to either Dr. Deming or Squires (1982, p. 75) who are both well-known experts in quality, stood firmly in the conviction that statistics is the heart of quality control. The lack of feedback and statistical data available in this organization, as identified in this study will not be able tell how the organization’s plans are carried out. Thus, carrying out performance measurement will enable the organization to identify changes in overall performance and correlate those changes with improvements in product or service quality and operational performance.

5.12 FINDINGS AND DISCUSSIONS ON HYPOTHESES

During the three timings of implementation of the quality system, the challenges recorded are mainly of cultural and attitudinal types, particularly *before* the implementation. Based on the result of the findings, the first hypothesis saying that there are cultural and attitudinal challenges in the initial phase of implementation of the quality can be accepted.

The analysis also discovered a variety of challenges for each type of seven core principles as shown in the appendices from Appendix 5.1 to Appendix 5.7. The findings reveal that the impact of these challenges on the implementation of the quality system, both quantitative and qualitative, is variable, as shown in tables from Table 5.1 to 5.7. The impact of the challenges also vary in nature with a mixture of positive and negative impacts over the different timings of implementation as particularly shown in Tables 5.1, 5.3, 5.4, and 5.5. Based on these findings, the second hypothesis saying that the impact of the implementation of the quality system in BDA, both quantitative and qualitative, is variable can also be accepted partially accepted.

5.13 SUMMARY

The findings of the study have revealed that the effectiveness of the implementation of the quality system is strongly influenced by the challenges faced by the seven core principles of TQM. Attitudinal and cultural challenges seem to be the core effective domain contributing to the effectiveness in the implementation of the quality system. The findings also reveal that BDA's performance is not yet a quality organization of pride. Accordingly, both the hypotheses have been accepted based on the results of the study.

The next final Chapter 6 will summarize and conclude the research, and give recommendations for the way forward.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS FOR THE WAY FORWARD

6.0 INTRODUCTION

This chapter gives a summary of the significant results of the research and the contributions to knowledge based on the findings and discussion of the previous chapters.

This chapter also discusses some suggestions for future research and some recommendations for the way forward.

6.7 SUMMARY AND DISCUSSIONS

Based on the findings and discussions of the previous chapters, this research has five (5) key conclusions. They are also related to the suggestions and recommendations to the way forward.

6.7.1 Training is detected and suspected to be relatively weak and corrective actions are needed in some specific areas. TNA should be carried out in order to come up with proper training plans. However, employees have a strong preference to attend outside (external) training and external consultants to deliver in-house training. Internal professionals who have been on the job for a considerable period of time with all the relevant experience are not deployed. There prevail a mindset considering internal professionals as *inferior* to the external professional or consultants.

This organization is facing a serious attitude problem among employees. In areas of attitude, counseling is needed. Professionals at managerial level need to develop and apply their counseling skills; (there is no necessity to get outside consultant to do counseling for fellow employees).

- 6.7.2 There is a strong need to restructure the way the organization and the employees work. Employees at managerial level are separated from the rest of the employees by giving them separate rooms as a privilege. Organization with strong teamwork share common workplaces together with their supervisors and other co-employees. This kind of work setting is very common and prominent in quality-driven organization, especially among Japanese firms (in Malaysia).
- 6.7.3 Processes in strategic quality planning or corporate planning, as it is termed in BDA, should have linkages to performance, training, and reward. Other work processes have been long established and slow changing, which have resulted in the organization lacking in innovation (at micro-level) and/or breakthrough (at macro-level). Strategic or corporate planning should include a new way of doing things (than the used to or the traditional way). This is what Peters and Waterman (1982) said as to build some sort of a major new corporate capability – that is, to become more innovative, to be better marketers, to permanently improve labor relations, or to build some other skill which that organization neither do possesses nor practices regularly.
- 6.7.4 In order to develop a quality work culture in this organization, each section and each individual employee must come with a plan on how to enhance and sustain a quality and performance-based culture within the organization. This method can begin with strategic quality planning for each section or department. Each individual employee can come up with his or her plan of action, which then in aggregate becomes the section's or the department's work plans.
- 6.7.5 The findings reveal a strong need for this organization to develop a feedback culture organization-wide in order to capture lessons learnt. A lot of activities and processes lack information and valuable data when monitoring, feedbacks, and evaluation are not done professionally. Results of quality activities serve as lessons learnt.

Based on the average score achieved for the challenges identified as discussed in Chapter 5 and as shown in Tables 5.1 to 5.7, none of the scores achieved reached the rate of 4 (high) calculated based on weighted average for the timing *before*, *during*, and *after*. Taking the assumption that each level of score is 20% and that will mean a score from 1 to 5 is equivalent to 100% achievement. By combining all the quantitative and qualitative scores achieved by the challenges of the seven core principles for the three different timings, the overall achievements are as shown in Table 6.1 below. Based on the scores and the assumption made for the timing *before* the implementation, this organization achieves a score of 2.77 (55.4%) for quantitative and 3.12 (62.4%) for qualitative. For the timing *during* the implementation, this organization achieves a score of 2.94 (58.8%) for quantitative and 3.35 (67.0%) for qualitative. And for the timing *after* implementation, the score achieved is 2.39 (47.8%) for quantitative and 2.64 (52.78%) for qualitative. Based on the total score achieved this far, it can be concluded that BDA's quality drive and initiatives this far is between 50% to 60%, which is very low when compared to the achievements of world-class organizations between 80% to 95%. The result tells that BDA still has a long way to achieve world-class standard unless the weaknesses highlighted in the findings, among other things, are addressed seriously and immediately.

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TIMING	TOTAL WEIGHTED AVERAGE SCORE			
	Quantitative	Percentage Equivalent	Qualitative	Percentage Equivalent
Before	2.77	55.4%	3.12	62.4%
During	2.94	58.8%	3.35	67.0%
After	2.39	47.8%	2.64	52.78%

Table 6.1 – Total Achievement of BDA’s Quality Drive and Initiatives Derived From the Score Achieved by the Challenges of the Seven Core Principles of TQM

6.8 LESSONS LEARNT

There are many learning points obtained from this research. This research exercise alone has been great academic experience being undertaken. However, two most prominent and obvious learning points are

- (iii) *Before* and *during* the implementation of the quality system, people are turned into chaotic position (or disoriented) when new or different work procedures and processes are in placed. Under both situations it takes time for people to change or make change to happen.
- (iv) In terms of performance measurement, either of a team or individuals, a tracking and feedback system must be developed in order to measure the performance of every individual employee. With data and record performance available, such information would assist future approaches and decision-making much easier and meaningful.

6.9 GENERALIZATION OF THE RESEARCH FINDINGS

Even though that this research is conducted locally in Bintulu and in one single organization, it is felt that the findings, particularly of Chapter 5, could be generalized to other service organizations, especially the public service sector around Bintulu and other public service organizations in the state of Sarawak. The significance of the challenges of the core principles of TQM may differ, in one way or another, among different types of service organizations kind or of services offered. For example, organizations like the Miri Municipal Council (MMC) and the Kuching North Municipal Council (KNMC) may face similar challenges in some areas on Customer Focus.

6.10 IMPLICATIONS FOR PRACTICE

Perhaps the strongest conclusion that emerges from this research analysis is the need for top management to become involved in quality activities. This is a widely accepted truth. Strategic quality planning and management poses special challenges. It requires a clear sense of direction, a recognition that quality control and quality

assurance are at best partial solutions, a sensitivity to quality's multiple dimensions, and the support of functions throughout the organization.

If managers hope to succeed, they must first move aggressively to improve their understanding of quality practices and performance. If quality is to be managed, it must first be understood (Garvin, 1988; p. 221). They need to acquire more detailed information about, say, consumers' views, quality performance and levels of other organizations, and especially the sources of their own quality performance. Such efforts are likely to be costly and time-consuming, but they are essential if real progress is to be achieved.

6.11 SUGGESTIONS FOR FUTURE RESEARCH AND THE WAY FORWARD

This is the first research or research attempt ever been taken upon the implementation of the quality in this organization.

Based on the above conclusion, these are some of the suggestions and/or recommendations for the way forward:

- Monitoring and evaluation on quality activities have not been carried out in the manner it should be done. Giving feedbacks on such activities have not been developed as a culture in the organization resulting in the lack of data and performance measurement. As such monitoring, evaluation, and feedbacks have become the issue in most of the challenges of the core principles of TQM in the implementation of the quality system. A functional quality procedure should be developed in the organization's quality system whereby all quality activities should be comprehensively monitored by providing feedbacks and evaluation together with all the relevant data and information. Further research should be carried after a lapse of considerable time in order to ascertain the effectiveness of quality activities being carried out in pursuit for quality excellence along the quality journey of this organization.
- Further research should be carried out to ascertain how corporate image has been affected by the prevailing customer service (with all the complaints pouring in based on data in Appendices 6.1 and 6.2) after the introduction and implementation of the quality system. The research should also determine how the corporate image is influenced by the effectiveness and functionality of the quality system.
- Traditional approach to training should not be the only methodology to acquire and improve knowledge, skills, and attitude of the general employees. Coaching and mentoring should be considered seriously in view of the fact that this organization has a considerable number of professionals and supervisors who have more than 15 years of experience each. Further research should be carried out to ascertain the effectiveness of training after a lapse of a considerable time after the implementation of these two training methodologies.

6.12 SUMMARY

This chapter gives the overall summary of the research. This study has managed to identify the challenges (Appendices 5.1 to 5.7) of the seven core principles of TQM that contribute to the effectiveness of the implementation of the quality system ISO 9000:1994 in the organization (BDA). This research has also contributed to enrich knowledge on the challenges of the core principles of TQM in the implementation of the quality system. Besides contributing to knowledge, the findings also could be generalized to other service industries, particularly the public service sector.

The study on the challenges of the seven core principles of TQM in the public sector organization is still at its infancy. Therefore, further research should be conducted to enrich the existing knowledge in this area. Such efforts may be costly and time-consuming, but they are essential in order to achieve real progress.

APPENDIX 5.1:

CHALLENGES OF CORE PRINCIPLE #1: TOP MANAGEMENT SUPPORT

TIMING: <i>BEFORE</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Lack of knowledge and experience	44
2	Lack of commitment	24
3	Complacency in implementation	20
4	Poor quality planning	19
5	Fear of failure	17
6	Lack of guidance	14
7	Poor direction setting	8
8	Communication	8
9	Involvement	6
10	Leadership traits/weaknesses	5
11	Lack of strategy	5
12	Poor supervision	2
13	Take things for granted	2
Total response:		174
TIMING: <i>DURING</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Lack of guidance and experience	33
2	Lack of knowledge and experience	27
3	Lack of role play / leadership	25
4	Executive commitment	22
5	Involvement	18
6	Open communication	14
7	Confidence in the system	8
8	Complacency	6
9	Awareness	6
10	Direction / Vision	2
Total response:		134

TIMING: AFTER IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	General awareness and knowledge	27
2	Develop a monitoring system to quality	21
3	Support and commitment to resources and time	18
4	Feedback	14
5	Lack of experience	10
6	Work culture	7
7	Involvement	4
8	Control measure	2
9	Complacency	1
Total response:		104

APPENDIX 5.2:

CHALLENGES OF CORE PRINCIPLE #2: STRATEGIC QUALITY PLANNING

TIMING: BEFORE IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Unclear TQM objectives	41
2	Lack of professionalism /Training	37
3	Quality policy not well stressed	34
4	Lack of organization culture	27
5	Lack of formulation of strategies	24
6	Lack of follow-up / feedback	9
7	Lack of quality output	6
8	Lack of customer focus	5
9	Service efficiency and design	4
10	Meet customer needs	2
Total response:		189
TIMING: DURING IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Resources and support facilities	32
2	Lack of support and coordination	31
3	Poor guidance	29
4	Culture change	23
5	Lack of quality and business focus	10
6	Lack of knowledge	9
7	Lack of feedback / Monitoring	9
8	Quality policy not well stressed	5
9	Meet customers' needs	5
10	No process design	4
11	Attitude	2
12	Internal customers	2
Total response:		165
TIMING: AFTER IMPLEMENTATION		

No.	Types of Challenges	No. of Response
1	Lack of monitoring system / Follow-up	51
2	Lack of feedback on results	38
3	Lack of effective control measures	27
4	Guidance	16
5	Lack of vision and focus on future opportunities	10
6	Lack of customer focus	5
7	Operational responsibility	4
8	Objective oriented	4
9	Maintain process / Procedure flow	4
10	Sustain cultural change	3
11	Commitment	1
Total response:		163

APPENDIX 5.3:

CHALLENGES OF CORE PRINCIPLE #3: CUSTOMER FOCUS

TIMING: BEFORE IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Quality of customer service	55
2	Sensitivity to customers	37
3	Relationship with customers	26
4	Poor attitude towards customers	18
5	Poor quality recognition	14
6	Lack of knowledge and commitment to customers	9
7	Poor communication and interpersonal skills	6
8	Lack of standard procedure to handle customers	1
Total response:		166
TIMING: DURING IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Sensitivity to customers	38
2	Poor communication skills	34
3	Poor attitude towards customers	25
4	Customer friendly	16
5	Lack of professionalism	9
6	Resistance to change	8
7	Lack of knowledge on customers	4
Total response:		134
TIMING: AFTER IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Monitoring & enforcement of customer service system	70
2	Recognition of customers' rights	29
3	Lack of communication skills	25

4	Service quality improvement	20
5	Attitude towards customer service	7
6	Hotline not monitored	1
7	Supervision	1
Total response:		153

APPENDIX 5.4:

CHALLENGES OF CORE PRINCIPLE #4: TRAINING AND RECOGNITION

TIMING: <i>BEFORE</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Unclear policy on training and recognition	33
2	Lack of training objectives	29
3	Lack of assessment	27
4	Direction of training	26
5	Poor participation and support for training	26
6	Lack of training schedule / Calendar	3
7	Lack of recognition on training	2
8	Irrelevant training	2
9	Commitment to resources	2
Total response:		150
TIMING: <i>DURING</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Lack of TNA and poor understanding on training needs	43
2	Poor coordination for training	31
3	Budget for training	27
4	Facilitator / trainer	13
5	Lingua franca	12
6	Participation and seriousness in training	10
7	Lack of assessment	8
8	Lack of support / follow-up after training	3
9	Lack of motivation	2
10	Lack of time / opportunity for training	1
Total response:		150
TIMING: <i>AFTER</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Monitoring, follow-ups, and feedbacks on training	41
2	Lack of TNA and poor understanding on training	30

	needs	
3	Coordination for training	15
4	Lingua franca	11
5	Facilitator / trainer	7
6	Participation and seriousness in training	6
7	Sincerity in assessment	5
8	Lack of systematic procedure on training	3
9	Poor response (attitude) about training	3
10	Budget	2
11	Lack of training schedule / calendar	1
Total response:		124

APPENDIX 5.5:

CHALLENGES OF CORE PRINCIPLE #5: ENHANCING TEAMWORK

TIMING: BEFORE IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Teamwork and cooperation	41
2	Leadership role	39
3	Communication barrier/channel	33
4	Element of trust	32
5	Lack of support/ Uncommitted workforce	10
6	Bad attitude	2
7	Decision making	2
8	Relationship	2
9	Lack of quality procedure	1
10	Double standard	3
Total response:		163
TIMING: DURING IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Teamwork and cooperation	42
2	Involvement/willingness to participate	36
3	Leadership role	29
4	Attitude	28
5	Team motivation	7
6	Poor communication	6
7	Low task oriented	2
8	Slow decision making	2
9	Commonality of purpose	1
Total response:		153
TIMING: AFTER IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Teamwork and cooperation	50
2	Involvement/participation	29

3	Attitude	27
4	Leadership role	21
5	Appreciation/recognition	13
6	Decision making	3
7	Communication	3
8	Commonality of purpose	2
9	Lack of trust	2
10	Motivation	1
11	Visions/Mission/Values	1
Total response:		152

APPENDIX 5.6:

CHALLENGES OF CORE PRINCIPLE #6: PERFORMANCE MEASUREMENT

TIMING: <i>BEFORE</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Poor quality culture	43
2	Lack of documented procedure or standard	42
3	Poor quality training	34
4	Attitude	31
5	Lack of knowledge on quality	10
6	Lack of proper assessment and feedback	8
7	Lack of knowledge on statistical process control	6
8	Lack of commitment	4
9	Traditional trend of training followed	4
10	Insufficient data	3
11	Lack of sense of urgency	1
Total response:		186
TIMING: <i>DURING</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Attitude	47
2	Poor supervision	39
3	Poor team spirit	35
4	Commitment	26
5	Evaluation / Feedback / Monitoring	11
6	Poor knowledge on quality	10
7	Poor planning	5
8	Benchmarking	4
9	Lack of communication	2
Total response:		179
TIMING: <i>AFTER</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response

1	Lack of feedback / evaluation / Monitoring system	55
2	Attitude	42
3	Commitment	41
4	Poor communication	37
5	Knowledge on quality	9
6	Recognition / Appreciation of appreciation	4
7	Benchmarking	3
8	Lack of preventive action	3
9	Cooperation	3
Total response:		142

APPENDIX 5.7:

CHALLENGES OF CORE PRINCIPLE #7: QUALITY ASSURANCE

TIMING: <i>BEFORE</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Lack of procedure on quality	52
2	Poor knowledge on quality	48
3	Lack of sense of urgency / deadline	47
4	Attitude	41
5	Poor supervision	6
6	Poor monitoring system on performance	3
Total response:		197
TIMING: <i>DURING</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Poor knowledge on quality	50
2	Poor supervision	45
3	Attitude	36
4	Development of documented procedure	24
5	Lack of sense of urgency / deadline	9
6	Role and knowledge of management level	5
7	Monitoring / follow-up	5
8	Communication	2
9	Lack of cooperation / teamwork	1
Total response:		198
TIMING: <i>AFTER</i> IMPLEMENTATION		
No.	Types of Challenges	No. of Response
1	Monitoring / Assessment / Feedbacks	57
2	Work culture	43
3	Recognition / Appreciation of performance	41
4	Communication	24
5	Maintenance of quality system (procedure)	14

6	Attitude	8
7	Supervision	3
8	Poor quality control	2
Total response:		193

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Appendix 4.1 - Set of Questionnaire (used in the survey)

WHAT ARE THE CHALLENGES AND HOW EFFECTIVE DOES THE QUALITY SYSTEM UNDER ISO 9000 STANDARD BEING IMPLEMENTED SUPPORT BINTULU DEVELOPMENT AUTHORITY'S (BDA'S) TOTAL QUALITY MANAGEMENT (TQM)?

We are undertaking a study to surface the challenges and to understand how the quality system under the ISO 9000 Standard is being implemented to support TQM of Bintulu Development Authority (BDA). Please indicate your responses in the questionnaires below.

Please answer all questions.

Thank you for your cooperation in making this study a success!

The following questionnaire aims to find out the challenges you have experienced **before, during, and after** (bda) the implementation of the quality under ISO 9000 Standard in your organization and the effectiveness of the quality system in supporting the seven core principles of TQM as outlined by MAMPU. Please write down what you think are the challenges and then indicate the extent of the effectiveness and impact) of the quality system on TQM in BDA by circling the appropriate score ranging from **1** (very low), **2** (Low), **3** (moderate), **4** (high), and **5** (very high). For each challenge that you have filled and the scale that you have given (under the quantitative and qualitative), write down your proposed plan of action to be taken under the **ACTION** column.