

**IDENTIFICATION AND DESIGN**

Of

**PERFORMANCE MEASURES AND DRIVERS**

for a

**LOGISTICS SERVICE PROVIDER**

by

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## EXECUTIVE SUMMARY

The aim of this document is to review different engineering methods that can be used to identify performance drivers, measures and processes and as a result align the most key performance drivers of the IMPERIAL companies with Nampak Tissue's key performance drivers.

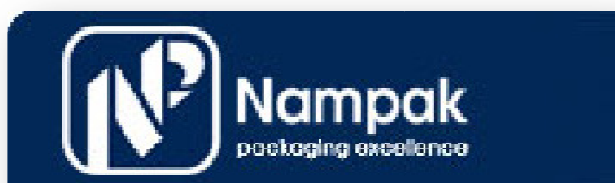
According to Kanji (2002) effective management of a company depends on how effectively performance is measured. As a result it is necessary to develop and implement a system for performance measurement.

IMPERIAL Logistics is a logistics and supply chain management service provider (LSP) based in South Africa. IMPERIAL Logistics focus not only on warehousing, distribution and transportation but also on improving services, value adding, reducing costs and exceeding their clients' expectations in the supply chain environment.

In a fragmented supply chain such as IMPERIAL Logistics and Nampak it is of great importance to align each company in the supply chain according to its key performance drivers and measurements. It is essential that the aligned companies share common goals and visions to ensure optimal satisfaction of each company.

The Balanced Scorecard creates a cause and effect relationship between measures from each of the four perspectives, namely: the learning and growth perspective, internal business process perspective, the customer perspective and the financial perspective; it can also be used as a strategic management system or as a communication tool in the organization. For each of the strategic objectives identified, measures will be created. The final stage will consist of aligning the key drivers of the IMPERIAL companies with Nampak's drivers.

In conclusion this project has analyzed and used the Balanced Scorecard method to identify the key performance drivers of each company, created measures for each performance driver and as a result create a performance measurement system.



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# **Chapter 1: Introduction and Background**

## **1.1 Introduction:**

IMPERIAL Logistics is a logistics and supply chain management service provider (LSP) based in South Africa and consist of FOUR divisions: Transportation and Warehousing, Specialised Freight, Integration Services, Support Services and Consumer Products. IMPERIAL Logistics is one of three divisions of the IMPERIAL Holdings Group.

The consumer products division of IMPERIAL Logistics provides logistics and supply chain management solutions through offering primary and secondary transportation, distribution, selling and merchandising services of foods and goods.

IMPERIAL Logistics focus not only on warehousing, distribution and transportation but also on improving services, value adding, reducing costs and exceeding their clients' expectations in the supply chain environment.

Supply chain management plays an important role in increasing an organisation's effectiveness, competitiveness, profitability and customer care (De Witt et al.2001). A key point to improving logistics excellence in a supply chain is the structured and continuous measurements of logistics process performance. (Bullinger et al.2002).

For a logistics service provider such as IMPERIAL Logistics, identifying the key performance drivers in a company plays an important role. These performance drivers are used to create measures in a supply chain environment. These measures should focus on the internal functions as well as the overall performance of the company. Aligning and integrating these measures play a critical role in supply chain management. (Holmberg, 2000)

In a service driven industry, customer satisfaction is crucial. A LSP must focus on operational and technical excellence. Each company has a unique set of requirements that need to be met. Logistics service providers specialize in integrated operation, warehousing and transportation services that can be customized to customer's needs based on market conditions, demands and the delivery system requirements for their products.

IMPERIAL Logistics have various clients, but for this project, we will only look at Nampak Tissue. Nampak Tissue caters to the following industry sectors: Commercial and Industrial environment, Catering and Leisure, Resellers, Education, Healthcare and Hygiene & Cleaning. Brands include: Twinsaver, Twinsaver Luxury, Lifestyle, Cuddlers and Hulett's foil. (<http://www.nampak.com/>) Nampak Tissue works with 3 IMPERIAL companies: IMPERIAL Distribution, IMPERIAL Cargo and IMPERIAL Cargo Solutions.

IMPERIAL Distribution and Transport specializes in distribution and warehousing. They provide the following services:  
(<http://www.imperialdistribution.co.za/asp/documents.asp?ParentID=201>)

- Freight Forwarding and Clearing Management
- Import Container Distribution
- Primary Freight Management
- Complete Warehousing Management
- Inventory Management
- Dispatch Management
- Risk and Incident Management
- Secondary Distribution Management
- Specialized Fleet Design
- Merchandise Management
- 4PL Management
- SLA Management
- KPI Management

IMPERIAL Cargo specializes in the following core logistics activities namely:

- Warehousing Management
- General Warehousing
- Inventory Management
- Local Distribution
- Line-haul Distribution
- Contract Distribution
- Specialized Warehousing and Distribution Solutions

## **1.2 Project Aim:**

The aim of this project is to identify and design key performance drivers, measures and processes in a fragmented supply chain environment. As a result align the applicable IMPERIAL companies' performance drivers with Nampak Tissue's drivers.

## **1.3 Project Scope:**

Firstly research will be done on existing performance measures and frameworks, analyzing supply chains and implementing supply chain management methodologies developed for a fragmented supply chain environment.

Then an analysis of the fragmented supply chain will be done. By collecting data from Nampak, IMPERIAL Distributions, IMPERIAL Cargo and IMPERIAL Cargo Solutions, the key process drivers for each company will be identified. Next performance measurements will be created for each process driver identified. Then the performance drivers of the IMPERIAL companies will be aligned with the performance drivers of Nampak Tissue.

The final stage of the project will consist of building performance frameworks and then developing performance measurement systems applicable to Nampak Tissue.

This project will exclude the actual implementation in Nampak but will include comparing results against Nampak's goals and current methods.

## **1.4 Deliverables:**

- Overview of existing performance models
- Summary of data given by Nampak and relevant IMPERIAL companies
- Key performance drivers applicable to Nampak and relevant IMPERIAL companies
- Measurements applicable to Nampak and IMPERIAL companies
- Processes and frameworks for performance measurement systems
- Alignment of measurements and performance drivers
- General frameworks relevant to Nampak and IMPERIAL companies
- Performance models
- Assessing performance models in accordance with Nampak's goals
- Aligning applicable IMPERIAL companies with Nampak according to key performance drivers identified.

## **1.5 Problem Definition:**

### **1.5.1 As-Is of the companies:**

Currently the only performance measures applied in the companies is financial measures. According to Tangen (2004) performance measurement systems consisting of financial measures cause several problems in the company such as:

- Excessive use of ROI may conflict with the strategic objectives
- May pressure managers for short-term results and discourage improvement
- Financial measures are focused on controlling processes in isolation rather than the company as a whole
- Financial measures are not directly linked to the manufacturing strategy
- Financial measures do not penalize over production and precisely identify the cost of quality

In summary the current performance measurement system consist of measures, inefficient to use in determining the status of the organization's processes. Thus there is a need for performance measures which reflect the entire organization's strategic objectives.

Faced with plans for business growth, IMPERIAL Logistics needs to align the key performance drivers of the applicable IMPERIAL companies with Nampak Tissue. This is part of a continuous process evaluation and improvement program.

## **Chapter 2: Literature Review:**

### **2.1 Introduction:**

Performance measurement can be seen as framework of how effective and efficient a task can be accomplished in relation to how the goal is met (Cheng et al.2002).

Using measurements to support manufacturing operations started in the 19<sup>th</sup> century with Frederick W Taylor. His idea of time and motion studies was used to manage production lines and warehousing operations. Businesses have since changed their supply chains outlook through applying supply chain management methodologies and principles (Larry, 2002).

Implementation of supply chain management principles requires that the internal perspective of the performance measurement should be expanded to include inter-functional and partnership perspectives as well and to avoid looking inward. This can be achieved through integration of the internal functions and external operations of organizations in a supply chain. (Cheng et al. 2002)

Performance measurements consist of five areas (Larry, 2002):

1. Function-based
2. Process-based
3. Cross enterprise
4. Number of measurements applicable
5. Alignment of executive and management level measures

One of the main problems of performance measures are that they are only functionally focused thus each functional area creates its own performance measure which leads to conflicting goals throughout the organization. By combining function-based measures with process based measures, the focus will be more on the overall performance of the process (Larry, 2002).

Goals for each measurement need to be established. Methods consisting of historically based goals, external and internal benchmarks and theoretical goals can be used to decide on the appropriate performance goals.

Methods available to measure supply chains performance (Larry, 2002):

- Balanced Scorecard
- SCOR model
- Logistics Scoreboard
- Activity-based Costing
- Economic Value Analysis

The following methods will be discussed and analyzed namely: Balanced Scorecard, Strategy Maps, the Performance Prism and the SCOR model.



## **2.2 Performance Measurement systems:**

According to Kanji (2002) effective management depends on how effectively the performance of a company is measured and thus it is necessary to develop and implement a performance measurement system. The most important role of a performance measurement system is to compare progress of the company against its goals. It is important to create a measurement system which can be used as a motivational tool.

Traditionally performance measures focused only on the financial perspective of a company. Since these measures were based on return on investment and sales turnover, this resulted into a backward looking focus, instead of focusing on the present and determining what needs to be changed.

According to Kanji (2002) the criteria for the performance measurements are conditioned in the Critical Success Factors of a company and responds to the following determinants namely: customer satisfaction, employees/stakeholders and evaluating the organization's performance.

An organization with exceptional performance will have:

- A positive view of financial growth and profitability
- An expanding customer base
- Favorable view from its stakeholders
- A high level of goals and objectives accomplished

The key drivers to success are:

- Focusing on internal and external customer satisfaction
- Providing employees with training
- Analyzing the organization's key processes
- Implementing continuous improvement

To accomplish this, the following is necessary:

- Defining mission, vision and goals
- Determining a quality strategy
- Coordinating resources to increase financial performance
- Establishing goals to improve customer satisfaction
- Establishing efficient information systems
- Developing human resources and providing opportunity for training
- Motivating continuous improvement

According to Toni and Tonchia (2001), performance measurement systems can be categorized into one of the following categories:

1. Cost and non-cost performance. Here the Activity Based Costing method can be used.
2. Performance measures can be aligned with the objectives of the company. Here the balances scorecard method can be used.
3. Low-level measures developed into key performance indicators. The performance pyramid can be used.

4. Proportional to the Value Chain and the Theory of Constraints method can be used.

The Performance Prism, the SCOR method and the Balanced Scorecard method will be reviewed. All of the abovementioned methodologies are performance measurement systems and the most appropriate method will be selected and used.

### **2.2.1 The Balanced Scorecard:**

According to the [balancedscorecard.org](http://balancedscorecard.org) website, the Balanced Scorecard is a strategic planning and management method that is used to align activities with the mission, vision and strategies of the company and to improve the internal and external communications and monitor the company's performance against its strategic goals.

It was originated by Drs Robert Kaplan and David Norton as a performance management framework that adds non-financial measurements and as result provides a balanced view of the organization's performance.

The scorecard has evolved from its use as a performance framework to a strategic planning and management tool. It provides a framework that helps not only identify measures but also what should be done and how it should be measured.

According to [businessballs.com](http://businessballs.com), to create a Balanced Scorecard, the following information is essential:

- The company's mission
- The company's strategic plan/vision
- The company's financial status

The Balanced Scorecard suggests that the organization can be viewed from 4 perspectives:

- The learning and growth perspective
- Internal business process perspective
- The customer perspective
- Financial perspective

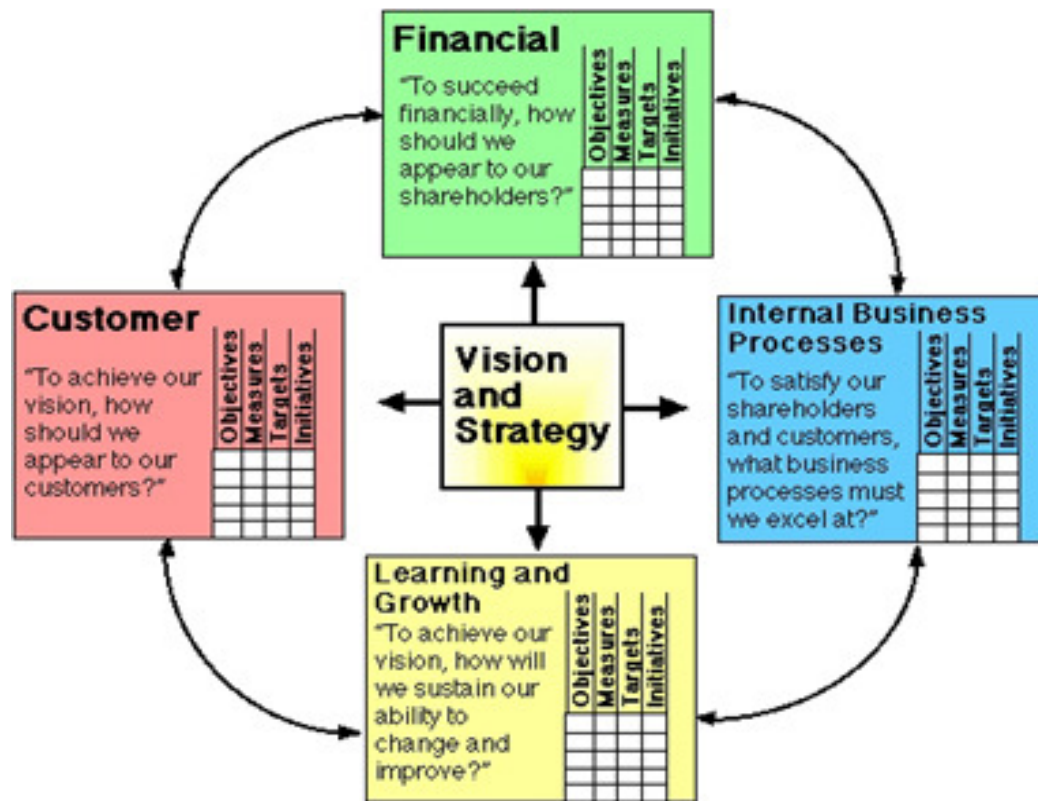
The approach of the Balanced Scorecard is to optimize its processes, motivate employees and enhance information systems while monitoring the progress towards the company's goal.

In terms of customer satisfaction, the Balanced Scorecard analyses the company's ability to provide quality goods and their effective or efficient delivery, while the financial perspective represents the company's long-term goals.

The internal business perspective compares the internal business results against its measures. The learning and growth perspective's purpose is to integrate the other perspectives towards an overall organization's success.

The Balanced Scorecard creates a cause-and-effect relationship between the measurements from each of the abovementioned perspectives and can also be used as a strategic management or communication tool in the company.

**Figure 1: An example of the different perspectives: (Ritter, 2003)**



**Table1: Possible measures from each perspective (businessballs.com):**

DEPARTMENT	AREAS
Financial	Return On Investment/ Capital Cash Flow Financial Results
Internal Business Processes	Number of activities Duplicate activities Process alignment/bottlenecks
Learning & Growth	Accurate level of expertise Employee turnover Job satisfaction Learning opportunities
Customer	Delivery and quality performance Customer satisfaction Customer percentage of market

### 2.2.2 The Performance Prism in Practice:

The Performance Prism can be seen as a measurement framework which addresses the most important issues of an organization and it is designed to help choose the essential performance measurements by asking questions to help managers create a certain pattern of thinking to analyze the links between the measures (Adams & Neely 2001).

The Performance Prism contains 5 interrelated facets. The first facet consists of the stakeholder's satisfaction which includes the view of the stakeholder by asking questions such as: "Who are the key stakeholders in the organization and what are their needs?" (Adams & Neely 2001).

The second facet concentrates on the idea that the measures should be derived from the objectives. Here the question "what are the strategies required to ensure that the needs of the stakeholders are satisfied?" asked (Adams & Neely 2001).

The third facet, the process facet asks: "what are the processes needed in order for the organization to deliver their strategies?" (Adams & Neely 2001)

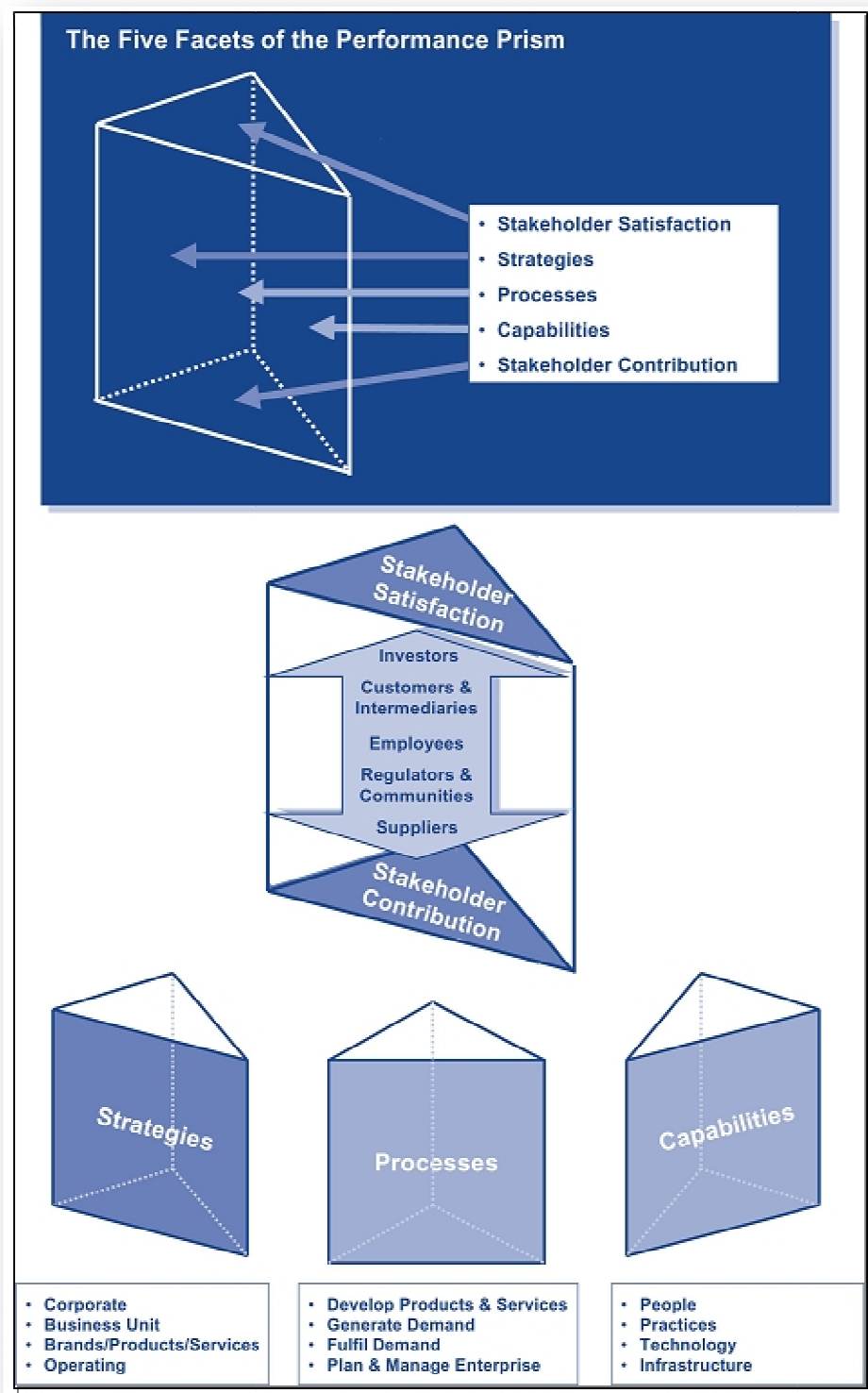
The fourth facet of the Performance Prism can be seen as the Capabilities facet. Capabilities consist of a combination of people, technology and infrastructure that creates the possibility of executing business processes. The key question asked here is: "what are the capabilities needed to operate the processes?" (Adams & Neely 2001)

The last and fifth facet is the Stakeholder Contribution which can be seen as the company delivering to the stakeholders or the stakeholders contributing to the company (Adams & Neely 2001).

The relationship between the stakeholder and the company is a unique attribute to the Performance Prism and can be used as a tool to change management's idea of thinking (Adams & Neely 2001).

However the attention has been placed on finding the right strategies to develop the performance measurement system on and as result has neglected how the performance measures are going to be realized and thus giving little attention to the process of the actual design of the system. Another disadvantage identified is that no consideration is given for the existing performance measurement systems that may be in place (Tangen, 2004)

**Figure 2: The five facets of the Performance Prism are illustrated below:**



### **2.2.3 SCOR:**

A SCOR model helps identify which type of metrics can be used to ensure a balanced approach. The measures will be a combination of:

- Cycle Time metrics
- Service/Quality metrics
- Asset metrics
- Cost metrics

It addresses the specifications of the supply chain with a balanced metrics other than the Balanced Scorecard which focuses only on the enterprise-level-measurement (Larry, 2002).

The SCOR model provides a balanced and a vertical (hieratic) view and integrates theories of elements such as business engineering, benchmarking and process measurement. The SCOR model is composed of all the elements which make up the supply chain process, the key performance measurements and the software that can be used (Huang et al.2005).

The SCOR model consists of 3 levels. Level 1 is based on 5 management processes: Plan, Source, Make, Deliver and Return. In level 2 the processes are divided into process categories and then in level 3 level 2 processes are sub-divided into process elements (Huang et al.2005)

The plan process includes processes which balance supply and demand, assess resources, prioritize demand, inventory management and production (Huang et al.2005).

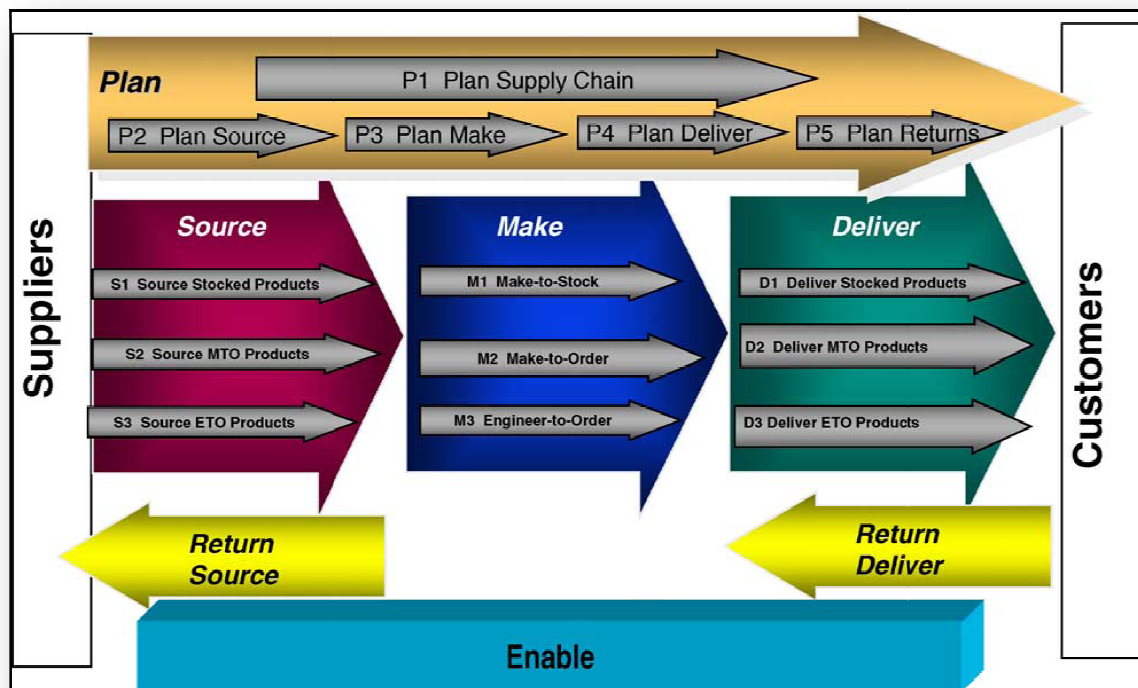
The source process helps to enhance goods and services to meet planned/actual demand. It considers jobs such as receiving, holding and issuing of material. (Huang et al.2005)

The make process contains all of the functions where the production takes place including requesting/receiving raw material, manufacturing products, testing, packaging and then holding/releasing of final products (Huang et al.2005).

The deliver process contains processes involved with providing finished goods and services to meet planned/actual demand. These processes include order management, transportation and distribution management (Huang et al.2005).

The return process consists of the management of reverse flow of material and information of defective and surplus products, thus authorizing, verifying, scheduling and receiving of the mentioned materials (Huang et al. 2005).

**Figure3: The SCOR infrastructure (Huang et al. 2005)**



SCOR Benefits (Bolstorff & Rosenbaum 2003):

- Cost reduction and service improvement
- Improvement on the return on investment and total operating income
- Return on assets
- Reduced operating cost

Flexibility is a disadvantage associated with using SCOR-based tools. The user often has to force the process to fit the SCOR definitions even if this representation does not exactly describe the nature of the actual business. One of the main difficulties of the SCOR configuration is that it is complex and is thus easy to produce an invalid model. The SCOR model simplifies and generalizes broad strategies that need more in-depth study (Albores et al).

### **Disadvantages of the SCOR model**

(<http://xiaozhu11.blogspot.com/2007/04/scor.html>) :

- The SCOR model assumes but does not address the need for training, quality, IT and administration
- The SCOR model's complexity requires a number of parameters which is very time-consuming and if the wrong data is collected, it will result in huge differences in the analysis results
- The metrics in the model are US-centric



## **2.3 Additional Assisting Approaches:**

### **2.3.1 Key performance indicators:**

According to the <http://www.visitask.com/balanced-scorecard.asp> website, the central to success of a business is dependent on excellent management information. Thus while monitoring profitability it is also important that a business keeps its KPIs (key performance indicators) in mind.

KPIs are measures that can be quantified and indicate the critical success factors of a supply chain. Before KPIs can be selected, it is important to identify what the company's goal and mission are and then as a result KPIs act as a measurement of progress towards these goals.

The use of KPIs provides the management of an organisation with a high level view of the progress. They may consist of reports, spreadsheets or charts.

It is important to establish definite definitions of how KPIs are to be calculated as well as which units. After KPIs have been identified, they should be used as a performance management tool.

KPIs should meet the following criteria:

- Be direct
- Be objective
- Be adequate
- Be quantitative
- Be practical
- Be reliable

The key performance indicators or drivers will be identified for each of the companies as part of the Balanced Scorecard method.

### **2.3.2 Strategy Maps:**

The strategy of a company can be translated into strategy maps to show how the company creates value for its clients. The strategy map was created by Robert S. Kaplan and David P. Norton (1996) who created the Balanced Scorecard. According to them strategy maps can add a second level of detail to illustrate the time used to apply a strategy and another level to improve the focus of the organization.

The strategy map is a variant of the Balanced Scorecard method (Ghasemi & Saghaei 2009). Strategy maps can be seen as communication tools which show how value can be created in the organization. They show the connection between the objectives through creating a cause-and-effect chain, which is key to the Balanced Scorecard ([balanced.scorecard.org](http://balanced.scorecard.org)).

Characteristics of Strategy maps (Kaplan and Norton, 1996) :

- All the information is displayed on one page for easier strategic communication
- There are four perspectives
- The financial perspective helps to create long-term shareholder value and uses the productivity strategy to improve the cost structure and the asset utilization and growth strategy to enhance customer value
- In the internal perspective the operations and customer management processes help with the product and service attributes. The innovation, regulatory and social processes help with the company's image.
- All of these processes are supported by the human, information and organizational capital
- The arrows connect the cause and effects relationships

Strategy maps will be created for each of the companies as part as the Balanced Scorecard method.

## **Chapter 3: Steps to create a performance measurement system and data analysis**

### **3.1 Method selected:**

According to Chan et al. (2009) the most common problems arise due to different goals between the clients and the design team.

The Balanced Scorecard assesses the activities of each company in the supply chain, creates measures from four different perspectives and thus results in balanced processes based on the measurements. It also summarizes the performance of the organization from multiple perspectives on a single page and it promotes the development of vision and strategy through all management levels.

The Balanced Scorecard provides a framework for managing the implementation of the strategy as well as allowing the strategy to evolve due to changes in the company because of the changes in the competitive market (Allias et al. 2009).

### **3.2 Benefits of using the Balanced Scorecard:**

Performance measures used to focus only on the financial perspective of a company. By using the Balanced Scorecard method, it creates a balanced vision of the business performance such as parameters that measure the overall performance of the company and thus taking into account capital, market, internal processes and human resources perspectives as well. (Ritter, 2003).

The Balanced Scorecard:

- Helps the development of the vision and strategy and thus the understanding through all levels in the company.
- Allows the creation business models such as identifying KPIs and their interrelation.
- Minimizes information overload, by placing a limit on the number of measurements used.
- Forces managers to focus more on smaller groups of measurements which are critical for the overall performance.
- Makes it possible to view the key elements of the business through cause-and-effect analysis and identifying activities necessary to reach the goals.
- Provides defined measurement parameters that will show the success of a strategy.
- Improves communication throughout the company by creating objectives and aligning key processes.

By using the Balanced Scorecard, IMPERIAL Logistics will be able to know more about the various companies' needs to ensure the alignment of the various strategies (Chan et al. 2009).

Strategy maps will be created based on the key performance indicators identified and according to the research in Chapter2.

The SCOR model and Performance Prism will not be used because of the disadvantages identified in Chapter 2. However based on current data gathered and specific requirements the Balanced Scorecard method will be used.

### **3.3 Solution approach to create a performance measurement system by using the Balanced Scorecard method:**

According to Kaplan and Norton (1996) the Balanced Scorecard introduces four new management processes that contribute to linking long-term strategic objectives with short-term actions. The first process of translating the vision helps the managers to build a consensus around the organization's vision and strategy. The second process of communicating and linking helps managers to communicate their strategy through the entire company.

First the vision of the company needs to be translated into strategies according to the four perspectives of the Balanced Scorecard. Next business unit scorecards in which each company translates its strategy into its own scorecard, must be created. After creating the scorecard, the CEO and executive team must review it. Then the scorecard must be communicated through the entire company and then individual performance objectives must be established. Every employee's performance should be linked to the Balanced Scorecard.

According to Kaplan and Norton (1996) the following steps will be followed to create a scorecard for each of the companies:

1. Define organizational vision, mission and strategy. This ensures that the performance measures identified in each perspective supports the company's strategic objectives.
2. Develop performance objectives and measures. It is essential to identify where the company must excel in order to attain the vision. For each objective identified it is necessary to create measures.
3. Performance management is an evolutionary process and thus requires adjustments as necessary. It takes time to establish measures, and it is important to recognize that they might not be 100% the first time.

According to the methodology mentioned above, the steps outlined in 3.4 will be followed to create a Balanced Scorecard:

### **3.4 Tasks that will be followed to create a Balanced Scorecard:**

1. Gather and analyze data
2. Determine missions, vision and strategy
3. Create strategy maps
4. Determine strategic objectives from strategy maps
5. Create cause-and-effect linkages
6. Defining performance measures for each objective

#### **3.4.1 Gather and analyze data:**

To follow the Balanced Scorecard method the company must first understand the mission and the strategic plan or vision.

Questionnaires and brainstorming can be used.

Time studies are done when a certain target for an activity needs to be established.

#### **3.4.2 Determine mission, vision and strategy:**

By holding interviews with managers and employees the vision, mission and strategies can be identified at high and low levels of the organization which can be aligned to determine the key objectives of the organization. The objective of developing the strategy is to translate the different dimensions into specific performance requirements (Dalton, 2007).

#### **3.4.3 Strategy maps:**

Strategy Maps based on the strategic goals identified will be created for the organization.

#### **3.4.4 Create strategic objectives:**

Strategic objectives of the organization will be created based on the strategy maps and will be used to create the Balanced Scorecard.

#### **3.4.5 Create cause-and-effect linkages:**

By developing the interrelationship between the objectives, the effect that the objectives have on one another will be illustrated. The internal cause and effect will refer to the relationship between the objectives within a certain level, and the external cause and effect will reflect the relationship between different levels.

#### **3.4.6 Defining performance measures for each objective:**

As a result performance measurements will be aligned with the strategic objectives of the company.

### **3.5 Create a performance matrix:**

It is necessary to create a performance matrix to determine whether an organization is reaching its goals. A performance matrix helps to identify problem areas within an existing system. It will be created by setting targets and comparing the actual performance against these targets.

### **3.6 Implementation of the Balanced Scorecard:**

Aligning the high-level scorecard with the low-level scorecard and Nampak Tissue's scorecard with IMPERIAL companies, the final performance measures for the fragmented supply chain based on the overall strategies of the organization will be selected.

## **Chapter 5: Design and Solution:**

### **5.1 The Development of the Performance Measurement System:**

The Balanced Scorecard method suggests that the financial and non-financial measures are part of the top-down process, driven by the mission and strategy of the business unit. It is possible to use the Balanced Scorecard as a strategic management tool to manage the strategy of the organization over the long run. (Chavan, 2007)

The Balanced Scorecard will be created using a reverse engineering approach. First the vision of each company will be clarified and translated into strategy. Next by using the strategy maps the strategic objectives and measures will be communicated and linked.

### **5.2 Vision, Mission and Strategy of Companies:**

#### **5.2.1 Nampak Tissue:**

Mission: Passionate people + personal touch = Consumers for life

Vision: We aim to provide expert advice, service and products to the following industry sectors: Catering and Leisure, Commercial and Industrial Resellers, Education, Healthcare and Hygiene and Cleaning. Passionately African, advancing hygiene to all

Strategy: Treat others with dignity and respect. We are passionate about success. We value talent and diversity. We are accountable for all we do. Constantly strive to be the best we can.

#### **5.2.2 Imperial Logistics:**

Mission: Innovative world-class supply chain partner  
Focusing on dedicated contracts

Vision: Always exceed our customers' expectations

Strategy: Combine processes technology together with the skills of our people to find the optimum solutions for our customers. We are flexible and proactive in order to accommodate the changing needs of our customers. Constantly strive to be the best we can.

### **5.2.3 Imperial Cargo:**

Mission: Live our brand in everything we do

Vision: Always exceed our customer's expectations

Strategy: Imperial Cargo's main strategy is to offer our customers an on stop supply chain service through our diversified business model

### **5.2.4 Imperial Cargo Solutions:**

Mission: To specialize in cargo transportation, value-added and related services, taking principality as the catalyst into Imperial Holdings' capabilities as a national logistics provider through strategic alliances and networks

Vision: To be a world-class 3<sup>rd</sup> party logistics provider committed to create value to all its stakeholders

Strategy: Quality, Cost, Safety and Customer ethics

## **5.3 Strategy Maps:**

According to Kaplan and Norton (1996) strategy maps describe how an organization can create value by connecting the strategic objectives identified, in a cause and effect relationship with each other through the four perspectives of the Balanced Scorecard.

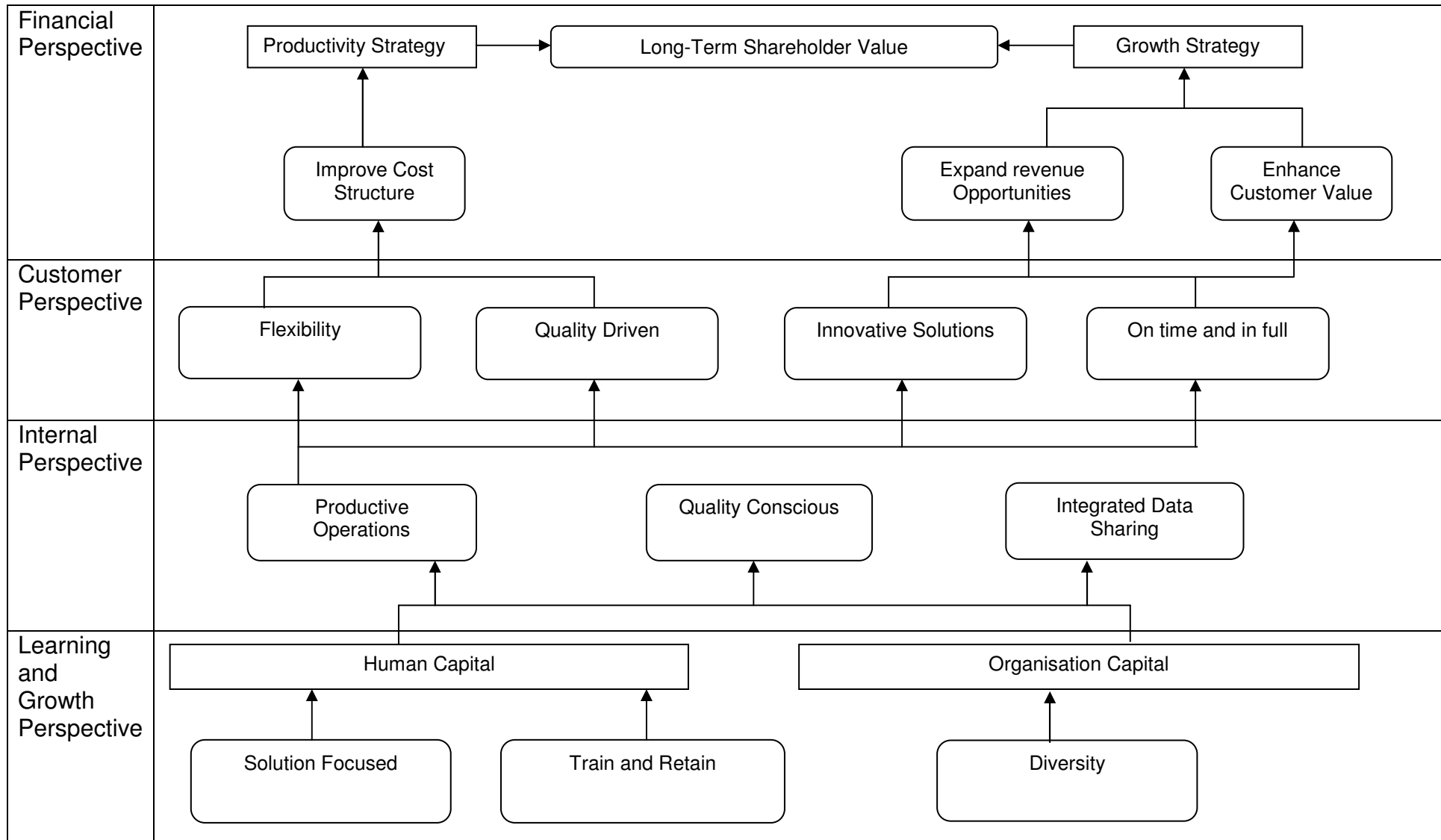
By connecting the different perspectives with one another in a graphical representation, the strategy maps helps to communicate the strategies among the executives and the employees.

According to Kaplan and Norton (1996) the first step in creating a Balanced Scorecard is to develop the objectives based on the strategies identified for each company. Strategic objectives are identified based on the template of the strategy map shown in Appendix A. The strategic objectives identified for each company are then used to create strategy maps.

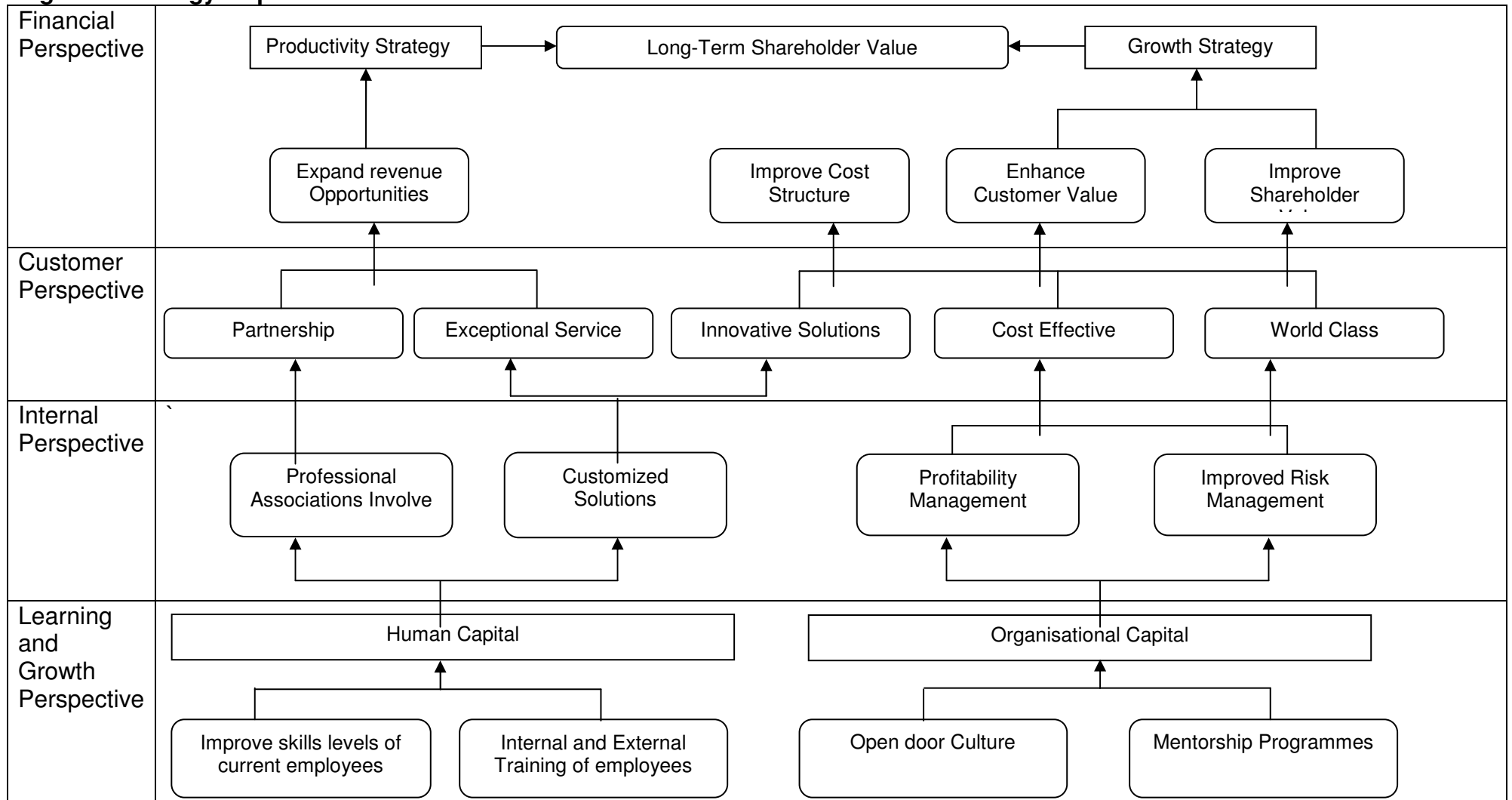
The strategic objectives identified through the strategy maps will be used to construct the scorecard.



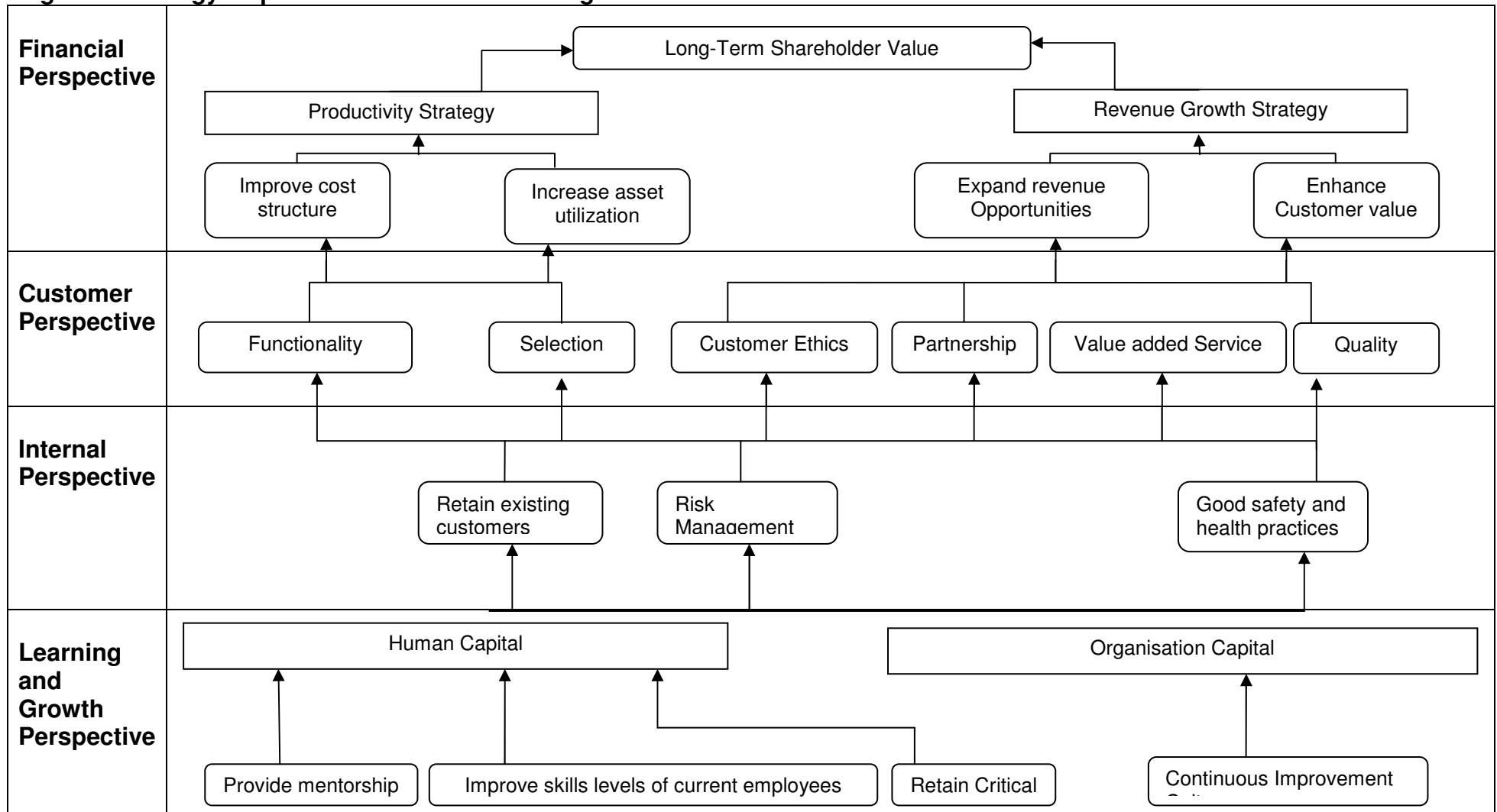
**Figure4: Strategy Map created for Nampak Tissue:**



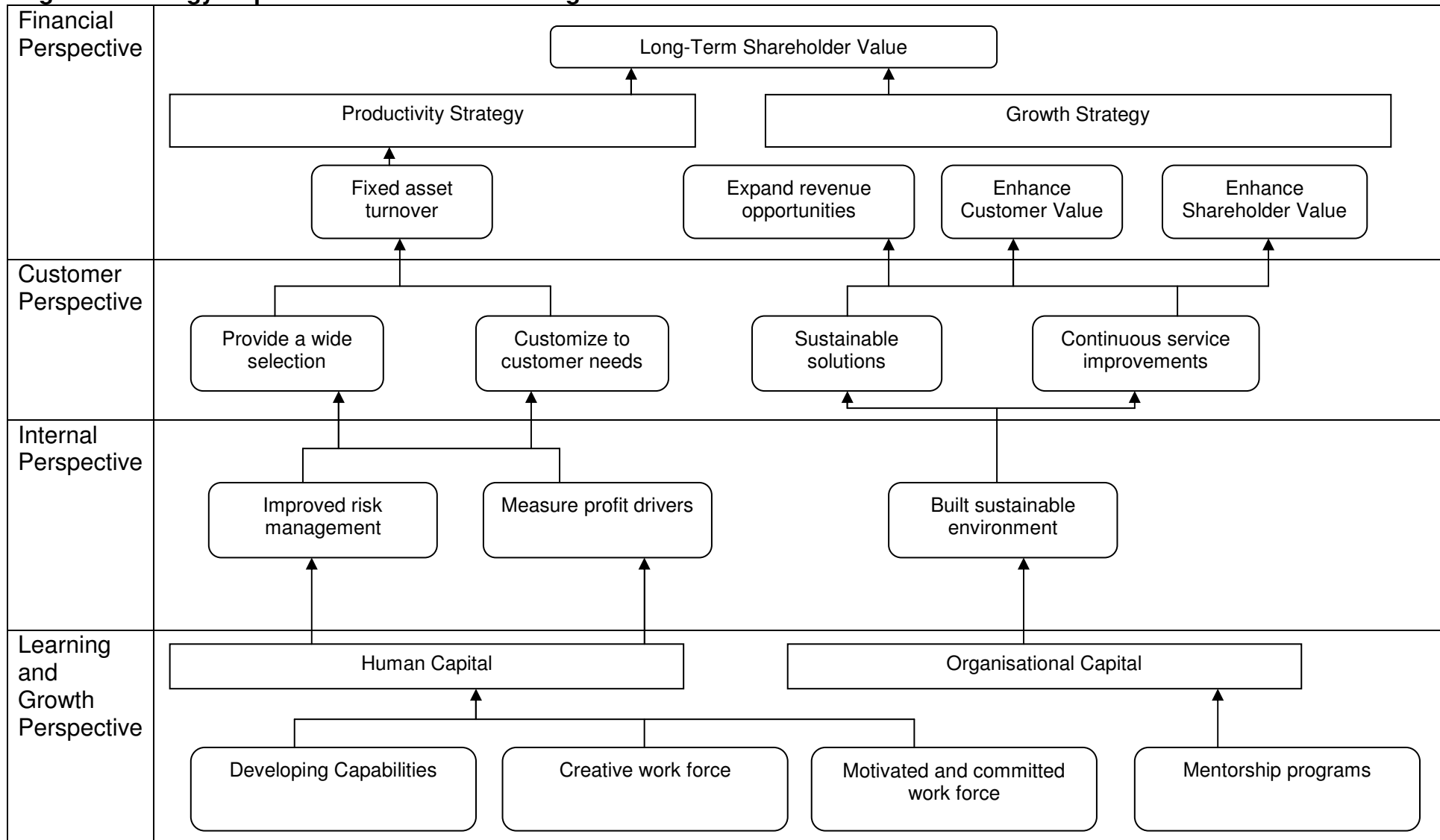
**Figure5: Strategy Map created for IMPERIAL Distribution:**



**Figure6: Strategy Map created for IMPERIAL Cargo Solutions:**



**Figure7: Strategy Map created for IMPERIAL Cargo:**



## **5.4 The Scorecards:**

Scorecards will be created for each company based on the strategy maps. The IMPERIAL companies' scorecards will be aligned with the high level scorecard, Nampak Tissue. To align the scorecard, the measures not currently used by the IMPERIAL companies but used by Nampak Tissue, will be added in bolt and named accordingly: Internal business thus I1 and I2, learning and growth as L1 and L1 and Financial as F1 and F2. They are also added at the top, since their priority should be higher than the rest. Measures will be developed for each of the strategic objectives identified.

When creating performance measures, it is important that they link exactly to the vision of the company. The measures should focus on the outcomes necessary to achieve the organisational objectives. Each objective should be supported by at least one measure. If quantitative measures are feasible, then they should be encouraging to employees (Denet et al.2001).

Each company's measures will differ because their strategies differ. The cascading process which is driven by the high level scorecard insures that each of the IMPERIAL companies' measures is aligned with Nampak's objectives and measures.

Measures identified by: Tangen (2004), Denett (2001) and Kaplan and Norton (1996) will be linked with each of the strategic objectives identified below.

**Table 2: Balanced Scorecard created for Nampak Tissue:**

<b>Nampak Tissue:</b>					
<b>Perspectives:</b>	<b>Strategies:</b>	<b>Objectives:</b>	<b>Measures:</b>	<b>Description:</b>	<b>Calculation:</b>
<b>Customer</b>	➤ Innovative	Functionality	Satisfied Customers	Number/percentage of customers that are completely satisfied with the services provided	Number of customers completely satisfied/ Total number of customers
	➤ On time and in full	Service	Percentage on time delivery		Number of on time deliveries / Total number of deliveries
	➤ Quality Driven	Quality	Number of customer complaints		Amount of customer complaints per period
	➤ Flexibility	Selection	Index of products offered and percentage of customer's needs covered		Number of services offered/ number of services requires

<b>Internal Business</b>	➤ Lean, mean and productive operations	Operational management	Productivity		Value adding time / total time
	➤ Quality conscious	Operational management	% of defects per batch		Number of defects per batch size detected / total batch size
	➤ Integrated data sharing and execution programs	Operational Management	% Achievement of Goals		Amount of goals achieved / total amount of goals

Learning and Growth	➤ Train and retain leaders for tomorrow	Human Capital	Average number of training hours per employee		Total number of training hours divided by number of employees
	➤ Solution focused rather than blame management	Human Capital	Average training cost per employee  % employees satisfied with work environment		Cost of training divided by number of employees  Number of employees satisfied / total number of employees
	➤ Diversity is our strength	Organisational capital	% employees satisfied with professionalism, culture, values and empowerment		Number of employees satisfied / total number of employees



Financial	➤ Expand revenue opportunities	Revenue Growth Strategy	PBIT (Profit before interest and tax)	Minimum growth of 15% per year	Operating revenue – operating expenses + non operating income
	➤ Enhance customer value	Revenue Growth Strategy	ROICE (Return on Invested Capital)	Minimum of 4% above operating companies WACC	After tax operating earnings/ (Total assets- Excess cash- non – interest- bearing current liabilities)
	➤ Improve cost structure	Productivity Strategy	Price over Price	New contract price is compared to previous contract price, any downward variances are recorded as savings	Old contract price-new contract price

**Table 3: Balanced Scorecard created for IMPERIAL Distribution:**

IMPERIAL Distribution:					
Perspectives:	Strategies:	Objectives:	Measures:	Description:	Calculation:
Customer	➤ Exceptional Service	Service	Percentage on time delivery		Number of on time deliveries / Total number of deliveries
	➤ Partners in measuring and managing performance	Partnership	Customer Loyalty	Tendency of a customer to choose business over another business	How many customers out of total customers have moved to another company
	➤ Cost Effective	Price	Actual vs. budgeted expenses	% over budget	(Actual – budgeted) / Total budgeted
	➤ World Class	Quality	Attrition/Churn	How frequently do customers terminate their relationships	Average time period a customer terminates their contract
	➤ Innovative	Selection	Number of customer complaints		Number of customer complaints per period
	➤ Efficient Solutions				

<b>Internal Business</b>	➤ <b>I1: Productivity</b>	<b>Operational Management</b>	<b>Productivity</b>		<b>Value adding time/ total time</b>
	➤ <b>I2: Quality</b>	<b>Operational management</b>	<b>% of products damaged</b>		<b>Number of products/ total number of products handled</b>
	➤ Improved risk management	Operational management	Technological risk	Technology ranking compared to competitors	Technology used compared to other similar industries
	➤ Customized Solutions	Innovation Process	% Increase in number of new products introduced		(Total products beginning of year – total products end of previous year) / total products previous year
	➤ Profitability Management	Operational Management	% Exceeded shareholder targets	Shareholder Value Analysis = Estimated total net value of company / Value of shares	(Number of actual shareholder targets – estimated shareholder targets) / Estimated Targets
	➤ Professional Associations involvement	Regulatory and Social	Number of employee complaints		Number of employee complaints per period

Learning and Growth	➤ L1: Diversity	Organisational Capital	% employees satisfied with professionalism, culture, values and empowerment		Number of employees satisfied / total number of employees
	➤ Internal and external training of employees	Human Capital	Average number of training hours per employee		Total number of training hours divided by number of employees
	➤ Improve skills levels of current employees	Human Capital	Average training cost per employee Training penetration rate		Cost of training divided by number of employees Percentage of employees completing a course compared to the total number of employees employed
	➤ Open door Culture	Organisational Capital	% of employees satisfied with work environment	Based on employee survey forms completed	Number of employees satisfied/ total number of employees
	➤ Mentorship Programs	Organisational Capital	Mentor satisfaction rate	Based on mentor survey forms completed yearly	Number of mentors satisfied with employee progress

<b>Financial</b>	➤ Expand revenue opportunities	Revenue Growth Strategy	PBIT (Profit before interest and tax)	Minimum growth of 15% per year	Operating revenue – operating expenses + non operating income
	➤ Enhance customer value	Revenue Growth Strategy	ROICE (Return on Invested Capital)	Minimum of 4% above operating companies WACC	After tax operating earnings/ (Total assets- Excess cash- non – interest- bearing current liabilities)
	➤ Improve cost structure	Productivity Strategy	Price over Price	New contract price is compared to previous contract price, any downward variances are recorded as savings	Old contract price-new contract price
	➤ Improve shareholder value	Revenue Growth Strategy	Shareholder's value	Firm value - future claims	(NPV of all future free cash flow + Value of non-operating cash flows) – future claims (debts)

**Table4: Balanced Scorecard created for IMPERIAL Cargo Solutions:**

	<b>Strategies:</b>	<b>Objectives:</b>	<b>Measures:</b>	<b>Description:</b>	<b>Calculation:</b>
<b>Customer</b>	➤ Understand customer's logistics requirements	Functionality	Satisfied Customers	Number/percentage of customers that are completely satisfied with the services provided	Number of customers completely satisfied/ Total number of customers
	➤ Value Added Service	Service	Percentage on time delivery		Number of on time deliveries/Total number of deliveries
	➤ Partners in measuring and managing performance	Partnership	Customer Loyalty	Tendency of a customer to choose business over another business	How many customers out of total customers have moved to another company
	➤ Customer Ethics	Quality	Number of customer complaints		Number of customer complaints
	➤ How the customers want to integrate into their service offering	Selection	Index of services offered and percentage of customer's needs covered		Number of services offered/ number of services required

<b>Internal Business</b>	➤ <b>I1: Productivity</b>	<b>Operational management</b>	<b>Productivity</b>		<b>Value adding time / total time spend</b>
	➤ <b>I2: Quality</b>	<b>Operational management</b>	<b>% of products damaged</b>		<b>Number of products damaged/ total number of products handled</b>
	➤ Improved risk management	Operational management	Risk Factor	Number/Percentage of high loyalty customers who are at risk of breaking relationship with your business	Number of customers unsatisfied/ total number of customers
			Technological risk	Technology ranking compared to competitors	Technology used compared to other similar industries
	➤ Safety and health	Regulatory and Social processes	Reportable non-fatal accidents	Number of non-fatal accidents per period	Total number of non-fatal accidents per 100 000 hours worked
			Number of injuries or casualties		Total number of Injuries or casualties per period
	➤ Retain existing customers	Customer management	Customer Value	Value of customers retained	Number of customers retained/ total number of customers

Learning and Growth	➤ <b>L1: Diversity</b>	<b>Organisational Capital</b>	<b>% employees satisfied with professionalism, culture, values and empowerment</b>		<b>Number of employees satisfied / total number of employees</b>
	➤ Management Development Programs	Human Capital	Average number of training hours per employee		Total number of training hours divided by number of employees
	➤ Improve skills levels of current employees	Human Capital	Average training cost per employee  Training penetration rate		Cost of training divided by number of employees  Percentage of employees completing a course compared to the total number of employees employed
	➤ Build a continuous improvement culture	Organisational Capital	Number of process improvement ideas generated		Number of improved ideas generated in a time period



<b>Financial</b>	➤ Expand revenue opportunities	Revenue Growth Strategy	PBIT (Profit before interest and tax)	Minimum growth of 15% per year	Operating revenue – operating expenses + non-operating income
	➤ Enhance customer value	Revenue Growth Strategy	ROICE (Return on Invested Capital)	Minimum of 4% above operating companies WACC	After tax operating earnings/ (Total assets- Excess cash- non – interest- bearing current liabilities)
	➤ Improve cost structure	Productivity Strategy	Price over Price	New contract price is compared to previous contract price, any downward variances are recorded as savings	Old contract price-new contract price
	➤ Increase asset utilization	Productivity Strategy	Return on Total assets		(Net income + interest expense + taxes)/ total net assets

**Table 5: Balanced Scorecard for IMPERIAL Cargo:**

<b>IMPERIAL Cargo:</b>					
<b>Perspectives</b>	<b>Strategies:</b>	<b>Objectives:</b>	<b>Measures:</b>	<b>Description:</b>	<b>Calculation:</b>
<b>Customer</b>	➤ Right Service at right price	Service	Percentage on time delivery	Tendency of a customer to choose business over another business	Number of on time deliveries/Total number of deliveries
	➤ Valued Relationships	Partnership	Customer Loyalty		How many customers out of total customers has chosen another company
	➤ Continuous service improvements	Selection	Index of services offered and percentage of customer's needs covered		Number of services offered/ number of services requires
	➤ Sustainable solutions	Quality	Number of customer complaints		Amount of customer complaints per period

<b>Internal Business</b>	➤ <b>I1: Productivity</b>	<b>Operational management</b>	<b>Productivity</b>		<b>Value adding time / total time spend</b>
	➤ <b>I2: Quality</b>	<b>Operational management</b>	<b>% of products damaged</b>		<b>Number of products damaged/ total number of products handled</b>
	➤ Improved risk management	Operational management	Risk Factor	Number/Percentage of high loyalty customers who are at risk of breaking relationship with your business	Number of customers unsatisfied/ total number of customers
			Technological risk	Technology ranking compared to competitors	Technology used compared to other similar industries
	➤ Measure profit drivers	Operational management	Percentage of performance targets met		Number of performance targets met / total number of performance targets
	➤ Building sustainable environment	Customer management	Customer Value	Value of customers retained	Number of how many customers retained beginning next time period/ total number of customers end of previous time period

<b>Learning and Growth</b>	➤ <b>I1: Diversity</b>	<b>Organisational Capital</b>	<b>% employees satisfied with professionalism, culture, values and empowerment</b>		<b>Number of employees satisfied / total number of employees</b>
	➤ Mentorship Programs	Organisational Capital	Mentor satisfaction rate	Based on mentor survey forms completed yearly	Amount of mentors satisfied with employee progress
	➤ Developing capabilities	Human Capital	Average number of training hours per employee		Total number of training hours divided by number of employees
			Training penetration rate		Percentage of employees completing a course compared to the total number of employees employed
	➤ Creative work force	Human Capital	Number of process improvement ideas generated	Based on employee survey forms completed	Number of improved ideas generated in a time period
	➤ Motivated and committed work force	Human Capital	% of employees satisfied with work environment		Number of employees satisfied/ total number of employees

Financial	➤ <b>F1: Improve cost structure</b>	<b>Productivity Strategy</b>	<b>Price over Price</b>	<b>New contract price is compared to previous contract price, any downward variances are recorded as savings</b>	<b>Old contract price-new contract price</b>
	➤ Expand revenue opportunities	Revenue Growth Strategy	PBIT (Profit before interest and tax)	Minimum growth of 15% per year	Operating revenue – operating expenses + non operating income
	➤ Enhance customer value	Revenue Growth Strategy	ROICE (Return on Invested Capital)	Minimum of 4% above operating companies WACC	After tax operating earnings/ (Total assets- Excess cash- non – interest- bearing current liabilities)
	➤ Shareholders value	Revenue Growth Strategy	Shareholder's value	Firm value - future claims	(NPV of all future free cash flow + Value of non-operating cash flows) – future claims (debts)
	➤ Fixed asset turnover	Productivity Strategy	Fixed asset turnover ratio		Sales / Net fixed assets

## Chapter 6: Design Evaluation

### **6.1 Design Evaluation:**

According to Kaplan and Norton (1996) an enormous number of companies have adopted the Balanced Scorecard concept to improve their existing performance measurement systems. By adopting this approach, it has provided clarification, consensus and focus on the desired improvements in performance.

The Balanced Scorecard enables a company to align its management processes and as result focuses the whole company on implementing long-term strategies. Without a Balanced Scorecard, organizations are unable to achieve consistency of vision and action as they attempt to introduce new strategies and processes. The Balanced Scorecard provides a framework for managing the implementation of strategy and allows the strategy to evolve in response to changes (Kaplan and Norton, 1996).

By using a reverse engineering approach, only the key drivers were identified and measures were created in the case where no form of measurement existed. The design approach was thus effective.

According to Denett et al. (2001) there are certain attributes that set apart a successful performance measurement system and these listed below:

- Every organization needs a performance measurement framework that can be understood by all levels within the organization and supports the objectives.
- Performance measures should be limited to only those relating to strategic goals and objectives and that provide relevant and concise information for the use of the decision makers.
- The most successful performance measurement systems are learning systems that help the organization identify what works.

According to Tangen (2004) performance measures should help managers to answer five important questions:

- Where have we been?
- Where are we now?
- Where do we want to go?
- How are we going to get there?
- How will we know that we have got there?

Consequently as mentioned above, the theoretical analysis is mostly proven since it adheres to these aspects.

## **6.2 Method Implementation:**

The Balanced Scorecards created for the various companies, will not be implemented currently because of the priority level of the organizations. However the steps to implement the Balanced Scorecards will be discussed.

When implementing the performance measurement system, the first step will be the communication to the various levels. As mentioned in the previous chapter, the development of the measures and objectives will be a continuous process, as the measures and objectives will change over time. There are still a number of processes that needs to be completed before the Balanced Scorecard can be used in the whole organization.

According to Denett et al., (2001) in order for a company to make effective use of the results of a performance assessment, they must be able to make the transition from assessment to management. It must also be able to anticipate necessary changes in the strategic direction of the organization. Both of these tasks can be facilitated by the use of the Balanced Scorecard approach.

To move effectively from performance measurement to management, two aspects need to be in place (Denett et al.2001):

- The right organizational structure
- Ability to use performance measurement results to actually bring around change in the company

### **6.2.1. The right organizational structure:**

The company needs to deploy a performance management strategy which includes the following attributes:

- Leadership involvement in designing and deploying performance measurement and management systems. Clear and consistent involvement by senior executives and managers is necessary to create a successful performance management system
- Effective and open communication with employees, stakeholders and customers in order to share assessment results. Internal communications helps ensure accomplishments of organizational goals and builds confidence if results are favorable. External communications help to strengthen partnerships with customers and to elicit positive support from stakeholders.
- Accountability is a key success factor. All managers and employees should understand what they are responsible for in achieving organizational goals.

### **6.2.2. Using results to effect change:**

There are certain aspects to keep in mind when using results for deploying a performance management system:

- Management needs intelligent information for decision making. The data generated should be timely, relevant and concise. If properly constructed,

the measures selected will result in data that is meaningful to decision makers in improving organizational performance.

- Assessment results should be properly analyzed. Understanding what a particular result really means is important in determining if it is important to the organization.

Once assessment results have been analyzed, communicated and used for development, effective performance management requires that the organization reconsiders strategic goals and then incorporates these goals into the performance management system. The Balanced Scorecard method is unique by placing the organization's vision at the centre of the performance assessment structure.

### **6.3 Recommendations:**

The identified measures and drivers can be seen as necessary to the Balanced Scorecard. In some instances the measures were in place, but the author recommends that all of the identified measures should be evaluated and changed where necessary.

### **6.4 Conclusions:**

This document has analyzed the various companies by using the different perspectives of the Balanced Scorecard method and identified the strategies and strategic objectives by using the strategy maps.

The strategy maps describe how the various companies can create value by connecting the strategic objectives in a cause-and-effect relationship with each other. Strategy maps help to communicate the strategy among the different levels in the supply chain and through this an alignment is created which makes the implementation of the strategy less complicated.

By implementing the balanced scorecard method, feedback for the outcome of business strategies is provided. This is known as a double-loop feedback.



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# **Appendix A: Template used for Strategy Maps**

