THE APPLICATION OF THE VIABLE SYSTEMS MODEL TO THE DURBAN INSTITUTE OF TECHNOLOGY LIBRARY

by

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DECLARATION

I hereby declare that this study represents the original work of the author and has not been submitted at another university. Where use was made of the work of others it has been duly acknowledged.

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Signature

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ABSTRACT

Most institutions of higher learning in South Africa have had to merge because of the directive from the Department of Education enacted in the Higher Education Act of 1997, which aimed at restructuring the higher education sector. Academic libraries as departments within these institutions also had to merge as their parent organisations merged. The Durban Institute of Technology (DIT) became the first merged institution of higher learning in the country. The purpose of this study is to diagnose whether the merged DIT libraries are viable. This is tested by using the Viable Systems Model (VSM), which is based on cybernetic principles. This research project is meant to give a holistic view of the viability of the DIT libraries.

Members of the library staff were asked through an interview process what their views were about the library. The interviews were semi-structured and were conducted individually so as to elicit detailed information from library staff about the library, its processes, procedures, structure and management. Observation and document analysis were also used to gather further information relevant to the study.

The study concluded that the library does not have enough resources and there is confusion amongst members of the library staff about what the library goals are. Although the library does not have a single image and culture it is very active and is well represented in the Library and Information Services structures and within the DIT.

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LIST OF ABBREVIATIONS

AV	Audiovisual
DIT	Durban University of Technology
ESAL	Eastern Seaboard Association of Libraries
HEQC	Higher Education Quality Committee
IT	Information Technology
LIASA	Library and Information Association of South Africa
LIS	Library and Information Studies
MBWA	Management by wondering around
MLST	M L Sultan Technikon
OPAC	On-line Public Access Catalogue
S1	System one
S2	System two
S3	System three
S4	System four
S5	System five
SD	Systems Dynamics
TN	Technikon Natal
VSM	Viable Systems Model

CHAPTER 1: INTRODUCTION

As a lecturer in the field of library and information studies (LIS) I teach people the skills that they need to be practitioners within the field. In doing this I empower them with certain tried and tested problem-solving methodologies available in the vast LIS literature. My work is a perfect match to my lifestyle and paradigm as it allows me to contribute to development. As an academic I have to conduct research which contributes to LIS literature, and lecturing gives me the opportunity to develop other people. They join our programme with only a mild interest in LIS, and after three years, when they leave us, they are ready to become practitioners in the field. I feel fulfilled when I think that I have contributed to that which gives them pride and joy.

What I have always loved the most about my profession - and this is probably what attracted me to it in the first place - is the structured and methodological way in which most things are done, leaving little or no room for mistakes. There has always been a right and a wrong way of doing things, and trusted evaluation strategies to determine which is which. It is comforting to LIS practitioners to know that when they are not sure of something they can consult the many LIS international or national databases and standards for answers. To say this, though, is not to deny that as the profession develops it is affected by technological and social changes.

LIS has been affected by many dynamics which have had both a positive and a negative impact on the profession. The effects of these dynamics have added to the complexity of the practice of LIS. For instance, the introduction of information technology (IT) made it necessary for LIS education and training to include a component of IT. Technology is changing the work-life of librarians and library support staff. They increasingly depend on it to add value to the services and products they provide. Pressures to keep up with new practices and to remain effective in present job responsibilities mean that they must read more about technology and its applications (Riggs and Zhang, 1999).

The democratic government which came into power in South Africa in 1994 has initiated the redress of past injustices through the sweeping reorganisation of the many systems which come under its control, including the systems of local government and of higher education. Changes made to municipal boundaries have

meant that existing public libraries designed to serve separate communities of readers have had to merge and serve more inclusive clientele, and the merging of academic libraries resulting from the merging and reorganisation of South Africa's higher education institutions have been even more complex in nature. These issues pose a great challenge for members of the LIS profession. In the light of the new dispensation in the country the government wanted to make changes on many systems so as to re-dress past imbalances and these changes have had an effect on the LIS profession. The general process of merging institutions - or libraries in particular - is determined by legislation and regulation, but each particular case has its own complexities and idiosyncrasies that influence the forms and outcomes of each merger (Soobrayan, 2003)

The problem for LIS practitioners is that there are no tried and tested methodologies or strategies available for them to refer to when dealing with these mergers. Reports on library mergers are often limited to case studies of particular mergers that do not offer much generalisation and theory (Swanepoel, 2003). This situation is aggravated by the fact that mergers are influenced by social issues and other contextual factors which make it highly unlikely that a strategy that someone in a foreign country has come up with will work in a different context. This situation leaves people involved in library mergers with very little to work on in the implementation of such mergers (Swanepoel, 2003).

1.1   THE HISTORY OF THE DIT MERGER

Most institutions of higher learning in South Africa have had to merge because of the directive from the Department of Education enacted in the Higher Education Act of 1997, which aimed at restructuring the higher education sector so as to ensure that all institutions of higher learning are operating at the same level. However, the merger of the M L Sultan Technikon, which traditionally served the Indian community, and the Natal Technikon, which served the white community, was perceived as a voluntary act. This is because the first talks about the collaboration of these two technikons, talks which initially also included the Mangosuthu Technikon, date back to 1989, prior to the advent of a post-apartheid democracy (Soobraryan, 2003).

The M L Sultan Technical College was founded in 1941 with a donation from Hajee Malukmahomed Lappa Sultan with matched government funding, and a site was promised by the Durban City Council. It was approved as an institution for Higher Education in 1947 and provided much-needed coordinated teaching and organized classes for the Indian community. However, it was not until 1953 that the Durban City Council provided the College with a six-acre site, and the main building was opened in August 1956. Future expansion was supported by local industry. Despite pressure from the nationalist government it committed itself to the education of African students as well as Indian. (Annual review, 2001)

Technikon Natal was originally the new Technical Institute founded in Durban in 1907 and is one of the oldest tertiary institutions in KwaZulu Natal. It spawned many educational institutions after that and became Technikon Natal in 1979. A new campus development was started in 1982, which led to the rapid expansion of courses and facilities including the new Alan Pittendrigh library, which opened in 1989. (Garrow, 2003)

As departments within these two technikons, the libraries had to merge when their parent organisations merged. During the mergers the management spent a lot of time working on structural and procedural issues relating to the process.

According to PricewaterhouseCoopers (1999), during the discussions of the merger of the DIT libraries a task team made up of representatives from both institutions was established, and they were mandated to report on the following issues:

> The library space required by both institutions;
> Details of the physical buildings and the structure of the proposed libraries;
> Details of the stock of books, journals, periodicals, videos and other materials, to determine numbers, duplications and requirements;
> How the skill of personnel would be identified and developed; and
> An assessment of the strengths and weaknesses of both libraries, to ascertain the best practice and policies with a view to adopting only the best outcomes into the new institution.

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The following issues were then identified as areas of concern:

> Should libraries be centralized or decentralised?
> How would developments in the field of electronic media affect the merged library?
> An assessment of access control and security systems to ensure compatibility.
> The re-cataloguing of all books, journals, videos and other material.
> An assessment of the need for internet capabilities and speed of access with a view to appointing the most effective service provider.

Looking at the documentation about the merger of the two pre-DIT libraries it is clear that the task team focused on structural and procedural issues and largely disregarded the fact that a merger is also a socio-cultural issue. Human resources issues were left on the periphery and did not receive enough attention, and yet these are the issues that are likely to lead to a lack of commitment to the new institution. This assumption is supported by Garrow (2003) in the research she conducted on the merger of pre-DIT libraries, in which she assessed staff perceptions about the merger. She listed building a new culture, overcoming the historical divide, and maintaining job satisfaction as the main areas of concern that were identified by library staff members.

1.2   THE PURPOSE OF THE STUDY

Organisational and social problems arise because of new degrees of complexity in organisations (Flood and Jackson, 1991). Cybernetics addresses this by providing cybernetic laws which, when adhered to, ensure that an organisation is viable. The merger of the pre-DIT libraries increased the complexity levels because it brought together two separate systems that included the unpredictable, complex system of people.

Cybernetic principles provide theory for dealing with the parts of a system, its environment, the relationship between the parts and the unitary goals of social organisations. This research is going to analyse the operations, co-ordination and management of the DIT library using the Viable Systems Model (VSM). This is

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going to be achieved by analysing the library procedures, processes and structures, with the aim of identifying the systems that lead to the viability of merged higher education libraries.

This research project is meant to give a holistic view of the viability of the DIT library. The purpose of this study is to diagnose whether or not the DIT library is viable, using the VSM, which is based on cybernetic principles. That is, library structures and processes will be analysed with the aim of assessing whether they have all of the necessary systems that VSM prescribes for a viable system. I hope that the result of this diagnosis will help create a better understanding of the systems that inform the viability of merged higher education libraries.

1.3 THE SCOPE OF THE STUDY

There are other merged higher education libraries in the country and in KwaZulu Natal, but I have decided to use the DIT library because the DIT was the first merged institution of higher learning in the country, and also because of my personal connection with it. I have assumed that the DIT, as a system, has had a lot of time to organise itself around the merger issue, and that the merged structures are by now most probably all in place. I have also assumed that the other institutions which merged after the DIT will go through stages and processes similar to those which the DIT went through, and that the findings of this research will therefore be able somehow to help them to deal with their mergers more effectively.

As the author of this research, I also have an insider perspective on the DIT merger, as I was part of the system during the merger implementation process. I am still part of this system, long after the process has been completed. I want also to acknowledge that prior to the merger I was part of both systems that merged, having initially worked for the Technikon Natal library, and being employed in M L Sultan Technikon at the time of the merger.

The VSM's five functional systems will be used to diagnose the current state of the DIT library. This study is going to perceive things from a systems-thinking point of view throughout.

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1.4 AN ACADEMIC LIBRARY DEFINED

An academic library is a library that is attached to or belongs to an institution of higher learning. There are different types of institutions of higher learning, with different missions, different governance structures, different academic emphasis and different student bodies (Budd, 1998). Integral to the definition of an academic library is its context, the world of the academy. That context defines the purpose of the library even if it cannot define how that purpose is to be fulfilled. The library offers a supplement and complement to the curriculum. It offers content essential to the acts of teaching and learning. It provides content that is integral to inquiry, whether the inquirer be a freshmen or the most respected professor (Budd, 1998).

The phrases 'higher education library' and 'academic library' are used interchangeably throughout this project to refer to libraries that are attached to institutions of higher learning

1.5 THE SUITABILITY OF THE VSM FOR THIS STUDY

Flood and Jackson (1991) suggest that viable systems diagnosis should be used in complex unitary situations. They define a complex unitary system as a situation where the system concerned is complex, e.g. has elements in close interrelationship, exhibits probabilistic behaviour which is difficult to predict, is open to the environment, and includes purposeful parts. However, it is assumed that there is general agreement about the goal to be pursued. An analysis of ordinary libraries might reveal that they are simple unitary systems as there can be little or no dispute at all about the goals of the library. However, the DIT library is perceived as a complex unitary system because the merger brought complexity to a unitary situation in the merging two different organizational cultures, creating power struggles and job insecurities. It is for this reason that VSM is used in this case study.

According to cybernetics, organizations sometimes fail to function effectively because their control and communication systems are poorly designed. It is important for two systems (in this case, exTN and exMLST) which have recently come together to form one system to have effective communication and control systems, for as they self-organize and try to co-exist, communication becomes vital.

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VSM provides a good tool for designing information systems based on the information processing systems of the organization rather than on the hierarchical model, which does nothing more than demonstrate who is to be held responsible when things go wrong in the organization. The information processing systems of an organization provide a good starting point for considering organizational design. It is very important for an organization which has just merged to focus on its information processing systems rather than on an organizational chart, as there are bound to be duplications in terms of structure and rank, which could then cause conflict.

VSM is generic. It does not prescribe a particular structure to which it can be applied. It is concerned with what defines a system and enables it to maintain its identity. It has therefore been found to be applicable to small and big organizations, training programmes, local and national government. Given its generic nature I can see no reason why VSM cannot be applied to libraries.

In VSM problems are corrected as closely as possible to the point where they occur. This increases motivation at lower levels in the organization and frees higher management to concentrate on meta-systemic functions. (Jackson, 1991). Dealing with problems when they occur is vital for libraries, because they serve users and this immediacy shortens turn-around time in terms of the response to the problem, especially if it involves a library user. This in turn improves customer satisfaction and frees higher management to get more involved with relating with the parent organization and the industry as a whole.

1.6 ORGANISATION OF THE RESEARCH PROJECT

This research project is meant to give a holistic view of the viability of the DIT libraries using VSM. It consists of six chapters. Chapter one introduces the merger of the two pre-DIT libraries, defines the term 'academic library,' and discusses the purpose and scope of the study.

Chapter two provides background information about how the M L Sultan and Natal Technikon libraries functioned before the merger. This chapter also gives a detailed

presentation of the DIT library's processes and procedures, including its structures and culture.

Chapter three reviews literature on library mergers, especially the mergers of the libraries of higher education institutions. It looks at the current trends in such mergers, the problems they face, and how managers normally deal with them.

Chapter four discusses the processes and research methodology used in this study. It also gives a detailed discussion of the five functional systems of VSM that are applied to the processes and procedures of the DIT library in this study.

Chapter five presents the results of the study based on the application of the VSM to the DIT library.

Chapter six discusses the conclusions of the diagnosis and makes recommendations.

CHAPTER TWO: THE BACKGROUND TO THE STUDY

This chapter provides background information on the DIT and new DIT libraries. The background information provided in this chapter is aimed at giving a better understanding of DIT, and of how the M L Sultan and Natal Technikon libraries functioned prior to the merger. This should enhance the understanding of the justification for this study.

2.1 THE M L SULTAN TECHNIKON LIBRARY

The M L Sultan Technikon had two libraries prior to the merger. The main library, known as the BM Patel Library, was located at the main campus on Centenary Road. A branch library was located at the Brickfield Campus, and catered for the information needs of the departments on the Brickfield Campus of the M L Sultan Technikon. See Appendix B for the organogram of the B M Patel Library

The B M Patel Library provided support service to the entire Technikon population e.g. the students, the management, and the academic and administrative staff of the M L Sultan Technikon. By 2000 the library had approximately 59 510 monograph volumes, 48 922 monograph titles, 900 serials and approximately 4000 multimedia titles. Access to the union catalogue was provided via SABINET and a variety of other online and electronic resources. The library had 36 staff, eleven of whom were professional staff, ten paraprofessional staff, and five that served in the evening (M L Sultan Technikon, 2000).

According to M L Sultan Technikon (2000), the mission statement of the B M Patel library was to strive to meet the commitment of the Technikon to higher education, as specified in its vision. To achieve this objective the library sought to provide a comprehensive information service to support the curricular and research activities of the institution. The library further aimed to provide a physical environment that was conducive to serious study, and which was user-friendly to the Technikon community.

The library had the following goals:

- To introduce the 'knowledge management' model in order to make the library more user-friendly, efficient and accessible;
- To improve access to library resources;
- To improve the quality and increase the quantity of the print and non-print collections (made up of audiovisual and electronic resources);
- To integrate library services with the academic programme to a greater extent;
- To improve the environment so that it was more conducive to serious study; and
- To increase the level of resource-sharing and other means of securing finances.

2.1.1 A DESCRIPTION OF THE LIBRARY SERVICES

According to M L Sultan Technikon (2000), the following are the services the library provided:

Acquisitions

Acquisitions had three staff members, who were responsible for processing incoming orders, executing payments, and accessioning the collection. The head of acquisitions monitored quality control and provided reports on the status of orders, etc.

Cataloguing

There were two staff members responsible for cataloguing and classification, with one managing the quality control of monograph cataloguing and the other managing audiovisual and serials cataloguing. Cataloguing made use of the 21st edition of Dewey and LC Subject Headings.

Circulation services

Circulation comprised of main circulation, short loans circulation, serials circulation, audiovisual circulation, and inter-library loans. Each section was managed separately.

Computer services

The systems administrator managed the whole automated environment, including software and hardware. The data administrator systematically reviewed the data content of each module to ensure the overall integrity of the system, and provided assistance with trouble-shooting and the maintenance of all other systems used in the library.

Audiovisual services

The audiovisual librarian was responsible for interacting with all faculties to develop a collection to meet special learning needs and to support the general teaching programme. Cataloguing, classification, and library education were also a part of this portfolio.

Education and training

Education and training was identified as a strength and a priority of the library. With two training laboratories, hands-on instruction was provided to Technikon staff and students throughout the year. An education unit comprised of all professional staff and paraprofessional staff was responsible for the instruction.

Information services

Information services were managed primarily by the Subject Librarians, who were responsible for developing the collections of the various faculties, for interacting with the faculties about their course and research requirements, for providing a walk-in reference service to students, and for library education for the campus community as a whole.

In addition the serials librarian provided a reference service that utilized the serials collection, which took the form of selected dissemination of information and a walk-in reference service. Library education, cataloguing and classification, and serials acquisition were also part of this portfolio.

2.2 THE TECHNIKON NATAL LIBRARY

Prior to the merger the Technikon Natal had three libraries, with the main library located at the main campus in Durban. It was known as the Alan Pittendrigh library. There were two branch libraries, on the City Campus and the Pietermaritzburg campus, serving the information needs of the Technikon Natal departments that were located on these two campuses.

The mission statement of the Technikon Natal library was to support education, research and lifelong learning amongst its users by providing access to information and by developing information skills.

2.2.1 THE SERTEC EVALUATION

The Sertec accreditation committee report (1999) commended the Technikon Natal library for

- The recognition of the Chief Librarian as an integral part of the Vice-Principal: Academic's management team;
- The recognition by the computer services staff of the importance of information technology in the library;
- The close liaison between library staff, particularly the subject librarians, and faculty members;
- The openness and willingness of all staff to communicate and share information;
- The extensive and varied workload of the subject librarians;
- The then user-education programmes;
- The obvious quality and innovativeness of the user services; and
- The library staff's extensive and intensive involvement in consortia activities despite the then staffing provision.

2.2.2 A DESCRIPTION OF THE LIBRARY SERVICES

Technical services

Technical services had seven staff members. Two staff members were responsible for dealing with acquisitions, two were cataloguers, and the other two were responsible for processing the collection. Ordering, cataloguing and all technical services related these activities were done centrally at the Durban main campus for all technikon Natal libraries.

Circulation services

Circulation comprised of main circulation, short loans circulation, serials circulation, audiovisual circulation and inter-library loans, with all of these sections being managed separately.

Computer services

The Systems Librarian managed the whole of the automated environment, including software and hardware. The portfolio included the provision of assistance with trouble-shooting and the maintenance of all of the systems used in the library.

Collection development

Book selection meetings were held monthly to buy stock and to discuss collection development-related issues. Nine book-selection and four periodical-selection meetings were held in 2001. During these meetings the library bought 4642 books, 42 serial titles and 301 videos.

Training library users

Information-skills training formed an important part of the Technikon Natal library mission, and therefore was planned and carried out meticulously. Subject librarians conducted library orientation sessions for new students twice a year, usually in February for annual students, and in July for semester students. Subject librarians also conducted subject instruction for senior students from second-year up to masters level on request, either in groups or individually. These sessions were more advanced and included talks on literature searching and the use of electronic library resources, etc.

Staff

In January 1992 the Technikon Natal library had 50 staff members spread throughout its three campuses. These staff members worked under the following conditions. They had 42 days of annual leave, 12 days of accumulative leave, and a 3-year cycle of 90 days for sick leave. All full-time staff worked 37½ hours a week. They had to sign in and out at the beginning and end of the day. On Wednesdays the library opened at 08h30 for library users because all members of staff were expected to shelf-read for the first hour, between 07h30 and 08h30. This helped to keep the shelves tidy and the collection in its right place.

2.2.3   THE TECHNIKON NATAL LIBRARY ORGANOGRAM

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                          ┌─────────────────────┐
                          │ Rector              │
                          └─────────────────────┘
                          ┌─────────────────────┐
                          │ Vice Rector: Academic│
                          └─────────────────────┘
                          ┌─────────────────────┐
                          │ Chief Librarian     │
                          └─────────────────────┘
                          ┌─────────────────────┐
                          │ Deputy Chief Librarian│
                          └─────────────────────┘
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Secretary

Subject Librarian Circulation

Subject Librarians Unit

Subject Librarian Cataloguing

Audio Visual Librarian

PMB Subject Librarian

Systems Manager

Librarian Information Services

Periodicals Librarian

Principal Library Assistant Audiovisual

Circulation Assistant

Library Assistant

Principal Library Assistant Periodicals

Periodicals Assistants

Senior Circulation Assistant

Senior Library Assistant ILL

Counter Assistants Berea City

Part time Library Assistant

Shelvers

Senior Library Assistant Acquisitions

Processing Assistants

Cataloguing Assistants

Student Assistants

Acquisitions Assistant

2.3 THE DURBAN INSTITUTE OF TECHNOLOGY (DIT)

The Durban Institute of Technology resulted from the merger M L Sultan Technikon and Technikon Natal in 2002. The DIT has been operating without a vision and mission until early this year, when the DIT adopted a new vision and mission.

2.3.1 THE DIT'S VISION, MISSION AND GOALS

According to Durban Institute of Technology (2005) the vision of the DIT is to be 'a leading University of Technology in Africa, that nurtures holistic education and the advancement of knowledge.'

The mission of the DIT is 'to serve the needs of developing societies within a dynamic global context and to enable quality teaching, learning, research and community engagement by providing quality, career-focused education, and promoting a values-driven ethos; sustainable partnerships with industry, community and society; excellence in applied and relevant research; empowering staff and students to succeed; and ensuring institutional sustainability.

The institutional goals of DIT that enable the institution to realize its vision for the future and to fulfil its mission are listed below:

- To promote learning through high-quality programmes, research and support services that will produce competent graduates;
- To ensure that the institution is strategically positioned within a global context;
- To ensure institutional sustainability;
- To enhance the quality of student life;
- To increase and enhance community engagement and partnerships;
- To attract and retain quality staff and promote staff advancement; and
- To continuously provide improved, quality services and infrastructure.

2.3.2 THE DIT LIBRARY'S VISION, MISSION AND GOALS

The DIT library has six campus branches. The collection at each campus branch reflects the courses that are offered on that campus. The collection is available in various formats e.g. books, theses, periodicals, audiovisual materials and electronic databases. The library had to embark on a major stock relocation project. As departments have moved to different campuses their stock has had to move with them to those campuses.

The vision of the DIT library is that it 'will be client driven, providing an environment that supports learning, teaching and research and is responsive to institutional needs as well as the imperatives of the national Plan for Higher Education. It will provide equitable access to information resources and facilities, using world-class technology and communication systems, taking into account the diverse needs of its community.

'The staff will be well trained and suitably skilled to provide an excellent service, including curriculum-based information literacy programmes which will contribute to the life-long learning initiative. Staff will be supported by a management, which is fair, transparent, accessible and committed to participative decision-making.

'Institutional management will provide appropriate support and funding to ensure the centrality of the library's role in the academic endeavour of DIT.'

In May 2004 the DIT library adopted the following as the goals of the library:

'Motto: The Right Resource for the Right person at the right time.

To develop a feeling of ownership by staff of the library
- Establish a psychological contract
- Determine what 'ownership' means for each individual
- Break down the barriers of historical allegiances or compartments
- Meet the requirements of the job while having fun (deriving pleasure)

To develop a customer-oriented service by
- Service delivery: put users at the centre of the library services

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- ➢ Provide the fullest service at all times within the constraints of the available resources, treating users with respect and courtesy
- ➢ Be responsive to users' needs
- ➢ Establish service level agreements with users
- ➢ Train staff to provide a quality service
- ➢ Develop a code of ethics

To improve productivity within the library
- ➢ Identify departmental and individual expectations clearly
- ➢ Establish productivity standards and benchmarks
- ➢ Identify (potential) problem areas
- ➢ Deal with poor morale and lack of motivation manifested by low productivity
- ➢ Recognize good performance appropriately and timeously
- ➢ Ensure good planning and coordination of workflow

To establish quality assurance levels and standards for the library
- ➢ Develop guidelines and principles to meet HEQC requirements
- ➢ Include people who do the job
- ➢ Develop standards and benchmarks
- ➢ Arrive at a common understanding of quality in the library
- ➢ Allow problem-solving initiatives to develop

To improve communication within the library
- ➢ Ensure two-way communication between staff and management
- ➢ Encourage communication amongst colleagues (horizontal communication at all levels)
- ➢ Encourage participative decision making and the involvement of staff
- ➢ Encourage the sharing of information at all levels
- ➢ Create a better understanding between colleagues from all sites of the DIT library
- ➢ Publish a newsletter, involve coordinators at general library meetings, abd manage by wondering around (MBWA)
- ➢ Build trust, develop understanding, and challenge perceptions
- ➢ Integrate library services and resources to provide a seamless service to users

- ➢ Develop a plan to ensure adequate IT infrastructure, resources and systems
- ➢ Identify the services that fall within the possibility of seamlessness
- ➢ Develop an awareness and understanding amongst staff of the need for seamless services
- ➢ Ensure that the website provides seamless access to as many services as possible

All DIT library sites and departments at the beginning of each year set their goals or action plans, which guide how they operate on a daily basis for that particular year. These goals are supposed to be in line with the current vision and mission of the DIT library.

2.4 SUMMARY

Background information has been provided in this chapter in order to develop a contextual framework for the study. An outline of how both libraries functioned prior to the merger and their organograms have been provided. The current situation of DIT library has been provided, including the environment in which the library operates. The next chapter reviews the existing literature on academic libraries and cybernetics in the context of this background information.

CHAPTER THREE: LITERATURE REVIEW

This chapter reviews the literature on academic libraries and the impact of the merger on academic library service. It also discusses cybernetic principles and how they relate to merged academic libraries.

3.1 ACADEMIC LIBRARIES

3.1.1 ACADEMIC LIBRARY SERVICE

Higher education libraries are attached to higher education institutions, which are the parent organizations that they serve. For the higher education library to be successful in playing its supportive role there needs to be a clear understanding of what a higher education institution is and what its purpose is because the higher education library will derive its mission and goals from this. According to Wainwright (2005) universities assemble people together in the creation of new knowledge and the transmission of previously developed knowledge. This description of a university, although it does not exhaust what a university is about, emphasizes the point that universities are a place where knowledge and information creation takes place. It follows that libraries are important departments within universities, and play a central role in their primary function.

Akeroyd (2001) defines a library as a collection of resources, a building or space, a function that is the organization of information, and as a service playing the supporting role in the context of the organization. The idea of a library as a collection of resources will endure, because even in the electronic age there is still a need to prescribe boundaries to ensure that the collection meets the needs of the user base. If the core process of the library as a function is organizing the information universe to enable easy access by users, then we can argue that libraries have an unchallenged role, to provide the tools for that will make it possible for that to continue.

According to Akeroyd (2001) the function of an academic library is on the one hand to bring together the universe of information adequately organized and utilizing metadata as document surrogates, and on the other hand to serve a universe of users sub-divided into specific user populations thus enabling them to gain access to the information they need. This is a limited definition of academic libraries as it does not

give a clear indication of all the other functions an academic library performs, but it does clearly describe the core mission of all academic libraries.

The focus of academic libraries is shifting away from the management of physical resources towards the exploitation and creation of pathways and links to support and the core mission of learning, research and innovation. Their services must become even more focused than before on the user and his or her needs, to the extent that they become highly personalized (Akeroyd, 2001). An academic library then needs to provide an excellent service that will respond to the changing needs of academic library users. Wainwright (2005) states that the required characteristics for the provision of a quality library service are performance, the possession of a range of features, conformance, durability, currency, serviceability, accountability, and perceived quality. Although these characteristics give a guideline for the development of a quality library service, it remains true, unfortunately, that the impact of a library service on the core mission of the university cannot be measured.

According to Wainwright (2005) future academic libraries should be constructed as collaborative facilities with co-location of a range of information, learning support and other student services. However the success of such a facility is not in the co-location but the total re-design of service delivery within an integrated university approach. Libraries are an important part of higher education institutions.

Librarians need many skills to be able to provide the 'glue' which will result in the new learning and research management systems becoming rich resources for staff and students. They must lead their institutions in the collaborative efforts needed to achieve this goal, and not be passive receivers of information queries (Wainwright, 2005).

This section has focused on the definition of academic libraries, because it is important to have a clear understanding of a system's identity and its environment prior to applying cybernetics and cybernetic principles to that system.

3.1.2 ACADEMIC LIBRARY MANAGEMENT

Auret (1996) states that directors do not have predominant roles to play inside academic libraries only, and that much of their time should be spent in linking the library with its environment (a liaison role), developing staff commitment and enthusiasm (a leadership role), creating or identifying and exploring development opportunities (an entrepreneurial role), and prioritizing and allocating resources. He says there is a fine balance in directorial activities between external and internal involvement.

The main function of library directors is to relate the library to an external environment of change and uncertainty, while instilling a sense of identity and purpose in their staff. Directorial associates and other library staff are primary communication partners (Auret, 1996). This role of the library management is more important in a turbulent environment such as that of merged higher education libraries, as it will deal with staff fears and insecurities. It also ensures that the management of the institution is aware of and informed about what is happening in the library and can therefore react appropriately or be proactive when necessary.

The other important part of a director's role, the one that justifies his or her power and authority, is the making of strategy in the library. Strategy making can be defined simply as the process by which significant organizational decisions are made and interrelated – decisions related to linking the library with its environment, determining basic goals and policies, identifying development opportunities, and allocating resources (Auret, 1996).

Higher education libraries are highly complex organizations with multimillion rand budgets, hundreds of employees, and assets amounting to millions. They demand leadership and management by highly skilled individuals (Auret, 1996). The training of managers of academic library has not been given the attention it deserves. LIS Noon (1997) states that the Aston Business School developed a strategic management programme for senior academic library staff in an attempt to deal with this lacuna. The development programme consisted of the following modules:

- ➤ *Strategic analysis*: environment analysis; financial, business and market analysis; stakeholder analysis; objectives, performance and priorities.
- ➤ *Strategic choice*: portfolio analysis; innovation and risk; segmentation and positioning; monitoring and evaluation strategies.
- ➤ *Strategic implementation*: managing change; motivation and performance management; managing creatively.
- ➤ *The strategic manager*: personal skills audit; gap analysis; options for personal change; changing roles and styles; the manager as a leader, politician and professional.

However the difficulty connected with this training programme, as with any other training programme, is for the members of staff who have been trained to actually implement the lessons learnt from the programme. It is one thing to go through a learning programme and another thing to be able to practice what one has learnt. The challenge then is for trained library managers to implement their training and avoid falling back into their comfort zones, in which they will continue to do things in the way they used to do them previously. This statement is confirmed by Albritton and Shaughnessy (1989) in Glendenning and Gordon (1997), when they state that leadership training is ineffective in changing the behaviour of participants. Leadership training aimed not directly at leadership behaviour itself but at providing diagnostic skills for the identification of the nature of the situation and the behaviours appropriate to it appears to offer considerable potential for improvement in leadership effectiveness.

Application of the VSM to academic libraries would be incomplete if it did not include the management of academic libraries and the challenges they face. Cybernetics is a management tool. The consideration of academic library management is therefore essential when mapping a merged academic library on the VSM.

3.1.3 CHANGE IN ACADEMIC LIBRARIES

Change brings the possibility for growth and experience but it also brings with it an element of the unknown, so it is threatening. Siddiqui (2003) argues that it is ironic

that when members of staff are secure they yearn for change, but when they have too much change they yearn for stability.

Change is unpredictable, inconstant and often unmanageable, yet organizational success depends on an ability to predict and control change in some way. It is not sufficient to await the outcome of events and to react to change after it has occurred. Effective organization must rather be prepared to grasp the opportunities provided in a time of change, alongside the threats, by responding proactively to the challenge of change (Farley, Broady-Preston and Hayward, 1998).

Mergers in academic libraries require an increased physical, psychological and emotional effort from library staff. The success of any change initiative relies on serious consideration by managerial staff of certain human resource management concerns, such as the need for communication, staff involvement, training and development and job design. It is these issues which must be addressed if members of staff are to be encouraged to accept change, for without their acceptance any attempt at change may be futile (Farley, Broady-Preston and Hayward, 1998). It is the members of the library staff, who create effective libraries and provide an efficient service to users. In order to achieve this, they themselves need to be efficient and effective. Job dissatisfaction and lack of motivation must therefore be addressed effectively by library management.

Strategic management texts tend to concentrate on structures and control systems as the primary focus for managing strategic change. However, it is sometimes more appropriate to address management styles and influence strategies in changing routines, symbols, power and communicating these changes as a process than to introduce major changes to structures and systems (Hill and McNulty, 1998). The impact of a merger, for instance, on individuals is mixed. Some people concentrate on the positive outcomes whilst others see only the negative. However, in any organizational change the people affected often feel disoriented, unsettled, frustrated, unprepared for change and unable to compete with the demands of the newly created institution. This poses a challenge to the management, because the emphasis in their style of leadership needs to change from controlling from the top to building morale and developing loyalty from the grassroots level. Building a culture that elicits

loyalty and a sense of community is crucial if the new institution is to survive and prosper. Leaders need to create images of the new organization that elicit new loyalties (Harman, 2002)

Academic libraries are changing faster than their parent organizations. Edwards and Walton (2000) state that invariably the intensity of change will cause conflict on different scales and levels, and that this conflict has serious implications for academic libraries. They further state that conflict is endemic in academic LIS. This suggests that it is not being properly addressed or managed. The reasons for this may lie in the historical culture of LIS, which could fairly be described as non-confrontational. Libraries have traditionally wished to retain their image of scholarly calm. There is, perhaps then, a tension between the pervasiveness of conflict in LIS and the reluctance of personnel to confront it. It may be that owing to the particular culture of LIS the only approaches to conflict management acceptable to them are avoidance and collaboration. What is needed is the kind of culture where genuine collaborative approaches can succeed. It is the responsibility of those at the top to ensure that this happens by starting off the process and setting up the systems by which change and conflict resolution can be achieved.

Change in academic libraries is closely related to the law of requisite variety in cybernetics. The amount of change which an academic library can exhibit and the extent to which it is able to effectively deal with that change determine the role that will be played by the variety regulator, whether it will be dampening or amplifying its affects.

3.1.4 ORGANISATIONAL CULTURE IN ACADEMIC LIBRARIES

Organisational culture can be defined as the deeper level of basic assumptions and beliefs that are shared by members of an organisation, that operate unconsciously, and that define in a basic 'taken for granted' fashion an organisation's view of itself and its environment (Schein, 1986). Academic libraries are a part of a wider community which they serve, be it a university or a technikon. That means that they are affected by the same social issues and politics which concern the whole institution. This includes the identity and the culture of the institution.

Culture in an organisation or work environment informs how members of a group or an organisation perceive and deal with the organisation. According to Schein (1986) culture in an organisation performs two basic functions. Firstly, it solves the groups' problems about survival and adaptation to the external environment. He defines the external environment as issues that are concerned with survival in what must be assumed to be the real environment, which is beyond the control of the members of the group. Secondly, it solves problems relating to the integration of the organisation's internal processes to ensure its capacity to continue to survive and adapt. He defines the internal environment as the group's definition of how to organise relationships among members of the group to permit survival in the defined environment through effective performance and the creation of internal comfort. A library that is in a process of merging (or newly merged libraries) does not have a culture, and furthermore staff members are frustrated because their 'comfort zone' is disrupted and they have no point of reference when they want to solve either their internal or external problems.

For any organisation to survive in its environment it needs a reason to exist. It is important for the merging libraries to be willing to shed their previous identity and open themselves up to embracing the new identity. This can be done by identifying the new core mission of the library. For academic libraries this reason for existence is normally the mission statement of the library. A strategy for implementing this new mission must also be formulated. The resolution of the mission and the solution developed to deal with it become core cultural elements (Schein, 1986).

There is a tendency to oversimplify or under-analyse organisational culture. Schein (1987) discusses four points which he refers to as traps that people might fall into as a result of under-analysing or oversimplifying organisational culture: (1) a failure to understand the dynamic consequences of cultural phenomena; (2) an overemphasis on the process of cultural learning (socialization) and insufficient emphasis on the content of what is actually learned; (3) the confusion of parts of the culture with the cultural whole; and (4) the confusion of surface manifestations of a culture with the underlying pattern or core of the culture.

Organisational culture is one of the elements which organisations have a tendency to self-organise around. It is therefore important to analyse organisational culture and how it manifests itself in an organisation if one is to apply the cybernetic principles in a system.

3.1.5 MERGER OF ACADEMIC LIBRARIES

Communication is important in mergers, as it can make a difference between the success or failure of mergers. However, institutions need to use various methods of communication and not rely solely on meetings, as it is necessary to limit this the number and duration of meetings that staff members have to attend. While it is acknowledged that communication is vital in any process of transition, balancing the pressure of work and the frequency of meetings is challenging for staff, and this could lead to the staff's developing a dislike for attending meetings (Jayaram, 2003)

Cady (1996) states that the relative success of the merger of academic libraries can be measured in relation to the staff, the clientele, and the external environment. The members of the library staff evaluate success on terms of position re-evaluations (rank and salary); the provision of opportunities for advancement, training and development; the attention given to issues of equity and gender; whether or not their new workloads are manageable; and whether or not they find their new supervisors to be acceptable. The clientele's measure of success depends on the improvement of the services they get from the library.

Academic libraries share the same culture with their parent organizations. This academic culture, like all other cultures, cannot be diffused in an instant, and yet the success of the merger of academic libraries and institutions lies in the diffusion of the previous institutional (academic) cultures and the creation of a new one to which all parties can be committed. However, these cultures are often incompatible and may collide and create conflict in many instances, thus posing a challenge for managers. Harman (2002) defines academic culture as historically transmitted patterns of meaning expressed in symbolic form through the shared commitments, values and standards of behaviour peculiar to members of the profession, as well as the traditions, myths, rituals, language and other forms of expressive symbolism that encompass academic life and work. Academic culture is deeply embedded and is not easy to unfreeze or turn off at will.

The merger of libraries can have a positive impact on service delivery e.g. combined resources, improved buying power, and the ability to provide extensive access to

current information (Regenberg et.al., 2002). Huang (2000) suggests that the following points can be positive outcomes of the merging of academic libraries:

> ➢ Combining materials from several libraries will create an enlarged collection that no single academic library could afford to acquire.
> ➢ Staff quality improves through the sharing of expertise
> ➢ The library is able to redesign positions and organizational structure to serve the new library in a more efficient way.
> ➢ The merger may alleviate a situation of tight funds for library acquisitions

Hiller (2004) provides a method which can be used to review the viability of academic libraries. He describes the four broad categories that an evaluation of the viability of an academic library should focus on as being the use of the library, the primary user population, the library dependency of the primary user community, and the quality of the facility. I consider his approach to be traditional and focused only on the use of libraries. It is silent about the library as a work place, and yet there is a close relationship between the use (or any other category that Hiller mentions) of the library and the quality of the service provided by the library staff. Hence this study uses cybernetic principles and VSM to evaluate the viability of the DIT library, in the belief that this is a more holistic to the issues under consideration.

3.2 CYBERNETICS
3.2.1 CYBERNETICS DEFINED

Different authors have defined cybernetics differently. It is interesting, though, to note that most of them have not tried to come up with new definitions of cybernetics but have instead tried to simplify the two main definitions provided by Norbert Wiener, who is known as the father of cybernetics, and Stafford Beer, who is known as the father of VSM.

Weiner (1961) defines cybernetics as 'the science of control and communication in the animal and machine.' For an organization to function effectively Weiner believed that it should communicate and be controlled properly, and he warns that if communication and control systems are not properly designed an organization can fail to function properly (Flood and Jackson, 1991). In 'the animal and the machine' part

he further emphasizes that cybernetics can be used in any system e.g. a tree, dog, factory, society, etc. as long as it is an interconnected whole made up of a group of elements of any kind. In trying to clarify this latter part of the definition Lerner (1972) says cybernetics is a science of control and communication in mechanisms, organisms and society.

Beer (1967) defines cybernetics as the science of effective organizations. This definition looks at cybernetics as the science of proper control within any assembly that is treated as an organic whole (Pask, 1961). Cybernetics looks at the difference between the effective and the ineffective and viability and non-viability. Hence, it uses VSM as a tool. I will discuss the relationship between VSM and cybernetics later. Clemson (1984) states that 'cybernetics is concerned with the general patterns, laws and principles of behaviour that characterize complex, dynamic probabilistic, integral and open systems. Cybernetics thus studies for example, brains, ecologies, groups, organizations, factories, etc. The emphasis is always to find those general principles that apply to all such systems.'

I find Clemson's statement enlightening. It really gets to the core of cybernetics. Cybernetics provides laws or principles that apply to all systems and can therefore be used to understand complex situations. Lerner (1972) confirms this by arguing that cybernetics is based on the idea that it is possible to evolve a general approach to the investigation of control processes in various types of systems. The importance of this idea is that cybernetics offers a powerful tool for quantitative description of processes relating to the solution of complex problems.

This study uses cybernetic principles to ascertain the general patterns, control and communication mechanism that merged academic libraries should have, so as to function effectively.

3.2.2 BASIC LAWS OR PRINCIPLES OF CYBERNETICS
Cybernetics is based on three laws. In discussing these three laws Clemson (1984) dissects them and ends up with six laws, with each normal basic law having a

subdivision. My discussion will focus on the three basic laws, namely self organizing systems law, feedback, and the law of requisite variety.

3.2.3 THE LAW OF SELF-ORGANISING SYSTEMS

The law of self-organizing systems refers to the ability of the systems to continuously recreate themselves whilst staying recognizably the same. This is caused by the persistent relationship between the components and not the components themselves. The ability to maintain identity is related to the fact that these systems have purposes, which provide a framework for their maintenance of identity. Lack of purpose is usually indicative of the impending collapse of a self-organizing system (Hilder, 1995).

Complex systems organize themselves. Self-organization can take place through culture, informal communication networks, operational goals, etc. However, self-organization is mainly caused by the relationship and the interaction of the components of a system. Self-organizing systems produce emergence, which is properties and outcomes which most of the time are unpredictable that it derives from its parts and structure but cannot be reduced to them.

According to Jackson (1991) complex systems have 'basins' of stability separated by 'thresholds' of instability. This means that some elements of a system are stable and others are not. Organizations should be stable enough to be able to deliver the results they were designed for, even in turbulent times and environments. In order to do this an organization must self-organize. Complex systems have to be controlled through self-organization. The law of self-organization enables organizations to do this by providing managers with the knowledge of what causes stability in their organization and what might threaten it.

Mergers cause turbulence in academic libraries as they are characterised by job insecurities, lack of clarity about the management, etc.. Academic libraries as self-organising systems should be able to function during turbulence. That is, they should be able to continue to provide information services to library users even when their

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stability is threatened. They should adapt to the new environment and deal with threats whilst retaining their identity.

3.2.4 FEEDBACK

The output of a complex system is dominated by feedback. All outputs that are important to the system must have associated feedback loops. This means that any desired result that has no systemic feedback loop will not be achieved or any system that lacks a feedback loop for a desired output is pathologically defective (Clemson, 1984).

A system does the work of transforming inputs into outputs. The processes in the system are characterized by feedback, whereby the behaviour of one element may feed back, either directly from another element by way of their relationship, or indirectly via a series of connected elements, to influence the element that initiated the behaviour (Flood and Jackson, 1991). Feedback can either be negative or positive.

A system self-regulates through negative feedback. A feedback control system has a closed loop structure. It operates by the continuous feedback of information about the output of the system. The output is compared with a predetermined goal of the system and if the system is not achieving its goal then the margin of error (negative feedback) becomes the basis for adjustments to the system designed to bring it closer to realizing the goal. This kind of control system is extremely effective, since any movement away from the goal automatically sets in motion changes aimed at bringing the system back onto its goal.

Positive feedback loops act as if growth or change is the purpose. These loops tend towards explosive change which, unless limited by some other loop, will destroy the system (Clemson, 1984). Positive feedback loops are deviation amplifying. The positive feedback process is one where the output is fed back to the input, but instead of reducing any divergence from the goal it produces a further movement in the direction in which the output is already moving. Positive feedback mechanisms are growth promoting (Jackson, 1991).

Negative feedback can be changed to positive feedback and vice versa by making minor changes in the system. Jackson (1991) argues that feedback control alone may not be enough to achieve adequate regulation of an organization. It might be necessary to use feed-forward information that attempts to predict disturbances before they actually affect the organization. Control intervention can also be done in the environment, ensuring that the environment is conducive to the organization.

Academic libraries as systems have two main desired results or outputs. The first is to ensure that the information services provided respond to users' needs - that is, that library users are satisfied with the service they get from the library. Secondly, staff members should be committed to delivering the library's goals and be generally happy and satisfied with their work and work environment. As these two are important outputs of a library system, they should have feedback loops associated with them, which will provide information to the system as a whole about their status and if necessary changes will then have to be effected.

3.2.5 THE LAW OF REQUISITE VARIETY

The principle of requisite variety was formulated by W. R. Ashby in 1956. It states that the regulator power cannot be bigger than the capacity of the transmitting channel. The principle of requisite variety states that it is impossible to create a simple control system for the effective control of a complex system. The control system or the regulator, as it is normally called, must be as complex as the complex system to be controlled (Espejo and Harnden, 1989).

The variety of a system is defined as the number of possible states it is capable of exhibiting. It is therefore a measure of complexity (Jackson, 1991). The law of requisite variety states that given a system and some regulator of that system, the amount of regulation attainable is absolutely limited by the variety of the regulator (Clemson, 1984). Variety is a subjective concept depending on the observer. However, this law states that only variety can destroy variety. In order to control a system we need to have as much variety available to us as the system itself exhibits (Jackson, 1991).

This law can be discussed clearly through the use of the control model of an efficient system that has an input, an output, and a connection network. The capacity of a channel that is used to connect input and output must be sufficient to transmit that traffic flow of information. The capacity to distinguish detail at the output end of a system should be equivalent to the capacity of the system to receive and process information at the input end of a system. This will ensure that no power or information that was used at the input end is wasted because it cannot be interpreted at the output end or be held by the transmitter.

Ashby's law of requisite variety states that control can be obtained only if the variety of the controller or all parts of the controller is at least as great as the variety of the situation to be controlled. Output variety must therefore at least match input variety for the system as a whole, when the input arrangement and the output arrangement are considered separately (Beer, 1981). Managers have to learn how to use variety reducers, filtering out the vast complexity of operational and environmental variety and capturing only what is of relevance to themselves and the organization (Jackson, 1991).

The turbulence that is caused by mergers requires managers to be able to understand a variety of situations that can be exhibited by a system. During mergers the managers of academic libraries need to be skilled enough to be able to use variety reducers when they encounter irrelevant variety (information) and variety enhancers when they encounter variety which needs to be amplified, because this can benefit the library.

3.2.6 SUMMARY

This chapter has reviewed literature on various aspects of academic libraries and cybernetic principles. The next chapter builds on this by discussing research methods and the VSM which will be applied in this study.

CHAPTER FOUR: RESEARCH METHODOLOGY

This chapter describes the research processes used in this case study of the DIT library. I used interviews, document analysis, observation and informal discussions to examine different aspects of the library and to collect the data needed. I also discuss Cybernetics and the VSM, the tools that are applied in the study.

4.1   RESEARCH METHODS

Interviews, document analysis, observation and informal discussions were used during this project in order to gather the information necessary for this study. Case studies strive to highlight the features or attributes of social life. These attributes may consist of a set of interactions, common behaviours or structures. This case study captures the complexity of a single case, the DIT library.

The project is also exploratory. Bless and Higson-Smith (1995) state that the need for exploratory research could arise out of a lack of basic information on a new area of interest. The merging of higher education libraries is a new subject area, especially in South Africa, which arose from the merging of academic institutions. The DIT, which is the parent organization of the DIT library, was the product of the first merger of higher education institutions in South Africa. This study aims to diagnose the viability of merged higher education libraries, as there was no better institution to use than the one which merged first. This research can also be said to be descriptive because it reports the way things are at the DIT library.

Stake (1995) argues that a case-study method may seem to be a poor basis for making generalizations, but certain activities, problems and responses do arise repeatedly from case to case, and certain generalizations can therefore be arrived at while using a case-study method. Case studies can be used if a researcher looks for regularities. The regularities that I looked for in this study were the status quo in terms of the everyday activities of the library, the understanding of these activities amongst the members of staff, and the social interaction among staff. However, producing generalizations and regularities requires a conceptual framework. The conceptual framework of this research is provided by the objectives of the study and the VSM, which is a tool that I use for analysis.

The managers, subject librarians and the library secretary were asked to provide the necessary documentation for the purposes of this research. All of them were very helpful and provided the documentation without any hassles.

4.2   DATA COLLECTION METHODS

Data was collected through interviews, as questionnaires proved to be an inappropriate data collection tool for this study.

4.2.1   QUESTIONNAIRES

Hall and Hall (1996) define a questionnaire as any set of questions respondents complete themselves in a research study. Questionnaires provide an easy method of presenting questions. Several questions can be asked and respondents have time to give thoughtful answers. Respondents are able to complete the questionnaire at their convenience. No researcher is present during the completion of the questionnaire, and the respondents can therefore not be identified. This gives greater assurance of anonymity to respondents.

Bailey (1989) quotes Babbie (1973) as stating that the disadvantage of using questionnaires is that they yield a low response rate, sometimes as low as 10%, and 50% is considered adequate. A high response rate was necessary for this study to be successful, as it was thought to be important to get a perspective of as many staff members as possible about the DIT library merger. The questions and the format of the questionnaire had to be kept as simple as possible so that they could be easily understood by respondents. Because of the nature of the problem situation and the methodology used, some questions could not be simplified, so a researcher needed to be present to clarify these to respondents. Therefore questionnaires proved to be an inappropriate data collection instrument for this study, and interviews were preferred.

4.2.2   INTERVIEWS

According to Welman and Kruger (1999) when an interviewer poses questions contained in a structured questionnaire to a respondent, such a previously compiled questionnaire is known as an interview schedule.   Interviews generally give a high response rate.   They are also good when the researcher requires co-operation. Interviews give the researcher a chance to observe non-verbal communication and probing is possible, which gives a better understanding and clarification of issues.

One major advantage of an interview is its flexibility.   The interviewer can probe for more specific answers and can repeat a question if the response indicates that the respondent misunderstood.   The interview tends to have a better response rate than a questionnaire (Bailey, 1989).   The interviewer can record spontaneous answers. These answers may be more informative than answers which the respondent has had time to think about.   The interviewer can ensure that all questions are answered.

The disadvantage of using the interview is that a person's thinking ability is affected by factors such as fatigue, stress, illness, heat, etc.   A respondent may give answers in an interview that are less than his or her best because they are affected by any of the above factors (Bailey, 1987).   It may be necessary for the interviewer to phrase the same question differently for different respondents, or even to ask different questions of different respondents.   While this flexibility can be an advantage, it can be a disadvantage if it makes it difficult for the researcher to compare respondents' answers.

4.3   INTERVIEW SCHEDULE DESIGN

The interview schedule was as open-ended as possible in order to gain spontaneous information about attitudes and actions.   The interview schedule was kept short, bearing in mind that the library staff was very busy preparing for the launch of a new system.   The questions asked were mainly questions that provided information that would feed directly into the VSM and help in diagnosing the viability of the library. The underlying research question (having to do with the viability of DIT library) was not put into the interview schedule so as not to influence the respondents.   I also thought that they would have answered it in monetary terms, placing emphasis on

finance, and that was not the aim of the study. The VSM does not look at the viability of organizations in monetary terms but holistically, including all the different but essential elements of an organization.

Interviews were conducted with a representative sample of the DIT library staff. The interview assessed the understanding of members of staff of the library's policies and procedures, and their attitude towards their work. The questionnaire (see Appendix A) consisted of 22 questions divided into five sections according to the five systems of the VSM.

Section 1, numbered from 1 to 1.4, asked mainly for information about the operation of the library, and the information gathered from this section fed into S1 of the VSM. Section 2, numbered from 2 to 2.3, asked mainly for information on the resources of the library and the co-ordination of library activities. The information gathered here fed into S2 of the VSM. Section 3, numbered from 3 to 3.3, asked for information about the management of the library. The information gained here fed into S3 of the VSM. Section 4, numbered from 4 to 4.3, asked mainly for information about the library's interaction with its environment. The information gathered here fed into S4 of the VSM. Section 5, numbered from 5 to 5.4, asked for information on policy and the strategic direction of the library. The information gathered here fed into S5 of the VSM.

The sampling strategy for the interviews was based on selecting a representative sample of library staff, including at least one person per department or section from all site libraries and the whole management team. In total, nineteen interviews were conducted. All interviews were recorded using a tape-recorder. All tapes were transcribed for analysis. I then examined the notes and highlighted key points. I wrote key points on an index card using the interview number as an identifier. I numbered the interviews from 1 to 19 according to the sequence in which they were conducted e.g. the first interview was numbered one the last was numbered nineteen.

4.4   PILOTING

Final changes were made to the interview schedule after it was distributed for pilot testing. Two subject librarians were identified as respondents during the test, because the researcher had easy access to them, and because they were part of S1 of the system that was going to be diagnosed with the interview schedule. After piloting, two changes were made, one change affected the sequencing of the questions and the other affected the grammar. The question had to be re-phrased.

The results from the pilot test suggested that the questions were easy to understand, and no obvious problems were identified. Shortly after that I made appointments with those I wished to interview, and started conducting interviews.

4.5   CONDUCTING INTERVIEWS

I 'phoned all of the respondents I had identified during sampling, to set appointments to conduct the interviews.   All of the interviews were conducted during set appointments except for that with one respondent from the management team. I set appointments with that respondent three times, and on each of the three occasions, when I arrived, I was given a different reason why the interview could not be conducted at that time. Owing to time constraints I could not set a fourth appointment, as I had to move on to the next stage of my research. I do not believe that not conducting this interview compromised the findings of the research in any way, as other respondents at the same level in the system were interviewed.

All of the participants gave me their permission to record the interviews. Where necessary I asked for clarification and probed for more information. To complete the interview took an average of approximately 30 minutes, but some respondents gave detailed responses which made their interview take longer, while others were more brief and general.

4.6   RESEARCH PARADIGM

The study was conducted within a learning framework of hard systems thinking. The nature of the problem situation was the key reason that hard systems thinking was

used, as it allows for seeing the defects of whole system and prescribing possible solutions for them. Being able to see the major interrelationships underlying the elements of the problem situation leads to new insights about what might be done (Senge, 1990). Cybernetics and the VSM were used because they consider interrelationships, communication mechanisms and recursion, issues which are relevant to this study. There are other systems-thinking tools which could have been used, but they were inappropriate for this study. Some of these tools are discussed below.

4.7 SOFT SYSTEMS METHODOLOGY (SSM)

According to Flood and Jackson (1991) SSM is based on four principles, which are learning, culture, participation and the 'two modes of thought' (the real world and the ideal world). As a process of enquiry, SSM is a system of learning, perceiving and evaluating a situation before deciding on a course of action and then taking that action, which in turn leads to a changed situation from which a new learning cycle begins. Decisions about a way forward will depend on relevance, cultural feasibility and systemic desirability.

Culture plays an important role when a systems analyst has to decide on the changes that are necessary to improve the situation. The proposed changes must be culturally feasible. That is, they must be relevant to the culture of the organization in order to be considered for implementation. At the same time they must be systemic so that they do not violate systems thinking. Culture guides the SSM user, in the sense that the SSM states clearly that there are organizational or social constraints in the 'real world' which potential changes recommended by the intervention must meet.

The principle of participation is very important, because without the participation of all of the stakeholders in analyzing a problem area and discussing the possible changes, the chances are that the intervention will not be effective.

Soft systems methodology is based on the notion that one rarely comes across a problem which is clear and well defined. Instead one comes across messes, which are sets of interlinked, ill-defined problems. VSM has been designed for diagnosing

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problems of communication and control, and for assessing the viability of organisations. It is clear that SSM would have been inappropriate for this study, which deals with a well-defined problem i.e. evaluating the viability of a merged academic library. VSM considers problems to be real, well-defined and solvable. It uses the five categories of data to diagnose the system and then make suggestions for solutions. SSM tackles problems without a clear understanding of what the problem is or what action can be taken to deal with it. A hard systems approach like the VSM is more suitable for this study.

4.8   SYSTEMS DYNAMICS (SD)

Systems Dynamics (SD) can be thought of as a problem-solving methodology, because after a problem area has been identified SD creates explanations as to what the causes of the problem might be.

Caulfield, C.W. and Maj, S. (2002) define SD as concerned with creating models or representations of real-world systems of all kinds, and studying their dynamics (or behaviour). In particular, it is concerned with improving problematic system behaviour. The purpose in applying SD is to facilitate understanding of the relationship between the behaviour of the system over time and its underlying structure and strategies/policies/decision rules. A computer model is used to try to comprehend the patterns of change that the system displays over time, and to identify feedback patterns. This information about a system can be used to recommend what kind of policies will work in addressing the problem situation (the system) and which ones may not work.

According to Caulfield, C.W. and Maj, S. (2002) most SD modelling packages consist of only basic elements, namely stocks, flows, converters and connectors, which can be perceived as the building blocks which form the structure or the configuration of how the modelling system is put together. Stocks represent anything that accumulates over a period of time e.g. cars, people, etc. Flows go through the pipe of the flow in the direction of the arrow and at a rate determined by the flow regulator. Flows are activities that feed the stock and they always leave tracks on the stock. Flows can be inflows or outflows. Converters are used to break out the detail of the logic, which

might otherwise be buried within a flow. They can also be used to represent constant values. A converter can act as a stock if one is not interested in the details of the stock. Connectors link the other three building blocks together. They represent inputs and outputs. Connectors do not take on numerical values. They merely transmit values taken by other building blocks. Although connectors link all of the constructs they cannot connect into a stock.

Although Systems Dynamics models are suitable for use on both quantitative and qualitative variables, SD is traditionally used for modelling quantitative variables. Qualitative variables are normally left out of modelling systems because they are hard to measure, yet they play an important part in the dynamics of the system to which they belong. Systems Dynamics can therefore not be applied in this study as the study focuses on qualitative variables and how they can be measured or used to determine the viability of merged academic libraries.

The main disadvantage of SD, which has made it completely impossible to apply to this study, is that it models behaviour that takes place in a structured environment. SD is difficult to apply to situations that are complex and adaptive and interacts with their environment, like an academic library system.

4.9   CYBERNETICS

Cybernetics is a conceptual tool that can be used for understanding organisations and supporting management of change. According to Espejo and Gill (2002) cybernetics has two modes: diagnostic and design. The first mode relates to an existing organisation and the second to new organisations, or ones that have radically changed their identity. They further state that a cybernetic method to study organisations has five steps:

1. Formulation of the organisation's identities
2. Construction of structural models
3. Unfolding the organisation into primary activities and structural levels
4. Constructing table recursion/function
5. Modelling the organisation with the Viable System Model

The first step sets the boundaries of the investigation, while the following three deal with identification of the systemic parts of the organisation. The last step is the diagnosis of the system, considering the cybernetic principles, using Viable Systems Model (VSM).

4.10   THE RELATIONSHIP BETWEEN CYBERNETICS AND THE VSM

Traditionally organizations have been viewed as hierarchical institutions. The Viable System Model (VSM) looks at organizations in terms of the functions that they perform using the cybernetic principles of communication and control, which is achieved through feedback.   Effective use of feedback ensures that there is communication in the system and that the system is controlled effectively.

VSM is a tool that is used to diagnose whether or not a system is viable. The term viable, when used in relation to organizations, refers to economic viability, a fact which gives rise to the assumption that most organizational problems are economic. VSM does not dispute this, but argues that there are laws governing the structure and dynamics of any viable system to whiwch all successful enterprises will be found to respond to (Beer, 1989).

We have all had the experience of doing something that works well but in hindsight realising that it could have been done better, easier and with less strain.   In organizations management this is where cybernetics comes in. It is silly to reach successful organizational goals by trial and error if the rules of the game are already known. Cybernetics and VSM provide these rules (Beer,1989).

Management cybernetics must be seen as a diagnostic tool. By mapping both the organization and development process in which it is engaged on to the VSM, it is possible to understand strengths and weaknesses in terms of the axioms of viability. This makes it possible also to prescribe for whatever turns out to be pathological (Beer 1989).

4.11 THE VIABLE SYSTEMS MODEL (VSM)

Management cybernetics provides effective mechanisms to discover problem situations and to regulate organization tasks. VSM is a tool for doing just that. Viable systems are those that are able to maintain a separate existence. These systems have their own problems-solving capacity. If organizations are going to survive they need not only a capacity to respond to familiar disturbances but the potential to respond to unexpected, previously unknown disturbances (Espejo, 1989). The viability to respond to previously unknown disturbances is the corner-stone of viable systems, for they adapt to change, and it is therefore highly unlikely that major changes can render them non-viable.

Traditionally organizations have been viewed as hierarchical institutions. The VSM looks at organizations in terms of the functions that they perform, using the cybernetic principles of communication and control. Thus the structure of an organization is defined by the actual parts and actual communication channels in existence and not by the parts and lines of authority formally defined by an organizational chart (Espejo, 1989).

The VSM has five functional systems that are interconnected through complex information and control loops. Recursion allows us to use this same model to represent for example a company and its divisions, together with the wider organizations of which it may also be a functional part.

4.11.1 SYSTEM ONE (IMPLEMENTATION)

System one (S1) refers to the fundamental operations within a viable system. It can also be referred to as implementation. S1 is made up of all the operations that do the things which justify the existence of the system. It includes the management of these operations. Without S1 there would be no reason for the organization to exist (Hilder, 1995).

S1 consists of the parts that actually carry out the tasks that the system is intended to accomplish. They constitute the implementation of the system's purpose. They have their own information channels for communicating with the environment about

their own information channels for communicating with the environment about everyday issues. The environment is very complex and the information that concerns the system must be reduced before reaching the system.
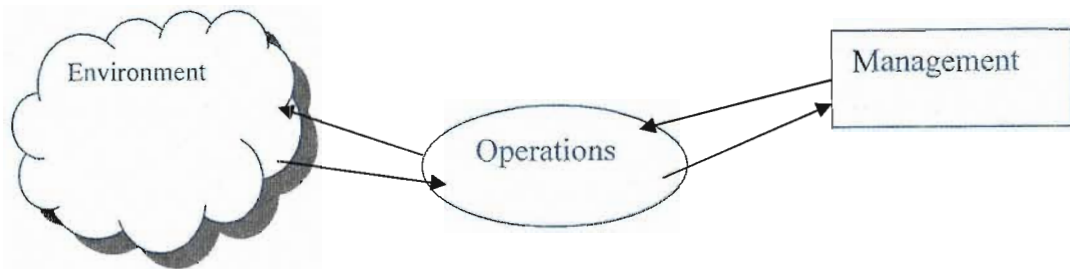
Figure 1: System one

Figure 1 is a graphic representation of S1. It can be used to depict what is happening at S1 level.

The operation interacts with the environment and its local management. The environment provides operations with the information it needs to function. If this information (variety) is too much, it is filtered. If it is too little it is amplified. Operations then provide management with some information about its functioning.

Management has lower variety than operations because it is impossible for management to know everything (every little detail) about what is happening in the operating system. Operations have a lower variety than the environment. Operations cannot know all the needs and preferences of the market (environment). The opposite is also true - that the variety of the environment greatly exceeds that of the operation that serves it, which will in turn greatly exceed the variety of the management that controls it (Beer, 1985).

The VSM strives for balance. It is necessary then that high variety is attenuated or filtered and low variety is amplified or enhanced to the number of possible states that the receiving system needs and can actually handle in order to strike a balance.

System one (S1) is concerned with implementation. Each part or system is autonomous in its own right and therefore must exhibit all of the features of a viable

system. Because all of the parts connect to their local environment they then absorb much of the overall environmental variety (Flood and Jackson, 1991).

4.11.2 SYSTEM TWO (CO-ORDINATION)

System two (S2) is responsible for the co-ordination functions of a viable system. S2 co-ordinates the parts that make up S1 in a harmonious manner and dampens uncontrolled oscillations between the parts (Flood and Jackson, 1991).

S2 provides a very specific type of regulation. It exists to damp oscillations among different S1 units and to co-ordinate their activities. S2 work is focused on implementing decisions about common services and resources as smoothly as possible and therefore it concentrates on schedules and protocols. The decisions may have been made among different S1 units or by higher levels in the organization (Leonard, 1999). However Hilder (1995) argues that these decisions do not have to be imposed from senior management but must be arranged voluntarily between S1 elements. That is because senior management does not have enough requisite variety to dictate to S2. He further states that S2 activities normally take place informally e.g. over lunch.

The S2 function is embodied in the regulatory centres, which are represented by a triangle in the diagram.
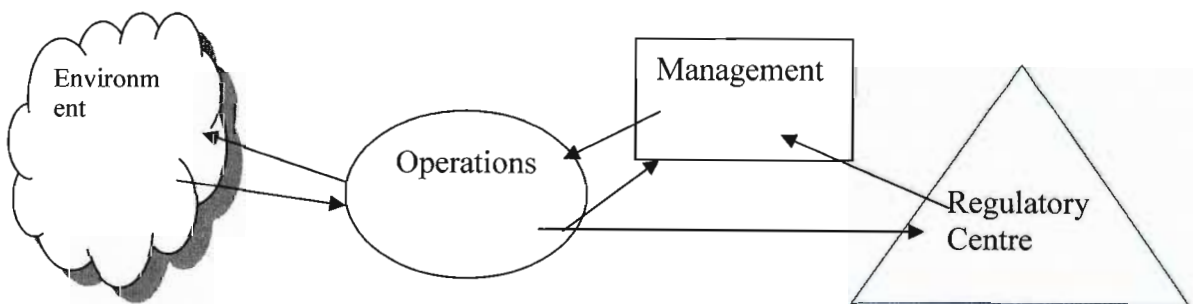

Figure 2: System two

S1 strikes a resource bargain deal with senior management. That is, S1 performs certain agreed-upon functions, and senior management will provide resources for that. Resources act as a variety filter. The accountability that goes with the responsibility for allocated resources is also a variety filter.

regulation. This regulation amplifies managerial variety because the details of the resources bargain must be elaborated. This regulation also filters operational variety because operational potentiality must be harnessed to agreed objectives. Therefore the regulatory centre's main function is to ensure stability between management and operations.

A transducer is used during the communication process. The transducer encodes or decodes a message whenever it crosses a system boundary and therefore needs a different mode of expression. Wherever the information carried on a channel capable of distinguishing a given variety crosses a boundary, it undergoes transduction. The variety of the transducer must be at least equivalent to the variety of the channel (Beer, 1985).

Jackson (1991) states that S2 consists of the control of the parts of S1 linked to a regulatory centre. The regulatory centre receives information about the actions of the various operations and is able to prevent dangerous oscillations arising in the system. S2 oversees interactions and stabilizes the situation so as to obtain a balanced response from S1. It sends feedback to the localized management of S1 to re-establish harmony, calling if necessary upon the resources of S3.

4.11.3 SYSTEM THREE (CONTROL)

System Three (S3) performs the control function that maintains internal stability. It interprets the policy decision of higher management and allocates resources to the parts of S1 (Flood and Jackson, 1991)

S3 refers to the everyday control of S1 by senior management. S3 is responsible for internal and immediate control of the organization and also for supervising the co-ordination activities of S2. S3 relies on information coming directly from the localized management of S1 through the command axis. However, this channel might not have enough requisite variety to be effective, so S3 needs to directly monitor the operations of S1 in order to ensure that it is efficient. This can be done by sending task teams to operations so as to do spot checks or audits. Stafford Beer refers to this direct monitoring of operations as System three star (S3*) (Hilder, 1995). S3* gives

not have enough requisite variety to be effective, so S3 needs to directly monitor the operations of S1 in order to ensure that it is efficient. This can be done by sending task teams to operations so as to do spot checks or audits. Stafford Beer refers to this direct monitoring of operations as System three star (S3*) (Hilder, 1995). S3* gives S3 direct access to the operations of S1 and therefore does not need to rely solely on information from the localized management of S1.

S3 exercises a lot of variety filtering through the resource bargaining struck with S1. These arrangements set boundaries based on resources for results exchange. The terms of this agreement substantially narrow the variety available to the operation. With this accountability relationship, the operation should be able to draw on its full measure of variety whilst retaining substantial autonomy (Leonard, 1999).
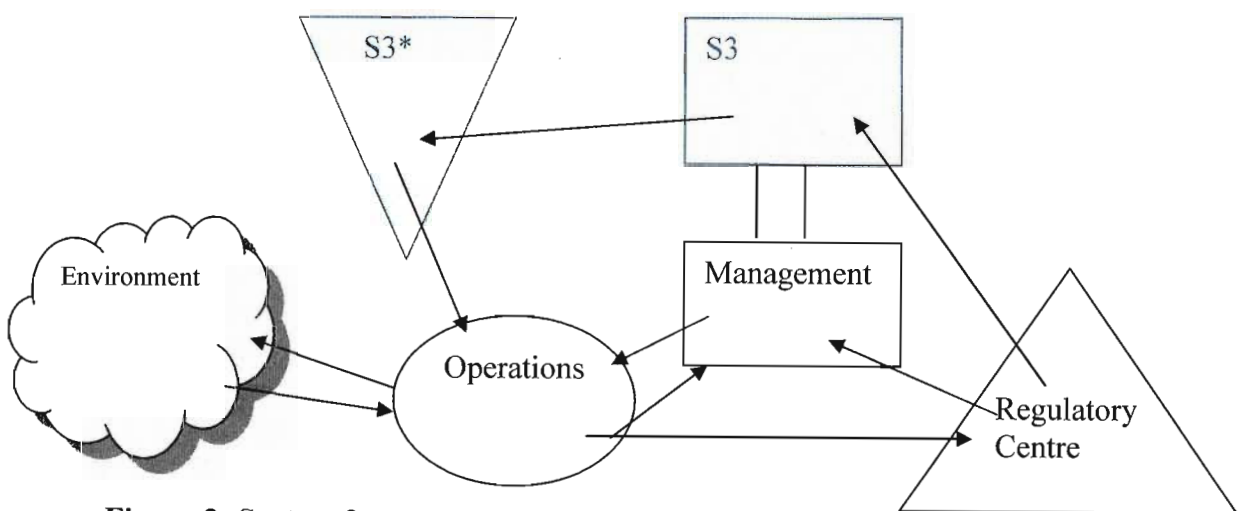
Figure 3: System 3

S3 is responsible for the 'here and now' - that is, the internal and immediate functions of the organization's everyday management. It is different from S1 because it surveys the system as a totality, which the components horizontal elements are not placed to do. It is different from S2 because it exerts authority on the central command channel although it does not conduct the anti-oscillatory functions of S2 (Beer, 1985).

A viable system has an agreed purpose based on internal information regarding the state of the operation. S3 influences S1 by direct intervention or by modifying S2. Direct intervention is done through the command axis and modification is done through the resource bargaining.

It might send instructions downward on the basis of this, or consult upward. And thirdly, it responds to information received from S3* advising on the state and future of the concerned operations. The surplus variety coming from the environment into the operation, then into the management of the operation, has to be cancelled out by the variety coming down the vertical channels of S3 and S3*.

4.11.4 SYSTEM FOUR (INTELLIGENCE)

The organization as modelled so far is capable of dealing only with immediate concerns. In a changing world, organizations which fail to adapt cease to be viable, so an intelligence function is necessary.

S4 is an intelligence-gathering function that captures all relevant information about a system's total environment. It distributes this environmental information upwards or downwards according to its degree of importance. It rapidly transmits urgent information from S1, S2 and S3 to S5 (Flood and Jackson, 1991).

S4 needs channels to and from S3. This is because intelligent adaptation cannot be achieved without an understanding of the organization as it currently exists, information which is obtained via S3. Proposed adaptations of the organization then have to be fed back through S3 in order to be implemented. The thick arrows between S3 and S4 are intended to indicate the very rich interaction that needs to exist between these two functions. S3 and S4 must be in proper balance.
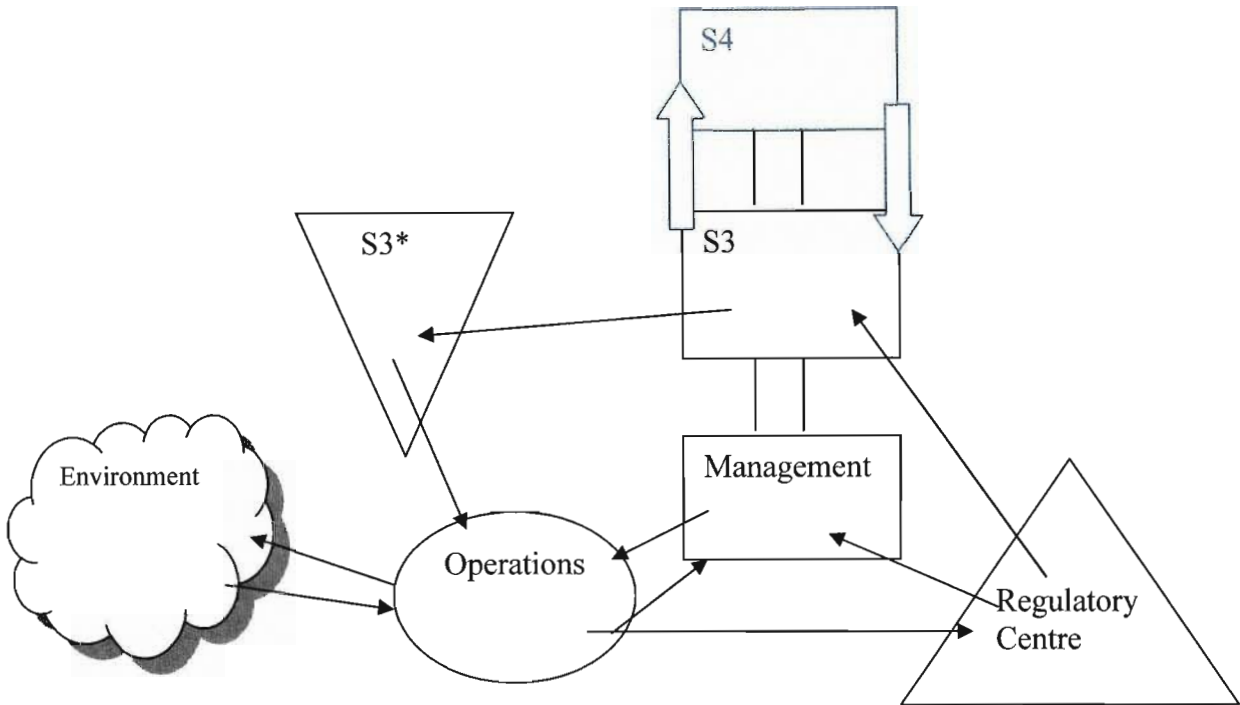
Figure 4: System 4

S4 is concerned with managing not only the outside and then but also provides self-awareness to the organization or the system. According to Jackson (1991) S4 has two main tasks. Firstly, it switches instructions down from S5 to the lower level systems. And it switches upward from S1 to S3 information required by S5 to take major decisions. Secondly, it captures for the organization all of the relevant information about its total environment. If the organization is to be viable and effective, its variety has to match the variety of the environment in which it operates.

4.11.5 SYSTEM FIVE (DIRECTION)

System five (S5) arbitrates between S3 and S4. It maintains creative tension between these two systems. S5 is responsible for policy and also for representing the essential qualities of the whole system to any wider system of which it is a part (Flood and Jackson, 1991).

S5 considers the organization's purpose or identity and is thus responsible for the direction of the whole system. Considering information generated by S4 it creates policies that are conveyed to S3 for implementation by S1. S5 also monitors the

Because S5 considers an organization's purpose and identity it therefore provides the organization with its personality. S5 is normally highly distributed throughout the organization (Hilder, 1995).

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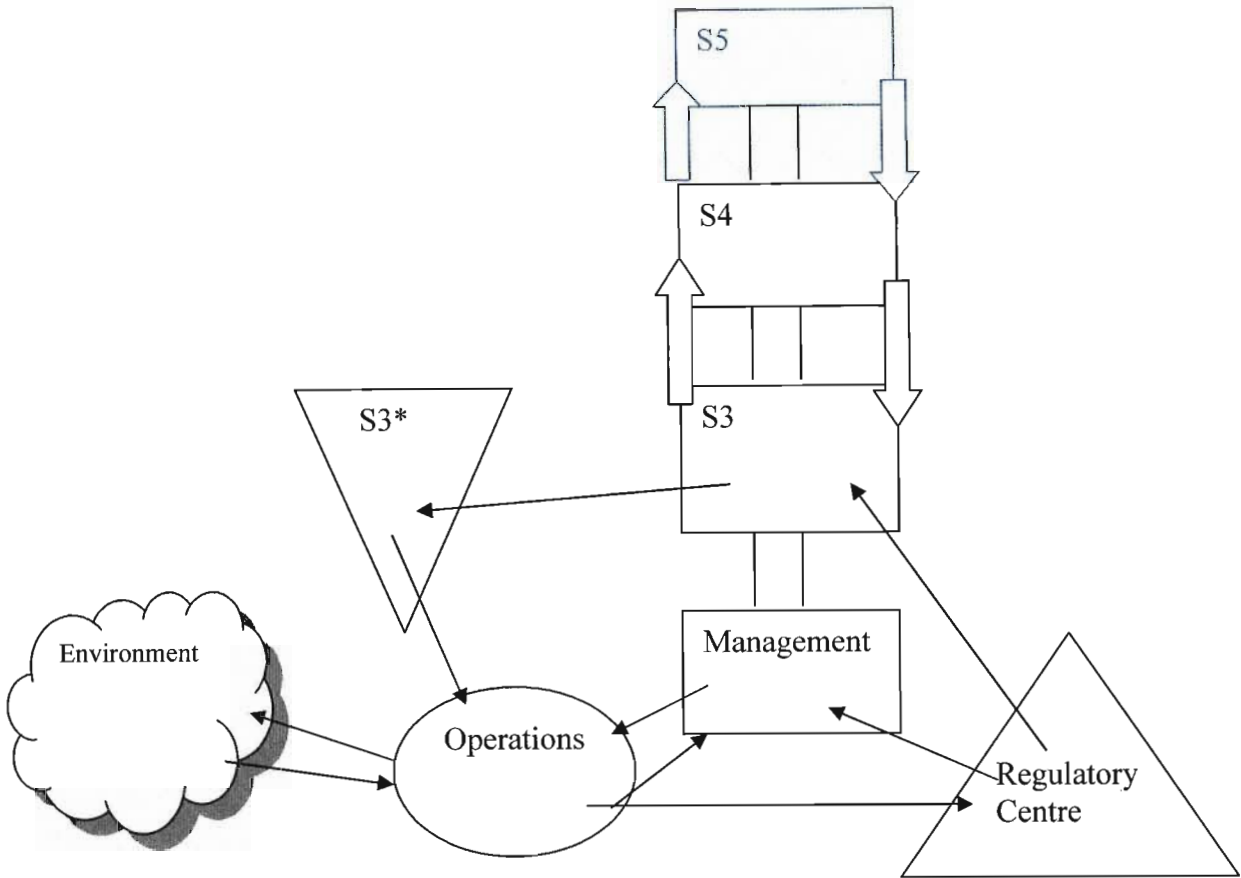
Figure 5: System 5

This diagram is a complete VSM model with all of the functional elements of VSM in place.

The policy and rules of the organization come from S5. They are not stated firmly, although some organizations can have published objectives. The rules are normally created by the personality, purpose and identity of an organization. S5 acts as a variety sponge that filters variety from S3, because it knows very well what the existing business is (Beer, 1985).

S5 is responsible for the direction of the whole organization. It is the thinking part of the organization, formulating policy on the basis of all of the information passed on to it by S4 and communicating the policy downward to S3 for implementation by operations (Jackson, 1991).

4.12 SUMMARY OF THE VSM

The systems of the VSM can be summarized as follows:

- System 1 (S1) (operations) – Performs the doing and producing function. That is, it carries out the main organizational tasks. It is the operational unit composed of people, departments or divisions that actually get the work of the organization done.

- System 2 (S2) (co-ordination) – Performs the co-ordination function. This system is responsible for conflict resolution and re-establishing harmony. Its main aim is to co-ordinate divisional activities so as to avoid instability.

- System 3 (S3) (control) – Performs the internal and now function. It interprets and implements policies. It is responsible for synergy, ensuring that there is stability.

- System 4 (S4) (intelligence) – Performs the external and future function. It communicates the opportunities and threats of the environment to the organization. It also helps in the efficient and effective running of the organization.

- System 5 (S5) (direction) – Performs the identity function. It is responsible for vision, direction, goals, and setting the mission statement. It provides the ground rules and the means of enforcing them to ensure that the system is complete.

4.13 RECURSION

Beer (1985) defines recursion as a next level that contains all of the levels below it. Flood and Jackson, (1991) state that recursion means that the whole system is replicated in its parts, so that the same viable system principles may be used to model a sub-system (department) in an organization, that organization and its supra system.

VSM is based on the idea of recursion. Recursion refers to the fact that the structure of the whole model is replicated in each of its parts. Operations or departments of an organization should be treated as viable systems in their own right and must therefore possess their own S1 to S5 (Jackson, 1991)

Individuals within an organization are themselves viable systems. They belong to departments that are viable systems. An organization as a whole is a viable system, and the industry within which organizations are participants is a viable system as well. This means that VSMs are nested in each other.

4.14 CRITICISM OF THE VSM

In assessing the limitations of VSM it will not take us far if we attempt to evaluate it solely in terms of its own cybernetic principles. Therefore I will look at the limitations of VSM from perspectives that are foreign to cybernetics. I grant that in doing this I might come across what Kuhn in Jackson (1989) calls 'paradigm incommensurability,' which is a situation where different theoretical traditions frequently seem to talk past each other, failing to engage in any constructive dialogue.

Beer (1989) states that VSM is criticized by those who notice that people are the basic elements of a VSM and say that 'people have free will.' This is true, but what this criticism does not consider is the fact that people also have constraints laid upon them by their upbringing and the roles they play in their organization. People cannot do whatever they want to do within an organization. They still have policies and procedures which they have to follow. However, in critiquing viable systems diagnosis Flood and Jackson (1991) say that it has been criticized for its emphases on organizational structure and communication and control processes but neglects qualities brought by the human actors who make up organizations. Thus it has little to say about the social processes that go on in organizations, about organizational culture and about politics and power struggles in enterprises. Personally I believe that both of these points somewhat cancel each other out, for VSM cannot have people as its basic element if it does not consider social process and organizational culture. Cybernetics's law of self organization on which the VSM is based considers culture. Moreover, the function of S5 is primarily concerned with the identity, purpose and

personality of an organization, and there is no way in which this function can be performed effectively if it does not consider organizational culture.

Flood and Jackson (1991) quote Ulrich as criticizing the VSM for basing the model on the idea that it has a predetermined goal, then seeks to pursue this goal as efficiently and effectively as possible by delegating control over means to the parts of the organization. These parts, however, do not participate in goal determination. They are free only to the extent that they can develop alternative means of reaching the predetermined goal. This is true. The VSM does not discuss forms of participation so as to gather various stakeholders' points of view. However, it does not reject it either, so I see no reason why participation cannot be used in conjunction with the VSM.

The cybernetics model has been criticized for emphasizing stability at the expense of change. S4 plays an important part in scanning the environment for possibilities which the organization might take up. The S3, 4 and 5 seek to balance the demands for stability against the demands for change. The model thus allows for continual adjustments and review (Flood and Jackson, 1991).

Mthembu (2000) states that much as it is riddled with criticism and misunderstanding, the VSM still remains one of the few answers to systems viability and meaningful management. The VSM is a good tool to provide information about the nature and scope of the assistance that the VSM can lend to management practice.

4.15   SUMMARY

Cybernetics and the VSM emphasize humility in organizations i.e. a viable organization should be willing to learn and rectify mistakes through communication and control. Libraries that have merged need to realize that they are going to make mistakes, but the important thing is to acknowledge those mistakes and to rectify them. This is certainly not good news for librarians who are used to doing things right and having standards to ensure relevance and uniformity. However, if merged libraries are to survive, they need to self-organize and keep steering in the right direction in spite of all their complexities. The VSM provides organizations with

tools to diagnose their current state, enabling them to deal with whatever it is that turns out to be their problem. Hence in the next chapter it is applied in the case of the DIT library with the aim of diagnosing the state of this system.

CHAPTER FIVE: PRESENTATION OF RESULTS

This chapter presents the results of the study of the DIT library after analysis using the VSM, and also highlights why the VSM was applied to this study.

5.1 APPLICATION OF THE VSM TO THE STUDY

Diagnostic evaluations are designed to inform researchers and project managers about the present situations within communities, highlighting current trends, forces and resources (Bless and Higson-Smith, 1995). The VSM is a diagnostic tool used in this case to diagnose the viability of the DIT library by highlighting trends within the library. Mapping the DIT library on the VSM helps us to understand the strengths and weaknesses of the library, thus enabling the library to intervene to rectify its weaknesses. The cybernetic technique and rules were developed so that they could account for the viability of any system that is worthy of surviving (Beer in Espejo and Harnden, 1989)

The VSM looks at organizations in terms of the functions that they perform, using cybernetic principles. In this study, cybernetic principles (the VSM) were applied to the operations of the DIT library. Mthembu (2000) states that information should be the basis on which any organization exists. This statement should apply closely to an academic institution, and particularly to its library, which is supposed to be the main supplier of information within the institution. This means that there should be information systems that are relevant and effective in order for the organization to survive.

Effective use of feedback ensures that there is communication in the system and that the system is controlled effectively. According to Jackson in Espejo and Harnden (1989) the variety that is potentially in the environment will always outweigh that of the system and such a state of affairs calls for careful management of systems and their complexity by managers. In applying the VSM to the DIT library I will also focus on its communication systems with the aim of diagnosing whether the library is managed effectively, and I will also assess the ability of the library to absorb the variety that is presented by its environment.

5.1.1 SYSTEM ONE (IMPLEMENTATION)

S1 is concerned with the actual implementation of the system's purpose. The function of S1 (that which is implemented) is therefore justified, derived and supported by the reasons for the existence of the system as a whole. In the case of the DIT library this purpose is encapsulated in its vision (see Chapter two), and more trenchantly in its motto, which is to provide 'the Right Resource for the Right person at the Right time.' To achieve this aim the library embarks on various activities which can be summarized into the following three broad areas of its operation: information services, materials access, and materials organisation.

It is worthwhile, though, to note that not all of the DIT staff members who were interviewed had a common understanding of what the goals of the library were. These are some of the responses I got when I asked: What are the generic goals of DIT library?:

> ➤ To ensure that we create open communication channels between management and staff.

> ➤ To be integrated into the whole education system of the institution.

> ➤ We don't have vision, mission and goals. At one time we were told to come up with goals but there is nothing confirmed that we all have.

> ➤ To serve users to empower them, train them.

Operations has its own channels for communicating with the environment and its local management. The environment provides operations with the information it needs to function effectively. In the DIT library operations, their environment can be perceived as the wider DIT community, but because of the scope of this research the boundary for the environment was drawn around the library users. The DIT uses various means to communicate with the library users, e.g. suggestion boxes, notice boards, orientation sessions, face-to-face dialogue at library service points, electronic mail, Subject Librarians sitting in Faculty Board meetings, memorandums, etc. When operations interacts with the environment there is supposed to be feedback between

these two elements. However, there is very little feedback in this case. Most of the communication that the library relies on and that provides operations with feedback is initiated by library users.

The DIT library acknowledges that communication with library users is an area in which it needs to improve:

> ➢ We don't communicate very well. There's room to do a whole lot more.

> ➢ Communication is a definite area for improvement.

> ➢ Communication needs critical attention.

The new on-line public access catalogue (opac) system that the library is in the process of implementing has features that will apparently make it easier to communicate with library users. However, from my understanding of how this new system works I still think this communication will be initiated by library users.

As stated earlier, operations also communicates with its local management, so that management is informed about the functioning of operations. However, management does not have to know about every little detail of operations. They just need enough information to be assured that all is well with operations. From my observation there seems to be adequate and clear communication between operations and local management. This is probably because in most areas of the library local management is a function performed by coordinators, and they are very close, if not intertwined, with operations. There is a balance in terms of the communication that takes place between local management and operations.

Communication between operations and the environment can be used to find out the needs and preferences of the environment from operations. That does not seem to be happening in the DIT library. Their communication is limited to current events or library activities. One respondent confirmed this during the interview process: "We often don't ask users what they really want, are they happy? And look at things from

their perspective. We look at things from the position of a worker in a library. We need to elicit much more information from users – survey them much more".

The VSM strives for balance. In the S1 of the DIT library there is a balance in the loop between operations and local management, but in the loop between environment and operations, information from both parties needs to be amplified to achieve a balance.

5.1.2 SYSTEM TWO (CO-ORDINATION)

The library uses various ways to co-ordinate its functions. Generally it relies on the library structure, especially the site managers, as they are the people who are responsible for the day-to-day running of the library. When I asked the question: 'How does the library co-ordinate its functions in-order to ensure that its objectives are met' these are some of the responses I got:

- ➢ The co-ordination is up to the relevant site managers who are responsible for kind of day-to-day operational activities.

- ➢ Co-ordination lies with the site manager who once a week holds meetings with staff and also once a month there are co-ordinators meetings where co-ordinators discuss operation of libraries in each site.

- ➢ Each section has a manager responsible to see that all goals are met and all functions are performed. We have a managers' meeting every two weeks where we report back.

There is also a belief or an assumption amongst staff that everybody in the library knows what they are in the library for, so they just have to perform their duties. This is perceived as some form of co-ordination.

- ➢ People are given enough freedom to exercise within the scope of their job. They know what they are supposed to do.

> Staff is aware of what they are here for.

Meetings and policies are also seen to play a vital role in terms of co-ordination of activities.

> We have policies and meetings. Meetings are useful with the co-ordination of functions.
> We are a committee driven organization. We take decisions at meetings and we have policies that guide us.

S2 work is also focused on implementing decisions about common services and resources so that things can run as smoothly as possible, and it therefore concentrates on schedules and protocols. Most functions of S2 at the DIT library reside with co-ordinators, especially in smaller site libraries, as they have to work with schedules and administration e.g. they have to coordinate the taking of leave, to ensure that all sites have adequate staff to run smoothly every day. S2 provides a specific type of regulation among S1 units to co-ordinate their activities. This function of S2 is in place at the DIT library and its role is made easier by the adequate flow of communication between operations and management. This is evident in operations in the way staff can and do work in the various sections of the library, offering help to a busy or short-staffed section for that day. This happens especially with circulation staff at the main circulation desk, and short-loans staff in the main campus libraries. In smaller site libraries, members of staff move around to different sites with ease. Subject Librarians schedule their lunch breaks, leave, etc in such a way that there is always someone who is available to serve the library users. This demonstrates that there is understanding and teamwork amongst the members of staff in the various areas of operations at the DIT library.

S1 strikes a resource bargain deal with senior management. This means that S1 performs certain agreed-upon functions in the DIT library relating to the provision of information to library users, and the senior management provides resources for the provision of that service. The regulatory centre's main function is to ensure stability between management and operation. S2 then ensures that resources for operations are

provided and that operations actually do take place according to the agreed objectives of the DIT library.

The library does not have enough resources, which means that the management is not meeting its side of the resource bargain deal, which makes it difficult for operations to function effectively. However, the shortage of resources in the library cannot be looked at in isolation. It has to be discussed in relation to the DIT's institution-wide resources. This is where the management cybernetics rule of recursion has impact on the DIT library. This will be discussed at length later in this chapter.

When asked whether the library has enough resources, this is what members of the library staff had to say:

> It will never be enough. Not in a million years!

> It will always not be enough because there are things that we would like to have but because we don't have money we can't get those things.

However, there is general understanding amongst members of the staff that even though the resources are not adequate they need to make the best use of those available, in order for the library to function.

> We are short staffed because there are positions that still need to be filled but we try by all means to ensure that all services are covered.

> You try your best to use whatever is available.

> We utilize available resources to the maximum and restrict usage of things.

> It's enough to improvise, make do and get systems in place.

There is a difference of opinion between the general staff, who believe that the library is understaffed, and a member of the management team who thinks differently, although all of them agree that the library staff is too busy and is working very hard

> I cannot say that we are short of staff but I think we are short of facilities to work smart. If we could have facilities to work smart I don't think people will feel that there is a shortage of staff.

This idea is confirmed by the other member of the management team, who acknowledges that the library has a lot of vacant posts but believes that the main problem with staff issues lies with capacity building:

> We have a lot of vacancies but when those vacancies are filled I believe that we are adequately staffed. I think the library has enough staff. I don't think we have sufficiently worked out with everybody what their understanding is of what their jobs are.

S2 is responsible for tracking the use of resources, which enables it to report to middle management about the activities of S1. The DIT library uses statistics, periodic reviews, reports, and meetings, especially the financial and materials selection committee meetings, to track the use of resources within the library.

5.1.3 SYSTEM THREE (CONTROL)

S3 is responsible for the 'here and now;' that is, the internal and immediate functions of the organization, the everyday management of the operations of the organization. In the DIT library the S3 function is primarily the responsibility of managers and co-ordinators, which function they perform via meetings, on-site visits and reports. However, there is a perception among members of staff that managers do not perform this function very well, because they are reactive and rely on complaints for monitoring the daily activities of the library.

> They rely on complaints from library users about dissatisfaction with the service.

> It's mainly a reactive thing. If somebody goes to the manager then there's something done. It's not like the manager goes out there to see if everything is working well.

> If you are not doing your job the report from lecturers and students informs them (managers).

S3 is also responsible for the transmission of detailed interpretation of policy from senior management downward to S1 (operations) so as to ensure that policies are implemented in the right manner and serve the purpose for which they were developed. This responsibility of S3 is not firmly in place at the DIT library. Some policies are being implemented more than others, but the responsibility for proper implementation lies with staff members:

> Library staff members have to make sure that policies are implemented.

> Sometimes people forget what's in a policy and others have to remind them. We are not really aware of the policy all the time, which we have to be.

> People are generally trusted to implement policies. We are not heavily watched.

The materials selection policy is perceived as the only policy that is implemented properly:

> The only policy that is implemented and interpreted to the letter is the materials selection policy.

> I'm not sure how other policies are implemented but the materials selection policy is implemented.

Because there are no mechanism put in place to ensure that staff members implement policies properly, some of them sometimes find it difficult to implement them when performing their duties.

> Library policies can't be followed realistically.

However there are times when library policies are not implemented, in order to please library users.

> If we want to make library users happy, sometimes we have to sacrifice and compromise about policies.
> The implementation of policies is not 100%. Sometimes you find yourself breaking the rules for the sake of the users.

Some members of the library management team are to blame for staff members not implementing policies properly, because they themselves do not respect policies:

> We don't do that (implement policy) well at the moment. There is also a problem where library management is seen to not comply with policy.

> That's very difficult especially when some of the library management don't adhere to policies.

S3 sends instructions downward from senior management and passes information upward from operations. Various meetings are held in the library weekly, biweekly and monthly, which is a means of communication for library staff, but the general staff meeting which all staff members attend is held once a month for one-and-a-half hours. The general staff does not feel that there is an open communication channel in the library, and thinks that the management does not consult or listen to them.

> They just do things without involving staff members that sometimes backfires with small issues becoming big issues because of lack of communication.

> As much as they (management) talk to staff but their management style is based on consultation whilst having authority sometimes you are consulted but not given an option. It's always like, remember I'm the one who has the final authority.

➤ Communication is not enough because you find that there are other issues that library staff want to discuss but because of time constraints those issues cannot be discussed.

The management team of the DIT library has different views on communication from those of the library staff. This difference of opinion probably fuels the lack of communication that members of staff perceive, and makes it difficult for management to put measures in place to improve the situation:

➤ Communication in the library happens vertically from the top down. There's not much that happens from the bottom up. If it does it probably gets stopped somewhere along the line in the hierarchy. People don't feel included, heard. They are not informed. They feel a sense of exclusion.

➤ Although we invite items for the agenda (for the general staff meeting), as managers we have to take decisions, so if there are issues that we think will be better handled in other committees we refer items to them.

➤ Staff very often feel they are left out in the loop and that they only hear about things after the effects.

➤ Information can be filtered down and go up to management – it doesn't always work but the principle is there.

➤ Because of the bureaucratic structure by the time information comes to the bottom or top it is so distorted. You have to do damage control because it's being interpreted in a totally different way.

Respondents were asked to make general comments about the S3 function of the library. Most library staff members who were interviewed were not satisfied with the way the library is managed:

➤ Managers don't have experience, lack leadership skills, and can't lead properly.

> Not an ideal management system because they don't lead by example. Whatever the management is doing is not what we are supposed to do e.g. late-coming and what we expect them to do is not what they are doing.

> We have a very weak set of managers who don't manage proactively, who manage reactively. The overall management is becoming very autocratic. The library is not well managed at all.

> Managers are not qualified to take decisions to run libraries and departments on a day-to-day basis. They don't have enough skill and experience.

> I'm not entirely sure that the director manages this library as it should be managed. I feel he is still of the old school. He wants to be the one taking decisions and pretends to be democratic. He is like he's the director he's got the say and everybody must listen to him and do as he says.

> I worry now that our director is becoming quite autocratic.

> It's such a confusion. We don't know what our management philosophy is.

> Within the management group there's not a cohesive agreement in terms of our management philosophy. There are very different styles of attending to problems … and different interpretations of what library management is about.

According to the VSM, management needs more information to perform its function effectively than the information provided through meetings and reports. S3 needs to directly monitor the operations of S1 in order to ensure that it is efficient. This function is performed by S3*. It can be done by sending task teams to operations to do spot checks or audits. S3 is not properly in place at the DIT library, and the S3* function is not performed at all. This leaves the management relying solely on information received through reports and meetings. However, this information is not enough to give the management a clear and thorough understanding of what is happening in the library on a daily basis.

5.1.4 SYSTEM FOUR (INTELLIGENCE)

S4 is an intelligence-gathering function that captures all of the relevant information about a systems total environment. It distributes this environmental information upwards or downwards according to its degree of importance. Without S4 an organization is capable of dealing only with immediate concerns and is unable to look to the future and prepare for it accordingly.

The S4 function of gathering information about the systems total environment is firmly in place at DIT library. The library is also quite visible at the DIT as a whole, with staff members serving on informal associations like the Gender Forum and trade unions. The library also has representatives in the formal management structures of the DIT e.g. senate, the academic management team, Faculty Board and the Library committee.

Library staff members are actively involved in various LIS initiatives and associate activities both at provincial and national level. For example, many members of the library staff are members of the Library and Information Association of South Africa (LIASA), with five of them being office-bearers in the KwaZulu-Natal branch committee, including the chairperson of the branch, who is also from the DIT library. The DIT library is also a member of the Eastern Seaboard Association of Libraries (ESAL), the chairperson of the consortium is from the DIT library, and there are two other staff members who are conveners of the working groups for the consortium. The chairperson elect of the Committee of Higher Education Libraries in South Africa is from the DIT library. DIT librarians also represent the KZN region in the Coalition of South African Library Consortia.

The involvement of the DIT library staff in these associations clearly indicates the extent to which DIT is in touch with its environment. What is even better is that all of the above roles are played by different staff members who work for different departments, which should make it easier for information on these initiatives to be distributed and passed on to other people within the library. Over and above this, the specialist director went to Australia to study libraries there and look for best practices, and three managers visited different academic libraries within the country, also to assess the environment for best practices.

However, the information and knowledge that is gained by people participating in these initiatives is not shared with other staff members to the extent that it should be, and in instances in which it is shared, not much is done to put the ideas that come forward into practice. This is confirmed by the management team:

> They only feedback as much as the individuals who represent are able to bring things out.

> I don't think we are doing much in terms of taking ideas that come from these interactions and putting them into practice.

If the information were shared and used to benefit the library in its functioning as it should be, then all staff members would realize its value. There are staff members who thought that this interaction had no value, and others who were not sure:

> It has never helped me. I don't even know why we do it.

> I guess it helps.

> I don't know whether it helps in any way.

However, there were other staff members who saw the value of this interaction:

> We get a richness of people being involved and getting a national and regional sense of what is happening in LIS... It expands horizons.

> People involved get ideas about how other libraries are functioning and how to improve our library and to give others ideas about how we are functioning.

> In a sense it gives some form of direction.

The S4 function is in place so as to alert the system about changes or things in the environment that might affect it. Given the extent to which staff members are in-touch with the LIS environment, the DIT library should not have a problem in getting

access to this kind of information. However, the members of the library staff do not seem to have access to it. When asked if they had ever received information that enabled them to anticipate problems before they happen, some responded by saying they could not think of anything.

> ➢ I can't think of anything.

> ➢ I'm not sure. I really can't think of anything.

> ➢ Nothing springs to mind.

> ➢ We are never alerted to things in time.

Other staff members cited their experience and observation as the main source of information which helps them anticipate problems. Some people cited the grapevine as their source:

> ➢ Informally through grapevine. Without the grapevine it might be difficult to solve some of the things.

> ➢ Grapevine is a useful source.

> ➢ Through grapevine. It's like someone will say to you I was in a meeting and they said this and that about you so you better be prepared for the next meeting.

The other responsibility of S4 is to distribute the information it gathers to all the systems, but more importantly to S3, which is the system it is supposed to liase most closely with. However, at the DIT library the only function S4 seems to be performing is the information-gathering function. It does not distribute the information to other systems, and there is no close relationship between S3, the management of the library, and S4.

5.1.5   SYSTEM FIVE (DIRECTION)

System five performs the identity function. It is responsible for vision, direction, goals, and the setting of the mission statement. It provides the ground rules and the means of enforcing them to ensure that the system is complete.

Some elements of the S5 function are in place at the DIT library but others are not. Staff members have a clear understanding of the processes and procedures of policy making.   If the policy is a section-specific policy e.g. circulations, information services, etc. then the people who will be most affected form a task team which will put together a first draft of the policy. It is then circulated to all staff for comment, refined, and tabled before the management team for endorsement. Some policies are sent to the Library Committee and other broader DIT structures if necessary.

Strategic planning is done by the extended management team, which consists of directors, managers, co-ordinators and representatives. This is a consultative process as an agenda for the planning meeting is circulated and people are asked to make comments and add items that they think are necessary for inclusion in the agenda. However, there was also the perception that this was just token consultation.

> ➤ From the last strategizing it feels like it's token representation because the decisions are made by the director. It's autocratic, from the feedback that one gets from the reps that go there.

S5 is concerned with an organization's identity and provides an organization with its personality.   The personality of an organization is based on its image. For an organization to have a personality which all staff members can ascribe to and represent, it needs to have a common image. Although the DIT library does not have a common image because of various reasons e.g. the difference in the physical structure of site libraries, different signage and mindsets, etc, this is something the library is working towards achieving. They have started branding the library e.g. they have a new library logo, they are marketing the library more, and drafting customer care standards.

S5 is also involved in providing the organization with strategic direction. Given that the DIT library has been in existence for three years and does not have a strategic plan except for the 3-year capital expenditure rolling plan (which is required by the management of the institution as a whole), it is plain that S5 is not providing the library with strategic direction, and therefore that not all aspects of the S5 function are in place.

5.2 SELF ORGANISATION

Complex systems organize themselves. Self-organization can be through culture, informal communication networks, operational goals, etc. However, self-organization is caused mainly by the relationship and the interaction of the components of a system. The concept of self organisation refers to the fact that there is no one who tells or instructs the system how to organize itself. Systems self-organize around certain issues. In the DIT library merger the system initially self-organized around the 'us and them' attitude. There was a lot of tension and animosity as the two groups (ex Technikon Natal and ex M L Sultan Technikon library staff) did not want to work with each other because they did not trust each other. This 'us and them' attitude is still there but has subsided somewhat, while the competition between sites is rising.

> Some sites think they are superior to other sites, they do things in better ways. Although we are doing the same thing there is that perception and it's irritating.

> The ML vs TN thinking is fading. The major thing now is this competition between sites. People are like we want to make sure that our site is better than the other site.

> The exTN and exMLST thing is still there.

> There is this thing of people undermining each other. Initially it was TN and ML and now it's site based. There are sites which think they are better off then others.

It must be noted that the 'us and them' attitude that was experienced in the library was spread throughout DIT as an institution, so the library was just demonstrating aspects or characteristics of DIT as a whole.

5.3   RECURSION

VSM is based on the idea of recursion. The theory of recursion is that the structure of a whole is replicated in each of its parts.   Operations or departments of an organization should be treated as viable systems in their own right and must therefore possess their own S1 to S5 (Jackson, 1991)

The budget which the library uses is provided by the DIT's executive management. The library then uses this budget for all its resource-based needs. The DIT as an institution is a viable system, a whole, on a level higher than the library. The library as a department is S1 (operations) of the DIT as an institution.   The executive management of the institution provides resources to its S1, which is the library, so that it can function. Because the library is also a viable system in its own right, the senior management within the library then allocates a budget and other resources to the different departments and sites within the library. As suggested earlier in this chapter, the library does not have enough resources, and from this perspective it can reasonably be assumed that the library management is not fulfilling its side of the resource bargain, but this problem cannot be addressed by the library management if DIT as an institution does not provide the library with more resources.

Within the DIT as a whole there is no clear understanding of how its various subsystems work or come together to form a whole. The various departments within the DIT do not have a common understanding of how they can work together, helping each other to achieve their goals and to realise their potential.   The lack of communication evident in the library seems to be reflected in the DIT as a whole, and extends to a lack of communication between the different levels of the system, as is exemplified in the following:

> ➤ We want to promote internal staff. If new staff come in they will come in right at the bottom of the hierarchy. Unfortunately HR department has one view of this and executive management who gave us the permission to do this

has another view. So there was a total clash and although the advert went out we couldn't act on it. We couldn't short-list people. We have a stalemate situation right now.

This lack of understanding is also evident in the problems the library is having with spending its budget, because the finance or buying department does not understand how the library spends it budget.

> We have a problem with spending the small amount of money that we get. We commit it all but because of the way book buying happens, from the bookkeeping point of view it looks as if the library is not spending its budget. But we have committed it all. It's just that it has not all been paid out because the material hasn't arrived.

The way the finance system works within the DIT also makes people want to waste rather than save the limited resources that the DIT has, because there is the perception that a department is punished for not spending instead of being rewarded for it.

> The problem is that if you don't use your budget the following year they are going to give you less... If you are given a budget you want to make sure that you use that money and blow that budget so that you can get more the following year.

5.4   SUMMARY

This chapter has presented the results arising from applying the VSM to the DIT library. The information derived from this application makes it possible to draw conclusions about the viability of the library. These conclusions and the recommendations arising from them will be found in the next chapter.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions drawn from conducting this study and recommendations based on the findings.

6.1 CONCLUSIONS

This research analysed the operations, co-ordination and management of the DIT library using the VSM. This was achieved by analysing the library procedures, processes and structures with the aim of identifying the systems that inform the viability of merged higher education libraries. The following are conclusions drawn from that analysis.

6.1.1 SYSTEM ONE

The DIT library staff members do not have a common understanding of what the goals of the library are.

The library depends on library managers to see to it that the goals of the sections which they are responsible for are met.

The DIT library relies on notice boards, orientation session and one-on-one communication to communicate with the library users. This communication, however, is not sufficient. Staff members get feedback from library users. If the feedback they receive is negative they then try to rectify whatever the complaint was about. Notice boards are used as a means of giving feedback to library users.

6.1.2 SYSTEM TWO

The co-ordination of the everyday activities of the library is the responsibility of library managers. There is also the general assumption that all library staff know their roles and responsibilities, so they co-ordinate themselves by doing what they are supposed to do in the library. Meetings and policies also play an important role in the co-ordination of library activities.

The library does not have enough resources to perform its functions effectively but members of staff make the best use of the available resources in order for the library to function. However, due to the finance system used by the institution and the competition between sites there are incidents where the resources (the budget) are used unnecessarily. Statistics and reports are used to track the use of information resources by library users.

6.1.3 SYSTEM THREE

Library managers are responsible for monitoring the everyday activities of the library. To a large extent this monitoring is done through reports and meetings. The proper monitoring of sites and sections depends on how active the manager is and his or her management style. Some managers sit in their offices not knowing what is happening in their sites or areas of responsibility. Some staff members perceive managers as inexperienced and therefore unable to lead and manage the library effectively.

The library staff is generally trusted to implement policies. There are no mechanisms in place to ensure that implementation actually does happen. As a result some policies are not implemented and some staff members feel that library policies cannot be implemented realistically if library users' needs are to be satisfied.

Management makes communication channels available through various meetings, e-mails, and the general staff meeting which is held once a month for one-and-a-half hours. But the general staff does not feel that there is an open communication channel in the library. They also feel that the management does not consult them.

Some staff members feel that the library is not well managed because the director is autocratic, the managers are weak and unqualified, and there is no common management philosophy among the management team.

6.1.4 SYSTEM FOUR

The library is very effective in interacting with the DIT and LIS communities. Library staff members represent the library in various structures at DIT and in various

LIS associations. This helps the library to acquire information about changes, trends or any other information in the external environment that might affect it. However, this information is not shared with all library staff members and some staff members therefore think it to be of little value.

6.1.5 SYSTEM FIVE

All library staff members are involved in the formulation of DIT library policies through a consultative process. Nevertheless staff members still find it difficult to implement those policies realistically. The extended management team is involved in strategic planning. The DIT library does not have a strategic direction, as it does not have any long term (strategic) plan in place and not all members of staff are clear on what the goals of the library are. The library also does not have a common image, although the process of branding the library is in place.

There is still the 'us and them' attitude amongst the library staff, but it now arises from competition between site libraries. Each site library wants to be better than the others.

The various departments making up the DIT as a whole do not talk to one another, and there is therefore a lack of understanding of how each department works, which impacts negatively on its functioning. For example, the HR and Finance systems do not understand how things in the library are done, which makes it difficult for the library to function effectively.

6.1.6 THE VIABLE SYSTEMS MODEL OF THE DIT LIBRARY
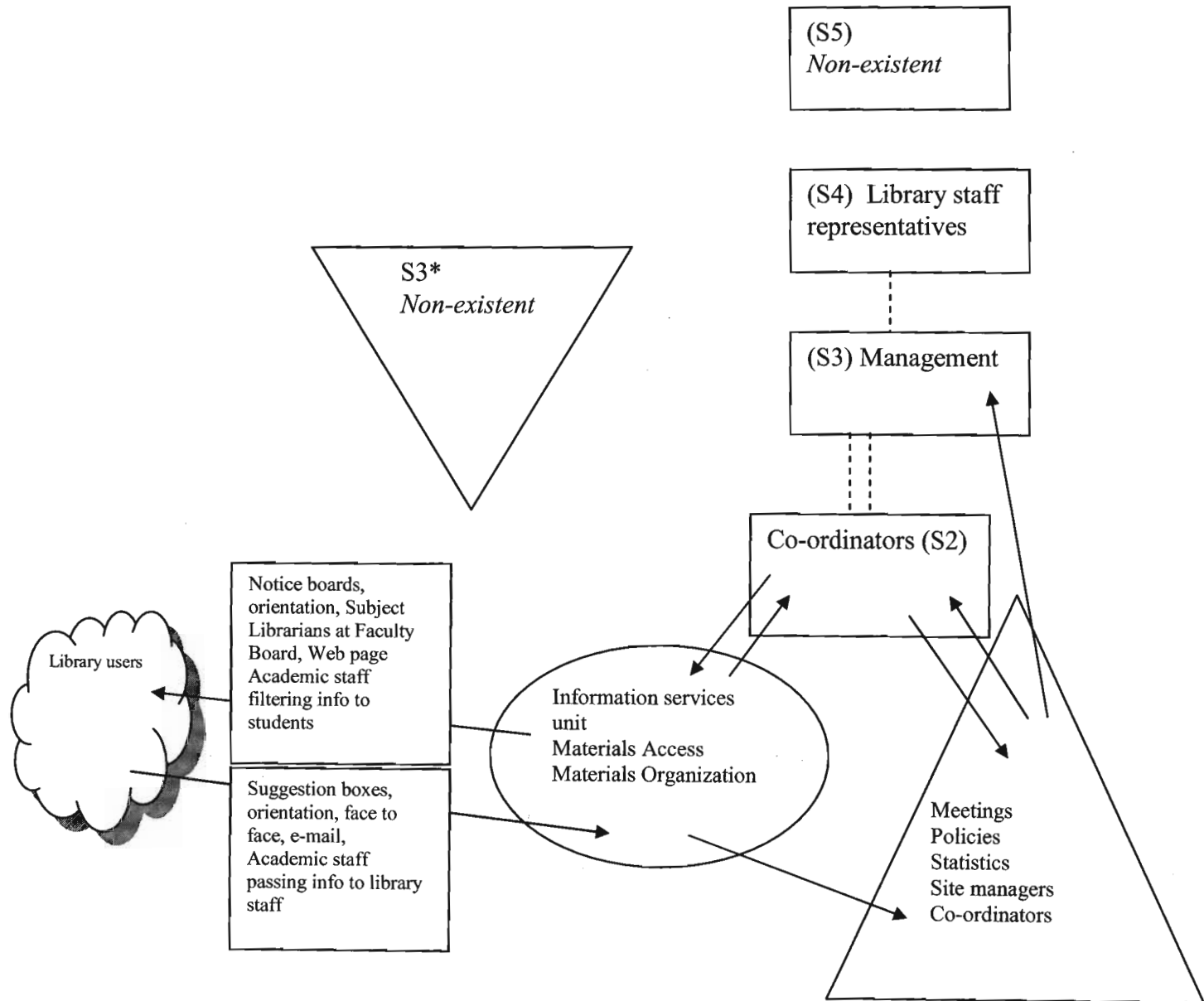
Figure six: The VSM of the DIT library

This figure depicts that S1 (operations) communicates with its environment which is the library users through the use of suggestion boxes, notice boards, one-on-one communication, etc.. However this communication needs to be improved because most of the communication that the library has with its users is communication that is instigated by the library users. The library needs to do more to initiate communication with the library users.

Materials organization, information services units, and materials access are the operational sections of the DIT library, but they seem to operate almost semi-independently as the library does not have common goals that all staff strive to achieve. Operations communicates with co-ordinators who are responsible for co-ordinating the daily activities of the library.

Policies, meetings, site managers, co-ordinators and statistics are the instruments used to regulate the activities of S1. Co-ordinators take part in the regulation of S1, which is why there are arrows between the co-ordinators and the regulation centre (S2). S3 takes part in and is informed about the regulation activities of S1, which is how it keeps in touch with what is happening in operations. S3 also communicates with co-ordinators to get more information about S1, but this communication can be improved. There is an overlap between the functions of co-ordinators (S1 management) and managers (S3). However, managers are perceived as being ineffective and unable to perform their functions effectively.

S4 is active, as various library staff members represent the library on various provincial and national LIS bodies and associations. This ensures that the library is kept in touch and up to date with what is happening in its environment. However, this information is not effectively communicated to other levels, which is why there is a single dotted line between S3 and S4. This represents the limited information flow between S4 and the other systems.

S5 is non-functional, because the DIT library has no strategic direction and common image.

Figure 5 in chapter three demonstrates how the VSM diagram of a viable organization looks. A comparison of Figure 6 above with Figure 5 in chapter three clearly demonstrates that the DIT library is not a viable system.

6.2 RECOMMENDATIONS

6.2.1 SYSTEM ONE

The DIT library seems to be already aware of what it needs to be doing in terms of communication, and there are plans in place to put in new mechanisms to improve communication with library users. However, what the library needs to be conscious of is the need to always look at things from a library user's perspective. This will make communication easier and ensure greater satisfaction of users' needs, as the information that the library will gather from surveying or communicating with library users will help it to provide services and facilities that are tailor-made for the users' needs.

The DIT library should also set standards that all staff members who communicate with library users should adhere to. This would control and monitor the quality of the information that goes out to library users. This information has the power to impact on the image that the users have of the library.

6.2.2 SYSTEM TWO

It is not enough for the library to work on the assumption that library staff know what they are in the library for, as confirmed by one management team member. The library should have mechanisms in place which ensure that staff understand their job profiles and job descriptions, especially because after the merger many people found themselves in new positions, while others retained the same jobs with slight variations to their job description. This would improve productivity, because people would have a clear understanding of what it is exactly that they are supposed to be doing.

There is clear evidence of teamwork at operations level which the management is not acknowledging and rewarding. If this pocket of best practice is noticed, rewarded or acknowledged it might spread to other sections and levels of the library. In most organizations teamwork is a given and all employees are expected to work as a team, but given the history of the merger of the libraries and the extent to which it was and to some extent still is immersed in the 'us and them' attitude I believe best practices should be acknowledged and rewarded accordingly. However, this will need to be

handled tactfully otherwise it might worsen the conflict that is already brewing as a result of competition amongst different library sites.

There is definitely a need for more physical, financial and space resources in the library, and until the executive management of the institution completely fulfills its part of the systemic bargain by providing adequate resources for the library the DIT library will not function optimally.

6.2.3 SYSTEM THREE

One of the goals of the DIT library is to develop a feeling of ownership amongst staff members. It is going to be very difficult to make staff develop a sense of belonging to the library if they feel that they are not listened to and that their ideas do not matter. For this goal to be realized the library management needs to take a serious look at its communication channel with the general staff members. Communication is critical and can determine the success or failure of the merger.

It is clear that members of the library staff are not happy with the current management style, and given that the management team is made up of six people who are diverse in terms of culture, experience, race and gender, there are bound to be differences in personalities and management style. The management team needs to have a general understanding and agreement on what their management philosophy is. The team should have enough freedom to exercise and manage their portfolios in the way that best suits their personalities and the staff who report to them, whilst knowing the parameters (the management philosophy) within which they are working.

6.2.4 SYSTEM FOUR

The library is doing a sterling job in terms of interacting with the external environment and gathering the relevant information. However, it fails to put the information and resources it has to good use. It is recommended that as a starting point all staff members are made aware of their colleagues' rank, positions and responsibilities. When people who sit in these various associations have been to meetings and/or are involved in projects I suggest that they report back to relevant

meetings or departments. The library can also publish a quarterly newsletter that will contain information on the various activities of the library and members of the library staff. This newsletter can be for the library staff only, so as to cut printing costs.

6.2.5 SYSTEM FIVE

The personality of an organization is supposed to come from or be presented by the top management, and to filter down to the lower levels of staff. It is recommended that the library management be conscious that it provides the DIT library with its image and personality, and that if it wants a good work ethic and responsibility to prevail as characteristics of this personality, the management itself must display those characteristics.

6.3   SUMMARY

The implementation of these recommendations will result in the DIT library's having a viable system. Below is the redefined VSM of the DIT library, depicting how its VSM would look if the above recommendations were implemented.

6.4   THE VIABLE SYSTEMS MODEL OF THE DIT LIBRARY
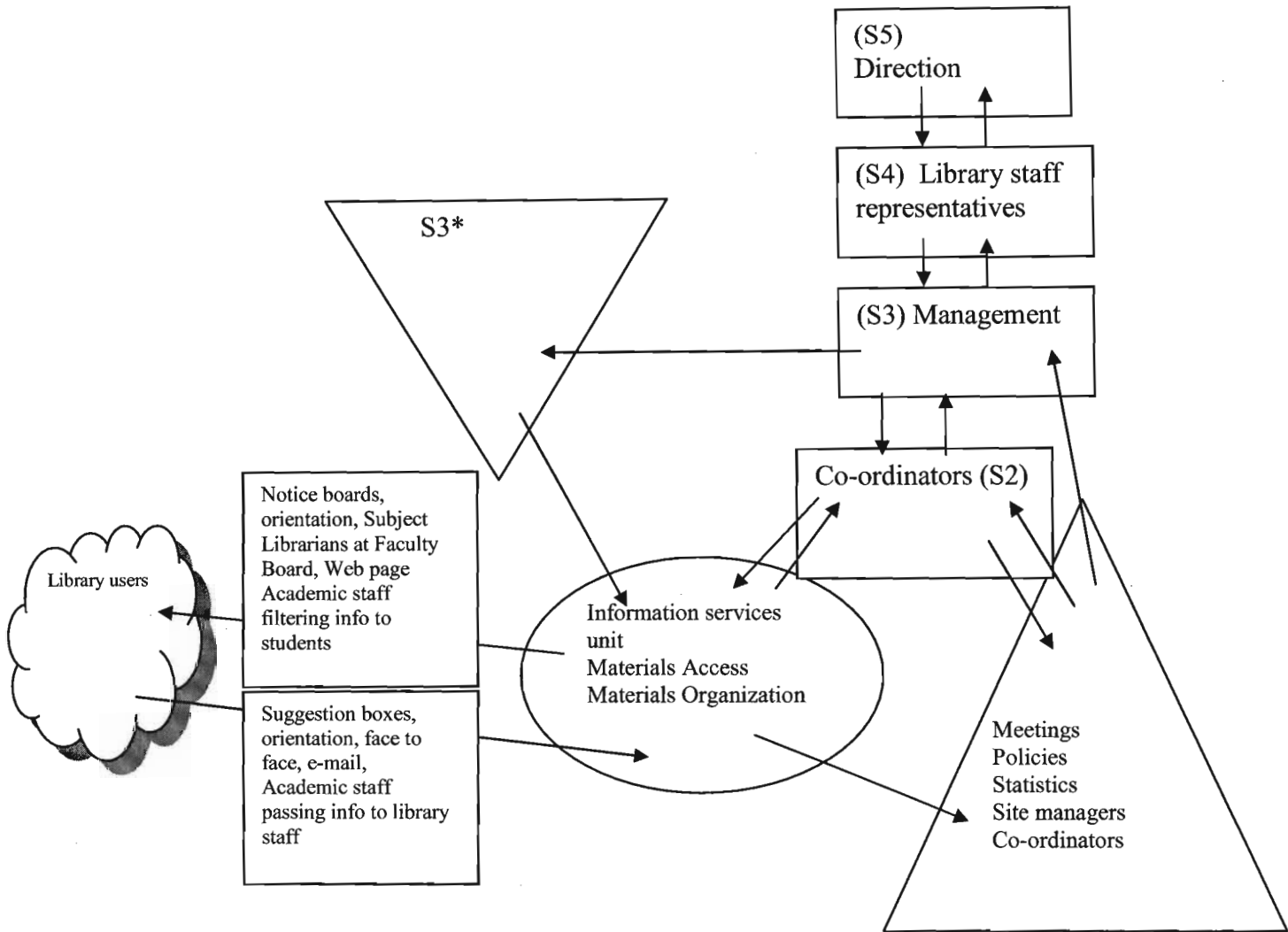
Figure seven: An improved VSM of the DIT library

There has to be increased communication between operations and co-ordinators (the regulatory centre).

Communication also needs to be strengthened between co-ordinators (S2) and managers (S3).

Managers (S3) should be more visible at operations points so as to monitor activities and also to stay informed about what is happening at operations level.

Library representatives (S4) should feedback on their activities to the management and operations.

The director (S5) and the management team should decide on one management style to be followed. The director should also drive all of the necessary development aspects of the library.

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APPENDIX A
Interview schedule
This interview is part of a research project currently being undertaken in partial fulfillment of the Master of Commerce in Organizational and Management Systems with the University of KwaZulu-Natal. The purpose of my study is to diagnose whether DIT libraries are viable. I hope that the result of this diagnosis will help create a better understanding of the systems that inform the viability of merged higher education libraries. Your cooperation in participating in this interview is greatly appreciated. Your responses to the questions will be treated confidentially.

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1.   What are the generic goals of DIT libraries?
1.1   How do DIT libraries ensure that these goals are met?
1.2   All departments and site libraries have their own goals, how does the library ensure alignment of these goals with the generic DIT library's goals?
1.3   How do DIT libraries communicate with the library users?
1.4   Do you ever get any feedback from library users? How and what do you do with that feedback?

2.   How does the library co-ordinate its functions in-order to ensure that its objectives are met?
2.1   Does the library have enough resources to perform its functions? If no, how do you cope or function then?
2.2   How do DIT libraries ensure that these resources are used efficiently to meet their objectives?
2.3   What informs how the available resources are used?

3.   How does the management monitor the everyday activities of DIT libraries?
3.1   How does the management ensure that DIT libraries policies are interpreted and implemented exactly as they were meant to be when they were drafted?
3.2   Is there an open communication channel between management and general staff?
3.3   What are your thoughts about the way the library is managed?

4.   How does DIT library interact with the DIT community and LIS community at large?
4.1   Does this interaction (if it exists) help DIT libraries in anyway in its functioning? If no, why do you do it then?
4.2   What do your library users think about the services and facilities that the library offers? How do you know this?
4.3   Do you ever receive information that enables you to anticipate problems before they happen? If yes, how and from whom?

5.   Who is involved in strategizing and formulation of DIT library policies?
5.1   What process does this strategizing and policy formulation follow?
5.2   What are your thoughts about the progress (if any) that the DIT libraries have made from the time when it initially merged up to now?
5.3   Do all DIT libraries share a common image? If yes, what is it? Is this image share by all staff?
5.4   What is the five year plan of DIT libraries? Is all staff aware of this?

ORGANOGRAM OF THE B M PATEL LIBRARY

DVC (Academic)

Director

Secretary

Deputy Librarian

Head: Media & Training Services

Technical Sector

Technical branch:
- Technician (Graphics)
- Technician (Comp. Tech.)
  - Technical Assistant
- Technician Production
  - Technical Assistant
  - General Assistant
- Technician (Repairs)
  - Technical Assistant

Comp. Service
- Systems DBO
  - Data Admin -Int
  - Data Admin-ext
  - General Assistant

Orders Dept
- Acquisitions Librarian
  - Asst Lib Legal Res
  - Asst Lib Orders
  - Asst Lib – INV

Serials Dept
- Serials Librarian
  - Asst Lib Subs
  - Lib Asst Processing

Multimedia Dept
- AV Lib
  - Asst Lib Comp Aided Resources
  - Asst Lib Comp Aided resources

Catalogue Dept
- Chief Cataloguer
  - Cataloguer
    - Ass Lib MM
  - Asst Lib Catalogue
    - Shelver
  - Lib Asst Processing

Circulation Dept
- Circulation librarian
  - Princ Asst: Circ
    - Lib Asst Circ 1
    - Lib Asst Circ 2
  - Princ Asst: Reserve
    - Lib Asst Reserve
    - Lib Asst Reserve (2)
  - Princ Asst: ILL
    - Lib Asst ILL
  - Lib Asst Stock Binding
  - Shelver
  - Shelver
  - Shelver
- Chief SL
  - SL: Commercia l Science
  - SL: Arts
  - SL: Managerial
  - SL: Built Environment
  - SL: Engineering
  - SL: Science
  - Lib Asst Info Desk

Info Services
- Info Lit Lib

Evening Services
- Evening Librarian
- Evening staff

APPENDIX C: ORGANOGRAM OF THE DIT LIBRARY

DVC: Academic

Director

- Secretary
- Messenger
- **Manager: Materials Organization**
  - Secretary
  - Co-ord Cat & class
    - Class/ Catalogues
    - Processing
  - Co-ord Periodicals
    - Bind
    - Periodicals
  - Co-ord Acquisitions
    - Acquisitions
  - Co-ord ILL & DocDel
    - ILL
  - Co-ord IT & systems
    - IT, Systems, Web
    - Financial Officer
    - Photocopy & sales

Director

- **Manager AP**
  - Secretary
  - Co-ord PM
    - Pm As
    - PM P/T
  - Co-ord Materials
    - Circ short loans Asst
    - Stack attend
  - Info services
    - AV Asst
- **Manager BM**
  - Secretary
  - Info Service SL
    - AV As
    - Legal Res
  - Co-or materials Access
    - Cir Sh
    - Stack Attend
  - co-or PM
    - PM asst
    - PM P/T
- **Manager Other Sites**
  - Pmb sites co-
    - R/S circu. asst
    - Indumis circulat asst
    - P/Time assists
    - P/T assists
  - Arts sites co-ord
    - Circulation Assistant
    - P/T Ass
    - Stack Attend