

Process and Communication Serving as Catalysts for Successful Capability Management in the Department of Defence¹

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ABSTRACT

Given the current economic conditions in the world and, specifically, in South Africa, all organisations are trying to focus on saving costs and particularly getting more for less with decreasing budgets. The way to start achieving this difficult task is to streamline processes and communication within organisations so as not to have unnecessary or fruitless expenditure. The prominent research question that has been investigated is, “Can the current process for acquiring, integrating and implementing new weapon systems be streamlined and communication improved in order to ensure effective operational capabilities, thus allowing the DOD to fulfil its mandate successfully?” The research conducted is focused on an applied research paradigm; it has been designed to apply its findings to solving a specific, existing problem. Applied research, furthermore, involves the application of existing knowledge to improve management practices and policies. While the research is empirical by nature, the phenomenological paradigm serves as a basis for the research. As a result, the type of data, which is used to support the research findings, is qualitative. Action research serves as the research method. A total of 11 questionnaires was distributed, all of which were returned. The following main recommendations were made, based on the research:

- Lack of Capability Manager - A capability manager will be responsible for the main activities:
- The Need for a Capability Centre of Excellence - This centre of excellence would allow for central command and control over all activities relating to capability management, and, in this way, would improve communication and the consolidation of effort.

Keywords: Process, communication, capability management, Military, centre of excellence

¹ How to cite this paper: Povey, J., Watkins, A., Meyer, J. A. (2018). Process and Communication Serving as Catalysts for Successful Capability Management in the Department of Defence; *PM World Journal*, Vol. VII, Issue IX – September.

INTRODUCTION

For the South African National Defence Force (SANDF) to carry out its functions, the availability of appropriate armaments is essential. On a governmental level, the national security strategy and the defence review amongst other things provides guidelines to the Department of Defence (DOD) to develop policy, doctrine and strategy to ensure the safety and security of its citizens. The applicable strategies developed will require possible re-structuring and re-planning within the DOD.

Armaments are obtained through a process of armaments acquisition. The acquisition projects are managed and executed by the Defence Matériel Division (DMD) with the view to improving the battle preparedness of the DOD by way of the addition of new main equipment or by upgrading existing main equipment.

Together with the applicable DOD project officers appointed to execute the acquisition projects for the DOD, the DOD makes use of Armscor as its acquisition agent, ultimately to assist in providing a level 5 product system to satisfy the operational need as defined. This product system must, however, be delivered and integrated into the level 6 user environment for use in addressing the following areas (commonly known as “POSTEDFITB”):

- **Personnel** (all people within the Arms of Service, both military and civilian, responsible for operation, maintenance and repair of the product system);
- **Organisation** (flexible functional groupings with an appropriate balance of competency, structure and command and control to support the product system);
- **Supply and support** (the supply of commodities and products as required for the execution of military operations, which includes warehousing of items of supply, infrastructure and support services required to ensure the availability of equipment, wherever deployed and employed);
- **Training** (technical and operational training to users to ensure the effective use of the product system);
- **Equipment** (the physical equipment designated to enhance military power);
- **Doctrine** (encapsulating regulatory framework, strategies, policies and procedures, principles and other related prescripts justifying the existence of Arms of Service capabilities and readiness);
- **Facilities** (encapsulating buildings, structures, property, equipment, training areas, civil engineering works through life support infrastructure and utilities necessary to support capabilities, both at static and operationally deployed locations);
- **Information technology** (encapsulating defence intelligence, information, data and data processing systems, including computer applications, manual information systems, data and information content, timeliness, presentation, format, reliability and validity, data correlation and fusion);

- **Technology** (encapsulating commercial and/or military technologies required, including research and development, technology growth paths, cycles and trends, technology reliability, affordability, cost effectiveness, technical opportunities and risks); and
- **Budget** (encapsulating and relating to the planning, identification and allocation of funds to finance acquisition and operations during the life cycle).

The process of identifying, developing, acquiring and using the weapon systems involves various role players who work somewhat in isolation and where each has his/her own roles and responsibilities. DMD develops and acquires the specific capability determined as a shortcoming or new requirement by the applicable user, while the User System Manager (USM) is the person responsible for the effective utilization of the weapon system through its life cycle once it has been delivered. Product System Management (PSM) aids the USM in mastering the systems management approach to SANDF equipment over the total life cycle of the equipment.

Background to the Problem

The project officer has no real involvement in the operational use for which the system is intended. In reality, the system acquired is formally handed over to the user after which the use and life-cycle management of the system becomes the responsibility of the User System Manager (USM) and Product System Manager (PSM) respectively. This process is not clearly defined, and communication between these parties is poor as they operate in different environments and have totally different reporting structures, duties and responsibilities.

Statement of the Problem

The research problem that will be investigated within the ambit of this research study is as follows, “Owing to ineffective communication and the lack of defined processes, the acquisition, delivery, integration and implementation of new weapon systems acquired for the DOD do not always provide the intended strategic advantage, resulting in the possible ineffective use of the systems and little value added”.

LITERATURE REVIEW

This topic provides a unique opportunity to measure the SANDF process for acquiring and implementing weapon systems in order to ensure that the required operational capabilities are available, as guided by the military strategy.

Communication in DOD projects

Effective communication is difficult in DOD organisations because these organisations tend to be geographically separated and operate under distinct processes, leadership, reporting hierarchies, and there are differing expectations among the customer, community and product centres. Communication is lacking within the project management domain in the DOD, owing to the hierarchical structures, roles and responsibilities.

According to Ravi and More (2010:37), communication throughout the acquisition process plays a crucial role in its eventual success. The ideal situation in any organisation is that employees should work in high-performance teams using High Performance Work Systems (HPWS). HPWS has been defined as ‘a specific combination of HR practices, work structures, and processes that maximizes employee knowledge, skill, commitment and flexibility’ (Bohlander & Snell, 2004:690).

According to Parumasur and Govender (2013:05), teams and teamwork have a major impact on organisational performance. Total Quality Management (TQM) requires both individual and team input for work processes which depend largely on employee talents, experience, competencies, knowledge, skills, and capabilities. With a total quality environment dictated by cooperative links, the emphasis is on teams and teamwork aimed at breaking down barriers and obstacles among individuals, departments, line and staff functions (Evans & Lindsay, 2005).

High-performing teams with special characteristics function optimally at teamwork and must utilize their creativity to help organisations with continuous operations improvement and in the development of new ‘products, services and markets’ (French, Rayner, Rees & Rumbles, 2008).

To achieve high performance, team acquaintance is required. Teams need to be given an opportunity to express their approach to solving a problem or managing a project. As the team progresses through the stages of team development (organising, establishing interdependence, producing and evaluating), suitable group behaviour and the prioritization of activities must be ensured. If high-performance teams are, thus, to be created, facilitators are needed to provide advice when problem-solving, using certain quality management tools and keeping the activities of the team on course (Dale et al., 2007).

Process for Managing DOD projects

The process to develop and deliver a weapon system and then to operate, maintain and support it through its life cycle is an extremely lengthy one. This unique process involves three main role players, each with his/her own role and responsibility. To understand the complexity of the problem, it is important to understand that this whole process involves the following activities:

- When a capability shortcoming is identified, the requirement is registered and forwarded to the Defence Matériel Division, where the formal acquisition process is initiated to develop and/or acquire such a capability. This process is driven by the Project Officer (PO).
- Once the product or weapon system has been tested and evaluated, the weapon system is handed over to the User System Manager (USM), who is then responsible for taking it into service for operational use.
- The Product System Manager (PSM) is responsible for the life-cycle management (LCM), including maintenance and repairs as necessary.

The project officer makes use of a process known as the DAP 1000 to acquire systems. Once these systems are delivered for use, the USM and PSM use their own management systems to control the use and support of the systems.

According to Csoma and Thal (2011:01), over the last two decades there has been a fundamental shift in the way new products are developed. The traditional approach of a sequential, compartmentalized development process has been replaced by a cross-functional, interdisciplinary approach that focuses on the entire development process and emphasizes communication, speed, teamwork, and alliances across multiple teams and organisations to deliver products to the customer rapidly. Companies are exploring new ways of harnessing innovative ideas across the organisation to develop, manufacture, and launch products more quickly and more cheaply than the competition. This push towards innovation in product development is the result of changing customer needs, advances in technology, shorter product life cycles, and global competition. This new paradigm is characterized by the use of cross-functional teams, participation by all stakeholders, strategic planning, globalization, increased reliance on partnerships with other companies, and an added emphasis on manufacturing and affordability early in the design process.

An essential component of this new paradigm is the need for continuous and effective communication and the coordination of development activities and product responsibility across various teams or business units both within and outside the organisation. Coordination, information sharing, and collaboration in this new environment play a critical role in the design, development, integration, and manufacturing of new products.

The White Paper on National Defence for the Republic of South Africa (1996) clearly spells out the main functions for the employment of the SANDF. The Constitution provides that the SANDF may be employed in the following functions:

- For service in the defence of the Republic, for the protection of its sovereignty and territorial integrity;
- For service in compliance with the international obligations of the Republic with regard to international bodies and other states;
- For service in the preservation of life, health or property;
- For service in the provision or maintenance of essential services;
- For service in the upholding of law and order in the Republic in cooperation with the South African Police Service under circumstances set out in law where the Police Service is unable to maintain law and order on its own; and
- For service in support of any department of state for the purpose of socio-economic upliftment.

It is the policy of government that the above functions do not carry equal weight. The primary function of the SANDF is to defend South Africa against external military aggression. The Defence Review seeks to determine the appropriate size, structure and force design of the

SANDF into the next century. Defence planning can, therefore, be described as a needs-driven and cost-constrained operational capability.

Weapon systems as the basis of the planning cycle, are sub-divided into 8 levels and are defined as follows:

- Level 1 – Raw material;
- Level 2 – Components;
- Level 3 – Product sub-assembly;
- Level 4 – Products;
- Level 5 – Product systems;
- Level 6 – Core systems or capability;
- Level 7 – Operational system or capability; and
- Level 8 – Joint higher order military system or Defence capability.

When referring to operational capabilities or weapon systems, it is important that the systems hierarchy is understood as these systems and sub-systems are acquired through the process of acquisition projects which deliver a Level 5 product system to the user for integration into the Level 6 or core capability to the user environment which includes all the soft issues of POSTEDFITB, ultimately affecting the performance of the applicable weapon systems.

This hierarchy is depicted in Figure 1 below.

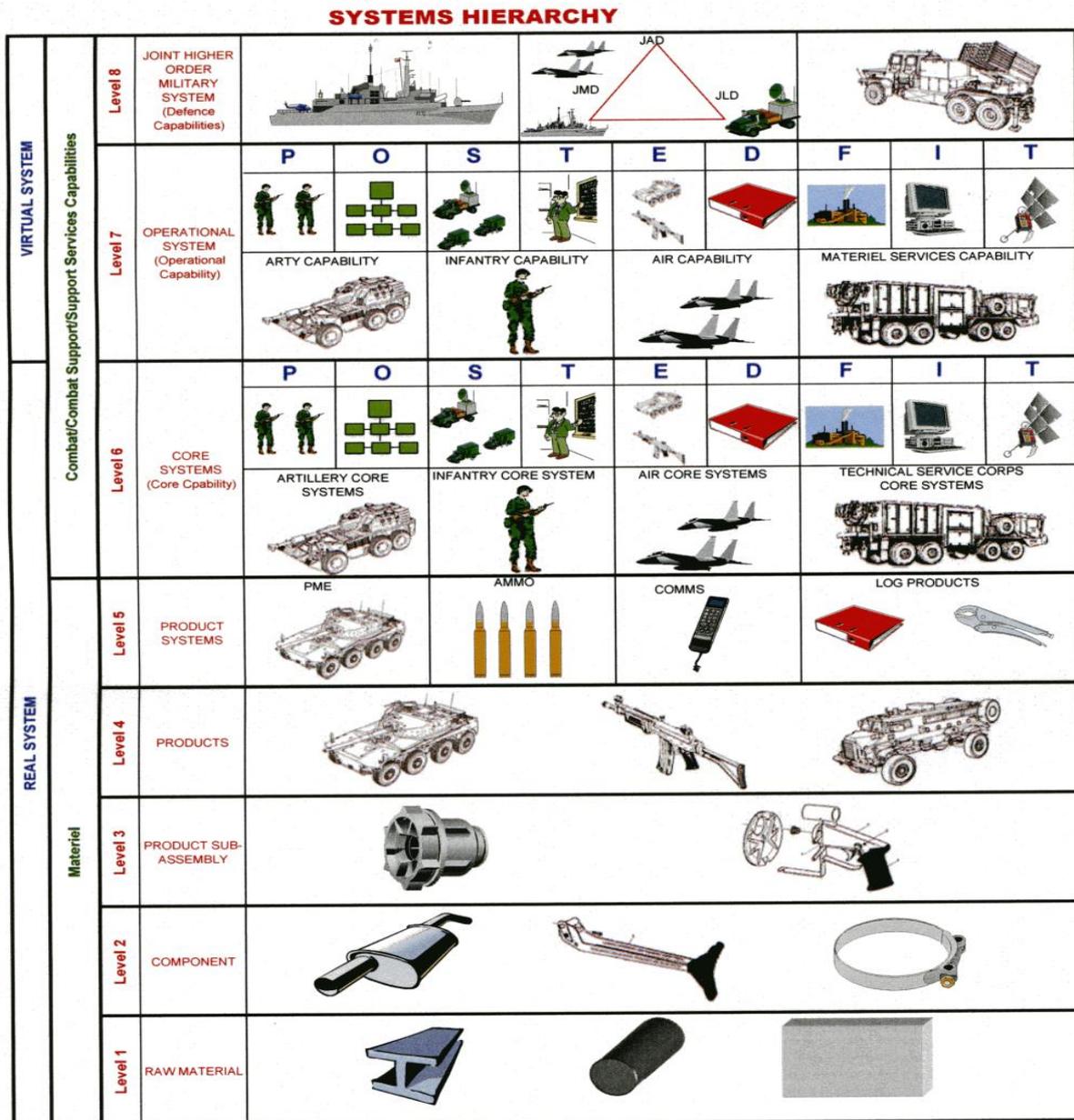


Figure 1: Systems Hierarchy

Defence Capability Management Concept

The definition of capability management differs from country to country yet it has the same underlying meaning. According to the American Defence Force Directive 7045.20 (2008), a capability is defined as, “The ability to achieve a desired effect under specified standards and conditions through a combination of means and ways across doctrine, organisation, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) to perform a set of tasks to execute a specified course of action”.

According to the Australian Defence Force Defence Capability Development Handbook (2014:05), the term capability is defined as “The power to achieve a desired operational effect in a nominated environment, within a specified time, and to sustain that effect for a designated period. Capability is generated by fundamental inputs to capability (FIC) comprising: organisation, personnel, collective training, major systems, supplies, facilities and training areas, support, command and management”.

According to Shalders (2002:01), a capability is delivered by systems that have the following fundamental inputs:

- people;
- organisation;
- doctrine;
- collective training;
- materiel, including major platforms, combat systems and supplies;
- facilities;
- through life support; and
- Command and management.

Shalders (2002) further explains that capability systems have life cycles which begin with the identification of the need to reduce a current or prospective capability gap.

One of the greatest challenges of capability management is achieving the best balance between allocating finance to maintain current capability and investing in future capability. To achieve this, it is essential to have a clear understanding of the nature of the strategic and operational tasks that the SANDF might have to perform in both the immediate future and the longer term, out to about 10 years or more.

Capability development

According to Jones (2012:05), the aim of Capability Development is to develop and maintain the most operationally effective and cost-efficient mix of capabilities required to achieve Government’s strategic objectives. Jones further addresses the following key views that provide the basis of Defence’s approach to Capability Development:

- Discipline.
- Choice.
- Time.
- Joint and Whole-of-Government.
- Collaboration and transparency.
- Executable and sustainable
- Security and diversity of supply.
- Risk managed.
- Value for money.
- Documented decisions

Military strategic capabilities

According to South African DOD Instruction DAP 1000 (2003:12), missions that will enable the SANDF to achieve the Military Strategic Objectives (ends) were prioritised and divided into three capability groupings. As these missions are considered to be capability drivers, each capability's contribution to the successful execution of each mission was considered, taking the priority of each mission into account. This constitutes the means of the Military Strategy.

There are four broad categories of joint strategic capabilities within a single force, which are as follows:

- C4I3RS (command, control, communications, computers, intelligence, information, infrastructure, reconnaissance and surveillance);
- Light Mobile;
- Conventional Warfare; and
- Support.

Defence strategic objectives

In order to ensure that the strategies described above are executed, the DOD identified seven strategic objectives during the transformation process:

- The execution of Defence commitments as ordered;
- The provision of contingency ready and cost effective Defence capabilities as specified by approved policy;
- The administration of the DOD within the prescripts of the law and government policy;
- The assurance of sustainability, continuous improvement of output quality and the reduction of the cost of DOD processes as well as the accounting thereof;

- The assurance of the continuous quality improvement of people in the DOD;
- The assurance of quality command and management information in the DOD; and
- The assurance of continuous quality improvement of SANDF equipment and facilities.

The appropriate communication is lacking within the project management domain in the DOD owing to the hierarchical structures, roles and responsibilities not being clearly defined and to individuals working in total isolation and even being geographically isolated at times.

International Trends for Capability Management in Defence Organisations

The process to develop and deliver a weapon system and then to operate, maintain and support it through its life cycle is an extremely lengthy one. This unique process involves three main role players, each with his/her role and responsibility. To understand the complexity of the problem, it is important to understand that this whole process involves the following role players and activities:

- When a capability shortcoming is identified, the requirement is registered and forwarded to Defence Matériel Division, where the formal acquisition process is initiated to develop and/or acquire such a capability. This process is driven by the Project Officer (PO).
- Once the product or weapon system has been tested and evaluated, the weapon system is handed over to the User System Manager (USM), who is now responsible for taking it into service for operational use.
- The Product System Manager (PSM) is responsible for the life-cycle management (LCM), including maintenance and repairs as necessary.

The project officer makes use of a process known as the DAP 1000 to acquire systems. Once these systems are delivered for use, the USM and PSM use their own management systems to control the use and support of the systems.

According to Csoma and Thal (2011:01), over the last two decades there has been a fundamental shift in the way new products are developed. The traditional approach of a sequential, compartmentalized development process has been replaced by a cross-functional, interdisciplinary approach that focuses on the entire development process and emphasizes communication, speed, teamwork, and alliances across multiple teams and organisations to rapidly deliver products to the customer rapidly. Companies are exploring new ways of harnessing innovative ideas across the organisation to develop, manufacture, and launch products more quickly than the competition. This new paradigm is characterized by the use of cross-functional teams, participation by all stakeholders, strategic planning, globalization, increased reliance on partnerships with other companies, and added emphasis on manufacturing and affordability early in the design process.

Roles and responsibilities in SANDF Capability Management

Acquisition project officer

According to the South African DOD Instruction (DODI/ACQ/00005/2003) (2003:63), when a Service identifies a need, an operational requirement must be registered within the appropriate forums in order to initiate the acquisition of this capability. The Service then further assists the project division in identifying a suitable officer who can be appointed as project officer. The project officer must be appointed as soon as possible, and, to ensure continuity, should remain with the project until its completion. He is to be assisted by functional specialists on a temporary or permanent basis.

Core User System Manager

In general terms, a military system is often defined as follows, “A System is a composite of items, assemblies, skills, and techniques capable of performing and or supporting an operational mission. A complete system includes related facilities, items, material, services and personnel required for its operation to the degree that it can be considered a self-sufficient item in its intended operational and/or support environment”.

Military user systems are generally found on level 6 and 7 of the systems hierarchy and, typically, consist of all the “POSTEDFITB” elements. In the context of the SANDF, the term “weapon system” refers to a product’s system on level 5 of the systems’ hierarchy. A weapon system includes support equipment, spares, supplies, training system, technical data, facilities, etc.

Objectives driven management approach

As derived from the definition, USM is, therefore, an objectives’ driven management approach controlled by the following elements:

- Combat readiness
- User system life-cycle

It can, therefore, be said that the main role of USM is the preparation to meet future operation capabilities, to manage the renewal of outdated capabilities, to sustain current operational capabilities, and to direct the phase-out of capabilities.

Principles of USM

As an important part of capability management, the USM is directed by the following unique principles:

- Systems approach – Integration of products and systems to form user systems;
- Single point of responsibility – Management of combat readiness;
- Team approach – Leader of functional specialists;
- Effective communication – Interaction between various role players;
- Objective driven – Quantitative goals and measurements to determine combat readiness;
- Flexibility – Flexible so as to meet any reasonable contingency;
- Intelligence – Accurate measurement and analysis of combat readiness of user system;
and
- Cost-effectiveness – Combat readiness at the lowest possible cost.

Core Product System Manager

The weapon system that is developed and acquired under DMD must meet the specific capability shortcoming or a new requirement. The User System Manager (USM) is the person responsible for the effective utilization of the weapon system through its life cycle once delivered. Product System Management (PSM) aids the USM in mastering the systems management approach to SANDF equipment over the total life cycle of the equipment. It must, however, be noted that no formal approved military document is available to guide the PSM with his/her roles and responsibilities.

It is the responsibility of the PSM to define the requirements for the creation of the Products System Management System (PSMS). The mission of the PSMS is to provide the means to accomplish PSM objectives successfully.

The Importance of Communication and Structures in Organisations

Communication

According to Blenkinsop and Maddison (2006), a consistent paradigm in human societies is that the communal efforts of the many generally exceed the output of the individual (Johnson, 1754). This premise underpins the team-based structures seen in today's public and private sector organisations, including those within the defence environment. Integrated Project Teams (IPTs) have been successfully used in USA defence acquisition with Pentagon officials recognising that deploying teams of functional experts at the early stages of a project can prevent downstream performance failure, cost escalation and time overruns (Valdez and Kleiner, 1996; Bender, 1998).

According to Knod & Schonberger (2001:613), there are six aspects to effective project management, namely:

- Strategic implications of projects;

- High-performance project teams;
- Project organisational structures;
- Tools and techniques; and
- Continuous improvement in projects.

High-performance project teams

The need for high performance project teams is critical (High performance project teams can be essential, but the need for them cannot be; it is ‘critical’, ‘important’ instead) within the SANDF to ensure success. The concept of teams has always formed the foundation of defence training as a whole. The evolving role of technology has created a greater need for specialist high performance teams working as one.

Project organisational structures

The amount of time people spend on projects compared with working within their functional departments is partly determined by the organisation. The extent of project management emphasis in the organisational structure may be zero to full emphasis. The five structures are listed below:

- Pure functional organisation (No project activity);
- Project coordinator (Short term assignment but no project budget or staff);
- Product/commodity or project engineer (Small amount of dedicated staff with limited budget);
- Autonomous project management team (Consisting of a full team from the functional departments of outside staff support); and
- New business unit (A super project that is established as a separate division or business unit).

Tools and techniques

It is important that an organisation is given the necessary tools and techniques in order to move forward. In the case of the SANDF, the guidance is given through strategies, policies, orders and procedures. In the case of project management within the SANDF, this guidance may be extremely old and outdated and this ultimately affects performance.

Continuous improvement in projects

The condition of its weapon systems, armoury and equipment should be of the finest quality and technology. The fact that South Africa has a smaller budget than other countries makes it

essential to have effective and efficient strategies, structures, processes and good communications within departments and divisions.

Cross functional teams

The SANDF makes use of cross functional teams to execute projects. According to Robbins, Judge, Odendaal & Roodt (2009:246), cross functional teams are an effective means of allowing people from diverse areas within an organisation to exchange information, develop new ideas, and coordinate complex projects, yet it must be noted that these teams are challenging to manage, as achievement is based on trust and teamwork.

Power and Politics

According to Robbins, Judge, Odendaal & Roodt (2009:351), ‘power’ refers to the capacity that a certain individual possesses that influences the behaviour of another individual so that he/she acts in accordance with his/her wishes. It can be noted that leaders use power as a means of attaining group goals, and leaders achieve goals. Power is simply the means to facilitate this achievement.

The SANDF most frequently makes use of legitimate power which in some cases does not promote group cohesion, teamwork and continuous improvement. The communication direction of such leaders in these positions of power is usually that of one way communication.

Organisational structure

According to Robbins, Judge, Odendaal & Roodt (2009:401), an organisational structure defines how job tasks are formally divided, grouped and coordinated. There are six key elements that managers need to address when designing their organisational structure, namely:

- Work specialisation;
- Departmentalisation;
- Chain of command;
- Span of control;
- Centralisation and decentralisation; and
- Formalisation.

The SANDF, as part of the business it is performing, still makes use of the chain of command type structure. In most cases this structure is required to warrant authority and the unity of command, which highlights individual accountability and responsibility.

Core User System Manager

The Signal USM resides under the SA Army Signal Formation operations segment and is situated at the Wonderboom Military Base in Pretoria. The Senior Staff Officer Operations (SSO Ops) is generally known as the USM or capability manager for the specific core, in this case the South African Signals Core (SASC).

Core Product System Manager

The Directorate Army Product System Management resides under the Chief Army Force Structure and is situated at the Army HQ in Pretoria. The figure below shows the high level structure of the SA Army Force Structure.

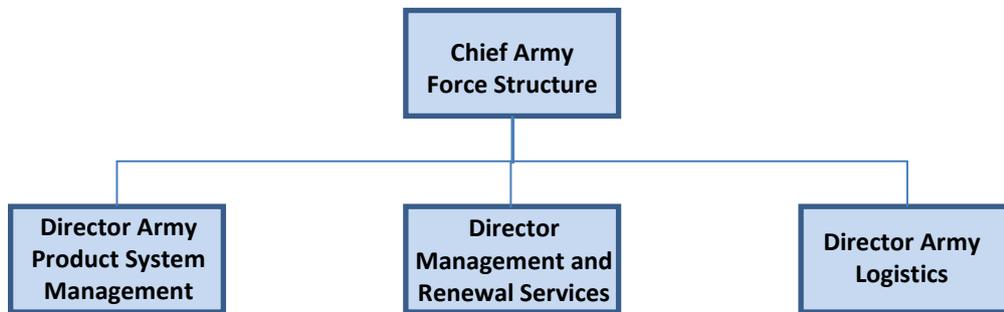


Figure 2: SA Army Force Structure

The Signal PSM resides under the Directorate Army Product Systems segment. The figure below shows the high level structure of the PSM.



Figure 3: SA Army Directorate Army PSM Structure

Capability life cycle management involves three main role players who are not situated together and have minimal communication. Using the SACS as an example, the current capabilities are old and outdated with weapon systems dating back to the 70's and 80's. In terms of resource capability, the current members occupying these posts have little to no experience in the development, integration and lifecycle management of weapon systems mainly due to the DOD's policy on staff promotion/rotation.

Research Question

The research question forming the crux of this research study is as follows, “Can the current process for acquiring, integrating and implementing new weapon systems be streamlined and communication improved in order to ensure effective operational capabilities, so allowing the DOD to fulfil its mandate successfully?”

RESEARCH METHODOLOGY

Within the SANDF, the research environment will be limited to the specialists responsible for the acquisition, maintenance, life cycle management and operations of weapon systems. These individuals are commonly known as the Project Officer, USM and PSM. It must be noted that this environment is very small and consists mostly of senior officers, with few junior and warrant officers. Figure 4 below shows the percentages of the various rank groups addressed by this questionnaire. The rank groups that responded to the research questionnaire are as follows:

- Senior Officers – 5
- Junior Officers – 2
- Warrant Officers - 4

Owing to the size of the SANDF, the research focus was the Signal Corps environment, which is structured and operates its weapon systems similarly to the rest of the Services and Divisions. The sampling frame was specifically chosen in order to validate the practicality of the concepts presented here. The risk of bias, which cannot be statistically eliminated, however, is recognised by the author owing to the small number of respondents to the questionnaire. The reliability of the statements (responses) in the questionnaire posted to the sample respondents drawn from the SANDF were tested by using the Cronbach’s Alpha tests. Descriptive statistics were performed on all variables, displaying groups, frequencies, percentages, cumulative frequencies and cumulative percentages. Inferential statistics were performed on the data using the Cronbach’s Alpha test to test internal consistency.

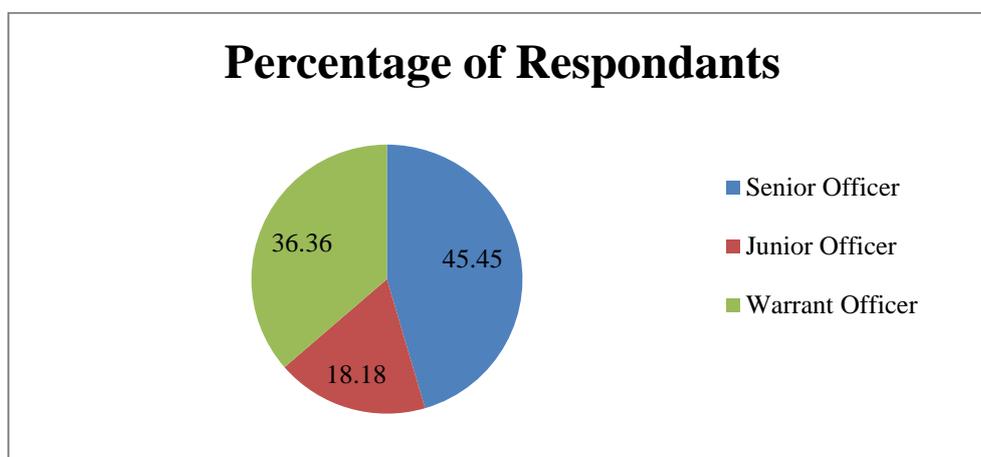


Figure 4: Rank Groups Percentages

RESULTS, ANALYSIS AND DISCUSSION

Reliability testing

The reliability test (Cronbach’s Alpha Coefficient) was executed on all the items (statements) which represent the measuring instrument of the survey with respect to the responses rendered in this questionnaire. The results are represented in Table 1.

Questions		Variable Number	Correlation with total	Cronbach’s Alpha Coefficient
1.	To what extent do you agree that there is suitable, continuous flow and sharing of communication between the various environments in the USM, PSM and Project domains?	V 1.1	1.287	0.757
2.	In your opinion, are the roles and responsibilities within these environments clearly documented and understood ensuring appropriate utilisation of our systems?	V 1.2	0.966	0.653
3.	To what extent do you agree that the current operational capabilities required to fulfil our mandate are maintained and utilised effectively?	V 1.3	0.919	0.510
4.	To what extent do you agree that capability management is executed successfully within our organisational?	V 1.4	1.075	0.793
5.	To what extent do you agree that the DOD is suitably structured to facilitate successful capability management?	V 1.5	0.949	0.923
6.	To what extent do you agree that co-operation and communication between the various role players in your environment is critically essential for success?	V 1.6	0.316	0.425

Questions		Variable Number	Correlation with total	Cronbach's Alpha Coefficient
7.	To what extent do you agree that a dedicated person or section responsible for the total capability management is present within your environment?	V 1.7	1.838	0.558
8.	To what extent do you agree that capability management should be re-structured to promote cohesion and success?	V 1.8	0.949	0.720
9.	To what extent do you agree that there is good communication between CJ OPS and your environment?	V 1.9	0.876	0.971
10	To what extent do you agree that you experience constraints that influence your job performance?	V 1.10	0.876	0.781
11.	To what extent do you agree that certain changes are required within your environment to promote effective use of personnel, budget and equipment?	V 1.11	0.919	1.000
12	To what extent do you agree that your environment is fulfilling its goals and contributing to ensure that the mandate of the SANDF is fulfilled?	V 1.12	1.252	0.818
Cronbach's Coefficient Alpha for standardised variable				1.018
Cronbach's Coefficient Alpha for raw variables				0.742

Table 1: Reliability Test Results

Descriptive statistics

Table 2 below shows the descriptive statistics for all the variables in the questionnaire for the SANDF with the frequencies in each category and the percentage out of the total number of

respondents. It is of importance to note that the descriptive statistics are based on the total sample.

Questions		Categories	Frequency	Percentage of total
1	To what extent do you agree that there is suitable, continuous flow and sharing of communication between the various environments in the USM, PSM and Project domains?	Strongly disagree	1	9.09%
		Disagree	5	45.45%
		Uncertain	1	9.09%
		Agree	3	27.27%
		Strongly agree	1	9.09%
2	In your opinion, are the roles and responsibilities within these environments clearly documented and understood ensuring appropriate utilisation of our systems?	Yes	3	27.27%
		No	8	72.73%
		Don't Know	0	0.00%
3	To what extent do you agree that the current operational capabilities required to fulfil our mandate are maintained and utilised effectively?	Strongly disagree	0	0.00%
		Disagree	5	45.45%
		Uncertain	2	18.18%
		Agree	4	36.36%
		Strongly agree	0	0.00%
4	To what extent do you agree that capability management is executed successfully within our organisational?	Strongly disagree	0	0.00%
		Disagree	8	72.73%
		Uncertain	1	9.09%
		Agree	1	9.09%
		Strongly agree	1	9.09%
5	To what extent do you agree that the DOD is suitably structured to facilitate successful capability management?	Strongly disagree	2	18.18%
		Disagree	3	27.27%
		Uncertain	4	36.36%
		Agree	2	18.18%
		Strongly agree	0	0.00%
6	To what extent do you agree that co-operation and communication between the various role players in your environment is critically essential for success?	Strongly disagree	0	0.00%
		Disagree	0	0.00%
		Uncertain	0	0.00%
		Agree	1	9.09%
		Strongly agree	10	90.91%

7	To what extent do you agree that a dedicated person or section responsible for the total capability management is present within your environment?	Disagree	3	27.27%
		Uncertain	2	18.18%
		Agree	6	54.55%
8	To what extent do you agree that capability management should be re-structured to promote cohesion and success?	Strongly disagree	0	0.00%
		Disagree	2	18.18%
		Uncertain	0	0.00%
		Agree	4	36.36%
		Strongly agree	5	45.45%
9	To what extent do you agree that there is good communication between CJ OPS and your environment?	Strongly disagree	3	27.27%
		Disagree	6	54.55%
		Uncertain	1	9.09%
		Agree	1	9.09%
		Strongly agree	0	0.00%
10	To what extent do you agree that you experience constraints that influence your job performance?	Strongly disagree	0	0.00%
		Disagree	1	9.09%
		Uncertain	0	0.00%
		Agree	7	63.64%
		Strongly agree	3	27.27%
11	To what extent do you agree that certain changes are required within your environment to promote effective use of personnel, budget and equipment?	Strongly disagree	0	0.00%
		Disagree	1	9.09%
		Uncertain	0	0.00%
		Agree	5	45.45%
		Strongly agree	5	45.45%
12	To what extent do you agree that your environment is fulfilling its goals and contributing to ensure the mandate of the SANDF is fulfilled?	Strongly disagree	0	0.00%
		Disagree	4	36.36%
		Uncertain	1	9.09%
		Agree	3	27.27%
		Strongly agree	3	27.27%

Table 2: Descriptive Statistics

Uni-variate graphs

The interpretation of results is that an average of lower than 3.0 can be seen as a “disagreement” with the statement or question, whereas an average above 3.0 is seen as an “agreement” with the statement or question. The averages per question are displayed below.

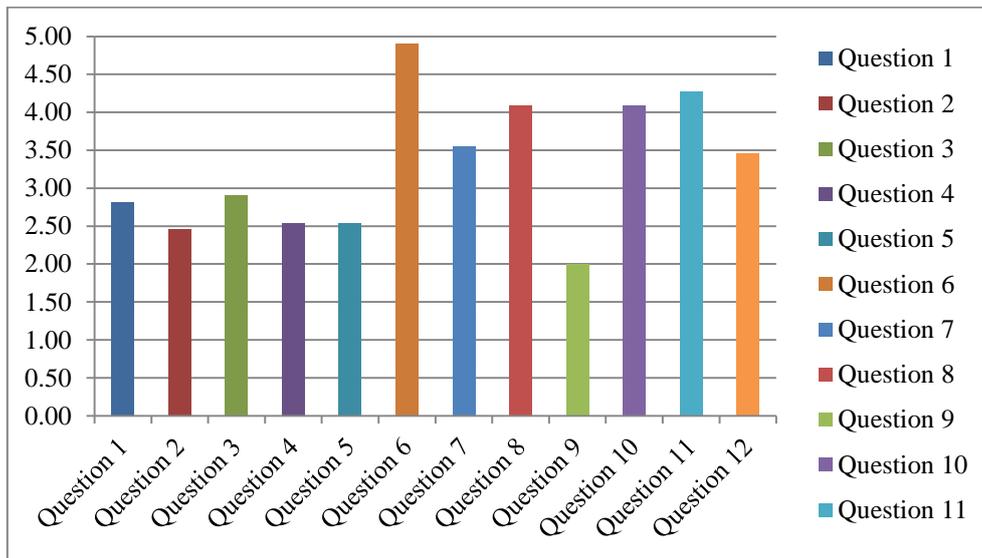


Figure 5: Questionnaire Averages. (Source: Own source).

Question 1 of Research Questionnaire

“To what extent do you agree that there is suitable, continuous flow and sharing of communication between the various environments in the USM, PSM and Project domains?”

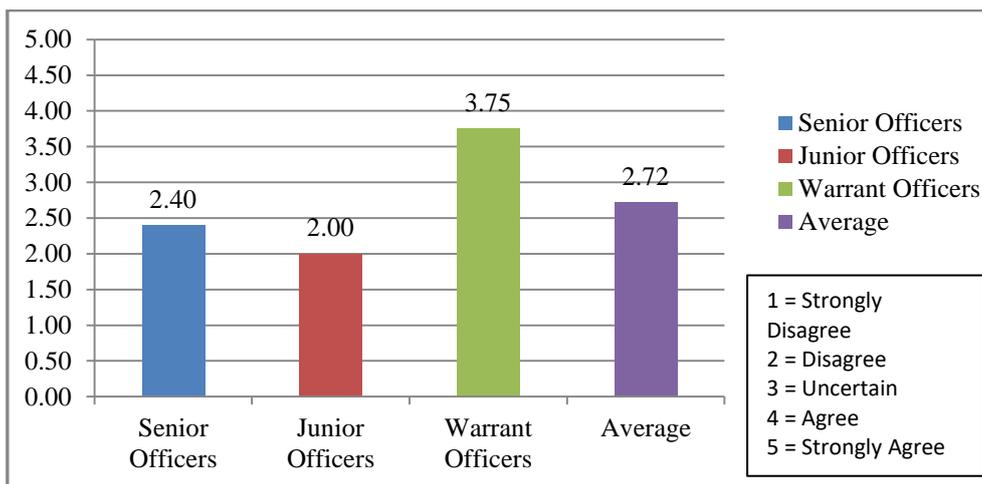


Figure 6: Combined Responses to Question 1.

Conclusion to Question 1. According to Ravi and More (2010:37), communication throughout the acquisition process plays a crucial role in its eventual success. It can be seen that the respondents mostly disagree with the statement that there is suitable and continuous flow and

sharing of information between the various environments. The warrant officers play more of a supportive role to the officers and, thus, do not have day-to-day communication with all the applicable environments which is contrary to the requirements as is expected from Ravi and Moore (2010).

Question 2 of Research Questionnaire

“In your opinion, are the roles and responsibilities within these environments clearly documented and understood, ensuring appropriate utilisation of our systems?”

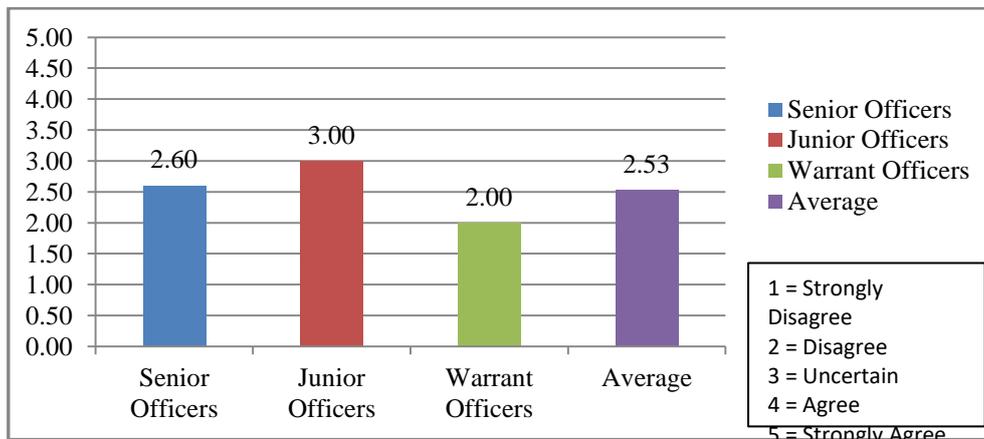


Figure 7: Combined Responses to Question 2.

Conclusion to Question 2. Unclear roles and responsibilities, poor communication and coordination, and lack of understanding of processes were the common themes throughout the study of Csoma and Thal (2011:05). It is clear from the responses that the roles and responsibilities within these environments are not clearly documented and, in some cases, do not even exist. Because of the physical separation in reporting structures, co-operation within these environments is demanding thus supporting the notion of Cosmo and Thai (2011).

Question 3 of Research Questionnaire

“To what extent do you agree that the current operational capabilities required to fulfil our mandate are maintained and utilised effectively?”

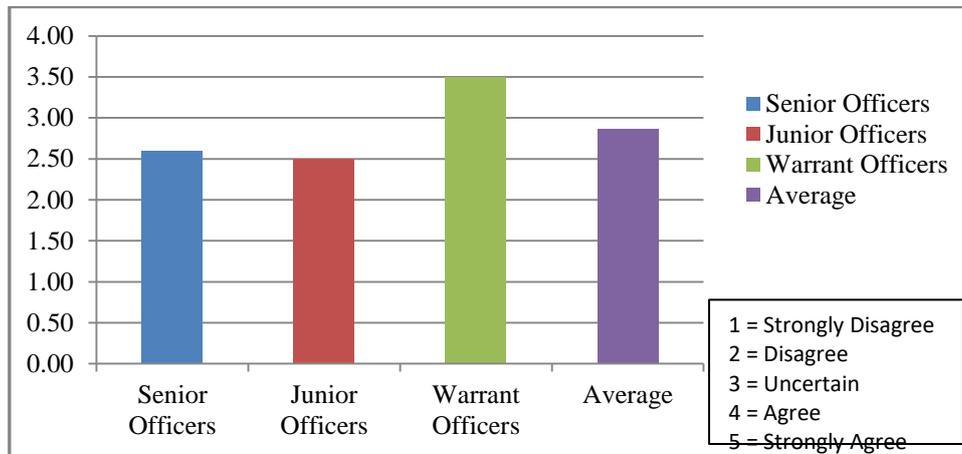


Figure 8: Combined Responses to Question 3.

Conclusion to Question 3. According to Shalders (2002:01), a capability is delivered by systems that have fundamental inputs around specific resources. Most responses disagree that the current operational capabilities required by the SANDF are maintained and utilised effectively thus the SANDF would not be in a position to fulfil its capability mandate.

Question 4 of Research Questionnaire

“To what extent do you agree that capability management is executed successfully within our organisation?”

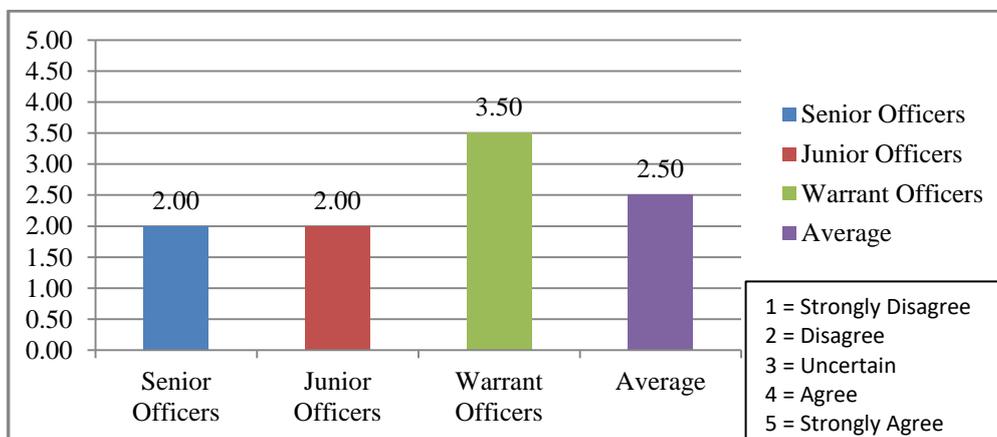


Figure 9: Combined Responses to Question 4.

Conclusion to Question 4. According to Jones (2012:05), the aim of Capability Development is to develop and maintain the most **operationally effective** and **cost-efficient** mix of capabilities required to achieve Government’s strategic objectives. It is clear that respondents disagree with the statement that capability management is executed successfully within the organisation thus not complying with the requirements as per the literature. .

Question 5 of Research Questionnaire

“To what extent do you agree that the DOD is suitably structured to facilitate successful capability management?”

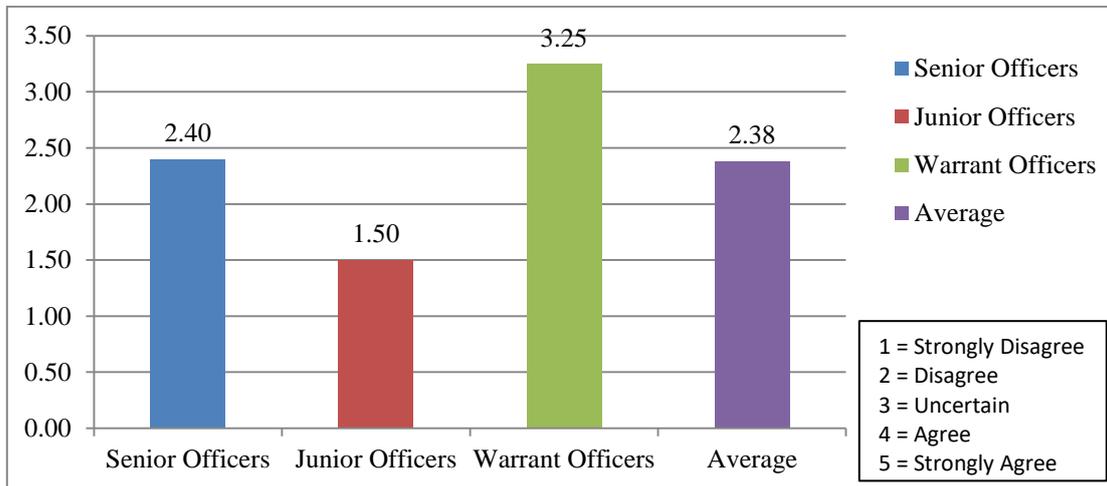


Figure 10: Combined Responses to Question 5.

Conclusion to Question 5. According to South African DOD Instruction DAP 1000 (2003:12), missions that will enable the SANDF to achieve the Military Strategic Objectives (ends) were prioritised and divided into three capability groupings. Most respondents were uncertain with regards to this question. The main reason, I believe, that they were uncertain as to whether the DOD is suitably structured to facilitate successful capability management was due to the fact that the respondents are not really aware of how capability management should be structured.

Question 6 of Research Questionnaire

“To what extent do you agree that co-operation and communication between the various role players in your environment is critically essential for success?”

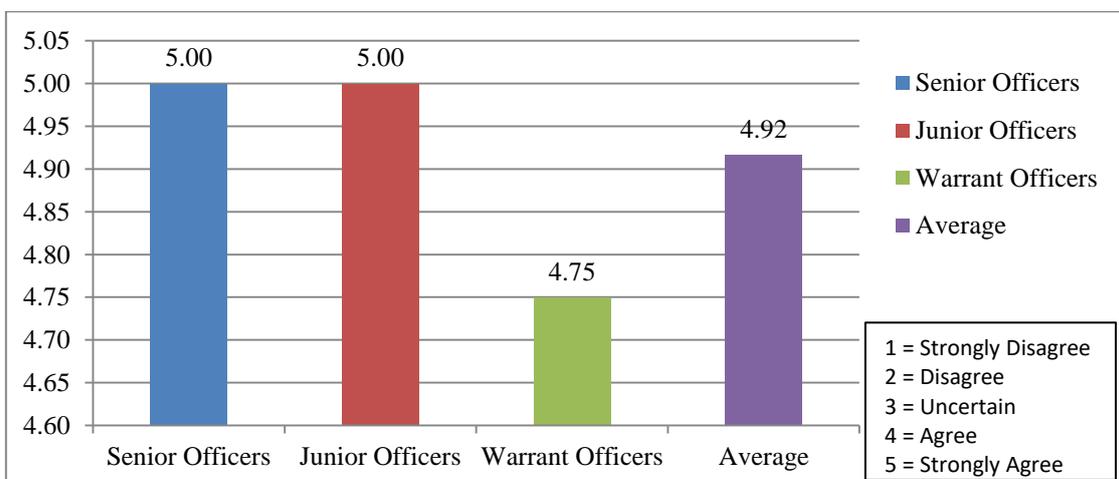


Figure 11: Combined Responses to Question 6.

Conclusion to Question 6. Unclear roles and responsibilities, poor communication and coordination, and a lack of understanding of processes were the common themes throughout the study of Csoma and Thal (2011:05). The primary reason for transitioning immature technologies is a breakdown in communication between key players in the development and transition process. The responses speak for themselves. Almost all responses strongly agree that co-operation and communication between the applicable role players is critically essential to ensure success thus supporting the notion in literature.

Question 7 of Research Questionnaire

“To what extent do you agree that a dedicated person or section responsible for the total capability management is present within your environment?”

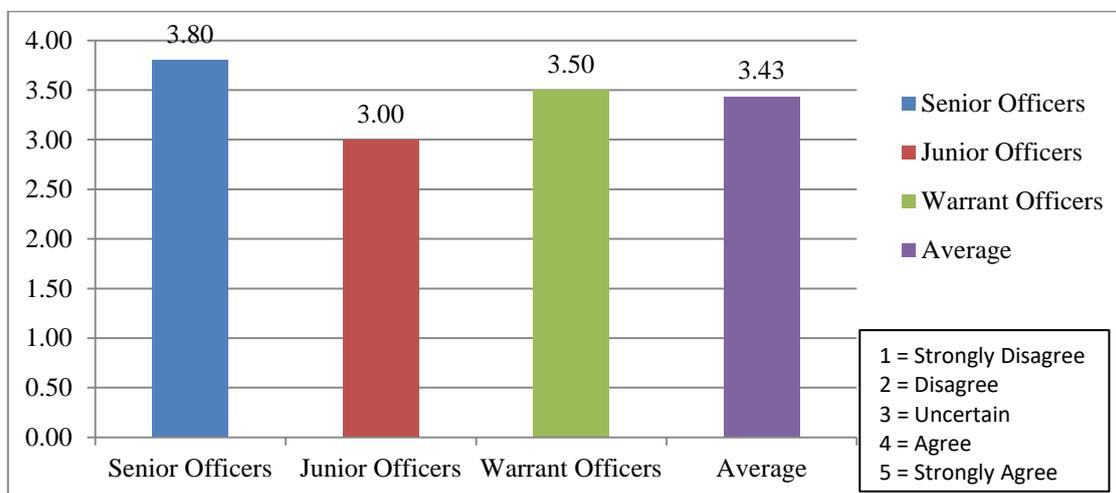


Figure 12: Combined Responses to Question 7.

Conclusion to Question 7. In the study done by Csoma and Thal (2011:11), a few questions were raised to address technology transition and specifically the individual responsible for ensuring the successful implementation of systems, which is discussed below. Most respondents agree that a dedicated person or section responsible for the total capability management is present within their environment. The term ‘total capability management’, however, is, not clearly understood by all. This can be confirmed when looking at the various structures within the applicable environments where it can be seen that no such provision is made for this thus not supporting the notion that a single point of responsibility is needed.

Question 8 of Research Questionnaire

“To what extent do you agree that capability management should be re-structured to promote cohesion and success?”

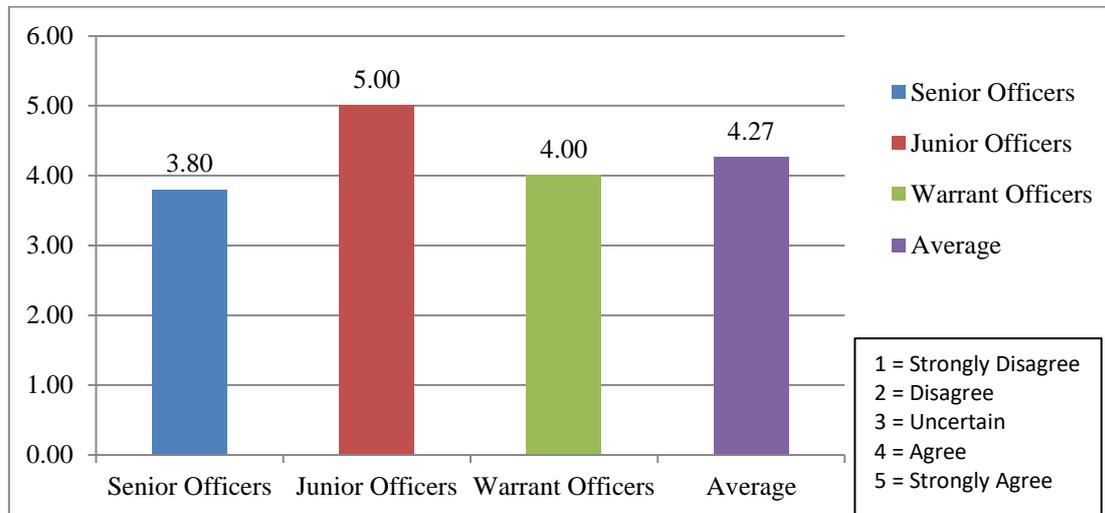


Figure 13: Combined Responses to Question 8.

Conclusion to Question 8. According to Robbins, Judge, Odendaal & Roodt (2009:401), an organisational structure defines how job tasks are formally divided, grouped and coordinated. Most respondents strongly agree that capability management should be re-structured to promote cohesion and success indicative of the organisation not functioning at optimal level thus not complying to the requirements of Robbins et al (2009)

Question 9 of Research Questionnaire

“To what extent do you agree that there is good communication between CJ OPS and your environment?”

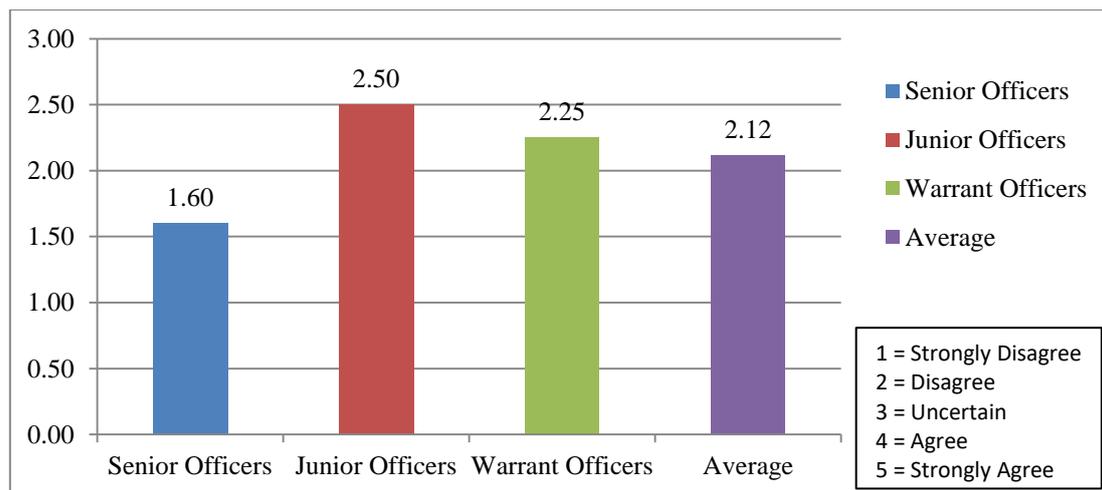


Figure 14: Combined Responses to Question 9.

Conclusion to Question 9. According to Robbins, Judge, Odendaal & Roodt (2009:351), ‘power’ refers to the capacity that a certain individual possesses that influences the behaviour of another individual so that he/she acts in accordance with his/her wishes. Most respondents disagree that good communication is experienced between CJ OPS and their specific environment which is contributable to the SANDF structures of command and thus not conforming to the literature as per Robbins et al (2009).

Question 10 of Research Questionnaire

“To what extent do you agree that you experience constraints that influence your job performance?”

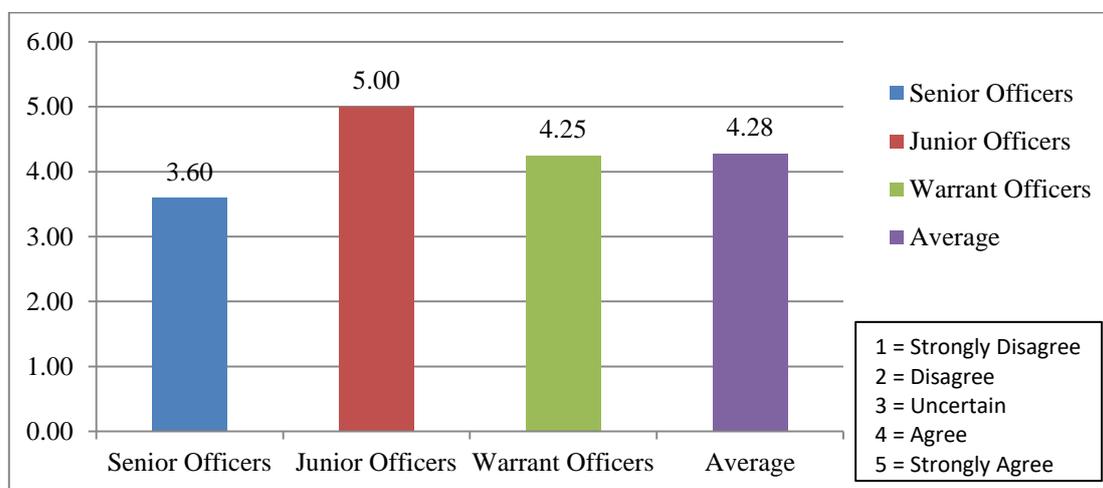


Figure 15: Combined Responses to Question 10.

Conclusion to Question 10. According to Robbins, Judge, Odendaal & Roodt (2009:246), cross functional teams are an effective means of allowing people from diverse areas within an organisation to exchange information, develop new ideas. Most respondents agree that they experience constraints that influence their job performance. These constraints could be due to structural, communication or procedural issues and is contrary to what is suggested by Robbins et al (2009).

Question 11 of Research Questionnaire

“To what extent do you agree that certain changes are required within your environment to promote effective use of personnel, budget and equipment?”

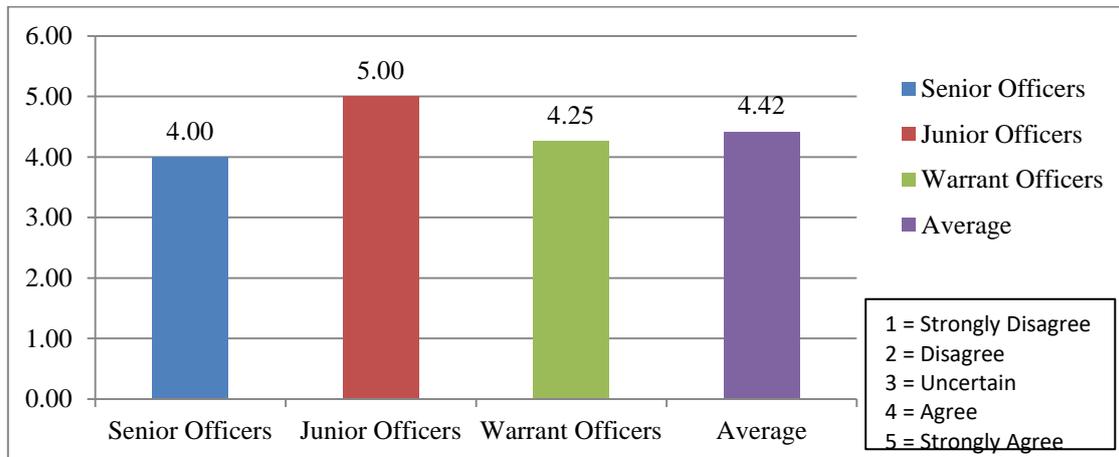


Figure 16: Combined Responses to Question 11.

Conclusion to Question 11. According to Knod & Schonberger (2001:613), there are six aspects to effective project management, namely strategic implications of projects; high-performance project teams, project organisational structures, tools and techniques; and Continuous improvement in projects. Most respondents agree that certain changes are required within their applicable environments to promote effective use of personnel, budget and equipment thus supporting the notion of Knod et al (2001).

Question 12 of Research Questionnaire

“To what extent do you agree that your environment is fulfilling its goals and contributing to ensure the mandate of the SANDF is fulfilled?”

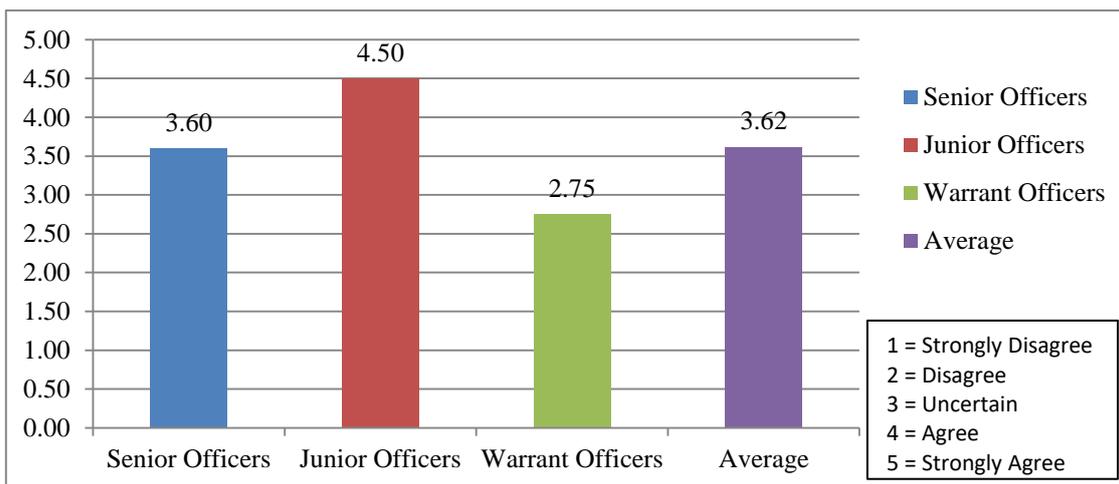


Figure 17: Combined Responses to Question 12.

Conclusion to Question 12. This question revealed members who agree and those who disagree with its content. Although members feel obligated to respond ‘agree’ in order to make

themselves feel that they are contributing, the previous opinions confirmed that the SANDF is struggling to meet all its objectives owing to inadequate weapon systems.

RESEARCH FINDINGS

The key research findings identified through this research can be summarised as follows:

- There is not a sufficient flow of communication and sharing of information between the applicable environments;
- Roles and responsibilities are not clearly documented and in some cases do not even exist;
- The physical and geographical separation of the environments places further pressure on communication;
- The current operational capabilities required by the SANDF are not maintained and utilised effectively;
- Capability management is not executed successfully within the DOD;
- The DOD requires re-structuring to facilitate successful capability management;
- Co-operation and communication among the applicable role players is critically essential to ensure success;
- A dedicated person or section is required to manage the various capabilities;
- There are structural, communication and procedural issues that hamper performance;
- Certain changes are required within the applicable environments to promote the effective use of personnel, budget and equipment; and
- The SANDF is struggling to meet and satisfy all its objectives owing to its having inadequate weapon systems.

RECOMMENDATIONS

The following recommendations are made based on the research:

- Lack of Capability Manager/Technology Specialist - The Capability Manager is fundamentally important for the management and the effective and efficient use of the applicable capability throughout the life cycle of the applicable system. This includes the technology transition of new systems into operational use (POSTEDFITB Elements);
- Life cycle management of these systems (Involves all maintenance and repair tasks);

- The issuing and deployment of systems;
 - Scheduling of mid-life upgrades and improvements to systems;
 - Re-placement of old and outdated systems;
 - Facilitation in the development of new systems; and
 - Alignment of capabilities to support DOD mandate.
- Each applicable SANDF Service and Division should have a Chief Capability Manager responsible for its core functions or capabilities, and there should be an applicable Capability Manager reporting to him/her.
 - The main focus within this environment is the transition from weapon systems management towards capability management.

The need for a Capability Centre of Excellence

The Defence Materiel Division (DMD) is responsible for the directing and co-ordinating of all acquisition and procurement activities and serves as the nodal point between Services and Armaments Corporation of South Africa (Armscor). The Chief DMD is also the chief policy advisor to the Secretary for Defence as the Accounting Officer.

It is recommended that a Capability Centre of Excellence be established at DMD in order to manage and facilitate capabilities for the DOD and SANDF.

This Capability Centre of Excellence must be managed by the Chief Capability Manager who maps the applicable capabilities to the strategic direction of the SANDF. The figure below shows the proposed structure of the Centre of Excellence making use of cross-functional teams.

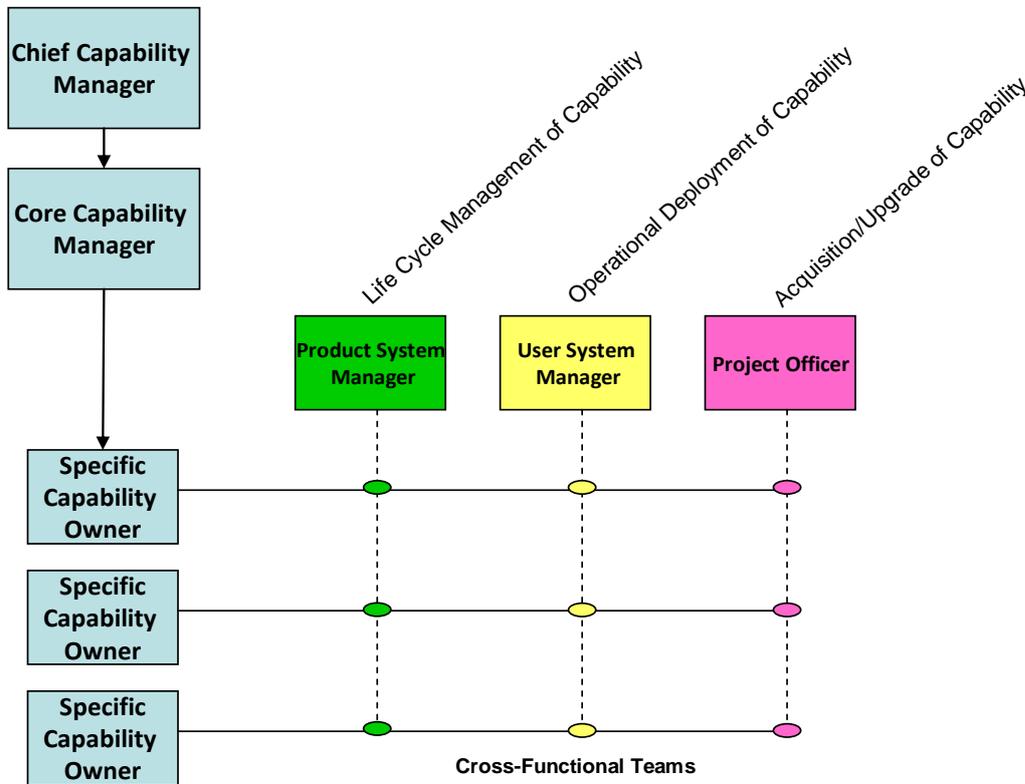


Figure 21: Proposed Structure of the Centre of Excellence.

The applicable Capability Owners are, therefore, responsible for writing the Project Management Plan (PMP) which addresses the short, medium and long term planning to develop, acquire, operate and maintain the capability.

Core Team Concept

As the leader in capability management, the DMD with its Chief Capability Manager should make use of cross-functional teams that cover the various roles within each core capability. Appointed representatives within every capability looking at PSM, USM and Acquisition activities are to be included in an integrated project team working closely together with effective and efficient communications among them.

CONCLUSIONS

In terms of the literature review, the key conclusion emphasized the shortcomings in communications and structures supporting effective capability management in the SANDF.

Although the three main role players performing the various functions within capability management exist, they are structured independently and work in relative isolation from one another. The roles and functions within each environment are not visible to all, resulting in a disjointed effort.

The importance of good communication and defined processes is a critical success factor for ensuring successful capability management. Efforts to address this are, however, severely hampered by the way the DOD is currently structured.

The recommendations of this study clearly suggest the re-structuring of applicable departments to facilitate capability management as a combined effort in the long term. Short and medium term solutions should, however, address a change in the approach and processes required to improve communication within the applicable environments.

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