Application of Critical Systems Thinking within Telkom (SA) Performance Management Systems

by

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PREFACE

This research has been carried out in 1999 at the Leadership Centre, University of Natal under the supervision of Professor Don Petkov. This document contains original material that has not been presented for any degree to any other University.

Reginald Siyabulela Jaca   31 January 2000

ABSTRACT

This dissertation explores the applicability of the Critical System Thinking (CST) methodology known as Total Systems Intervention (TSI) version one to the complex problems related to the practice of the Performance Management System at Telkom SA. As a point of departure, this research provides a historical analysis of a non-systemic management approach – Business Process Reengineering (BPR) and several uni-demensional hard and soft systems approaches and their contributions to the emergence and development of CST. It is argued that, given the messy and ill-structured problems that emerge as a result of the implementation of Performance Management Systems (PMS) at Telkom, a pluralist problem solving methodology such as TSI is the appropriate methodology applicable to the problem under concern.

ACKNOWLEDGEMENTS

I wish to express my gratitude to my organization Telkom SA, for the assistance they have provided me during my studies at the University of Natal, Leadership Centre. Certainly without the study leave they gave me, this research would not have been possible.

My sincere thanks go to my closest friends and colleagues at the Leadership Centre. My special thanks goes to Essa Al- Seppe with whom I had several debates and discussion regarding systemic thinking. Not only did these conversations deepen my understanding of systems thinking; they also helped me clarify my research goals. I am also grateful to my friends Dr Mxolisi Mavi and his wife Pulane Nathane for the assistance they gave me during the time of writing this dissertation. I am extremely grateful to Dr Mxolisi Mavi who read several drafts of this dissertation and provided excellent editorial advice.

I am also grateful to my supervisor Professor Don Petkov for the encouragement and guidance he gave me during my studies. He affirmed me to develop intellectually and have a clear understanding of systemic approach into problem solving.

Lastly, I thank my family, my wife Wendy and our two kids, Monwabisi and Nompumelelo, for putting up with me during the entire process of writing this dissertation.

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CHAPTER 1

Introduction

1.1 Background

At the centre of this dissertation is my personal experience as a black South African, who has had to negotiate life between two contraposing worldviews, namely the holistic African worldview which I encountered at home and the Cartesian worldview I confronted throughout my academic life. As a child growing up in Soweto, I came under the tutelage of my parents, Mpumelelo and Nomalungelo Jaca, both of whom were products of traditional African society. My father in particular, although not academically (formally) well educated, was a wise and an intelligent man. Tutored by his own parents in matters of African philosophy and cosmology, he believed that there is a nexus connecting the social, natural, and supernatural. He saw the world not as a collection of isolated objects and events but as a collection of phenomena that are interconnected and interdependent.

Growing up as a farmer in the Eastern Cape, my father learned that there is a harmonious relationship between the land, cattle, raw materials, human labour, the environment, and even machinery. This relationship, he taught my siblings and me, is at the heart of African morality and religion – that misfortunes and hostile natural forces occur only as a result of the disturbance of the harmonious relationship between the social, the natural, and the supernatural. The African worldview that my father espoused made him an eclectic person, thus augured him well for community leadership, which he assumed when he arrived in the West Rand, Johannesburg. What impressed me the most about him was his ability to engage people of various backgrounds. He could handle topics ranging from history to science to religion and to politics with ease. Perhaps more than anything else, it was this quality which my father had that left an indelible mark in my mind and inspired me to be like him.

Unfortunately, the African philosophy and cosmology that I imbibed from home was shattered when I entered Jabulani Junior High School, in Soweto, in 1980. The education I confronted there was centered on three disciplines, namely, the general studies, business studies, and the physical sciences. Like all other high school students in the country, I was compelled to choose one of the three disciplines as an area of concentration. I chose to focus on general studies. What I discovered during my five years at high school was that what the South African government considered an educational system was in reality not a system at all. To be sure, the education offered by the so-called educational system was fragmented and the various disciplines were treated in isolation as though they do not fit together. As general studies major, I was prohibited from taking classes in the business as well as the physical science disciplines. Undoubtedly, this new way of looking at the world called into question the holistic worldview I was exposed to at home. It plunged me into a pool of perplexity, leaving me with a sense of twoness – one oriented towards the African worldview, and the other, towards the mechanistic Cartesian worldview.

Upon completing high school, I entered the University of Cape Town (UCT) with the hope of reading towards a law degree. Unfortunately, I could not study law because my high school education had not prepared me for legal studies, I was told. In other words, my career choices and place at the university was predetermined by the academic track I was compelled to choose at high school. Left with no choice, I enrolled for a bachelor's degree in the social sciences, with industrial sociology and political studies as my majors. Although I enjoyed my studies at UCT, I found them rather limiting. The approach was very analytical and the vision of the world entertained in these studies was very parochial. For instance, in industrial sociology we were taught to analyze the activities of the workers in their workplaces without factoring the unfinished businesses that the workers brought from their families and communities to their places of employment. In other words, the activities of the workers in the factory floors and other workplaces were dealt with as though they were divorced from those of the society at large.

This narrow view of socio-economic and political issues inadequately prepared one for the complex world of work. This I discovered when I worked for David Lieberman Architects (DLA). A brief word about DLA is in order. DLA is an architectural company that won a

government tender to, *inter alia*, upgrade railway stations in Soweto, Johannesburg central, and Orange Farm, an informal settlement in Johannesburg South. My responsibility as Public Involvement Programme Consultant at DLA was to introduce these projects to different stakeholders within communities, with the aim of initiate dialogue between DLA and the respective communities about how the upgrading should take place. Among the various stakeholders I dealt with were such organizations as the Pan Africanist Congress (PAC), African National Congress (ANC), Azanian Peoples Organization (AZAPO), Civic organizations, student organizations and trade unions.

Undoubtedly, the work I was doing was for all intents and purposes systemic, in that it enabled me to see the linkages between community development and the architectural work DLA was doing. The only problem I had with my job is that I lacked the skills necessary for the facilitation of systemic work. Although I was aware of the interrelatedness and connectedness of all in life, I nonetheless had not been exposed to the theoretical and methodological underpinnings of systems thinking. Consequently, I could not adequately manage the problems that arose during my work at DLA. Fortunately, when I joined Telkom SA as a human resource consultant, I was given the opportunity to study systems approaches to management at the University of Natal, Leadership Centre. It is here that I have come to appreciate the systemic approach to problem solving.

But more importantly, my studies have enabled me to develop my own critical voice regarding systems thinking. They have provided me a new lens for looking at the world and more importantly my work as a Human Resource manager at Telkom SA. Whereas in the past I understood my HR work as dealing specifically with management of behaviour and activities in the workplace, today I see my work as a nexus connecting the social, technical and ecological aspect of work. More often than not, this systems perspective that I have learned at University of Natal, Leadership Centre has made me question the efficiency and relevance of reductionist management approaches practiced at Telkom SA. One such approach is the Performance Management System – an employee appraisal system introduced at Telkom SA in 1998, aimed at transforming the organizational culture and politics. The remaining pages of this dissertation will

discuss the problem situation regarding the practice of PMS at Telkom and how this problem situation could be resolved by a pluralistic systemic approach to problem solving.

1.2 Goals and Sub-goals

The main goal of this research is to apply a systemic approach into problem solving, and apply it in a problem situation regarding the implementation of an employee appraisal system known as the PMS. In particular, the research seeks to justify the use of Critical System Thinking (CST) and its TSI methodology in order to account for the improvement of Performance Management System (PMS) within Telkom SA. As part of the TSI process, the Soft Systems Methodology (SSM), which entails the drawing of the rich picture, the CATWOE i.e. C-customers A- actors T-transformation W- worldviews O- owners E- environment (CATWOE hereafter) analysis will be adopted during the choice phase of TSI version one as the appropriate systems methodology required to resolve the problem situation under concern.

The subgoals of this thesis can be formulated as follows:

- To investigate the practice of Performance Management System (PMS) of Telkom SA.
- To research relevant systems approaches into problem solving.
- To explore the theory of Business Process Reengineering (BPR) and its relevance to the problem of concern.
- To investigate systems thinking and Critical Systems Thinking (CST)
- To explore the development of Total Systems Intervention (TSI) version one and two
- To formulate a framework for the application of TSI in a problem situation at Telkom SA.

1.3 Scope of the research

This dissertation will explore the emergence and development of systems thinking, focusing specifically on the evolution and application of CST in problem solving situation. In order to illumine the theories underpinning CST and its methodological assumptions, this project will

compare and contrast CST with other systems methodologies such as Viable Systems Model (VSM), Systems Dynamics (SD), Soft Systems Methodology (SSM), and Strategic Assumption Surfacing and Testing (SAST), as well as with a non-systems methodology commonly used in problem-solving, namely, the Business Process Reengineering (BPR) methodology. More importantly, though, this dissertation seeks to show what CST means in a real world situation. Towards this end, the CST methodology known, as TSI will be used (TSI version one only) to tackle the problems associated with the Performance Management Systems -- an evaluation system used at Telkom SA.

1.4 Research methodology

There are a number of articles and books that have been written on the BPR methodology. However, Hammer wrote the foundational work on BPR in his paper *"Reengineering Work: Don't Automate, Obliterate" Harvard Business Review,* 1990. This paper by Hammer introduced BPR to the public and set the tone for subsequent writings on this process- based methodology. This is evident in Hammer and Champy, (1993); Morris and Brandon, (1993); Manganelli and Klein, (1994), and Hammer and Stanton, (1995).

Several books have been written on systemic approach into problem solving. Critical among these are Flood and Jackson, (1991), wherein a historical development of systems thinking is explored and different approaches into problem solving are discussed. Flood and Romm, (1996), which focuses mainly on the application of TSI in concrete situations; and Flood (1995), within which TSI version two is introduced into a non-academic audience, is applied in the real world situation. There are also numerous articles that have been written on CST and TSI by different authors, particularly in the journals *Systems Practice* and *System Dynamic Review* (see bibliography). But those that have been used as primary sources in this dissertation include Jackson, (1991) and Flood (1989), Flood 1995). All of these journal papers help clarify the theoretical underpinnings and methodological assumptions of CST. On the basis of the literature survey and the analysis of the current situation at Telkom a conclusion is made on the application of systems thinking and CST to the problem under concern. A triangulation framework was

followed, in which the research goals determine the research methodology and the relevant research approaches (see Landry and Banville, (1992). The goals of the research indicate the need to use methodologies that account for the human element and for human emancipation. Hence the choice of Total Systems Intervention as a metamethodology and Soft Systems Methodology for implementing the intervention on the improvement of the Performance Management System at Telkom SA. Furthermore different approaches were used that match the nature of the chosen methodologies like Rich Picture, CATWOE analysis etc.

1.5 Importance of the research

This research is important both on the theoretical and practical levels. Theoretically, it shifts the focus away from the sterile debate regarding the superiority or inferiority of reductionist management approach to a complementarist approach to problem solving, whereby the strengths of the various reductionist / isolationist approaches to problem solving are utilized in a pluralistic systems methodology. Another important aspect of this dissertation is that it provides a comprehensive analysis of the development of systems thinking and CST, thus enabling the reader to discern the similarities and dissimilarities between these systemic approaches. On a practical level, this research shows managers how to tackle concrete problems using the TSI version one. More significantly, it provides a framework for using a pluralist system methodology in the process of transformation.

1.6 Description of chapters

Chapter two, "*Investigation into current issues of Human Resources and Performance Management Systems within Telkom SA,*" sets the context for our discussion by introducing the problem context dealing with the implementation of the PMS at Telkom SA as a management tool meant to give Telkom a competitive edge in the global telecommunication industry. The history, structures, culture, and process of Telkom SA are discussed. Following the analysis of the context at Telkom, the PMS, is explored highlighting its process, strengths and limitations

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In chapter three, *"Business Process Reengineering – Its evolution and contemporary issues,"* The non-systemic methodology known as PBR is discussed. Several case studies are explored demonstrating both the successes and failures of BPR. This chapter ends with a critical evaluation of BPR.

Chapter four, *"Development of Systems Thinking and Critical System Thinking,"* introduces systems thinking into problem solving. The evolution of system thinking is discussed and various systems methodologies are explored, highlighting both their strengths and weaknesses. Having illumined the limitations of uni-demensional systems methodologies, the chapter goes on to discuss the origins of CST and explores the various perspective of this methodology as articulated by systems thinkers in the United Kingdom and elsewhere in Europe.

In chapter five, " *An investigation into the Meta-Methodology of Total Systems Intervention,"* The CST methodology known as Total System Intervention (TSI) is explicated. Both the TSI versions one and two are discussed, focusing primarily on their respective processes. The process thinking proffered by TSI is underscored.

In chapter six, *"Application of Total Systems Intervention in a Problem Situation- Telkom SA,"* The TSI version one is applied to the PMS problem context at Telkom. The argument forwarded in this chapter is that TSI version one could have helped Telkom management to anticipate and avert the problems that arose as a result of PMS implementation.

Chapter seven, *"Conclusion,"* provides a synopsis of the entire dissertation and reflects upon the practical outcome of the research. In addition, it proffers a recommendation for future research in systems thinking in South Africa.

CHAPTER 2

Investigation into current issues relating to Performance Management System within Telkom SA

2.1 Introduction

The purpose of this chapter is to discuss the Performance Management System (PMS), which is used by Telkom SA. to assess the competencies and development of its individual employees. In particular, this chapter will explore the process of PMS, highlighting both how PMS is carried out and the role(s) played by the various stakeholders in this process. The problems and tensions that arise during the process of PMS will also be identified. However, prior to discussing PMS, it is important that one first understands something about the structure, culture, processes, and the politics at Telkom SA. For this will enable one to fully grasp the purpose and process of PMS.

Towards this end, then, the four analytical dimensions of the organisation will be employed to illumine the context into which PMS is executed (Flood, 1995). These are: (1) organisational structure, which deals with the structures, functions, co-ordination and control of an organization; (2) organizational processes, which focuses on process flows and control over flows; (3) organizational culture, which involves decision-making processes in relation to social rules, relationship and practices; and (4) organizational politics, which focuses on how power and control is exercised and by whom. Following this analysis of the problem context at Telkom SA, the PMS will be fully discussed and its limitations will be highlighted.

2.1.1 Historical background of Telkom SA

When the South African Government separated Post and Telecommunication in 1991, the Post and Telecommunication Act of 1991, with this act Telkom SA came into existence. With this act of parliament, Telkom SA was now to be managed as a business entity, whose main purpose is to deliver telephone services to all South African communities at a profit. But more significantly, the advent of democracy in 1994 ushered a new dispensation in the life of Telkom. To be sure,

the newly adopted constitution of South Africa, which abolished racial discrimination in all public institutions and private enterprises compelled Telkom SA to review and reconstruct its structures to ensure that the racial imbalances of the past are corrected and equity is established. Indeed, in 1998 Telkom SA introduced PMS as one of the corrective measures. After having employed two different evaluative systems for many years, one for its management staff who were mainly white and the other for its operational employees, Telkom SA introduced PMS for all its employees regardless of race and competence level. Its overall purpose is to develop Telkom SA employees, especially those who come from the historically underprivileged communities, so that they can help achieve Telkom's business objectives while also making Telkom SA reflective of the South African demography (see Fig. 2.1 Census in Brief Report No: 03-01-11,1996) and Fig 2.2 Information from Management Information Services System (MSIS) Telkom SA, 31/12/1999).
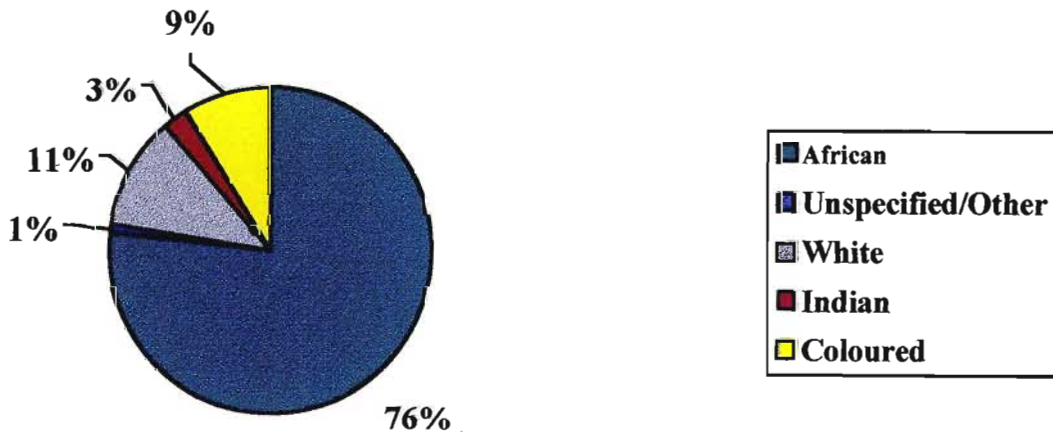
Fig 2.1 Adapted from Census in Brief, 1996

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TELKOM											
CURRENT STATUS											
Grades	Black		White		Grand Total	Black			Female		
	Male	Female	Male	Female		Total	Gap	Target	Total	Gap	Target
11 - 12	9464 88%	878 8%	135 1%	234 2%	10711	10342 97%	1131 11%	86%	1112 10%	-495 -5%	15%
8 - 10	16531 44%	4525 12%	10165 27%	6278 17%	37499	21056 56%	-1443 -4%	60%	10803 29%	-1572 -4%	33%
6 + 7	2061 29%	379 5%	3663 52%	954 14%	7057	2440 35%	-383 -5%	40%	1333 19%	-220 -3%	22%
1 + 5	806 27%	140 5%	1820 60%	254 8%	3020	946 31%	-171 -6%	37%	394 13%	-89 -3%	16%
Total	28862 50%	5922 10%	15783 27%	7720 13%	58287	34784 60%			13642 23%		

Fig. 2.2 Adapted from MSIS Telkom SA, 31/12/1999

Grade 1+ 5 Management

Grade 6+7 Supervisory

Grade 8-10 Operational

Grade 11-12 Support/Auxiliary

2.2 Analysis of Problem Context at Telkom SA

But before we dwell on what PMS entails, let us first explore the context out which this assessment system emerged.

2.2.1 Organizational Structure

The structure has been changed on various occasions since 1991; Telkom's organisational structure has always been pyramidal and hierarchical. At the pinnacle is the Chief Executive Officer (CEO), who is appointed by Telkom's Board of Directors (Currently Operations Committee decide on matters that affect Telkom as a whole) to run the organization in accordance to its vision, mission, statement and policies. Directly below the CEO were Senior General Managers (now called Managing Executives and Group Executives) who oversaw the various organizational functions such as operations, customer care, and installation, to name a

few. Some of the Senior General Managers supervised the Regional General Managers, (now called Regional Executives) who managed operations at six of Telkom's regions. Telkom's regional structures mirrored that of the national office. The regional general manager was at the top of the regional hierarchy, followed by the senior managers, supervisor, the managers, and the administrative/operational staff. At the very bottom of the pyramid were the auxiliary workers.

2.2.2 Organizational Processes

Just as the structure of Telkom SA was complex during the apartheid years, so were the business processes within the organizations. At every level of the organization, be it on the top leadership level, the mid-management level, or the rank and file level, there were a myriad of processes that took place. Critical among these were business processes such as service activation, service assurance, and customer care, which had impact upon the marketing, human resource, and technical environments at Telkom. Telkom's core business is to provide communication services which include voice and data services.

2.2.3 Organizational Politics

Telkom's business processes did not take place in a political or cultural vacuum. Rather, the politics and the culture of apartheid South Africa shaped these business processes. On the issue of politics, Telkom, as already alluded to, was a parastatal organization. Prior to the advent of democracy in South Africa in 1994, the apartheid government oversaw the management of Telkom. For this reason, the philosophy of apartheid was deeply entrenched at Telkom, thus leaving Telkom SA a mirror image of apartheid society. Nowhere was this more evident than in the organizational structure of Telkom. Before 1994, solely whites occupied the top managerial and supervisory positions at Telkom. Blacks, on the other hand, who constituted the majority of Telkom SA employees, were relegated to operational and auxiliary ("unskilled" labour) positions. Concretely, the corporate apartheid practiced at Telkom SA denied blacks the chance of upward mobility, and perhaps more seriously, refused them the right to make decisions about their destiny in the organization. This situation inevitably led to an antagonistic relationship between

the rank and file black employees of Telkom, the majority of whom are members of Communications Worker's Union (CWU), and the overwhelmingly white management and its ally, the Alliance of Telkom Unions (ATU), which represents the interests of white Telkom SA employees.

2.2.4. *Organizational Culture*

Telkom's culture during the apartheid era was basically Afrikaner. The communication symbols and indeed the language of operation was that of the Afrikaners. In short, Telkom SA in apartheid South Africa lacked a corporate culture appealing to all its employers. The implications thereof were that only Afrikaners secured seats in the company's boardroom, where decisions about the company were taken. As in the broader apartheid society, blacks were excluded from all decision-making processes. Hence their views about Telkom SA were not listened to, let alone incorporated in the mission and policies of the company. From the perspectives of black employees, there was no distinction between the political culture of the apartheid regime and the corporate culture of Telkom SA because they both were repressive. While apartheid's political culture stamped political dissent, Telkom's culture disregarded the individual and cultural differences and similarities that existed among the employees at Telkom.

Furthermore, Telkom's parochial view of the world, coupled with its monopoly of telecommunications industry in apartheid South Africa, had an adverse impact on its corporate culture. Because Telkom SA operated from within the framework of apartheid, its management turned a blind eye to the business opportunities that were left untapped in the communities of colour. Prior to 1994, Telkom's service delivery to the black townships and rural areas was very slow, to say the least. Compared to other telecommunications elsewhere in the developing world, Telkom's service delivery was among the lowest. By "service delivery" we are referring to the number of telephones lines opened per person, the time it took for a telephone to be repaired, and the mean time to install a telephone. There is only one conclusion one can draw from the situation described above, that the culture of performance at Telkom SA prior to the inauguration of democracy in South Africa was relaxed. Unfortunately, it remained so for a very long time

because of Telkom's monopoly of the telecommunications in South Africa, which served as a shield against external economic forces. Not only did this monopoly make Telkom SA cling to anachronistic business values; it also encouraged a culture of entitlement among Telkom's white employees.

2.3 The Introduction of PMS at Telkom SA as one of many Corrective Measures

It was against the foregoing backdrop that PMS was introduced at Telkom SA in 1998, per agreement between Telkom's new management and organized labour (both CWU and ATU). According to chapter 5 of Telkom's *Human Resource Manual*, PMS is "the process whereby the performance and development of each individual is managed, that is the planning, assessing and rewarding of performance and recognition of development, supported by continuous coaching and development to help Telkom, through its performers, to achieve its strategic objectives." The broader objective of this integrated process, it is argued, entails: (1) inspiring all employees to exceed the expectations of customers and ensuring growth and competitiveness as a company; (2) instilling and sustaining a performance culture; (3) ensuring that every employee knows what is expected of him; (4) building and enhancing the relationship between performer and promoter; (5) developing our people; and (6) measuring, assessing and rewarding performance.

From the objectives highlighted above, it is evident that PMS was introduced with the sole purpose: to cultivate a performance culture rooted in healthy relationships between the past beneficiaries of Telkom SA and the victims of its discriminatory policies. Although PMS is not a promotion system *per se*, its main objective is to affirm those who perform well in the company and as an additional spin-off making them promotable as well.

2.4 The Process of PMS

The PMS consists of six interrelated stages that have a clear start and end cycle. These are performance planning, observation, feedback, review and coaching, assessment, performance

improvement and personal development. The entire PMS cycle takes place over a period of one year. **Figure 2.3** illustrates the process of PMS.

Performance and development management process
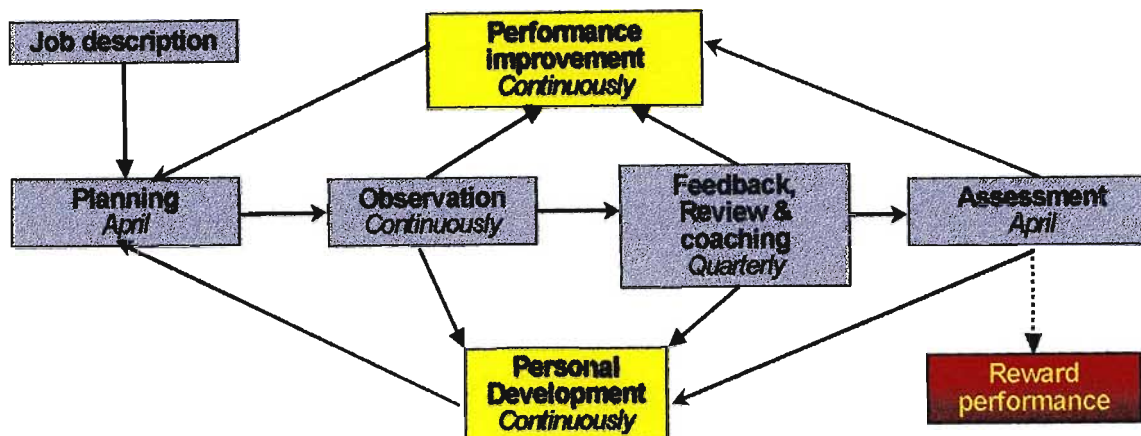
Figure 2.3: The process of Performance Management System (Adapted Telkom SA Human Resource Manual, Chapter 5)

2.4.1 Performance Planning

Like most business organisations, Telkom SA has a business plan that is cascaded down to the various service organisations, levels and functions within Telkom. Each and every employee of Telkom SA is contracted to perform certain function(s) as a contribution towards the realization of the organization's business plan. During the planning stage of PMS, the performer (the individual who is contracted to produce the expected work output) and the promoter (the person to whom the performer is accountable) get together to design a performance and development plan. In this plan, both the performer and promoter set the performance standard and adopt an assessment technique(s) and methodology that will be used to assess the performance of the

performer. Once the plan is designed and has been agreed upon, both the performer and the sign it.

2.4.2 Observation

The PMS observation stage is a continuous process whereby concrete evidence regarding the progress made in delivering outputs is collected and the development plan is monitored. Both the performer and promoter participate in this process, identifying the barriers to performance on output or development of competencies.

2.4.3 Feedback, Review & Coaching

The information collected during the observation stage serves as a basis for feedback, review and coaching. Essentially this stage of PMS is a formal session between the performer and promoter that takes place quarterly, where the observed information is reviewed and discussed. It is during these sessions that the identified barrier or problems affecting performance are tackled and necessary corrective measures are introduced. In case the performance plan designed is no longer relevant or contextual, a new one is designed jointly by the performer and the promoter.

In addition to the formal feedback session, the promoter and performer also engage in an informal feedback and review session on a daily basis, whereby the promoter informs the performer of his or her progress, shortcomings and successes in his or her daily activities. This informal interaction enables the performer to know exactly which areas of his or her work needs improvement, and also enables the performer to know when they are being successful.

2.4.4 Assessment

As shown in figure 2.3, assessment is conducted in two areas, namely, the progress with the development of competencies required to deliver the outputs and the assessment of outputs delivered. The assessment of personal development is conducted to identify if the development plan was successful in terms of imparting the right skills required to deliver outputs. Output

assessment on the other hand, involves checking whether the performer has reached the performance standard set out in the performance plan. During this phase, both the performer and promoter make their individual assessments, using the predetermined assessment technique and methodology. Following this, the individual assessments are then consolidated and an assessment form is signed by both parties, each indicating whether s/he accepts the consolidated assessment. In case there is a dispute, the promoter's promoter will, together with the union representative mediate the dispute. The output assessment score serves as input to determining the individual performance related pay increase.

2.6 A Preliminary Evaluation of PMS

Although it is early to judge whether or not PMS is successful, there are however preliminary results of this nascent performance and development management system that point to both its strengths and weaknesses. Considering the PMS strengths first, there can be no doubt that since the introduction of this system at Telkom SA, a performance culture has been inculcated among the employees. Unlike during the apartheid era, when employees demanded raises regardless of their performance output, today Telkom SA employees know that there is a clear link between performance and remuneration. In short, only those who meet the performance standard set in their respective performance plans are eligible for financial rewards.

Another strength of PMS is that it has enabled Telkom SA employees to see the connection between their individual performance and the overall business plan of the organization – that their individual contributions to the company are valuable. Not only has this realization boosted the self-esteem of the workers; it has also motivated them to play an even more integral part in the life of the organization. Certainly, the quarterly feedback, review and coaching sessions have played a key role in this matter.

Perhaps the most important strength of PMS lies in its developmental aspect. Unquestionably, PMS' insistence on training of employees at all levels of Telkom SA structures in their areas of work has empowered the workers to do their work more efficiently. More importantly, the

development programs at Telkom SA have benefited employees of colour who, as we noted earlier were denied the opportunities for training. Undoubtedly, this development has and will in the future change the complexion of Telkom's leadership.

Now addressing the problems associated with PMS, it must be stated that PMS, like any other system, has its flaws and limitations. There are five such limitations that have emerged since PMS was first implemented. First, although PMS is a joint product of organized labour and management at Telkom, there seem to be a lack of collective ownership of this system on the part of all the stakeholders. To be sure, CWU, which represents the majority of black employees at Telkom, perceives PMS as a management tool meant to promote the interest of capital at the expense of the welfare of the black workers. Management on the other hand, regards PMS as an indispensable performance and development tool that will enable Telkom SA to compete in the global market. In a sense, PMS is understood as a tool necessary for the survival of Telkom SA in a competitive and globalized economy. What has emerged then as a result of this difference in perception is a tension that has inevitably undermined the PMS process.

Another limitation of PMS is that its objectives and process has not been fully communicated to people at various levels of the organization. In particular, there has not been a clear link drawn between PMS and other organizational systems such as human resource, procurement, government relations, technology and network services and customer services and sales. As a result, some managers, particularly line managers, do not bother implementing PMS because to them it is purely a human resource matter.

What is also problematic with the PMS process is that not all promoters have the skills to implement PMS. In particular, there are promoters/managers/supervisors who ignore PMS because they lack competency in the areas of coaching and mentoring. This in turn has undermined the process and indeed the objectives of PMS.

One other problem associated with PMS is that the Strategic Equity Partners (SEP, the American and Malaysian partners of Telkom) are not integrated in the process of PMS because they bring

to Telkom SA their unique management culture. The problem with this is that these partners, who occupy very significant positions at Telkom, do not enforce PMS in their areas of influence because they do not share ownership of it. Not only does this state of affairs undermine PMS; it also promotes a fragmented view of management, which in turn adversely affects homeostasis and synergy within the organization.

The foregoing discussions have pointed to the organizational complexity of Telkom SA. They demonstrate that like a living organism, Telkom SA is a complex and hierarchical system, with each hierarchical level representing a sub-system, within the larger system. We have seen the problems associated with the practice of PMS occur at different hierarchical levels of Telkom. The implication thereof is that intervention of the problem situation must take place at the various hierarchical levels within Telkom. In the following chapter we are going to discuss the various problem-solving methodologies, the aim being to discern which of these methodologies could have helped Telkom minimize or completely avert the problems highlighted above.

CHAPTER 3

BUSINESS PROCESS REENGINEERING–ITS
EVOLUTION AND CONTEMPORARY ISSUES

3.1 Introduction

Prior to 1990 when the first papers on reengineering appeared and the publication in 1993 of Michael Hammer's and James Champy's book *Reengineering the Corporation* many business organizations that applied continuous incremental improvement programs to improve their business performance. These programs place emphasis on small, incremental changes, aimed at improving what an organization did best. According to Hammer and Champy (1993) there are three questions that organizations that used incremental programs sought to answer: 1) How can we do what we do better?, 2) How can we do what we do faster? 3) How can we do what we do at a lower cost?

These incremental changes to improve business performance usually focus on aspects such as quality, automation, reorganization, and rightsizing. Manganelli and Klein (1994) observe that the continuous incremental programs worked well for some time, when the rate of change in the business environment was continuous. They point out, however that because of the accelerated rate of change in today's business world, continuous incremental technique fail to keep up with the accelerated rate of change. As a result, current organizations that seek performance breakthroughs have now turned to BPR. A process-based method for achieving breakthrough performance enhancement, which was first introduced by Michael Hammer in his paper *Reengineering Work: Don't Automate, Obliterate,* Harvard Business Review (July –August 1990) and Hammer and Champy's (1993) book *Reengineering the Corporation.* It is in this paper on which Hammer argued for reengineering as a way forward for the 1990's. In his words "It was time to stop paving cow path. Instead of embedding outdated processes in silicon and software, we should obliterate them and start all over. We should "reengineer " our business: use

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the power of modern information technology to radically redesign our business processes in order to achieve dramatic improvements in their performance" (Hammer, 1990: 104).

According to Hammer and Stanton (1995: XI), between 75 and 80 percent of America's largest companies use BPR and would be increasing their commitment to it over the next few years. Why the shift from incremental improvements to performance breakthrough, one may ask? Because "discontinuous performance gains are the only way to equal or exceed the rate of change going on in a world around us" (Manganelli and Klein, 1994, ix). This chapter will discuss the BPR elements, illuminating its principles, assumptions, and theories that underpin it. In addition, the BPR will be evaluated, looking into its successes and failures.

3.2 Features of Business Process Reengineering (BPR)

3.2.1 BPR formally defined

Hammer (1993, 1995), Rakoswki (1994) and Carr and Johanesson (1995) define BPR as "fundamental rethinking and radical redesign of business processes to bring about dramatic improvement in performance" (Hammer and Champy 1993: 32). Central to this definition of BPR are four major concepts that warrant a brief discussion: fundamental rethinking, radical redesign, business process, and dramatic improvement.

3.2.2 Fundamental Rethinking of business processes

Fundamental rethinking involves the unraveling and revamping of strategic assumptions underpinning a business operation. Put differently, the fundamental rethinking aspect of BPR looks behind the business operation, questioning how and why that particular business operates. The goal of fundamental rethinking, however, is not to improve the already existing assumptions underlying the business in review but to set new assumptions that will render the business viable. When implementing BPR, the person(s) structures the business process in accordance with the

newly set assumptions and not on the basis of the previous process configuration of that particular organization.

3.2.3 Radical Redesign of business processes

Radical redesign entails changing substantially the business processes of an organization. It is not about superficial or cosmetic changes of business process but rather is about dismantling and redesigning of new business processes, taking into consideration the prevailing socio-political and economic factors in a particular context in which the business operates. As with fundamental rethinking, the goal of radical redesign is to give the business organization a competitive edge; it is to enable all the stakeholders in a business – both internal and external – the ability to carry out their tasks efficiently and effectively.

3.2.4 Process Centredness of BPR

BPR focuses mainly on business processes, examining how the tasks within the organization are grouped together and executed. By business processes we are referring to complete end to end set of business activities that together create value for the customer. According to Manganelli and Klein (1994), there are different types of business activities, namely, the value-adding activities, the hand-off activities, and the control activities. All these activities, Carr and Johansson (1995:5) contend, convert business inputs into outputs -- take input, transform it, and create an output for the satisfaction of the customers, both internal and external. When BPR is implemented, this nexus of business activities, which are usually invisible and have no proper linkages in traditional or less process-centered organizations, are examined and reengineered to ensure sustained growth for the business organization and contentment for the customers. Simply put, BPR's main focus is to radically redesign strategic processes (in some cases it replaces such processes) that are value adding.

3.2.5 Dramatic Improvement of businesses

BPR reengineers business processes of an organization in order to bring about a dramatic improvement in its performance. According to Hammer et al; there are three kinds of organizations that undertake BPR to improve their performance. First, are those organizations that find themselves in deep business trouble; when there is no way out. Organizations in this category either shut down the business operations or implement BPR to ensure their survival and viability. Second, are those businesses that are not necessarily in crisis but implement BPR as a precautionary measure. The third category includes organizations that are performing well, without and major hustles and whose horizon is smooth. However despite the stability of organizations in this category embark upon BPR in order to gain competitive advantage and to establish their hegemony.

A pivotal component of BPR is performance measurement, which is essentially a tool that enables one to measure the business performance of an organization. It is generally understood as a combination of factors, namely, the time it takes to deliver a product, the ability to maximize cost savings and to manage the business processes. Organizations that effect these changes in their operations tend to have a competitive edge.

3.3 Strong Leadership as an Indispensable Ingredient of BPR

Another important feature of BPR, which we have not as yet noted, is that it is a management reengineering system whose success depends entirely on strong leadership (Hammer and Stanton: 1995). Strong leadership here refers to persons in positions of leadership who are not intimidated by change; persons who are bold enough to tackle the problems and challenges confronting their companies or business organizations head on. BPR depends on leaders of this caliber. Leaders

who will use their authority, experience, intuition and skills to drive the BPR process from the upper echelons of the organization right to the operational levels/ or rank and file members.

According to Hammer (1996), there are three tasks that must be carried out by those who implement BPR. First, the identification of the process owner whose primary task is to design and manage the desired business processes and to ensure that all the role players with whom s/he works – generally referred to as process performers - understand the processes and their respective roles in these processes. "If the process is to work well," Hammer posits (1996: 78), the process owner must ensure that "well must be precisely defined in a way that is measurable, unambiguous, understood by everyone involved and reliable to people's own work". The second task that the process owner must do is coaching. When the BPR process is in operation, the process owner must make himself or herself accessible to the process performer. S/he must coach the process performers, showing them how best to execute their tasks and resolve the problems that confront them. Unlike a boss in a traditional organization, the process owner does not dictate to his/her subordinates but act as a guide and an enabler. His/her role is to impart knowledge to the process performers so they can perform their tasks efficiently.

As the person who is an expert of the business process, the process owner is charged with the third task of explaining and advancing the business process at different levels within an organization. When others in the organization seek information related to the business process, the process owner will be the one who provides such information. Also, when the organization or some entity within the organization does not support the business process, as they should, the process owner will advocate in the interest of his project.

3.4 Synopsis of the BPR methodology

One can surmise from the foregone discussion that BPR is essentially about a paradigmatic shift in the way in which business organizations and operations are structured. To be sure, organizations that implement BPR are invariably compelled to discard their old ideas, business assumptions and rules, and adopt new ones in order to gain a competitive advantage over against

their competitors. For, as Morris and Brandon (1993) point out, it is difficult to reengineer an organization while holding on to old and redundant paradigms. What BPR envisages in business reengineering is a radical shift from the old set of assumptions, principles, and rules to new ones – ones that guarantee sustained growth of a business.

In the view of Morris and Brandon (1993), the paradigm shift envisaged by BPR can be achieved only when business organizations embark on a continuous process of improvement of their business processes. In other words, change(s) must become a permanent ingredient of the business enterprise. Whenever change in the business environment occurs, the business organization must evaluate the impact of this change upon their organization, looking specifically at the implications of this change for its growth as well as for its customers. On the basis of this evaluation, the organization must then introduce change(s) or alternative strategies that will enable its business to thrive in the new business context. In short, the change in the business environment must always lead to a fundamental rethinking of the principles and assumptions underlying the business, and the radical redesign of the business processes of the organization. Such comprehensive changes are necessary for any business organization to maintain sustainable growth and customer satisfaction.

3.5 Successes and Failures of BPR

3.5.1 The Successes of BPR

Like any other methodology, BPR has both its strengths and limitations. Here we look first at the strengths of BPR and how these strengths have improved the performance of organizations. There are many aspects of business process reengineering that scholars have identified as critical to the success of the BPR methodology (see for an example, Hammer and Champy, 1993: 65-82; Manganelli and Klein, 1994: 12-17; and Hammer and Stanton, 1995: 5-10). The scope and limitations of this dissertation does not allow for the discussion of all the success stories of BPR. What this chapter will do however, is to highlight three features of BPR that enable organizations to improve their performance. First, BPR simplifies the processes within an organization either

through horizontal compression or vertical compression, thus eliminating waste and non value-adding work and enhancing value-adding work such as productivity, service, speed, quality, and customer satisfaction. Second, BPR "delinearizes" organizational processes, allowing for an increase in the speed of productivity and organizational performance in general. Third, BPR engenders cohesion and promotes worker development.

Horizontal compression is the process by which several jobs or tasks are streamlined or combined into one in order to allow efficiency and to cut down handoffs, errors and misunderstanding. To illustrate this process let us consider the General Telecommunication Enterprise (GTE) experience (see Hammer and Champy, 1995: 6). GTE is one of the largest providers of local telephone service in the US. An important component of GTE business operation is its repair and maintenance department, which provides technical assistance to customers. Prior to implementing BPR, the process of repair and maintenance at GTE was very long. Customers who called GTE to seek the repair of their telephone lines were first connected to a repair clerk, whose task was to log in the customer's complaint and to pass it on to the line tester. The responsibility of the line tester was to test the telephone line, checking if there is a problem in GTE's central office switch or line. If so, the line tester would then pass on the information to the central office technician or dispatcher who, in turn, will assign the case to a service technician. The service technician would then go to the residence or company to repair the telephone line.

The leaders at GTE realized that the repair and maintenance process was very long and costly. In an attempt to reverse this situation, they implemented BPR. Consequently, they found out that it was more cost effective for GTE to have what is known as a *caseworker* – a person who is knowledgeable about the end-to-end process (in cases where it is not possible for one person to know everything about the process, a *case team* would be appropriate) - to handle repairs and maintenance than to have several people with limited knowledge of the process. Because of the implementation of BPR, GTE was able to slash the time it took to repair the telephones. In addition, the caseworker has been able to resolve 40 percent of customer problems on the phone. All of this has increased customer satisfaction and the time and energy that was spent on the elaborate process of repair and maintenance is now invested in other value-adding jobs (Ibid.).

Vertical compression on the other hand, has to do with the decentralization of control and decision making processes. BPR ensures that decision-making or control processes are not separated from real work but are integrated in it. In other words, advocates of BPR insist that decision-making must be a part of the work. Those who carry out a project, be it a caseworker or a case team, must make decisions about the project themselves and not consult with someone in the pyramidal hierarchy of management. Such a configuration of work not only reduces the need of supervisory positions; it also empowers workers. For instance, the caseworker at GTE no longer had to consult with the various supervisors who oversaw the elaborate process of repair and maintenance. Because of process reengineering, s (he) was empowered to take decision s (he) deemed fit to solve a customer's problem. Such affirmation of workers boosts not the self-esteem of the workers themselves but also, the productivity of the company or organization. It is an open secret that workers who are affirmed in their jobs end up taking ownership of the project(s) with which they are involved, and their contribution to the company or organization increases. This, according to Hammer and Champy (1995), was evident not only at GTE but also at other corporations that implemented BPR.

The second critical feature of BPR that enabled companies to improve their performance is what is called "delinearization," a process by which the sequencing of work not according to linearity but in accordance to needs and natural precedence in the work (Ibid. 53 & 54). To illumine this point, let us consider the production process at Federal Mogul, of which Hammer and Stanton (1995: 7-8) write. Federal Mogul is an auto manufacturer in the US, whose old production processes consisted of 8 steps. The first step was to determine the specification of the part required – this was done by the sales representative; the second, to hand off the specifications to the engineer who designed the part; the third, to select a company plant that has the capacity to manufacture the part; the fourth, to send the design to the selected plant through the US mail service; the fifth, to take the design to the "toolroom"; the sixth, to design and manufacture the tools necessary for the manufacturing of the part; the seventh, to manufacture the part; and eighth, to deliver the finished part to the customer.

According to Hammer and Stanton, Federal Mogul's production process took 20 weeks to be completed while their competitors did the same work in twelve weeks and others in 6 weeks. In light of this situation, Federal Mogul sought to reengineer their production process so they could compete with the other companies in their business environment. Towards this end they implemented BPR. Now in the reengineered process, the sales representative and the engineer visit the customer as a team – no longer does the engineer have to wait for the sales representative to finish his or her tasks. The benefit of this set up is that it eliminated the misunderstanding that usually takes place during the handover and slashed the time that elapsed between the early and late steps of the process. In addition, Federal Mogul stopped using the US mail service. Instead, it integrated its information management system, which made it possible for people at various levels of the production process to access the information quickly. This information system eliminated the delays that occurred between steps and sped up the production.

The third benefit of BPR implementation is the cohesion and development of the work force. Because of its focus on processes, BPR looks at functions and not organizational structures. Correspondingly, it does not place emphasis on individual worker status but on the function(s) one executes. For an example, the various person involved in Federal Mogul's production process are measured and rewarded not according to the status accorded them by the pyramidal hierarchical management but are measured on a common basis: the performance of the end-to-end business process (Hammer and Stanton, 1995: 9). BPR's concept of case team enables the workers to see themselves as an important unit of the company or organization, and allows members of the case team to learn from each other. Undoubtedly, the spirit of cooperation that BPR engenders not only unites the workers but also solidifies the culture of the organization.

3.5.2 The Failures of BPR

One of the major failures of BPR has to do with its theoretical bankruptcy. There seem to be a credibility gap between the theory of BPR and its application. BPR proponents maintain that BPR is concerned about the radical redesigning of value adding and strategic business processes. Its focus, they argue, is not on organizational structures such as departments because it is not

possible to reengineer people who constitute these departments (Hammer and Stanton, 1995). The irony of the situation is that most organizations that embark on BPR end up with downsizing of their staff. For instance, the reengineering of the GTE repair and maintenance process resulted to the elimination of supervisory positions and the appointment of a caseworker. Concretely, this meant loss of jobs. In essence, what this outcome tells us is that BPR has impact not only on how work is done but also, on the people who do the work. The unfortunate thing is that BPR exponents do not acknowledge this pertinent issue. Hence there is nothing in BPR methodology that addresses the concerns of the casualties of reengineering.

Another failure of BPR, which is related to foregoing one, is its undimensional approach to problem solving. BPR, we have learned in this chapter, is process centered. That is, is focused solely on reengineering the business processes that increase the performance of an organization. The problem with this theoretical and methodological approach is that it tends to obscure the nature of organizations; it gives an impression that processes alone determine the performance of an organization. Far from it! as we shall learn in the remaining chapters of this dissertation, the business processes of any organization are shaped and influenced by a myriad of factors. To be sure, the corporate culture, politics, individual ambitions, environmental factors, *inter alia*, has enormous impact on the value-adding business processes. To suggest, as BPR advocates do, that an organization's performance can be changed without corresponding changes in the culture, politics, and structures of an organization is like building castles in the air. We concur with Manganelli and Klein (1994: 11) that "a process cannot be changed unless all the supporting elements are changed as well".

To illustrate the point above, let us consider one of the unsuccessful stories of BPR involving an electrical company in the US. According to Hammer and Stanton (1995: 229-238), this unnamed US company produced and supplied electricity to people and businesses in several US states for a long time. However, in the interest of promoting competition and breaking down monopoly, the US Congress passed a law stating that no electrical company should produce and supply electricity at the same time. In the light of this newly enacted law, the electrical company in

question decided to embark upon BPR. A newly appointed senior vice president of marketing was appointed as a sponsor for the reengineering project and a case team was also selected.

Unfortunately, BPR did not work successfully for this electrical company due to a number of problems. Chief among them was the company culture and politics. According to Hammer and Stanton (1995), the electrical company in question implemented BPR without tinkering with its corporate culture. In other words, those who were charged with the responsibility of reengineering were not prepared to adjust to the new world of work. In addition, the power relations were not altered to suit BPR. There was too much infighting among members of the team and some did not like the sponsor because he was an outsider and had not earned his management credentials within the ranks of the organization. These factors, *inter alia*, rendered BPR ineffective.

It must also be noted that BPR failed in some instances because it lacks a built-in element of self-critique. In other words, there is nothing in the BPR theory and methodology that allows its practitioners to critically reflect on the BPR process and the results it produces. The problem with this issue is that companies like the US electrical corporation we discussed above invested much of their resources in the BPR process not knowing that it was not going to deliver the goods. If BPR had a self-critique element in-built in its theory and methodology, then those implementing it would be able to reflect critically on what was right or wrong with the process, and perhaps provide correctives along the way. This way, disastrous situations like that of the US electrical company would have been averted.

It is for the foregoing limitation of BPR that systems thinkers dismiss BPR as a management fad. Perhaps one of the fiercest opponent of BPR is Jackson (1995) who, inveighs against all unitary approaches to problem solving. On BPR, he writes, "BPR is prescribed without reference to earlier well-documented research on defunctionalization, such as that concerned with matrix structures and Beer's viable system model, and there is no attempt to present a theoretical base for the work which would allow others to understand why BPR sometimes succeeds and why, no doubt, it sometimes fails" (Jackson, 1995: 35). Against what he perceives as the theoretical

bankruptcy of BPR, Jackson proposes critical systems thinking as the most viable approach to problem solving. This systemic approach into problem solving, he maintains, takes a holistic rather than a partial view of what is necessary for good management (Ibid. 37). In the next chapter we shall look at the emergence of critical systems thinking.

BPR would not have been an appropriate intervention methodology applicable to the problem situation at Telkom for the following reasons. First, as noted above BPR is process-centered – it focuses solely on the various processes within an organization and not on the organizational culture, politics and social relation within the organization. If applied the problem situation concerned BPR would only lead to the radical redesign of the processes of PMS and leave Telkom's culture and politics intact. Second, and related to the above point, BPR does not take human emancipation into consideration. Given that PMS was conceived as one of the tools of transformation, the application of BPR in the context would have been inappropriate because PMS and BPR appear to be incompatible or incongruent. Third and final, if applied to the problem context BPR would not lead to sustainable management of the complex problems related to the practice of PMS, because of its reductionist approach to problem solving. What the problem context at Telkom calls for is a holistic and systemic approach capable of solving complex problems at various hierarchical levels within the organization. In the next chapter we look at the emergence of such an approach to problem solving.

CHAPTER 4

DEVELOPMENT OF SYSTEMS THINKING AND CRITICAL SYSTEMS THINKING

4.1. Introduction

Over the past 40 years, management science has been shifting its focus away from reductionist management approaches which tend to look at problem solving within organizations from a narrow isolationist perspective to a more integrated and well theorized problem solving methodology based on systems thinking. This management methodology is known as Critical Systems Thinking (CST hereafter). This chapter seeks to explore the development of CST. However, because CST emerged from within the context of system thinking and is a part of this approach, our discussion of CST will be preceded by a brief discussion of the evolution of systems thinking.

4.2. The evolution of systems thinking

Although the systems thinking approach began as early as the sixteenth century during the Scientific Revolution, it gained particular ascendancy during the first half of the twentieth century when the old age debate between mechanism and holism reached its peak. At the heart of this debate was the question about how best to understand complex phenomena such as living organisms and machines. According to Flood and Jackson (1991: 3), "systems thinking is traditionally accepted as emerging in the 1940s as a response to the failure of mechanistic thinking to explain biological phenomena." By "mechanistic thinking," they refer to the Cartesian philosophy or paradigm advanced by, among others, Copernicus, Galileo, Descartes, Bacon, and Newton, which states that complex phenomenon can be understood only by analyzing its elementary parts. This philosophy found its theoretical manifestation in Descartes' method of analytical thinking.

Opposed to this Cartesian paradigm were the organismic biologists, who, as Flood and Jackson (1991) and Frijof Capra (1996) point out, pioneered the systems thinking approach. Perhaps one of the influential exponents of organismic school of thought is the biochemist Lawrence Henderson who, in his study of living organisms and social organizations, recognized that complex phenomena are made up of interrelated, interacting, and interdependent parts (Capra, 1996: 27). Hence he used the term "system" to denote both the living organisms and social systems (See Robert Lilienfeld, 1978: 14). As Capra observes, Henderson's concept of system became widely used in organismic biology. "From that time on," Capra further points out (Capra, 1996: 27), "a system has come to mean an integrated whole whose essential properties arise from the relationship between its parts, and 'system thinking' the understanding of phenomenon within the context of the larger whole." The early system thinkers like Henderson utterly rejected the analytical method associated with Descartes, arguing that systems cannot be analyzed. For dissecting systems to elementary parts would inevitably destroy the systems themselves. Against system analysis, the advocates of organismic worldview argued for the study of the relationships between the different parts of the system.

In line with this paradigm, Joseph Woodger, another noted exponent of organismic biology, studied the organizational complexity of living organisms and concluded that the organizational structure of such organisms are hierarchical in nature. Moreover, he recognized that each hierarchical level of living organisms represents a system within the larger system, which operates under its own laws (Capra, 1996: 28). Each of these systems, Woodger posited, forms a whole with respect to its parts while at the same time being a part of a larger whole. Related to the notion of hierarchy in the organization of living organisms was C.D. Broad's concept of "emergent properties" which refers to those properties that emerge at a certain level of complexity but do not exist at lower levels. As Capra (1996) points, organismic biologists affirmed Broad's concept of emergent properties, arguing that at each level of the hierarchical structure of living organisms, the observed phenomenon exhibits properties that do not exist at the lower level. For instance, they pointed out that there are different levels of complexity between cells and tissues, and between tissues and organs.

Another significant point made by exponents of the organismic view is that the study of organized complexity in living organisms must be contextual. That is, each observed phenomenon within the system must be understood in light of both its internal and external environment. Internal environment here refers to the relationships and interactions between systems in a complex and hierarchical system. By external environment, the organismic biologists referred to the environment or ecosystem within which living organism nest. For organismic biologists, the study of context is very important because systems are not the same. In their view there are two types of systems – an "open system"and a "closed system." An open system is understood as a system of high complexity that is in constant interaction with its external environment or ecosystem, with each modifying the other and being modified in return (De Rosnay, 1978: 25). The closed system, in contrast, is a system of high complexity that is totally cut off from the external environment, and thus exchanges neither energy nor information with its environment. This distinction between open and closed systems, organismic biologists believed, is crucial for understanding organizational complexity.

4.2.1 The Systemic Approach

Undoubtedly, the ideas propounded by organismic biologists had impact not only in the biological sciences but also in other academic disciplines such as cybernetics, information theory, and system theory. Because of this cross-disciplinary influence, an interdisciplinary approach called *systems approach* was born. According to de Rosnay (1978: chap. 2, p. 1), this approach is not to be considered a "science," a "theory," or a "discipline" but rather, "a new methodology that makes possible the collection and organization of accumulated knowledge in order to increase the efficiency of our actions." In his view, the systemic approach inherited three basic principles of organismic biology: (1) the concept of system. As de Rosnay points out, the systemic approach rests on the conception of system. It understands complex phenomena as systems; (2) the notion of contextuality – that organized complexity can best be understood by exploring the interactions and relationships among the various parts of the complex system as well as by exploring their external environment in the case of open systems; and (3) the notion of emergent properties – that within a complex system are other systems with varying amounts of

complexity. These fundamental principles of organization underpin the various systems methodologies that have been developed by systems thinkers in the field of management science, Let us briefly look at these methodologies.

4.3 Systems Methodologies

There are different approaches into problem solving which are premised from systems thinking. These include Hard Systems Thinking, which will not be discussed here as it is outside the scope of the research, the Viable Systems Model (VSM), Systems Dynamics, Soft Systems Methodology (SSM), Strategic Assumption Surfacing and Testing (SAST) and Critical Systems Thinking. There are many other strands of systems thinking which for space reasons will not be considered here (For further details see Flood and Jackson, 1991).

4.3.1 Cybernetics/Viable System Model

Cybernetics is described as the methodology that studies communication and control in living beings and in the machines built by man. Rosnay describes it creatively as "the art of managing and directing complex systems "(1978: chap. 2, p. 5). According Espejo and Markus (1993), when an environment becomes more complex, adaptability, foresight and learning become critical features for a social system to survive and develop. This is particularly true of business organizations. To be sure, the viability and survival of organizations depends not on the profit it makes but on its ability to adapt to changes in the environment that is ever changing and becoming complex. Put differently, profit is not a strategic goal that ensures the effectiveness and efficiency of an organization; it is rather an outcome or a product of a strategic methodological system that emphasizes value potential, viability, and the development of an organization. This system is called the Viable System Model (VSM) or cybernetics.

The operational assumption behind VSM is that in a social organization there are different levels of complexity. These complexities must be controlled in order for the organization to achieve viability and effectiveness. The VSM model ensures that an organization prepares itself for its effectiveness and is able to understand the environment as part of the process of ensuring

effectiveness. This, according to Clemson (1984: 47), VSM does by ensuring that people at different levels of the organization perform five critical functions, namely, implementation, co-ordination, control, intelligence and policy.

The VSM proponents argue that the performance of these functions must be recursive, both at the super-system and sub-system levels. That is, the same structural principles must be obeyed by the people who deal primarily with day to day operational business as well as by those concerned with long term ideas. This way, the VSM advocates maintain, organizations will be able to manage their internal processes, thus ensuring homeostasis and internal synergy.

VSM provides a good theoretical overview on how one should look into the processes and functions within an organization. However what it neglects are the individuals who perform these functions and keep the processes going. I concur with Flood and Jackson (1991: 110) that the VSM model has little to say about social system because of its neglect of the qualities brought by human actors who make up the organization. More disturbing about this model is that it is very silent on power relations, which characterize every social organization.

4.3.2 Systems Dynamics

Systems dynamics (SD) is premised on the assumption that the basic functioning of systems depends on the interplay of feedback loops, flows, and reservoirs (de Rosnay, 1978: chap. 2, p. 9). SD proponents maintain that the various elements that form a complex system interact and interplay. During this interaction, the connecting elements form loops, which are transmission circuits through which information between the connecting elements is transmitted. The information or data that is shared between the connecting elements is called feedback -- hence the loops involved in this process are called feedback loops. According to de Rosnay, feedback is either positive or negative. Positive when it "facilitates and accelerates the transformation in the same direction as the preceding result (de Rosnay, chap. 2, p. 10)." Negative feedback, in contrast, occurs when "the new data produce a result in the opposite direction to previous results" (Ibid.).

The SD proponents further argue that in a system where transformation occurs, information is transmitted either as input or output. Generally, input is understood as information or matter that the environment sends to the system while output is regarded as information or matter that the system deposits on the environment. However, on analysis, the SD model is largely closed to the environment – all the influential factors are contained within and therefore the inputs and outputs that transcend the boundary are restricted. As Flood and Jackson point out (1991, p. 62), "a system dynamics (SD) view is one that places emphasis on structure, and the processes within that structure, assuming that this is how dynamic behavior in the "real world." In a nutshell, the word "environment" in SD denotes only the internal environment – the processes within a complex system. Correspondingly, the SD model looks at the multi-causal feedback loops (inputs and outputs) that exist between the elements.

The goal or purpose of systems dynamics is to control the feedback dynamic within a system as a way of ensuring a balance in output and input. This is critical because without this balance the system can self-destruct. For instance, when a positive feedback loop is left to itself it will inevitably lead to the destruction of the system, through explosion or through the blocking of all its functions. To avoid this, system dynamics analysis, which analyzes the four significant characteristics of the structure of the complex system, namely, the *order*, *direction of feedback*, *non-linearity*, and *loop multiplicity*, allows one to predict and control the output objectively (For more on this, see Flood and Jackson, 1991, p. 63 – 64).

The basic methodology of systems dynamics is based on formulation, simulation and conceptualization. Formulation refers to policies and models which workout predictions. On simulation, it is argued that the aim with SD is "to simulate possible scenarios for businesses, firms and other organizations which, it is assumed, substantially decreases uncertainty and gives us greater confidence about implementing decisions (Flood and Jackson, 1991, p. 64)."Simulation in SD is done mathematically, through computers or computer packages. Conceptualization has to do with how the system can be conceived structurally. In other words, before formulation and simulation are carried out, a SD practitioner must identify and describe the "order of the system," using what is known as the "signed digraph" (For more on the SD methodology, see Flood and Jackson, 1991, p. 64-73).

SD is a very good methodology in that it enables one to understand well the technical aspect of an organization. The information derived from system dynamics analysis makes possible the control of technical processes within the organization and allows one to predict dynamic behavior. However, as with other methodologies, SD has its own limitations. Principal among these is its theoretical premise that dynamic behavior come as a result of the structure of a complex system. This is problematic because SD analysts fail to recognize that social reality does not occur in a closed environment under controlled situations but rather, is a phenomenon produced by an interplay of not only the feedback loops within the observed structure but also of a myriad of factors, some political, economic, as well as cultural. If anything, the study of social reality must be multi-foci, taking into consideration particular theories that illumine the various aspects of the social reality under study.

4.3.3 Soft System Approaches

There are several methodologies that are classified as soft systems. Because of the scope of this chapter, it is not possible to discuss all of these methodologies here. What this chapter will do however is to discuss in brief two of the methodologies, namely, the Strategic Assumption Surfacing and Testing (SAST) and the Soft Systems Methodology. Hopefully this discussion will highlight the principal characteristics of soft systems methodologies.

4.3.3.1 Strategic Assumption Surfacing and Testing

According to Churchman "the systems approach begin when you first see the world through the eyes of another" (Churchman cited from Flood and Jackson; 1991:119). Strategic Assumption Surfacing and Testing (SAST) focuses mainly on the relationship between the participants who are involved in a problem solving situation or intervention. SAST does not focus on the characteristics of the system, which constitutes the problem situation. As indicated by Flood and Jackson (1991: 119), in this approach, the human and political aspects of the organization are brought to the fore while the issue of organizational structure slides into the background. SAST seeks to engage members of an organization or community in a consensus-building process, where each member's assumptions about a social reality are scrutinized and evaluated in relation to other alternative assumptions held by other members of the organization or community. The

SAST methodology has four stages, namely, *group formation, assumption surfacing, dialectical debate*, and *synthesis* (For an elaborate discussion of this methodology, see Flood and Jackson, 1991: 124-128; and Jackson, 1991: 141-144).

SAST revolves around four philosophical points. First, that the strategic problems of organization are complex, messy problems and not structural problems. Second, that organizations are unable to deal with messy problems because they find it problematic and difficult to challenge accepted and internalized ways of doing things - one of the aims of SAST is to ensure that prior assumptions are evaluated and alternative policies and procedures are introduced and considered. Third, that the organization is seen to learn when its most cherished assumptions are challenged by counter assumptions. Fourth, it is assumed that conflict is inevitable, since the success of this approach depends upon the grouping, which is strongly committed.

SAST is based upon four principles, which are integrated and incorporated into its methodology. They are adversarial, participative, integrative and managerial mind supporting. In brief, the adversarial considers opposing or different views. The participative component places emphasis on the involvement of people at different levels within the organization. Following the debate of the various worldviews brought to the fore; the integrative principle then calls for the synthesis of these worldviews. The consensus that arises from the synthesis will then give a manager a deeper appreciation of assumptions held by various members of the organization as well as give him/her a better understanding of the organizational policies, procedure and problems.

One of the strengths of the SAST methodology is that it engenders or fosters a democratic culture in an organization, where every individual's voice is given visibility and importance. Not only is this approach to problem solving good for the self-esteem of the individual members of the organization, it also ensures transparency within the organization, which in turn brings about organizational stability.

There are, however, weaknesses associated with the SAST methodology. Chief among them is the lack of power analysis. The SAST exponents fail to recognize that in any organization there are power dynamics, which determine whose voice is to be taken seriously and which to ignore. It is an open secret that those who come from the upper echelons of an organization usually

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control the discourse – they often set the agenda and define the rules of debate. More often than not, the rank and file membership, because of fear of victimization, would tow the line that is set by those in the corridors of power. Another criticism of SAST, which is related to the one above, is that it assumes that all participants in the group formation are willing to share their opinions.

To the contrary, people who find themselves in an undemocratic corporate culture or in an organization wrought with unfair labor practices are more than likely to keep their mouths shut for fear of harassment or even dismissal. In such situations, meetings are approached with suspicion and in this context no open debate takes place. In short, SAST cannot properly operate in coercive contexts. It certainly would not have worked in apartheid South Africa, where institutional racism and inequality was deeply entrenched.

4.3.3.2 Soft Systems Methodology

Soft Systems Methodology (SSM) is a learning system, which initiates an incessant process of inquiry that ultimately leads to action. Like SAST, SSM moves from the premise that different people adhering to different worldviews make decisions about a situation(s) on the basis of the assumptions inherent in their respective worldviews. Unlike hard systems thinking, whose point of departure is a carefully defined objective that is taken as a given (Churchman, 1989: 74), soft systems like SAST and SSM have as their starting point complex and messy problems that intersect.

SSM is seen as a process of managing organized action. According to Flood and Jackson (1991) SSM works with complex issues while acknowledging the subjective part of human participants. It is better used in messy and ill-structured problem context; where the real causes and origin of the problem is not very clear. This soft system methodology helps to prevent decision- makers from taking decisions on the basis of pre-conceived ideas about assumed problems situations. Whereas hard systems approach regard problems, as concrete, real and solvable, soft systems approach does not view organizational problems as neatly structured but rather as messy and complex. Hard systems practitioners tackle the problem knowing exactly what the end should be (for instance, VSM proponents would employ their five systems levels to diagnose the problem

and decide on how to problem solve), soft systems exponents explore the problem not knowing what the outcome will be. This is so because the real causes and problem situation is unknown.

The SSM is thought of as a seven-stage process of inquiry (Checkland, 1981). Following is figure 4.1, which shows the SSM process of inquiry. This is now known as SSM (Mode one) Checkland and Scholes, 1990).

The first and second stage involves finding out about the problem situation. In other words, during these stages information about processes and structures is gathered. In addition to gathering information about processes and structures, the SSM practitioner will draw the rich picture during the first two stages of the SSM. The rich picture is a cartoon like expression, which highlights the problem situation and linkages among stakeholders. According to Peter Checkland, the rationale for drawing of a rich picture "lies in the fact that the complexity of human affairs is always a complexity of multiple interacting relationships; and pictures are a better medium than linear prose for expressing relationships. Pictures can be taken in as a whole and help to encourage holistic rather than reductionist thinking about a situation" (Checkland, 1999: A16). Stage three is the root definition; it is an idealized view of what a relevant system should be. What should be done, who should do it, and what is to be done? This process of inquiry is carried out through a system of analysis known as CATWOE:

-       Customer – victims and beneficiaries

-       Actors – those who do the activities

-       Transformation process – the purposeful activity, which transform input into an output.

-       Weltanschauung – the view of the world that makes the definition meaningful

-       Owners – who can stop the activity

-       Environmental constraints – those constraints in the environment that this system takes as given.

SOFT SYSTEMS METHODOLOGY

1.
The problem situation: unstructured

2.
The problem situation: expressed

3.
Root definitions of relevant systems

R 1   Rn
R2

4.
Conceptual models

C1
Cn
C2

5.
Comparison of 4 with 2

6.
Feasible, desirable changes

7.
Action to improve the problem situation

Real world
Systems thinking

Other systems thinking

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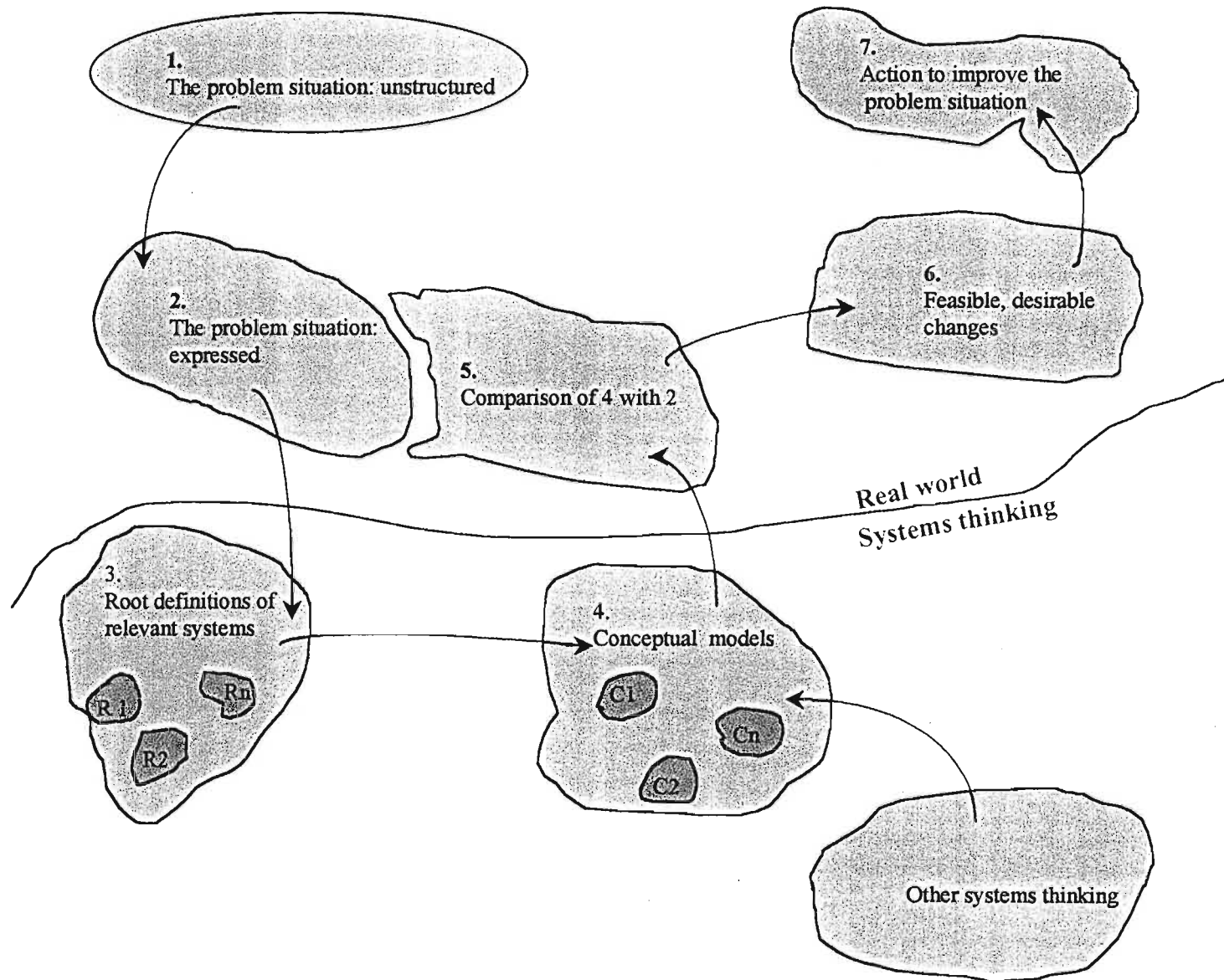
Stage four is about building conceptual models directly from the root definition. Stage five is about comparing conceptual models in stage 4 and reality expressed in stage 2. According to Flood and Jackson, "differences between the idealized models and reality highlight likely changes that would have to be made in order that reality better reflects the pure system thinking contained in the models" (Flood and Jackson, 1991:176). During stage five, an open debate about possible changes that could improve the problem situation is initiated. Stage six involves decision about feasible and desirable changes. Stage seven is taking action. This is a stage in which proposed systemic changes are implemented.

A major strength of SSM is that it is easily accessible to people regardless of their educational backgrounds and skills. In other words, the implementation of SSM does not depend on the expertise of an individual (s) but rather, could be executed by any sober-minded person. Another strength of SSM lies in its contextuality. As we have seen above, SSM does not impose upon its participants a priori knowledge about the social realities they confront. Rather, it allows participants to bring to use their own experiences and perception of the problem situation to the process of inquiry. As Flood and Jackson (1991:178) observes this approach to problem solving not only illumines the problem situation; it also allows participants to add flavor to the methodology.

It must be noted however that SSM, like other systems methodologies has its own limitations. Prominent among them is SSM's inability to function in contexts where there is ideological rigidity among members of an organization or society. For instance, it is very unlikely that in an organization where there are Marxists and capitalists or proponents of capitalism a consensus on a particular issue can be reached because these ideologies to which members cling are highly contentious and contradistinct. Related to this is another limitation of SSM, namely, its neglect of inequalities in organizations and societies. It is common that in any organization or society wrought with inequalities, the dominant groups tend to dictate and impose their will on the less dominant groups. This was certainly the case in apartheid South Africa, where whites prescribed for blacks a particular way of living. Furthermore, SSM focuses on the perceptions of individuals within organization as though organizational structures and processes do not shape such

perceptions. To be sure, how one perceives himself or herself and the environment in which he/she operates has a lot to do with one's social location in a particular environment. To suggest otherwise, as SSM proponents do, is to obscure human and organizational behavior.

In conclusion, it must be noted that, although methodological different, the systems approaches discussed in this chapter share one characteristics—they are unilateral and uni-demensional in their approach to problem solving. In other words, each of these methodologies were regarded as comprehensive and non-collaborative. As we shall see in the next section, it is this kind of chauvinism on the part of the advocates of each of the systems methodology discussed above that prompted other systems thinkers to develop a complementarist systemic approach to problem solving known as CST. It is this approach that this discussion now turns to.

4.4 Critical Systems Thinking

If anything can be said about the systemic methodologies discussed above, it is that they have one thing in common: they are all isolationists in their approach to problem solving in organizations and societies. Although they are systemic, each methodology focuses on a particular aspect of organizational complexity. Whereas the hard systems focus on fixed subsystems that exist within an organization, soft systems focus their attention on individual perceptions. More important to note is that adherents of each of these systems approaches believe that their approach is superior. Consequently, not enough internal criticism has been entertained and cross-fertilization has not occurred. It was precisely for this reason that a new systemic approach to problem solving known as Critical Systems Thinking (CST) was developed. Following is a brief discussion of the development, evolution, and methodology of CST.

4.4.1 Emergence of CST

Critical management science emerged in the late 1970s, in response to what CST proponents perceived as a lack of an element of self-reflection within traditional management science. Among others, T. Lowe, T. Tinker and Jackson (Jackson,1991) criticize these traditional management sciences of being dominated by a technocratic consciousness, a consciousness that

does not consider the impact of environmental, social, and human factors upon an organization. For instance, they point out that traditional management approaches do not question the existing inequalities within organizations as well as in the society in general. Furthermore, the advocates of critical management science are appalled by the lack of internal criticism within the traditional management field. In particular they criticize the traditionalists for not questioning the theoretical and methodological underpinnings of their own approach to management. Their assumptions or paradigms that they hold are fixed and taken for granted as correct.

4.4.2 Critical Systems Thinking as developed in the United Kingdom

For Jackson and other advocates of CST, there is no single management theory and methodology that can address the myriad of problems faced by contemporary organizations and societies. In other words, there is no single management approach that can solve organizational or societal problems independent of other management approaches. Against the traditional or reductionist approach to management, Jackson and his colleagues propose the CST, which, among other things, promotes complementarism and diversity in management science. In addition, there are two major strands in CST as indicated by Midgley (1997) CST in the British research as will be discussed here and the strand of CST promoted by Werner Ulrich.

CST is a holistic and systemic approach into problem solving, which is based upon five pillars, namely, critical awareness, social awareness, and dedication to human emancipation, complementarism (at both the theoretical and methodological levels).

4.4.2.1 Critical Awareness

As an approach that integrates complementary management theories and methodologies in problem solving, CST places emphasis on the understanding of the various theories and methodologies it integrates as well as the contexts into which it applies these theories and methodologies. This kind of an exploration is called critical awareness. There are three interlinked forms of critical awareness that system practitioners identify in the literature on CST:

(1) the understanding of the strengths and weaknesses and the theoretical underpinnings of available systems methods, techniques and methodologies (Jackson, 1991); (2) the understanding both the context of application and the possible consequences of employing the methodologies once the context has been defined (Flood, 1990; Jackson, 1990); and (3) the close examination of the assumptions and values underlying the systems methods. To the extent that CST questions the fundamental assumptions underlying the systems method, it is similar to BPR. However, where CST departs from BPR on this issue is on the depth of its critical examination of the systems method. Whereas BPR focuses its examination on the business processes, CST moves behind and beyond these processes, exploring the context(s) underwhich these processes occur and the impact of these processes on human relations and the environment.

4.4.2.2 Social awareness

CST, unlike BPR, is premised on a theory that all of life is webbed. What happens on a factory floor has implications and dire consequences for the ecosystem. The social awareness aspect of CST compels system practitioners to think carefully about the social implications of the methodologies they employ. This way they can minimise or avert whatever social crises may arise as a result of the application of certain systems methodologies in particular contexts. CST does this because it is committed to human emancipation.

4.4.2.3 Human Emancipation

Another benchmark of CST, which separates it from BPR and other management systems, is that it is dedicated to human emancipation. It is informed by Habermas theory of human knowledge. CST practitioners believe that all human beings have technical, practical and emancipatory interest in the functioning of the organization.

This quest for emancipation argues that, (Jackson, 1991:186); human beings can be satisfied only by a systems method such as CST, which integrate technical, practical and emancipatory methodologies, and promotes diversity and complementarism. He further posits that "CST is

dedicated to human emancipation and seek to achieve for all individuals their maximum development of their potential. This is achieved by raising the quality of life in organizations and societies in which they participate" (Jackson, 1991:186). Given the complexity of human situation, no single theory or methodology is capable of facilitating human liberation, says Jackson. This brings us to another important pillar of CST, namely, complementarism at theoretical and methodological level.

4.4.2.4 Complementarism at the methodological and theoretical level

Complimentarism considers different systems approach into problem solving, at the theoretical and methodological level, this is also referred as pluralism at both levels. CST promotes complementarism in messy and complex situations, which are faced by organizations and societies. Complementarism is premised on the assumption that there is no single theory and methodology that can be used to address problems that are faced by contemporary organizations and societies independently from other methodologies. This is achieved through a process of assessing the strength and weaknesses of different systems approaches, in relations to the tasks or situation, which is faced by an organisation at that particular period. When methodological and theoretical complementarism are implemented in problem solving, it assists in having well informed results of the intervention. Flood and Jackson (1991) argues that "Systems of systems methodology sit above and co-ordinates methodological paradigms". Midgley; (1993:13), further argues that complementarism is a proposition of meta- science that respect human-well being, it co-ordinates other sciences (knowledge and methods) in an informed manner

Human beings are considered to be playing a pivotal role in CST, their needs and contributions are continuously taken into consideration. CST is committed to critical reflection. Complementarism attempts not to suppress other systems approaches at the expense of others, hence the promotion of meta-paradigmatic through identification of strengths of other methodologies. In CST, continuous change and academic debate is encouraged.

Within management sciences some are still hooked to the traditional approaches into problem solving namely isolationism, imperialism and pragmatism (Flood and Jackson, 1991). Isolationist methodological approaches; believe that their particular approach is superior when compared to others. Isolationists tendencies are based on consensus and are not questioned in most instances.

Proponent of this approach believes that their methodology is superior, its approach is that some of the management science disciplines can be assimilated under their umbrella. As Jackson argued that "the imperialist strategy assumes that one or another of the strands of management science is fundamentally superior and can provide suitable foundations for the development of the discipline, but at the same time is willing to incorporate aspects of other strands if they seem to be useful and add strengths in terms of favored approach" (Jackson, 1991:289). It is open to new ideas but they should be integrated into the dominant or favoured one.

Pragmatists based their approach into problem solving not on a theory but purely on experience. They use any tool at their disposal when it comes into problem solving. Jackson (1991) argues that pragmatists do not undertake reflective inquiry but prefer to use whatever works in practice. They believe in effective action, or are very distrustful of theory and do not spend much time into understanding of problem situation. Jackson (1991), argues that "pragmatists concentrate on building a tool kit of techniques that can be used as required in a real world situation (Jackson, 1991:261). For a pragmatist, there are answers and techniques that are already available and they can be used in addressing complex issues. Then the conclusion is that a pluralist approach based on CST would be more suitable to the problem of concern in this research.

4.4.3 Critical Systems Heuristics and Boundary critique

4.4.3.1 Critical Systems Heuristics

As indicated earlier, the research on CST is conducted not only in the UK but also elsewhere in Europe. Perhaps one of the non-British scholars whose work on CST has had enormous impact in critical management science is Werner Ulrich. In his book *Critical Heuristics of Social Planning,*

published in 1983, Ulrich levelled a blistering critique against what he saw as a credibility gap in both the hard and soft systems approaches. Specifically, he noted that the systems approaches did not allow for a critical reflection either upon the goals attained and means used by hard systems thinking or upon the nature of the consensus achieved and the changes brought about by soft systems thinking. As a corrective, Ulrich proposed what he calls Critical Systems Heuristics (CSH).

CSH is a systems methodology that seeks to unravel the "normative content" of actual and proposed system designs. By "normative content" he refers to both the value assumptions that underpin intervention and the consequences such intervention impose on the participants and non-participants. CSH differs from hard and soft systems approach, in that it critically reflects upon the goals that have been attained through these systems approaches and the nature of the consensus, which has been achieved. Flood and Jackson best described CSH as "a means of interrogating systems design to reveal the boundary judgement being made and a means of postulating alternative boundary judgement, that is of asking what the boundaries should be" (Flood and Jackson; 1991: 205). Flood and Jackson (1991) argues that CSH sets a philosophy for emancipatory systems approach, which planners and other stakeholders can use to reveal the normative content of actual and proposed system designs. In other words, for CSH all designs and proposals should be interrogated and should not be presented as the only objective truth. The proponents of CSH are in agreement with Churchman who argues that every worldview is terribly restricted. For this reason, they insist that any proposal should not be taken as given because it might not be reflective of all the different perspectives held by different stakeholders. In short, CSH wants to ensure that the views of all stakeholders, including those, who might be invisible but negatively affected by the proposed design, are taken into consideration. This way it is able to address coercive situations, questioning the true interests and motives underlining proposed design processes. CSH challenges these said proposals and construct counter-proposals, which address concerns of stakeholders whose voices are muzzled by the process of inquiry.

CSH uses 12-boundary questions that allow planners and systems designer to get the normative content of proposed designed systems. These are 12 boundary questions:

1. Who is the actual client of the system design?
2. What is the actual purpose of the systems design?
3. What is the built in measure of success?
4. Who is actually the decision-maker?
5. What conditions of successful planning and implementation of the system are really controlled by the decision-maker?
6. What conditions are not controlled by the decision-maker (i.e. are in the environment)?
7. Who is actually involved as planner?
8. Who is involved as an expert, and of what kind is the expertise?
9. Where do the involved seek the guarantee that the planning will be successful?
10. Who among the involved witnesses represents the concerns of the affected? Who may be affected without being involved?
11. Are the affected given an opportunity to emancipate themselves from the experts and to take their fate into their own hands?
12. What worldview is actually underlying the design of the system? Is the view of (some of) the involved or of (some of) the affected?

Ulrich theory of CSH boundary critique does assist in ensuring inclusiveness during the intervention. What is not explained by Ulrich theory however are his own assumptions, premise from which he is moving and his own taken for granted. This makes it difficult to judge CSH. Furthermore one ought to exercise caution when opening the boundary because one can do so without any closure. It is also a fact that in a coercive situation or oppressive not all people or groups want to disclose their views or feeling about issues for fear of reprisal or victimisation. Therefore to insist on extending the boundary in such situation may infact promote or perpetuate oppression.

4.4.3.2 Boundary Critique

Gerald Midgley, a British systems thinker, elaborated Ulrich's notion of boundary judgement further. In his paper *"What is this Thing Called Critical System Thinking"* (Midgley, 1996), he proposes what he calls "boundary critique," which essentially entails making judgement about what must be part of the intervention and what must be excluded from it. In other words, the boundaries of systems designs must be fully explored and identified. "Boundaries" here refer to social or personal constructs that define the limit of knowledge that is to be taken as pertinent in an analysis (Churchman in Midgley, 1996). According to Midgley "researchers should remain aware of the need to access a diverse variety of stakeholders views in defining problems and to 'sweep in relevant information" (Midgley, 1996:1). In most instances, he posits, people tend to assume that boundaries are clearly defined whereas in actual fact this is not always the case. "What may appear to be improvement within the narrow defined boundary," Midgley observes, "may not be improvement at all if the boundaries are pushed out" (Ibid., 66.). For pushing boundaries may lead into questioning on who is the legitimate decision-maker who must be taken into consideration when decisions are made, and may lead to unexpected consequences.

Conclusion

In this chapter, the emergence and evolution of system thinking was explored. Soft and hard systems were introduced and their strengths and limitations were highlighted. In the light of these limitations, CST methodology, which emerged as a corrective to both hard and soft systems was introduced, paying attention to both the two strands of CST- one developed in the UK and the other elsewhere in Europe. If there is anything one must take from this chapter is the fact that systems' thinking is an ever-evolving intellectual discourse. That is to say the methodologies proposed are not final products. As we have seen throughout this chapter, each an every methodology we have discussed left many questioned unanswered, thus creating new problems areas that require research.

Also important to note about this chapter is that it outlined only the theoretical and methodological aspects of the various systems approaches to problem solving. The next chapter will focus on the practical application of a pluralistic systemic approach into problem solving. However due to the scope and limitations of this dissertation, it is not possible to discuss the practical applications of the different systems approaches discussed in this chapter. The focus will be mainly on CST application into the real world problem situation. CST is chosen because of its pluralistic / complementarist systemic approach to solving organizational problems and its adaptability to different contexts.

Chapter 5

AN INVESTIGATION INTO THE META-METHODOLOGY OF TOTAL SYSTEM INTERVENTION

5.1. Introduction

In the previous chapter CST was explored, focusing mainly on its theoretical and philosophical underpinnings. Nowhere was the methodological aspect of CST discussed. That is the purpose of this chapter. Here we shall move beyond theory, discussing how CST can be used in a real concrete situation. Towards this end, both version one and two of the Total Systems Intervention (TSI) methodology, which is regarded by most critical systems thinkers as a methodology grounded in CST, will be explicated. The word "most" is used here because not all-critical systems thinkers agree that TSI is commensurate with CST. Scholars such as Tsoukas (1993); and Ulrich (1995) refute this contention, arguing that TSI is incapable of constituting an adequate basis for CST. It is however outside the scope of this dissertation to discuss this debate here because it is adequately discussed by Ho (1994) in his paper *"Is Total Systems Intervention (TSI) No Better than Common Sense and Not Necessarily Related to Critical Systems Thinking (CST)?"* Rather the objective of this chapter is to show the reader what CST entails in a practical sense. This said, let us look at what TSI is all about.

5.2. Total Systems Intervention version one and two

5.3 TSI Version One

Total Systems Intervention methodology is described by Flood and Jackson (1991) as a meta-methodology that offers a problem solver different systems approaches that can be used in problem solving. This methodology, Flood points out, has been developed to provide managers with a practical and useful system-based approach to problem solving (Flood, 1995: 393). TSI, he further posits, offers managers with procedures to integrate all methods for problem solving in a

process which ensures that such methods are employed to tackle only issues they are best suited to. Among the various problem-solving methodologies that are integrated within TSI are such systems approaches as Soft Systems Methodology, Systems Dynamics, and Viable Systems Methodology, to mention a few. The underlying philosophical assumption underwhich TSI works is that of CST: that all problem-solving methods are complementary. TSI advocates believe that different systems approaches to problem solving can be used simultaneously to solve organisational problems. But how can this be done, one may ask? To answer this question let us consider what exactly constitutes TSI.

5.3.1 The process of TSI version one

According to Jackson (1991: 271), TSI is a systems-based intervention methodology, which uses a range of systems

metaphors (I shall say more about this later) to encourage creative thinking about organizations and their problems. These metaphors, he points out, are linked by a framework known as the *system of systems methodologies* to various systems approaches, so that once agreement is reached about which metaphor are most relevant to an organization's concern and problems, an appropriate systems-based intervention methodology (or set of methodologies) can be employed. So as to illumine what may be perceived as a complicated intervention problem-solving methodology, Flood (1995) describes TSI as a process in which a manager or problem solver operates three main types of activity: (1) *think creatively* about the problem s/he is facing; (2) *choose* a method(s) with which to address the problem(s); and (3) *implement* the changes sought in the organization in question. These main types of activity of which Flood speaks are regarded as the phases of TSI version one. Figure 5.1 illustrates the process of TSI version one. (Following Flood and Jackson, 1991). Let us look at each of these phases, seeing exactly what kind of task(s) is conducted during these phases.
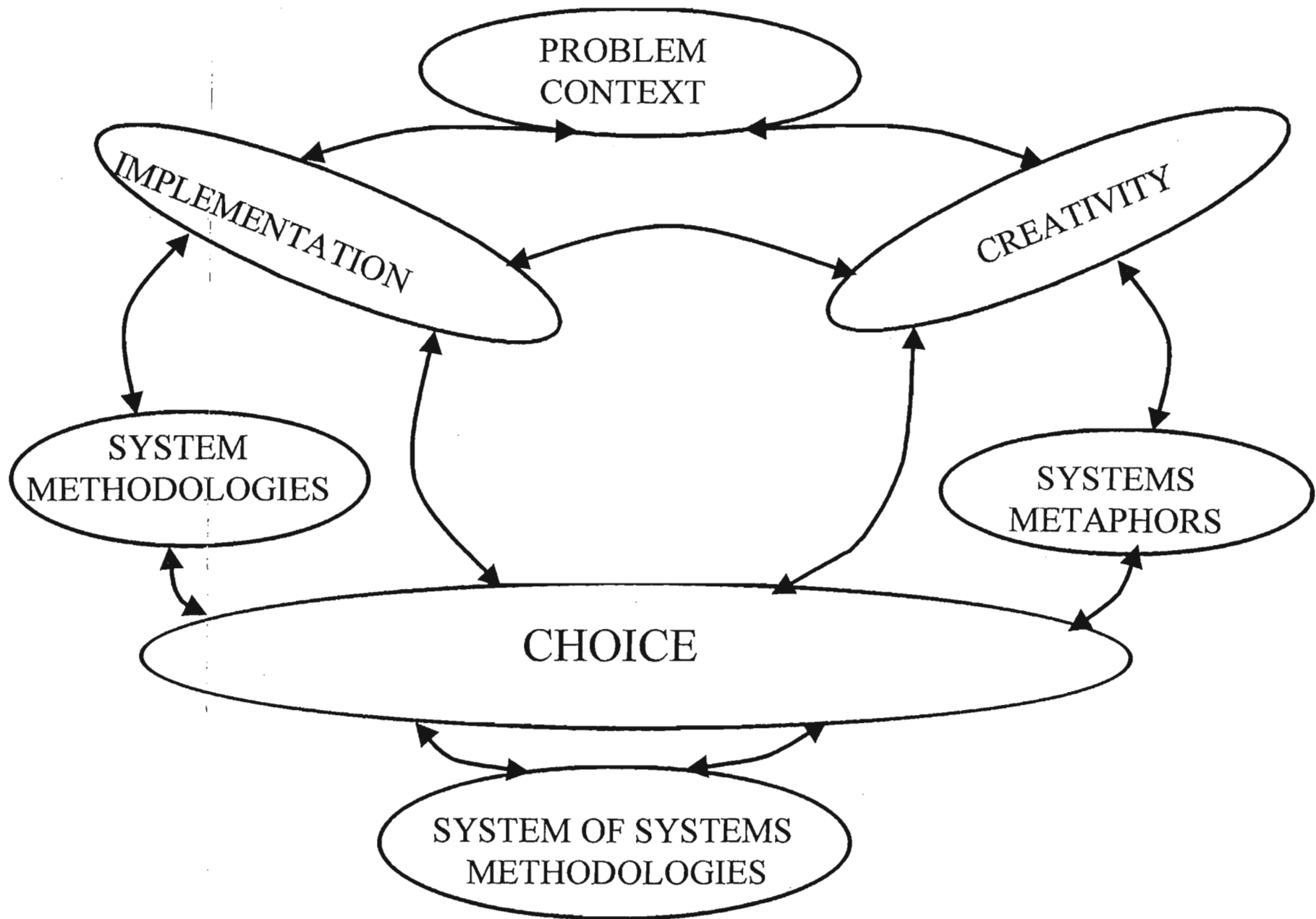
Figure 5.1 The process of Total System Intervention (version one)

5.3.2 Creativity

During this phase, the problem solver thinks creatively about the organization and its problem(s), using a set of systems metaphors provided by TSI. By systems metaphors I am referring to the

systems images developed by Morgan (1998) in his book *Images of Organization.* They have been incorporated into TSI -as tools of understanding organizational structures and problems (see also Bawden (1998), wherein he argues that systems images are crucial organizational development. At the heart of Morgan's work is the belief that an organization (i.e. its structure(s) and culture) can be seen as an image of a particular system, be it a machine, brain, organism, culture, domination, coalition, prison, or many other systems images he suggests. Thinking about organizations as systems, Morgan's argues, enables the problem solver or manager to see clearly the various aspects of an organization, thus enabling him or her to surface the organizational problems that must be tackled. The goal of the problem solver during the creativity phase of TSI is to adopt a systems metaphor(s) that best describes the organization in question. It is in this process of adopting a metaphor that the problem solver gains insight into the organization in review and begins to think about the appropriate intervention methodology to be employed.

5.3.3 Choice

During this phase of TSI, the problem solver chooses a systems based intervention methodology (or methodologies) related to the metaphor(s) adopted during the creativity phase. Towards this end, s/he uses the TSI tools called system of systems methodologies – a theoretical schema that has been constructed to classify systems methodologies on the basis of the assumptions they make about the nature of problem situations or what is referred to as the "problem context"(Jackson, 1991: 27). By "problem context" Jackson refers to the nature of the system(s) in which the problems are located and the nature of the relationship between the participants. These two variables, Jackson argues (1991: 27-28), allow for a construction of a grid of types of problem contexts, which in turn can be used as a tool for classifying systems methodologies. For instance, systems methodologies can be classified and related to each other by looking at whether they assume problems to be mechanical-unitary, mechanical-pluralist, mechanical-coercive, systemic-unitary, systemic-pluralist, or systemic-coercive, Jackson further argues (1991:274 and 275).

In essence, the knowledge provided by the system of systems methodologies about the underlying assumptions of individual systems methodologies, coupled with the insight gained as a result of creative thinking (adoption of metaphor/s) enables the problem solver to choose a systems based intervention methodology or methodologies that will tackle the organisational problems that are surfaced and yield the desired change(s). However, as Jackson rightly notes (1995: 33), the most probable outcome of the choice phase is that there will be a dominant methodology chosen – one that will tackle the most pressing or core organisational problems, while managing the less dominant interacting problems. Once the intervention systems method is chosen, it is then passed on to the implementation phase.

5.3.4 Implementation

During this phase, the problem solver implements the adopted systems methodology (or set of methodologies) to make the vision and mission of the organisation in question a material reality. The main task in this phase entails the eradication of the problems identified in the creativity phase and the introduction of systemic development or improvement within the organisation.

5.4 The Limitations of TSI version one and the development of TSI version two

As with any other management systems, TSI version one is not beyond criticism. As Midgely points out in his essay "Mixing Methods: Developing Systematic Intervention," there are many criticisms that have been levelled against TSI, some methodological and others, philosophical. The scope of this chapter does not allow us to discuss all of these criticisms. Besides, these have been explored at length in Midgely (1996). What this chapter will do instead is highlight six important criticisms of TSI version one, which resulted to the development of TSI version two or what is now referred to as the Local Systemic Intervention (LSI).

First, the complementarism of TSI is not well conceived. TSI draws upon the various systems methodologies without showing exactly how the different and sometime conflicting assumptions and epistemologies embodied by the systems methodologies are integrated methodologically.

This conceptual limitation, as Tsoukas (1992) correctly observes, renders the use of TSI problematic. Second, critics of TSI version one point out that the TSI metaphorical grid prescribed by Flood and Jackson (1991) is restrictive, in that it discourages problem solvers from generating their own metaphors and conducting their own metaphorical analysis of problem situations. The six metaphors that TSI offers are limiting. The third methodological criticism levelled against TSI version one is that the system of systems methodologies is very difficult to fathom – that it is inaccessible to the non-academic audience. The fourth criticism, which is also related to the second, is that the system of systems methodologies within TSI does not take into account the methodological developments in the various systems discourses. That is, it deals with the individual systems methodologies as though they are fixed or finished products. The last two criticisms are more philosophical than they are methodological. Fifth, post-modern critics of TSI version one note that like CST, TSI is anthropocentric – that it focuses solely on human beings and neglects the ecosystem into which human beings are linked and within which they function. Sixth and lastly, post-modern critiques also point out that the TSI version one methodology privileges the manager as though organisational development rests on his or her shoulders.

5.5 Philosophy of TSI version two

TSI version two is both continuous and discontinuous with the first version. Continuous in that it still emphasises the three main phases of TSI activities in problem solving, namely, creativity, choice, and implementation. However, TSI version two, which is commonly referred to as the Local Systemic Intervention (LSI) differs from TSI version one in many respects. First, responding to the criticism that TSI version one thwarts creativity, Flood (1995b,c) revised TSI by, among other things, making the TSI methodology recursive. What this means is that all the phase of LSI approach are represented at the micro-level within each of macro-level phase. The diagram below illustrates this newly revised TSI approach into problem solving.

Second, Flood accepted the criticism that the metaphorical analysis that TSI version one prescribed was indeed restrictive. To correct this situation, he introduced three things in order to encourage TSI practitioners to generate their own metaphors: (1) "divergent" metaphorical

analysis; (2) the use of creativity-enhancing techniques such as brainstorming and idea writing; and (3) an understanding of the "ergonomics of reflection" (Flood, 1995c). For to Flood; "problem solving is a mixture of creative thinking, choice of method and implementation of change proposal worked out by operating the chosen method(s)" (Flood: 1995c:11). Moreover the manager should be cognisant of the fact that organisational problems do not exist in isolation. In other words whatever problems one faces in an organisation is part of a whole. Likewise, the decision that will be made on a particular problem will have an impact on the entire organisation. A problem solver or manager needs to have a holistic or systemic approach into problem solving.

TSI version two provides the problem solver the tool which s/he can tackle organisational problems systemically. This version of TSI, like TSI version one is premised on the notion that organisation is a system that comprises of parts and sub-systems that continually interact with each other. It must be noted that methodologically, TSI version two is different from TSI version one. Whereas TSI version one methodology hinges around metaphorical analysis at problem situations, TSI version two abandons this analysis and introduces four key dimensions for analysing organisations. The four dimensions, which are identified by Flood (1995c:21) and mentioned earlier in chapter 2, are:

- Organisational processes – flows and controls
- Organisational designs – functions, co-ordination and control.
- Organisational culture – mediation of behaviour in terms of people relationship too social rules and practices.
- Organisational politics – power and potency to influence flow of events.

The *organisational process* is mainly concerned with the main core output and sub-output of a particular organisation. It identifies the main processes that add value to the customers and processes that are mainly internal in this situation. In essence, the organisational processes have to do with the flow of events from the input through the main process and then the output.

The *organisational designs* are the functions within which the organisational process takes place. The designs are functions and not people or lines of authority that co-ordinates and control processes. Nowhere is this more evident than in the VSM methodology discussed in chapter four.

Organisational culture has to do with the creation of an organisational culture that will be shared by all members of the organisation, regardless of their cultural backgrounds. TSI version two recognizes that individuals bring to the organisation distinct cultural experiences which when mediated may prove disastrous for decision making and the overall performance of an organisation. TSI version two helps managers avert this disaster by enabling them to devise or develop a communication system that is pregnant with universal cultural symbol(s). Such system will promote cohesion among members, which in turn will positively impact production.

Organisational politics assist in identifying who holds power and how power is exercised. Organisational politics is associated with decision- makers; it influences the flow of events within the organisation.

5.6 Principles of TSI version two

The principles of TSI are drawn from its philosophy. They play a significant role in the evaluation of the effectiveness of the intervention. There are four principles that have been identified by Flood (1995 bc) and these are a) being systemic, b) achieving meaningful participation, c) being reflective and, d) enhancing human freedom.

The principle of being systemic encourages problem solvers to be systemic when they are engaged in interventions. When they look into organizations, they must look into them from a holistic point of view; keeping in that, whatever system or subsystem they are involved with, is part of the greater whole. Organizations consist of different levels of hierarchies, i.e. systems, sub-systems and supra-systems. These different levels of systems interact with each other.

The next principle is provision of meaningful participation promotes organisational diversity by insisting that the boundaries of organisational discourse be widen open in order to allow for the surfacing of new ideas and perceptions. As Flood observes, meaningful participation follows from the systemic principle in that "it develops an appreciation of all intervention between all parts, of technical and human sorts, at the three level at any time, then the perception of all people involved and affected must be drawn into the picture"(Flood, 1995c:27). When boundaries are restricted, certain voices are muzzled and the organisational picture that emerges from this situation is distorted.

The next principle is being reflective. Flood (1995c) argues that organisational events are what people think they are. It is important to know what people think. This principle is crucial because people's perceptions about issues are recognised. Decisions that are taken are discussed and reasons why certain methods or approaches are preferred than others are reflected. Issues that cover this principle include technical and human issues, which are faced by participant in an environment in which changes are being executed. The human freedom is inextricably linked to being reflective.

5.7 Process of TSI version two

TSI version two process is both continuous and discontinuous with that of TSI version one. Continuous because the three stages of that version one – creativity, choice and implementation constitute an element of TSI version two. TSI version two is discontinuous with TSI one because of the addition of three modes of operation into its process. These are:

- Critical Review Mode
- Problem Solving Mode
- Critical Reflection Mode

5.7.1 Critical Review Mode

TSI version two incorporates a wide spread of models and methodologies in its schema. According to Flood and Romm (1996a) it does this by critically reviewing models and methodologies with a view of incorporating them in its system of approaches operated through the problem-solving mode. During this mode system models and methodologies are identified, and critically using the three TSI version one phases. That is each, each model and methodology undergoes review advocates forms of creativity, choice and implementation.

As Flood and Romm (1996a) points out, the critical review mode allows people to decide on an intervention model and methodology. Critical review mode, they write, "is needed so that people can prepare for themselves a diverse system of models and methodologies, capable of tackling the complex and issues that they face today… the critical review process is never complete in a sense that there will always be more approaches to review and indeed, always scope for further evaluations of those already incorporated" (Flood and Romm, 1996a: 103).

Following this review of models and methodologies, the evaluative process considers the following questions as proposed by Flood and Romm: 1996a).

1. How can we efficiently design processes?
2. How can we realize effective organizational design
3. What options should we debate and decide upon?
4. Why should we accept any resulting design or decision, who is likely to benefit?

5.7.2 Problem Solving Mode

During the Problem Solving Mode, the identified models and methodologies are used to tackle the core problem(s). In the process of intervention, each of these models and methodologies adopted undergoes the three-phase TSI evaluation process – creativity, choice and implementation. In this stage divergent ideas are discussed and debated which then lead into convergence with the purpose of reaching a consensus.

In the choice phase there is creative alignment of the model(s) and methodology (ies) in addressing the core issues that are facing the organization, this is followed by a choice of the model(s) and methodologies and lastly the implementation of the model(s) and methodology (ies). In this phase four-dimensional questions are asked or taken into consideration, they are organizational processes, organizational design, organizational culture and lastly organizational politics. The last process of problem solving mode is the implementation phase. This phase, like others, is also characterized by all the three phases of TSI.

In the implementation stage there is creative development of the change proposal, which leads to the choice of change proposal and the implementation of that proposal. There are a number of issues, which are addressed during this stage. These include process design, organizational design and the evaluation of design and decisions that has been taken. This then leads to the implementation of those decisions. In all these three phases of TSI version two, there is no beginning and an end; the process is continuously recursive.

5.7.3 Critical Reflection Mode

The critical reflection mode is the last mode of TSI /LSI version two. During this mode, the three phases of TSI/LSI, which are creativity, choice and implementation works in the following way: Firstly it operates in the anti clockwise manner; secondly it raises questions about the outcome of the three stages which are in the problem-solving mode. Flood and Romm (1996a) argues that this is done by asking whether the intervention model(s) and methodology (ies) used was suitable

or appropriate. The three phase of TSI evaluative process works as follows during the critical Reflection Mode:

- The implementation phase; receives a model or methodology reasoned during the problem-solving mode, it passes it through to the next phase.
- The choice phase; receives details of issues to be managed from the problem-solving mode, on the basis of chosen a model (s) and methodology (ies) for implementation.
- The creativity phase; receives details of change proposals or courses of action from problem solving; judged to be relevant to manage issues surfaced through creative thinking.

Figure 5.2, (based on Flood and Romm, 1996a) illustrates the process of TSI version two and its three modes.

5.8 A Summary of TSI version one and two

Having discussed Total Systems Intervention version one and two, there is a need to evaluate these two systemic methodologies. Both interventions attempt to apply CST in the real world situation.

Flood and Jackson (1991) developed TSI version one. TSI version is divided into three phases as mentioned above, which are creativity, choice and implementation. Different functions are executed during each of these three phases. During the creativity phase the focus is on the identification of a suitable metaphor. The problem with this phase is that there are only limited metaphors to choose from. TSI metaphorical analysis not only fails to adequately describe problem-situation not characterised by the proposed metaphors; it is also too rigid that it suppresses the creativity of TSI users. Another major problem with TSI version one is that the systems of systems methodologies is very difficult to understand let alone applying it on concrete problem context. This difficulty does not only affects non-academic audience but also systemic practitioners on the ground as well.

TSI version two attempts to resolve some of the problems and limitations identified in version one. It is characterised by three modes i.e. Critical Review Mode, Problem Solving Mode and Critical Reflection Mode that were not part of version one. In each mode the three stages of TSI are applied.
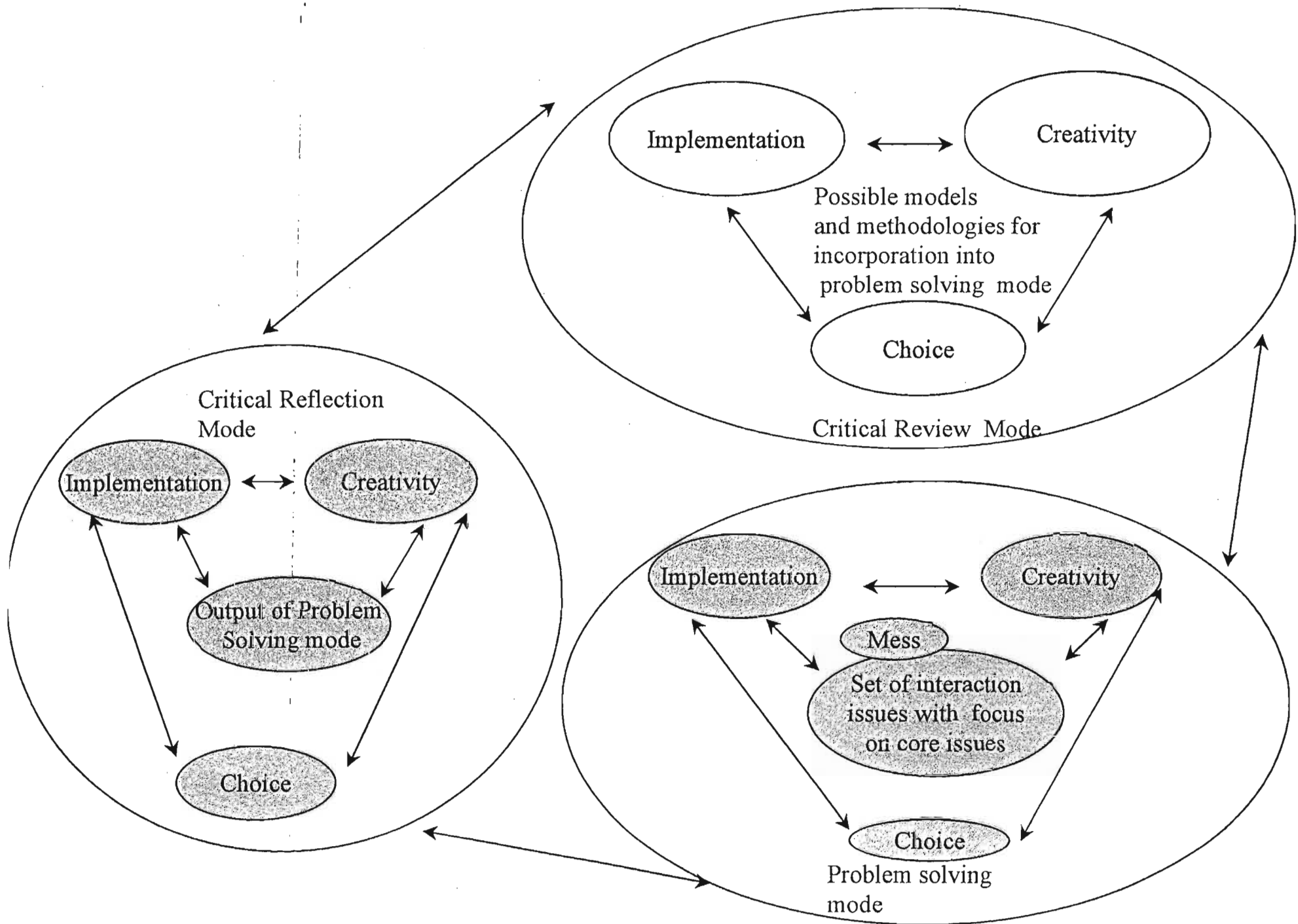
TSI version two was developed as a corrective measures to TSI version one. It is meant to simplify the TSI process – even Flood himself suggests that the book *Problem Solving Problems* (1995) on TSI version two is meant to assist both the academic and non-academic audience to be able to apply TSI in the concrete problem situation. However, upon critical reflection on TSI version two, one finds that it is much more complex to comprehend compared to TSI version one, let alone applying it in real life situation. In particular, the recursive nature of the evaluative process of TSI version two leaves one perplexed. It is for this reason that TSI version one, notwithstanding its problems and limitations, will be applied in analyzing the problem situation at Telkom SA as discussed in chapter 2.

CHAPTER 6

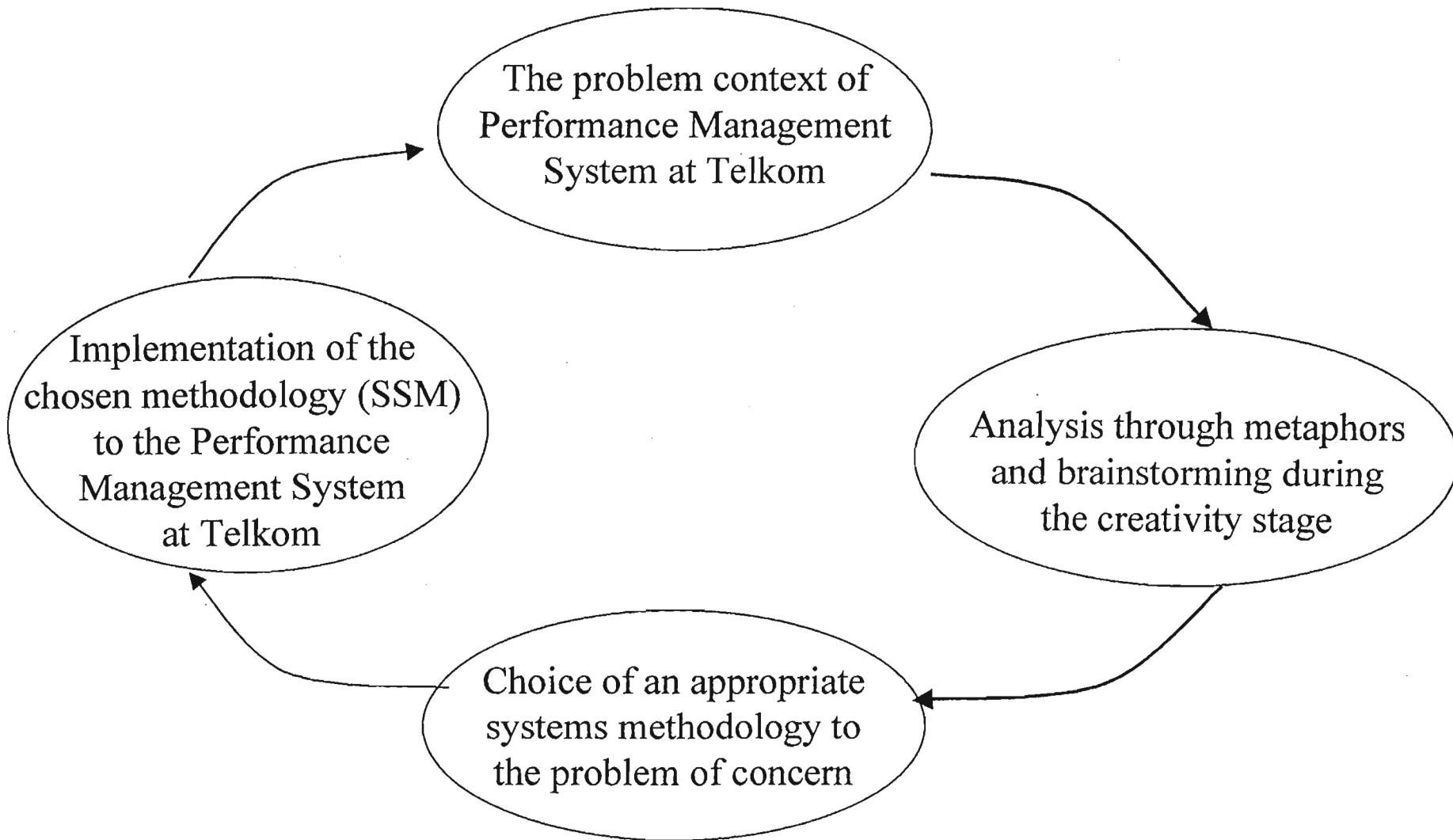# EVALUATION AND IMPROVEMENT OF A PERFORMANCE MANAGEMENT SYSTEM AT TELKOM SA

6.1 Introduction

Having discussed the various problem-solving methodologies in chapters 3-5, we now return to the case study discussed in chapter 2. As the reader may recall, we noted in that chapter that the implementation of PMS at Telkom SA has produced successes as well as problems. The perennial question that this chapter seeks to answer is how could Telkom SA have averted or eliminated the problems associated with PMS implementation? What problem-solving intervention methodology (or methodologies) could Telkom SA have used to successfully execute PMS. The following discussion applies TSI in a problem situation at Telkom SA's implementation of PMS. This case study is partly similar to that described by Strumpfer, where TSI was hypothetically applied to a problem situation (see case 10.3 in Flood, 1995: 268). Since some of the analysis of PMS implementation in the past few years is performed in restrospect. The difference in this case study, however, is that the researcher is part of the system (Telkom) and therefore involved with it at present and the proposed interventions. As such, this research can and should be seen and viewed as action- research.

It is my contention that, in the light of the complex and multiple problems that arose as a result of PMS implementation and inspite of the criticisms in the literature cited in chapter 5, TSI version one is arguably the best problem-solving methodology to be used at Telkom SA to anticipate and tackle the PMS problems highlighted in chapter 2. For TSI version one is both complementarist in its approach and is easy to follow. What follows next is the application of TSI version one to the problem context at Telkom SA as discussed in chapter 2. Following this systemic analysis of the problem context, SSM is applied to the problem situation.

6.2 Application of TSI version one to a problem situation at Telkom SA

Figure 6.1 illustrates a framework for TSI (version one) intervention in the problem of Performance Management System at Telkom. Since the problem context of PMS at Telkom has

The problem context of Performance Management System at Telkom

Analysis through metaphors and brainstorming during the creativity stage

Choice of an appropriate systems methodology to the problem of concern

Implementation of the chosen methodology (SSM) to the Performance Management System at Telkom

Fig. 6.1 A framework for TS1 (version one) intervention in the problem of Performance Management System at Telkom

Already been discussed in chapter 2, our discussion on TSI application will continue with the metaphorical analysis of the problem situation (see figure 6.1).

6.2.1 Analysis through metaphors and brainstorming during the creativity stage

As we have seen in chapter 2, not all the stakeholders at Telkom SA shared the same view on the need and importance of the introduction of PMS. This was so because not all the stakeholders were involved in the conceptualization of PMS but during the implementation of CST, some stakeholders were involved and committed, although the degree of commitment varied. Following the existing guidelines in Flood and Jackson (1991) regarding the creativity phase, in TSI a discussion and a debate on how best to understand Telkom SA and the environment in which it operates was initiated. The advantages of the creativity phase of TSI version one is that it compelled the various stakeholders to proffer metaphors that depict the organizational situation at that particular time. This in turn helped to unravel the different perceptions held by different people within the organization, thus making possible an honest discussion and debate about complex issues and problems confronting the organization. Furthermore, such a debate enabled people to gain insight into the problems and challenges facing the organization.

The "organismic" metaphor

It was found that two metaphors were dominant at Telkom. One is a metaphor of an organization as organism. According to Ackoff (1981) the organismic view refers to a living entity with its own objectives i.e. survival and growth – profit is seen like an oxygen – essential, but is not the reason for an organization existence. Like an organism, Telkom SA is an open living system that continuously interacts with its surrounding environment. As Morgan (1998: 35) points out, the organismic metaphor helps us to understand organizations as clusters of interconnected human, business, and technical need. It also encourages us to learn about the art of corporate survival, and urges us to develop vibrant organic systems that remain open to new challenges. Indeed, the top management at Telkom perceived their organization as an organism albeit they did not use the systems language. Realizing the changes in both the local and global economy and in the

socio-political life of South Africa, they saw fit the introduction of PMS in order to help Telkom SA meet the challenges of a globalized and competitive economy and the new socio-political dispensation in South Africa. From a critical systems perspective, this was indeed an important and essential step that the leadership at Telkom SA took. However, the problem, as we have noted in chapter 2, is that Telkom's leadership neglected to implement a methodology that would facilitate efficient communication about the situation confronting the organization and the need for PMS. It should be noted that within Telkom management there were those who viewed Telkom as a machine ("mindless society"), where the view is held that the organization function is to serve the owners through sufficient return on investment and time. Profit is seen as the only function of the organization. People are viewed as replaceable machines. If TSI version one were adopted, the creativity phase of this system methodology would have allowed for an in-depth discussion of Telkom's context at all levels of the organization, thus placing all stakeholders on the same par and ensuring smooth and quick implementation of PMS.

The "brain" metaphor

The other metaphor that is dominant at Telkom SA is that of an organization as a brain.

This metaphor focuses on the learning abilities of an organization and the processes that promote as well as discourage learning. The image of an organization as a brain offers a powerful perspective on how intelligence can be distributed throughout the enterprise. It also encourages organizations to be inventive and reinventive. Some of these characteristics are evident at Telkom SA. The fact that PMS has a developmental aspect demonstrates that Telkom's management realized the importance of skilled labor force in the current knowledge-based economy, where information knowledge and learning are key resources. Also, the fact that the organization decided to discard the old assessment system and adopt PMS demonstrates its learning capability. In other words, Telkom SA has learned from the changes in the socio-political and economic environment (both local and global) that strategies such as PMS have to be adopted to ensure corporate survival. Again, the only problem is that this metaphorical analysis of Telkom SA was not communicated effectively at all levels of the organization. Furthermore, the proponents of PMS failed to link PMS to the various sub-systems within the organization.

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6.2.2 Choice Phase

In line with the foregoing metaphorical analysis, VSM and SSM were identified as the possible intervention methodologies for the problem situation at Telkom SA. However, further analysis showed the need to apply only SSM to the problem context because organismic metaphor was found to be more dominant than the metaphor of an organization as brain within Telkom. The organismic metaphor shows three levels of objectives (Ackoff, 1981:25-27) i.e. societal, organizational and individual. The organization performance depends on the degree to which the people inside the organization and the bigger system of which the organization forms part influence it.

6.2.3 Implementation of an SSM intervention as the chosen systems methodology

A seven- stage process of inquiry typical for SSM mode one was used. The first and second stage of SSM i.e. finding out about the problem situation was employed. During these stages the information about the process and structures was gathered. With the adoption of SSM, a forum was proposed with different stakeholders at Telkom to give an opportunity to surface and discuss different perspectives regarding PMS. In these forum unions like CWU, which was suspicious of PMS, had the chance to register their reservations and make known their claims (which later dissolved as a result of the national strike). Likewise, the supporters of PMS had the opportunity to make their case vis-à-vis PMS. The advantage of this stage of SSM is that it allowed all the participants to debate the pros and cons of PMS, and draw a rich picture of the organization on the basis of which judgement about PMS was made. Figure 6.2 shows the rich picture of Telkom, which was drawn applying SSM to the problem situation at Telkom.

Stage three of SSM entails root definition as an output. During this stage the proposed system was clearly defined by means of a process of inquiry known as CATWOE, and its process was illumined. During its application to the problem context, the following process emerged.

The CATWOE analysis of the problem can be summarised as follows:

C – Telkom SA management, shareholders, employees and external customers (indirectly).

A – Telkom SA management, organized labour and employees.

T- Transforming the old performance assessment system to a user friendly Performance Assessment System.

W- Punishing poor performers and rewarding performers.

O- Telkom SA management.

E- Globalization, new competitors and changes in the government. The environment into which PMS is taking place was explored.

Root definition

"A Performance Management System which recognizes a need for all internal stakeholders to be involved from conceptualization until implementation, a system which also ensures that internal needs of an organization are in line with the changing demands and expectations of the external environment, and is credible and sustainable".

The impact of PMS on its environment was taken into consideration. For instance, questions about the possible impact of PMS on families and communities of underachieving employees were raised. The impact of PMS on other South African organizations was also considered. This process of inquiry helped us anticipate the problems associated with the implementation of PMS, and helped us devise strategies to tackle such problems during the early stages of the process.

Stage four of SSM is about building conceptual models. During this stage, the ideal proposed system adopted in stage three was now modeled. During this stage, discussion and debate about the "to be" model was held with all stakeholders presenting their opinions. Following this a consensus on how the ideal PMS should be modeled was constructed, demonstrating exactly what the proposed system should do.

Conceptual Model

- Different service organizations will assist to administer the new PMS

- Organized labour, particularly CWU, should have a buy in on this process. Initially CWU convinced ATU to sign the agreement then they CWU subsequently withdraw from the process.

- The application of PMS will assist in improving organizational performance, and will not rely on the performance of certain individuals but on all the members of the organization.

- PMS should be implemented contextually, taking into consideration the socio-economic conditions prevailing at a particular time.

- PMS should place emphasis on training and development of employees.

- PMS should be grounded on the systemic approach into problem solving.

- The goals and objective of PMS must at all times be evaluated in light of the changing socio-economic and political environment.

- All Telkom employees will be subjected to performance measurement.

Stage five of SSM is about comparing models and reality. During this stage the debate about the compatibility of the conceptual model with concrete reality took place. In our problem context, a question was asked about whether PMS is realistic and implementable within Telkom SA and the South African environment. Upon reflection on this matter, it was discovered that the conceptual model adopted is in fact compatible with Telkom's context as well as with the new South African dispensation.

The necessary changes to PMS outlined above were made carefully, and considered during stage six of SSM, checking their feasibility and desirability. Armed with the above conceptual model, we moved on to test the feasibility and desirability of the model. Given the desire of all stakeholders to have a Performance Management System for all Telkom employees, the conceptual model was adopted. Figure 6.3. illustrate the conceptual model for PMS 's implementation.
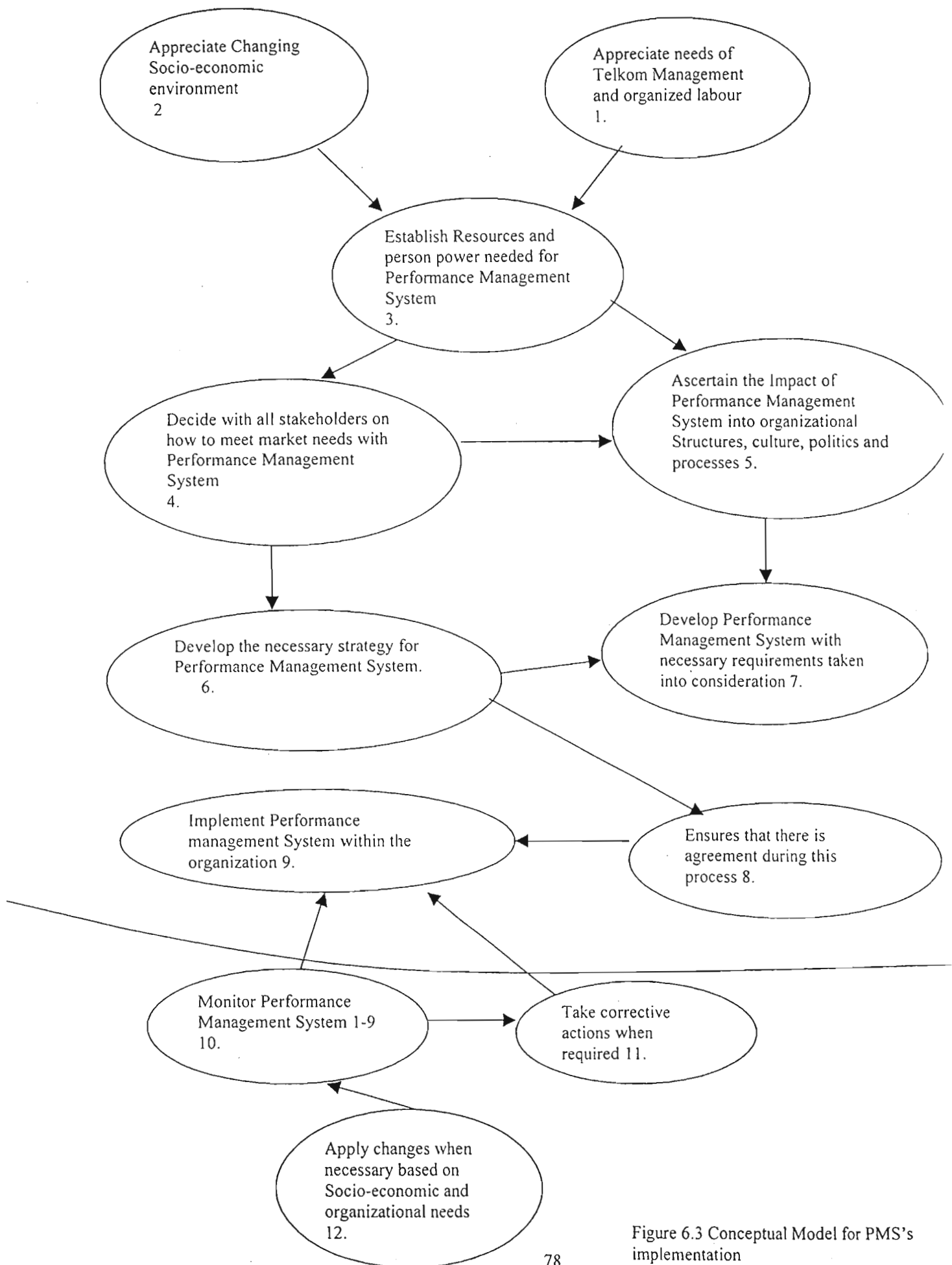
Figure 6.3 Conceptual Model for PMS's implementation

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6.3 Concluding reflections upon the application of CST to the Performance Management Systems at Telkom

Conducting research on PMS at Telkom not only helped me understand more fully the politics, culture, processes and structures of Telkom; it also enabled me to see first hand how messy problems can be solved. Being part of Telkom made my work in this study more easy because I was able to access information which an outsider would not have been able to access. However, it must be noted that this research was not without problems. To the contrary, there were three problems that I encountered during this study. First, Senior Managers who are pioneers of PMS were inaccessible for various reasons, e.g. they were in meetings/workshops discussing, among others things, the progress on Telkom network roll-out targets before 30 March 2000 end of financial year, and the ongoing dispute with organized labour over salary increase and the looming retrenchment of employees.

Second, during the research there was a temptation to revert to reductionist tendencies/approaches but these tendencies did not derail the systemic approach to solving PMS problems because the intervention methodology process did not allow for tangential analysis and practice. Third, attempts were made to involve all stakeholders of Telkom's PMS in the research by way of structured workshops but due to the national strike by Telkom workers and the subsequent lockout by Telkom management, it was impossible to have such workshops and instead meetings with smaller groups were organised.

However, notwithstanding the problems highlighted, the research was successfully implemented primarily because, as a member of Telkom, I had opportunities to talk in informal and formal settings to some individual stakeholders of the PMS about their views of this process (see Appendix D, for a report I wrote following several discussions I had with Mr. Tinus van der Merwe, the Senior Manager of the PMS office at Telkom, about the entire process of PMS and other stakeholders). Although my conversations with these individual stakeholders were loosely structured, they nonetheless provided valuable insight into the politics of PMS at Telkom and made possible the successful implementation of CST in the problem context.

The implementation of CST within Telkom's Performance Management System shows:

1) As an organization, Telkom comprises of systems, subsystems, and supra-systems that are interrelated and interacting. The metaphorical analysis of Telkom indeed shows that Telkom is a complex organization. The implication thereof is that anyone who seeks to address or solve the problems facing Telkom must first understand the complexity that characterizes this organization. One must understand not only the systems and sub-systems within Telkom, but also the larger system of which Telkom is an integral part, namely, South Africa. The results of our research demonstrate that when problems are understood contextually, the task of choosing the intervention strategy and methodology often becomes better structured.

2) Telkom is not a monolithic organization in terms of how people understand the problems and challenges facing the organization. Our research shows that one cannot understand organizational complexity and problem-solve without a sincere appreciation of the diverse perspectives held by different groups within an organization. As our discussion of the rich picture of Telkom showed, Telkom comprises of such groups as ATU, CWU, and management – all of which have self-interest(s) and perspectives that are usually antagonistic. Indeed this was the case with the PMS. What our research demonstrates is that when the PMS perspective of each of the stakeholders are taken into consideration, a mature PMS system that is satisfactory to all concerned is plausible. As we highlighted earlier, PMS does not function properly at Telkom because not all stakeholders take ownership of the process. This is due to the fact that not all the parties concerned in this process were involved in the conceptualization of PMS. To reverse this situation, Telkom must implement the conceptual model proposed by this study.

3) Cohesion, homeostasis, and synergy do not occur by chance but rather are forged through a mature and systemic methodology that promotes both diversity and complementarism. Our research shows that while there is dissension among the various stakeholders over the conception of PMS, there is nonetheless unanimity on the need for an equitable performance measurement system at Telkom. What we found lacking however is a process and methodology that allows for the creation of an integrated PMS that will satisfy all the stakeholders. If anything, our research demonstrates vividly the potency and effectiveness of CST to deal with messy organizational problems such as the ones at Telkom. Indeed the

eclectic application of TSI version one and SSM not only allowed for the surfacing of the various PMS perspectives at Telkom; it also provided the framework for establishing a consensus position acceptable to all parties. What this then implies is that no longer can one management approach or methodology solve the complex and messy problems faced by organizations. For systemic problems can be resolved only systemically.

4) Management issues cannot be separated from issues of human emancipation and empowerment. The results from our research show that organized labour are more receptive to a performance measurement system that places emphasis on training and development of employees, particularly those who were previously disadvantaged. This was not surprising given the historical background of Telkom. What this implies therefore is that emancipation and empowerment issues can no longer be dealt with as issues tangential to management but must be integrated in policy formation at all levels of the organization.

In conclusion, I would like to comment that some argue that the TSI version one used above is more of an academic exercise than it is about practically tackling intractable organizational problems. On the contrary this research experience showed that, TSI version one is realistic about the complex nature of organizations and the problems they confront. Among other things, it recognizes: (1) that organizations consist of different levels of hierarchies – systems, sub-systems and supra-systems—which in problem-solving must be engaged; (2) that genuine change comes through meaningful participation of all the people at various levels of the organization in question; (3) that people in organizations appreciate things in different ways – that in order to promote organizational homeostasis, synergy and cohesion, the multiple perspectives on the core problems facing the organization must be surfaced and thoroughly explored; and (4) that managers and problem solvers must accept the responsibility for the impact of decisions and policies on the physical, biological and social environment. In a nutshell, TSI version one is systemic in its approach and is socially and politically conscious.

More importantly, though, it can be argued that the TSI version one takes very seriously the issue of human emancipation. Thus inspite of the fact that traditionally SSM is considered as a pure interpretivist approach which was criticised by Jackson (1991) for preserving the status quo, here

SSM was applied within the philosophical background of CST. The reason is that TSI was the driving meta-methodology of the analysis and the intervention. Throughout its three phases it poses critical questions, aimed at liberating people from dominance by other people and forces they currently have no control over. Given the legacy of apartheid in our country's institutions, it is safe to conclude that TSI version one is one of several systems methodologies that has the capacity to radically transform the white dominated South African institutions into non-racial and non-sexist institutions.

CHAPTER 7
Conclusion

This concluding chapter reflects back on the goals of this dissertation. As we noted in chapter 1, the purpose of this dissertation is the exploration of the evolution and application of CST in a concrete problem situation. Towards this end, I began this project by stating the problematic or rather the problem context, which involves the introduction and implementation of PMS at Telkom SA. In our discussion of this problem situation, we highlighted the process of PMS as well as the preliminary results of this process. Having explored the problem context, we then considered the emergence and development of systems thinking -- the context out of which CST arose. However, to underscore the uniqueness of the systemic approach to problem solving, we first discussed BPR in chapter 3 – a non-systemic problem solving methodology. We learned from our exposition that BPR is an effective problem solving methodology in as far as it compress both horizontally and vertically—and delinearizes organizational processes.

The illustrative cases we explored indeed demonstrate that both compression and delinearization of organizational process lead to the elimination of waste and non-value adding work and to the increase of productivity services, speed, quality and customer satisfaction. However, our research also demonstrates the limitations of BPR. Chief among them is BPR's theoretical bankruptcy and unidemensional approach to problem solving. Following the discussion on BPR we looked at the historical evolution of systems thinking, focusing on hard and soft systems approaches into problem solving. An in depth study of the various strands of systems thinking, namely the VSM, SD, SSM and SAST reveal that each of these systems methodologies are underpinned by different assumptions pertaining to the contexts, nature of organizations, and the human interests they serve. We found out that each of these systems methodology addresses adequately the specific aspect of organizations they are meant to address. However, equally true is the fact that each of these systems methodology inadequately addresses the complex and messy problems faced by organization because they are not complementaristic in their approaches. This research demonstrates unequivocally that in the real life situation, organizations like Telkom experience complex problems at various hierarchical levels. Such problem, we learned can only be resolved

by a holistic and systemic approach that eclectically uses the various systems strands in problem solving. As demonstrated in chapter 5-6, CST is so far the only systems methodology that facilitate a complementarist or pluralistic approach to problem solving. This discussion on systems thinking set the context for an investigation of the theory of CST and its operationalisation through the TSI methodologies (version one and two), and laid the ground for the application of TSI version one into the problem situation as discussed in chapter 2.

Summary of Practical Outcomes of the Research

If anything, this research has shown that organizations are very complex and the problems they encounter are multiple and multi-layered. It demonstrates that no single methodology can resolve the complex organizational problems, be they structural, human, or technical. Our analysis of the implementation of PMS at Telkom SA in chapter 6 confirmed this contention. Although the methodology used by Telkom management in implementing PMS was not disclosed, one can surmise from the problems that have emerged out of the PMS process that this methodology is not holistic and systemic. A further point about our TSI analysis of PMS implementation at Telkom SA is that it demonstrates the ability of integrated systems methodologies to cope with complexity in real situation. As we have shown in chapter 6, TSI version one, which allows for the use of various systems methodologies in problem solving, could have enabled the PMS advocates to anticipate the problems and challenges of PMS implementation, thus enabling them to devise strategies to combat these problems and challenges before the implementation went into full swing.

A further point about this research is that it underscored the importance of meaningful dialogue among the various stakeholders in an organization. The reason PMS has not been successful at Telkom has to do in part with the fact that not all role players in the PMS process understand the need and objectives of PMS. As we noted earlier, CWU sees this system as a management tool designed to marginalize and ultimately retrench the workers. Unfortunately, nothing in the PMS methodology allows for an honest discussion of this and other perspectives on PMS. If PMS is to be successful, our research suggests that an intervention methodology that surfaces the deep-

seated feelings be employed. Our view is that TSI version one is the appropriate methodology for the situation because it teaches people how to think for themselves in complex real situations.

Possible Directions for Future Research

We have learned from this dissertation that the systems approach to problem solving is empowering. However, for it to empower South Africans, particularly those, who come from the historically underprivileged communities, it must adapt to the local objectives and context. It is true that the TSI process is unfamiliar to many people, and is inaccessible to those who are less educated and less conversant in English - the language commonly used in the work place. To address these limitations, steps must be taken to make this potentially empowering problem solving methodology culturally relevant to the labour force in South Africa. Perhaps this is where future research on systems thinking in South Africa should focus.

At the time when our country and nation is embarking on a crucial process of redefinition, commonly referred to as the African Renaissance, the systemic approach must adopt an African idiom. That is, its language and symbols must be culturally relevant to South Africa and indeed to the entire continent of Africa. This is where we believe future research in this country should focus. The systems thinking discourse in Africa must be stripped of its Euro-American garb and be given an African one. How this should proceed must be discussed and debated by advocates of systems thinking in Africa.

What is exciting about this possibility is that the current South African government has begun to lay the groundwork for a systems approach to problem solving. Unlike in the past when national issues were dealt with in a mechanistic way, today the current government is beginning to tackle national problems in a systemic manner. For instance, the crime strategy that has recently been adopted involves not only the police services as in the past, but also the departments of justice and correctional services. This systemic approach to crime opens a window of opportunity for systems practitioners to inject their perspectives and help our country and people to develop. Practically, this situation demands that systems thinkers be engaged in vigorous research about

how systems thinking can be used in governance and in development. Perhaps the infusion of systems perspectives in these areas would help give South Africa a human face.

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P.O.Box 99180
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0060
13 March 2000

Good day Tinus

RE: Proposed meeting and a workshop

Following out telephone conversation this morning regarding the proposed meeting to discuss some of their issues that pertain the Performance Management System (PMS). This note serves to confirm our appointment for tomorrow 14 March 2000 at 09h00. The purpose of the meeting is to discuss the following issues:

- The findings of my research
- Possibility of a workshop between your office and organized labour
- Application of Soft Systems Methodology (For the second time) into the problem situation at Telkom (SA) PMS.

I hope you will find this letter in order. Should you need further clarification please do not hesitate to contact me.

Kind Regards

Siyabulela Jaca

APPENDIX B

SIMPLIFICATION OF PERFORMANCE MANAGEMENT

ADMINISTRATION/RED TAPE	PROCESS ISSUES	CULTURE & LEADERSHIP
Forms	Performance Assessment	Perceptions
Performance Assessment	Clarify performance assessment vs. performance management	Lack of trust
Competence profiles	Too much emphasis on detail	Lack of understanding of purpose and function of PM.
Definitions of scores (1 – 5) [1]	Inadequate communication	Union politics
Customisation of profiles	Movement of people & vacancies (problems with acting)/constantly changing structures	Lack of enrolment
Same approach for management and bargaining unit (overall judgement)	Lack of understanding contracts	Clarify performance assessment vs. performance management
	Customisation of profiles	Too much emphasis on detail
	Development plans [2]: ♦ Don't know how ♦ No CFL delivery ♦ Narrow definition of development (= training courses)	Leadership culture [2]: ♦ Do not manage people's performance and conducive environment properly ♦ Do not or do not want to provide feedback
	Barrier – no meetings allowed	Inadequate communication
	Automisation and its roll-out	Lack of ownership [2]
	Failure to capitalise on initiatives, e.g. impersonal distribution of PM kits	Culture: ♦ Blaming ♦ Wait and see ♦ "What's in it for me?"
	Inconsistency in standards [1]	Movement of people & vacancies (problems with acting)/constantly changing structures
		Lack of understanding contracts
		HR consultants not fully enabled
		Compare against other people or against targets

ADMINISTRATION/RED TAPE	PROCESS ISSUES	CULTURE & LEADERSHIP
		(normative vs. ipsative approach) [1]

NOTES:

HR consultants to be enabled on all these issues.

1   Link with balanced measures
2   Enrol leadership

APPENDIX C

PDM AUDIT FINDINGS 1999

1.0) NO OUTPUT BARRIERS IDENTIFIED DURING PLANNING OR FEEDBACK & REVIEW SESSIONS

Implications

- No action plans will be put in place to address them/manage them
- During assessment they cannot be taken into consideration

NB In some areas people identify lack of competence as a barrier

Solution

Ensure that all the barriers were identified & managed during the cycle

Follow up

- HR to emphasize the reasons for managing barriers where they exist
- HR and line to cancel lack of competence as a barrier on the output plan and to address it in the development plan.

Hints

- Lack of competence is not a barrier
- Barriers are not supposed to be used as an excuse to performance
- Barriers must be managed throughout the cycle
- Where it was beyond the performer's control to resolve the barrier, then prove of action steps taken to minimise or resolve the barrier must be given.

2.0) NO PDM PLANS AND OPERATIONAL PLANS

Implications

- No plan, no reward and no development
- No gainsharing from this year onwards
- Non alignment to operation plan
- Lack of performer focus
- Informal relationships work when there are no problems
- Leads to disagreements during assessment
- No consistency with quality requirements
- Subjective evaluations/assessment
- No PDM plans means non-compliance and must lead to disciplinary action

Solution

PDM plans must be signed for everybody as soon as possible (100% completion)

Follow up

- Monitor progress made on PDM planning, feedback & reviews on a monthly basis.
- Audits will be done during assessments to establish what rating was given to managers who did not have PDM plans for self & performers
- HR to conduct another audit in February only on the PDM plans that were not audited yet and after the audit findings were discussed with line management.
- HR to escalate problems beyond their control to Top management and PDM Managers

3.0) NO DEVELOPMENT PLANS OR DEVELOPMENT PLANS OF POOR QUALITY

Implications

- Poor inputs lead to poor outputs
- Service excellence drive will not be realized
- Union and legislative implications
- Leads to disputes where promoter refuses people the opportunity
- CFL will not allow people to attend courses if they are not on their PDM Development Plans
- Leadership project for Managers will be a failure

Solution

- Promoters to agree with performers on their development plans for this cycle
- All development plans to be in place ASAP

Follow up

- HR to consult with line on the compilation of creative development plans
- Audits - as already indicated

Hints

- - "If you green you grow, if you ripe you rot"

4.0) PERFORMANCE MEASUREMENTS NOT SPECIFIC

Implications

- Performers will not know whether they are on the right track
- Very relative and can lead to subjectivity
- Informal relations work well when there are no problems
- Objective assessments will be impossible
- Movement of goal poles which will lead to disagreements
- During disagreements the Promoter/Company will lose the case

Solution

Ensure that performance measurements are
- Specific
- Measurable
- Attainable
- Relevant
- Time bound

Action

- Promoter to revisit PDM plans
- HR to assist line where necessary or required

Hints

- Use the following to establish measurements, Cost, Timing, Quantity, Quality, Technical requirements and or legal requirements

5.0) PROMOTER'S PROMOTER SIGNATURE

Implications

- Non alignment of deliverables to operational plan
- Lack of consistency in standards within the section
- Possible inconsistent assessment
- Possible unbalanced workload
- Possible interference of Promoter's Promoter during assessment (Unilateral ratings changes)
- During disagreements their input will not carry any weight
- Promoter's Promoter is going to be subjective in the measurement of own performers on the "Managed people's performance" output
- Operational plan might not be aligned with the Promoter's Promoters Business Plan

Solution

All PDM plans to be signed ASAP

Follow up

- HR to educate Line Management on the role of the Promoter's Promoter
- On all non-signed forms HR to do random audits during March 2000
- If no solution escalate to PDM Manager

Hints

- The Promoter's Promoter by not signing the PDM Plans, is waiving his/her authority to change things at any stage of the process
- Promoter's Promoter must have all the plans of their direct reports PDM plans prior to signing to ensure that the Operational Plans is aligned to own deliverables
- To ensure that there is consistency

6.0) NO ALIGNMENT BETWEEN PDM PLANS AND JD'S

Implications

- People may claim to be placed on a higher grade if they perform outputs/ranges above what is required in their Job description
- People are paid much higher than what they contribute to the company when they perform outputs/ranges much lower than what is required of them by the Job description
- It will lead to disagreements that we as a company might lose

Solution

- Promoters to refer to JD's and check if they are aligned to their PDM Plans
- HR to audit as already reflected (March 2000)
- If the JD does not support the sections requirements, HR to revisit the JD according to the Job Evaluation and Job Description Process
- All Top Management PDM Plans to be audited by PDM Managers

Hints

- During planning use the relevant JD and Business/Operational Plan as source documents
- Ensure that consistency and fairness prevails

Following is a short report on meetings that were held with Mr Tinus van der Merwe Senior Manager Performance and Development Management System and other stakeholders. These meetings were held between October 1999 and March 2000. The essence of these meetings was to conduct a research on Performance Management Systems (PMS) within Telkom SA. A number of meetings were proposed between myself, organized labour and PMS office to apply Critical System Thinking within PMS at Telkom SA.

- Organized labour was not comfortable to sit around the table and discuss PMS as they had declared a dispute over it.
- There was willingness from both parties to provide their views separately from each other. This meant arranging separate conversation with both stakeholders.
- Despite these separate meetings both stakeholders were continuously unavailable due to a number of reasons, the major one being Management of Staff Numbers (Retrenchment). During this process close to ten thousand (10 000) employees were retrenched. Organized labour became very suspicious of members of management.
- Mr Tinus Van der Merwe was always available to assist when I was in need of information or clarification.
- Early this year I proposed another workshop with all the stakeholders, I was informed that I could not arrange any meeting with organized labour without involving Group Human Resources (HR). At this stage both group HR and organized labour are busy with substantive negotiation (see appendix 5). With the current programme between the two parties, it is not possible to arrange a workshop.
- On the 14 March 2000 a meeting was arranged with Mr Van der Merwe, I had a fruitful discussion with him i.e. I went through my findings of the research. He was in agreement with most of the findings, especially the unsystemic

approach, which was pursued by the organization. He maintained that the was consultation from conceptualization.

- The latest on PMS is that Communication Workers Union (CWU) has declared a dispute. They are totally unhappy with unilateral decisions that the organization is taking pertaining to PMS.

APPENDIX S

From: Corporate Communication
To: ; ; ; ; ; ; A Carlson; Aaron Fricke; ...
Date: Fri, Mar 17, 2000 9:26 AM
Subject: Negotiations on pay and benefits has begun

To all grade 1-7 managers/supervisors

Please share this message to all employees reporting to you

New-look pay talks start

This year's negotiations on pay and benefits have begun - and management has proposed set
deadlines, defined a clear framework to keep the talks focused, and tabled a three to five-year
agreement instead of the usual annual agreement.

The parties have agreed in principle to reach early settlement and not to repeat last year's lengthy and
acrimonious negotiations.

At the first meeting yesterday, 16 March, management tabled an offer for a three to five-year
agreement, underpinned by performance-based increases and productivity-linked gainsharing.

This kind of agreement will enable the Company to move ahead with its preparations for the Initial
Public Offering and the introduction of fixed-line competition, without the loss of staff morale and
productivity that comes with protracted, yearly talks.

At yesterday's meeting, management indicated to the Alliance of Telkom Unions (ATU) and the
Communication Workers Union (CWU) that it planned to reach an agreement within weeks rather than
months. Lengthy, bitter negotiations were not in anyone's interests, management said.

The offer tabled yesterday focuses strongly on performance and productivity. It will mean scaling down
on guaranteed salary increases, steadily raising the value of performance increases, and paying
productivity-linked gainsharing bonuses to staff who receive satisfactory performance assessments.

Increases will be paid out in fixed amounts instead of percentages. The salary/performance increase
offer for the first three years equates to 6% a year.

Apart from these items, management's offer covers relocation and transfer benefits, leave
encashment, telephone rebates and medical aid, which Telkom intends making more market-related
and cost-effective.

ATU and CWU indicated that they would respond to the Company's offer and table their demands at
the next meeting, scheduled for Wednesday, 29 March.

ends