A BALANCED SCORE CARD STUDY ON PERFORMANCE MANAGEMENT SYSTEM WITH SPECIAL REFERENCE TO KELTRON – A CASE STUDY APPROACH

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ABSTRACT:

This research identifies strategic objectives based on the goals of the Keltron organization and develops measurement tools and targets for achieving those desired outcomes. Today, we live in a technology-driven world where speed, flexibility, intellectual capital development, and networks have become the basis of value creation even as connectivity and interactive technologies pervade all business activity. In this technology-driven environment, Keltron finds the assimilation, adoption and integration of technology in creating innovative solutions as the very basis of survival. Keltron's success has been in making technology work rather than inventing it. Keltron has been a catalyst in making electronics work in almost every aspect of our daily life, since 1973. Keltron's strength lies in the stable foundation and experience built over the years, its strong human capital, its nation-wide network and its ability to adapt itself to change. With over a 30-year long track record as a manufacturer of sophisticated electronic devices and systems, Keltron presents itself in the global market as a one-stop-shop for manufacturing, system integration, and after-sales-support in India. From being a pioneer in 1973, to the role of a trend-setter today, Keltron has been the catalyst for the development of electronics industry in Kerala. It was an experiment by Government of Kerala and within five years of its inception, Keltron had set up a production centre in every district of the State. More

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than 5,000 people were engaged directly or indirectly by Keltron for the manufacture of electronic goods. The model of a State-owned electronics corporation was so successful that several other States in India followed suit; launching their own electronics corporations. A quarter century later, Keltron after having contributed substantially to the industrialization of the State, set about transforming Trivandrum, the capital city of Kerala, into one of the major electronics hubs of the country. Today, the city is home to Techno Park, the internationally known technology park where thousands of talented men and women participate in the development of a burgeoning information technology industry. Keltron describes a range of products and large number of employees. Faced by challenges and the requirements to meet with the changing needs of the customer, many companies across the country have adopted the balanced scorecard approach to align their activities with the vision and mission of the organization and government. However, Keltron still uses financial measures as well as total project numbers in evaluating the performance of the team. This case study develops an evaluation framework based on the balanced scorecard methodology and creates a balanced scorecard system to measure the performance of Keltron. This research identifies strategic objectives based on the goals of the organization and develops measurement tools and targets for achieving those desired outcomes. The research concludes a set of recommendations to ensure implementation and successful application of the balanced scorecard system. The Managers were personally interviewed with the help of questionnaire to understand their perceptions on the Balance Score Card approach and their perspectives on whether adopting the Balance Score Card was of benefit to the organization. The statistical tool used is mean square analysis. The research ends with the findings, suggestions and recommendations to Keltron Company for managing performance using balanced scorecard in future and for the welfare of the employees.

NEED FOR THE STUDY:

Regardless of whether private or public in nature, all organizations need effective performance measurement and management systems to remain viable. Neely (1994), states that where measurement is the process of quantification and action leads to performance, performance measurement is the process of quantifying action. Keltron uses old tools like performance appraisal method, but in this competitive situation, organizations have to implement new methods for developing their employee work efficiency and customer satisfaction. Balanced scorecard is such a method which will help the organization to grow according to their goals and plans. So far into this research, it is evident that many researchers have highlighted the need to manage performance in organizations and have also pointed out the need to adopt a balanced approach to performance management encompassing both financial and non-financial measures and linking those measures to the vision and strategy of the organization.

In research, validity implies reliability (consistency). Reliability refers to the stability of the measure. It is the extent to which the same result will be achieved when repeating the same measure again. A measure is said to be valid if it captures what it is supposed to do. This research has obvious face validity in that it actually develops an evaluation framework based on several meetings with employees and senior managers at Keltron and makes use of routinely collected business and organizational information in the process. The Balanced Scorecard methodology used here is based on a valid and acceptable method. Further, the validity and acceptability of the Balanced Scorecard as a tool in measuring and managing performance among other researchers was established prior to the research and minor deviations in approach justified. The dimensions and range of indicators that were used in this research have been selected from a list of indicators provided by researchers within the organization, and after consensus was reached among senior managers with regard to their applicability in the current setting. These dimension and indicators have also been successfully used in developing and implementing scorecards for Keltron.

REVIEW OF LITERATURE:

Neely (1994) argues that performance measurement is the process of quantifying the efficiency and effectiveness of an action and the measurement system used as a set of metrics used in the measurement process. The two dimensions of efficiency and effectiveness in performance measurement highlights the effect of internal and external factors on such measurements (**Slack, 1991**). Effective performance measures provide insight into how well a company is doing, whether the company is meeting its goals, whether customers are satisfied, if the company's processes are in statistical control and if improvements are necessary and help in making intelligent decisions as to what the company does. Tools for statistical process control in manufacturing companies were introduced by Walter Shewhart as early as 1930's (**Shewhart, 1931**). These tools were used to manage data and controlling the spread of the manufacturing process. Shewhart argued that human wants can be considered as the starting point of setting standards for improvement thereby turning the focus of attention on the customer for measuring improvements (**Kollberg, 2007**). The basic idea of the balanced scorecard by **Kaplan and Norton** (1992) was simple and straightforward. Kaplan and Norton argued that 'what you measure is what you get' and that 'an organization's measurement system strongly affected the behaviors of its managers and employees' **(Harmon, 2003).** The evolution of the concept of balanced scorecard from a rather radical performance measurement tool to a comprehensive strategic management tool can be understood from the four Harvard Business Review articles published by Norton and Kaplan in 1992, 1993, 1994 and 1996. According to Norton and Kaplan, the traditional financial accounting measures (e.g. ROI and EPS) can give misleading signals for continuous improvement and innovation. To defy the heavy reliance on financial accounting measures, the authors argued that senior managers establish a scorecard taking multiple measures into account. The authors proposed a scorecard that used both financial and non-financial metrics in measuring performance of organizations. They also focused on how managers might identify the best measures in each of the four perspectives and how to communicate it within the organization. Several definitions of the Balanced Scorecard can be found in the literature with some variations in scope. **Williams, Haka and Bettner (2005)**, define the Balanced Scorecard as "a system for performance measurement that links a company's strategy to specific goals and objectives, provides measures for assessing progress toward those goals, and indicates specific initiatives to achieve those goals." The Balanced Scorecard Institute defines it as "a strategic planning and management system used to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organizational performance against strategic goals." According to **Kaplan and Norton (1992)** companies which use the balanced scorecard will be able to articulate goals for each of the above perspectives and translate those goals into specific measures. Understanding how the concept of the balanced scorecard evolved is helpful in appreciating the thought process of researchers in this field and how the balanced scorecard evolved in scope. The balanced scorecard builds on some key concepts of management ideas of the past such as the Total Quality Management (TQM) approach, customer defined quality, continuous improvement, employee empowerment as well as the basing of management and feedback on measurement (**Balanced Scorecard Institute, 2007)**. Originating with the work of the American statistician Edwards Deming, the TQM approach encompasses employees and suppliers as well as customers and creates an organization committed to continuous improvement. According to the Total Quality Management approach, quality involves everyone and all activities in an organization; must meet agreed requirements, both formal and informal at the lowest cost, first time and every time; and quality must be managed **(Brevis, Ngambi, Vrba & Naicker, 2002)**.

RESEARCH METHODOLOGY:

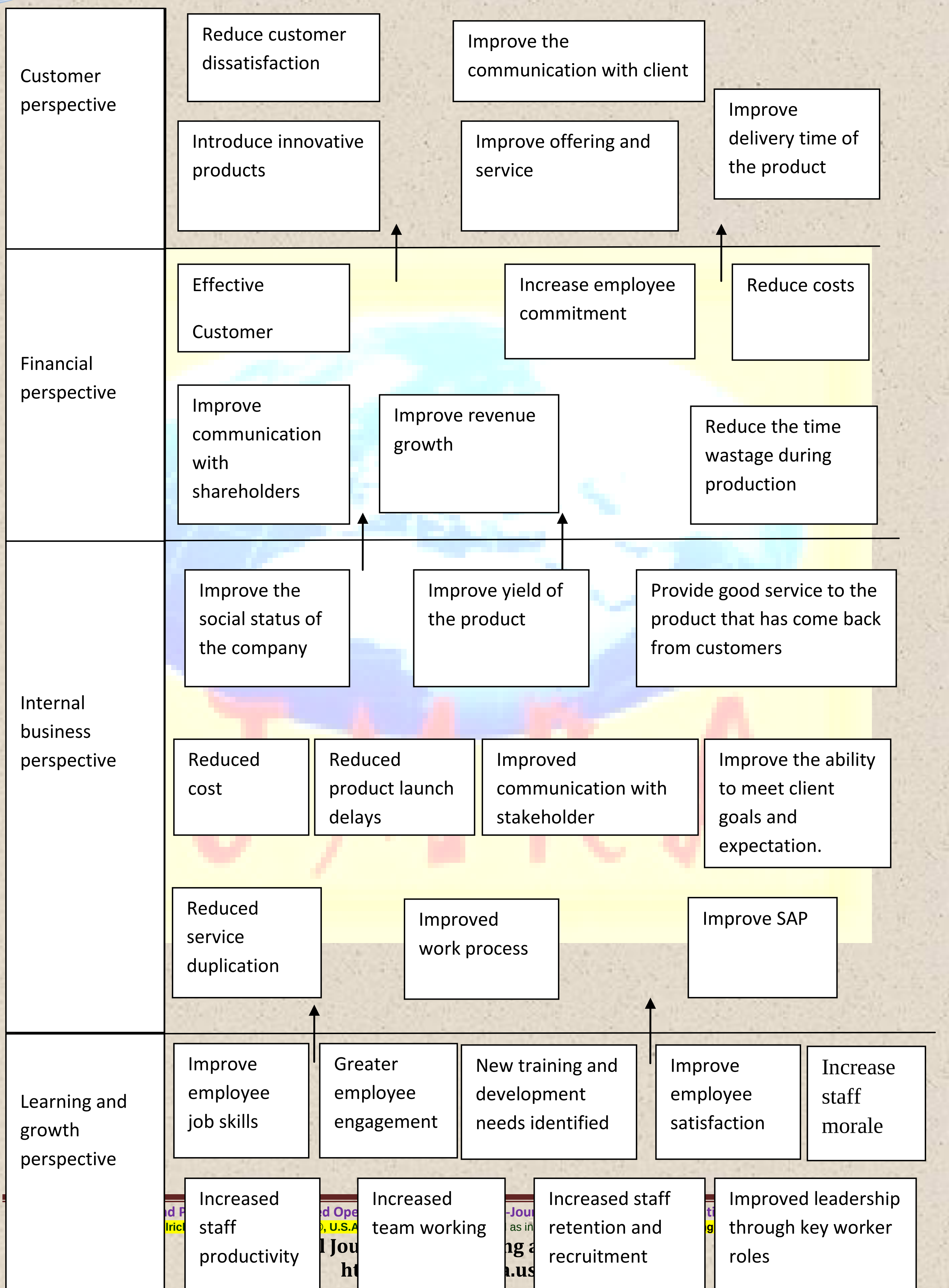
Research is a systematic approach to a purposeful investigation. Methodology refers to the various methods used by the researcher right from the data collection and various techniques. The total period allotted for the research work was three months. This research was undertaken by personal visit to the organization. Primary data are those which are collected as first-hand information and thus they are original in character. These are collected from the direct sources like, personal interview with the employees and observation method. Secondary data are previous records of the organization, magazines, journals and websites. The instrument used to collect the primary data was structured questionnaire and structured interviews. The size of the sample was 50. The researcher collected the data from the managers at Keltron. The Researcher adopted the convenient sampling technique to collect the data from the employees. The sampling unit consists of the employees of Keltron. In the research, the researcher has used the following tools to analyze the results. The said tools were applied using SPSS 11.0 version and SWOT analysis. The objectives, strategies, measurement tools and targets were developed by the author in conjunction with senior managers at Keltron. Staffs at other levels of the organization were not involved in the process. This could have resulted in a rather prescriptive performance measurement system which is biased towards management priorities. Wider engagement of staff could have probably resulted in a different set of objectives and priorities. The limitation of the research could be the inaccuracies in the indicators and measurement tools. Inaccuracies in data could result in results which are unreliable and unsuitable for measuring performance and in achieving targets. Weights have not been placed on any particular dimension or goal area.

Company's priorities change with changing national and local needs and it may be necessary to accurately place additional weights on some dimensions to achieve the desired outcome.

KELTRON'S OBJECTIVE AND CRITICAL SUCCESS FACTORS:

Objective	Critical Success Factor
Increase client satisfaction	Reputation of the company Customer relationship and satisfaction Employee satisfaction Product delivery and service
Increase the social status of the company	Product quality Relationship with clients Reduced cost
Ensure efficient use of resources	Learning organization Time lines Process efficiency
Increase production	Efficient use of resources Team working Skillful workers Proper planning
Identify training and development needs	Flexible work force and organization Learning organization Leadership Staff involvement Employee development and training
Improve relation with stakeholders	Improved profit Return on equity Communication with shareholders

CONSOLIDATED STRATEGY MAP FOR ORGANIZATIONAL GOALS



KELTRON'S PERFORMANCE MEASURE RECORD SHEETS

a)

Measure	**Customer satisfaction**
Purpose	To measure overall satisfaction with in the company
Relates to	The need to satisfy customers
Target	Reduce customer dissatisfaction rate by 50%
Formula	$\frac{\text{Number of dissatisfied customers}}{\text{Total number of customers}} \times 100$
Frequency	Biannually
Who will measure	HR manager
Source of data	Client satisfaction surveys
Who will act on data	Team and assistant manager
What will they do	Investigate reasons for dissatisfaction ,measure to improve overall client satisfaction

b)

Measure	**Publicity campaigns**
Purpose	To promote the name of the company across the world.
Relates to	The need to increase the communication between client and company.
Target	To attract more clients into the company.
Formula	$\frac{\text{Number of new clients}}{\text{Total number of clients}} \times 100$
Frequency	Quarterly
Who will measure	Marketing manager

Source of data	Marketing data base
Who will act on data	Team manager and marketing manager
What will they do	They will update data's in websites and will give information through other communicative areas.
Notes and comments	Publicity campaigns may include telephonic, email, face to face or web communication and or delivery of printed material or portable media for the particular purpose of raising awareness of the service

c)

Measure	**Return on equity**
Purpose	To give the current details of the company to stakeholder's
Relates to	Measure the company's ability to generate a return on its resources
Target	Will achieve a good relation with shareholders
Formula	Net profit before taxes/ Net worth
Frequency	Quarterly
Who will measure	Manager
Source of data	Audit records
Who will act on data	Team and finance manager
What will they do	Determines the rate of return on the invested capital

d)

Measure	Cycle time, yield
Purpose	Deliver quality products on time
Relates to	The skill and speed of employees
Target	Will achieve 100% efficiency in producing new products
Formula	$\frac{\text{Cycles}}{\text{Time}}$
Frequency	Quarterly
Who will measure	Supervisor
Source of data	Data base
Who will act on data	Employees
What will they do	They try increase the output and try to produce defect less products.

e)

Measure	Revenue growth
Purpose	To maintain a status in the market
Relates to	The total income of the company
Target	Will achieve 100% revenue growth
Formula	Current revenue – previous year revenue
Frequency	Annually
Who will measure	Financial manager
Source of data	Audit reports
Who will act on data	Hr manager
What will they do	They will try to introduce innovative ideas

f)

Measure	**Staff training**
Purpose	To ensure that all staffs undergo job specific skills training
Relates to	The need for training and development in response to changing needs of customers and shareholders
Target	All staffs are trained 100%
Formula	(Number of staffs trained / Total number of staffs)*100
Frequency	Biannually
Who will measure	Training and development officer
Source of data	Staff training records
Who will act on data	Training and development officer
What will they do	Ensure staff complete their training, identify training needs

g)

Measure	**Personal development review rates**
Purpose	To ensure the development of staff in line with the organizational and individual development needs.
Relates to	Training and development responsive to changing needs of employees.
Target	All staff have regular review with higher officials
Formula	$\frac{\text{Number of staffs who have had their reviews}}{\text{Total number of staff}}$ X100
Frequency	Biannually

THE BALANCED SCORECARD WAS THEN PREPARED BASED ON THE ABOVE OBJECTIVES AND MEASURES.

PERSPECTIVE	STRATEGIC OBJECTIVES	PERFORMANCE MEASURE	TARGET	INITIATIVES
CUSTOMER	**Increase client satisfaction**	Customer satisfaction	Reduce customer dissatisfaction by 50% Annually.	Survey's about customer satisfaction in progress
FINANCIAL	**Growth**	Revenue growth	Will achieve 100% revenue growth	Survey about the current revenue growth is going on.
	Profitability	Return on equity	Will achieve a good relation with shareholders	Compare investment in the company against other investment opportunities.
INTERNAL BUSINESS	**Manufacturing excellence**	Cycle time, yield	Will achieve 100% efficiency in productivity	Steps to appoint skillful employees.
	Increase publicity of the company	Publicity campaigns	Will conduct lot of campaigns	A step to update data's in websites and will give information through other communicative areas.
LEARNING AND GROWTH	**Identify training and development need**	Staff training	100% staffs undergo job specific and skill training.	Steps to identify staffs have not completed job specific and skill training. Training dates published.
		Personal development review rates	100% of staffs have reviews as per the guidelines.	Guidelines made available. Steps to identify staffs that have not been reviewed.

DISCUSSION AND CONCLUSION:

Though faced with challenges and hurdles at the outset, the research work eventually succeeded in developing an evaluation framework based on the balanced scorecard methodology. The management team at Keltron was supportive of the idea and welcomed the research. However, at the start of the research, considerable time had to be spent in collecting documents and reports to finalize the vision and mission statements. There was lack of a solid and consistent grounding with respect to the goals and objectives of the company. The vision and mission statements had to be created in the first meeting, which laid the foundation for further planning of objectives and strategies. The Balanced scorecard provides a framework and language to communicate the vision, mission and strategic direction of Keltron. Measurements are used to establish current position and inform employees as to what would lead to success in the future. Measurements set the focus on particular actions and outcomes. Establishing the current position of company will help understand what action is necessary to achieve organizational change. When asked how the balanced scorecard exercise helped to establish current position and communicate future direction, employee's response to the question was "the Balanced Scorecard gives us more clarity." The process of target setting helps communicate the need for change and direct the organization towards its goals. It will also highlight any gaps in performance. Organizational transformation results in achieving those targets. Fulfilling the requirements of its customers is the primary focus of any Keltron organization. Customer needs may spread across different dimensions. In publicly funded company like the Keltron, stakeholders are wide and varied. Government initiatives and directives also largely control the extent to which stakeholder and customer needs are met. That is a challenging job for the organization. Public sector organizations like Keltron are normally assessed through process and output oriented measures like economy, efficiency and effectiveness. An over reliance on some of these measures can act as a barrier to better healthcare outcomes. When asked about conflicts in objectives between the government and Keltron one of the interviewees stated "…the conflict is only in terms of costing. I do not think we are a cheap service and if the objective is to deliver the same high quality service with less financial resources, that's where the conflict arises." Nonetheless, the objectives of Keltron align with the overall objectives of the competitors. There has also recently been a push to cut costs, achieve maximum value for money and refocus attention on services which are comparatively cheaper. This has resulted in some strain on the availability of resources. As another interviewee stated "in terms of competitor's objectives, in trying to achieve those objectives we have lost the ability to provide often the intensive input that people need." None of the interviewees thought one objective was more important than the other; that objective would take precedence over the others as it would directly lead to cost savings for the company. Outcomes have also been gaining importance in the past few years. The dimensions, outcome measures and indicators used in assessing performance reflect the needs of different stakeholders which may interconnect or even be incompatible depending on the interests of the stakeholder group. In a multi-disciplinary company like Keltron, greater pressure from one stakeholder group may result in greater weight being given to a particular dimension or to some group of indicators or measures and a drive down on other stakeholder interests. In a multidimensional performance measurement system like the balanced scorecard, this can result in the development of a performance measure lacking in balance and integration. Imbalances and inconsistencies in stakeholder and customers interests can present barriers to the effective use of balanced scorecards in Keltron. The effective use of the balanced scorecard can also be affected by the indicators used. The indicators (measurement tools) were selected from a basket of suggested measures and tools by the government. Consensus was obtained among team members regarding the appropriateness of the measurement tools and target values for indicators. These target values pinpoint exactly the expected results and communicate the need for change within (and also outside) the organization. The indicators also help to show the actual position of Keltron. When asked how the Balanced Sore card approach helped to establish future direction of Keltron, manager replied "the balanced scorecard is sort of the beginning; it makes us improve the cohesiveness of the team and makes us think we are all moving forward together." To the same question employee replied, "I think it [Balanced Scorecard] has helped to pool what information we have, set it out a bit more clearly and focus on what our strengths are. We have clearly given ourselves a mission and vision which is useful for us to evaluate how we are functioning." Assistant manager response to the question was "I think we are [now] very focused in achieving what we are set out to achieving, some of the things like mission and vision that we talked about for a long while in the past, but never got around to completing." The measurement tools used are directly linked with the strategic objectives of each goal area or perspective and are embedded in a cause and effect chain as can be seen in the strategic maps. As mentioned earlier these imprecise, hypothetical cause and effect relationships link the desired outcomes with the activities that lead to achieving those strategic outcomes. Measurement tools are also linked with targets. Targets represent the desired outcome and the end result expected of the performance measure. As deputy manager stated during the interview "it [Balanced Scorecard] has made us focus on what we do and what we are aiming to do." The employees also made a similar statement "what it [Balanced Scorecard] has done is helped us to focus, given us a sense of direction…because we can see an outcome for our purpose it will help us looking at what our actions need to be." The balanced scorecard approach thus helps align strategy to action and monitor progress over time. Execution of the strategy and the monitoring of change are equally important. The Balanced Scorecard, as a tool, helps translate the strategy into operational terms and forms the basis for other activities. However, commitment from senior management is a prerequisite for successful implementation of the balanced scorecard and the management of change. Lack of support from senior management is one of the main reasons why balanced scorecard implementations fail. Engaging the whole management team in the process of building the scorecard will ensure that management is committed towards implementation. Other common reasons for failure are parent company interventions and the fear of measurement. Fear of retribution can prevent management from publicizing results of measurements. Motivation is another factor behind failure of performance management systems like the Balanced Scorecard. In the public sector company like the Keltron, employee reward for good performance often takes other forms than monetary. When asked what motivated managers to meet objectives, all interviewees identified 'recognition' and 'being valued' as the most important motivational factors. A assistant manager replied that "… recognition for developing and delivering a quality service; and if that means financial reward as in more money [budget] to develop and deliver services that are better." However, there are problems associated with linking rewards to the Balanced Scorecard in public sector organizations like the Keltron. There is widespread debate as to whether a formula-based compensation scheme would have advantages over an unverifiable and possibly biased subjective appraisal. Where weights are applied to indicators and dimensions in formula-based compensation schemes, there is the argument that it may lead to game playing and a drive down on particular stakeholder interests. Local priorities and variations could also have a bearing on these measures. The benefits of adopting the Balanced Scorecard system can be quickly identified without much knowledge or exposure to Balanced Scorecard system. The perceived benefits are in terms of obtaining clarification and consensus on strategy, the communication of strategy throughout the organization, aligning departmental and personal goals to strategy, linking strategic objectives to long term targets and annual budgets, the identification and alignment of strategic initiatives, facilitating systematic reviews, providing a double-loop feedback to assist in learning and strategy development and the translation of better strategic alignment into the improved results. When asked about the benefits of using the Balanced Scorecard in Keltron, employee replied "it gives us direction, focus and something to look at measuring our performance, something that the whole team can participate in and not just the management." To the same question, manager replied "it will help us identify the main actions for measuring and improving the service. It is also very practical, can be disseminated to the whole team and does not have to be necessarily applied by managers." Using the Balanced Scorecard along with strategic objectives and target measures will provide employees in all levels of the organization with a clear sense of direction, their role as drivers of change and the benefits of accomplishing organizational goals. These results are subsequently transferred to customers. The Balanced Scorecard helps to improve communication, facilitate learning and influence behavior within the service. The Balanced Scorecard system will open channels for continuous and ongoing dialogue between staff at all levels of the organization further enabling staff to align their individual goals with the organization's goals. It will also promote employee growth and development by identifying training and development needs and through the use of mentoring, coaching and closer supervision. This cycle benefits both employees and the organization as individual and organizational goals are accomplished at the end of the day. Thus a culture of achievement emerges from the process. As one of the managers [OBJ] stated "the balanced scorecard will highlight training needs for both management and staff and highlight areas where we perform well and areas where we perform less well… I would like to think that it will help the team gel more and think that we are one team and work better."

There are however challenges to implementing the Balanced Scorecard in public sector organizations like the Keltron. Unlike the private sector where the expected outcome of the balanced scorecard would be increased profits and returns for the shareholders, in public sector organizations like the Keltron, the emphasis is on getting the best outcomes for customers, while operating within limited financial resources or in essence to achieve value for money. The application of the Balanced Scorecard becomes difficult due to the fact that the

Balanced Scorecard is not a multi-stakeholder framework. The targets are imposed on organizations by the government. These national targets which may not be appropriate at the local level are compounded in the local government setting by various government departments and agencies with different requirements for information and performance data. This is particularly evident in government undertaking organizations like Keltron in that conforming to both national and local requirements and targets are necessary for the very existence and sustenance of the service. When used in public sector organizations, the format of the scorecard also changes with the customer perspective appearing in the top reflecting customer satisfaction as the top priority. The lack of empirical evidence in exploring the usefulness of the Balanced Scorecard as a performance management system may lead to managers being skeptical about accepting the Balanced Scorecard over other traditional measures. The Balanced Scorecard approach has also been criticized as being a costly, complicated and time consuming exercise. In light of the current push towards cutting costs and achieving value for money, managers may find it difficult to justify adopting the Balanced Scorecard system. Both during the development and implementation phases, determining what indicators to use and how to set measurement targets could also be a major challenge. Educating and engaging staff at all levels of the organization on the Balanced Scorecard system is necessary for successful implementation. This may be particularly challenging if staffs perceive the new performance management system as a threat and are resistant to change. Difficulties with the timely collection and collation of data may also pose challenges when trying to keep the system alive. Stakeholders may also equally lack adequate information on the concept of the Balanced Scorecard or in the use of a particular indicator to measure performance. When asked what the major challenges to implementing the Balanced Scorecard in Keltron were a manager replied "Engaging staff and carefully planning and involving the team resources. Because what we have actually identified is an awful lot of work and having the resources to carry out that work within the limited resources that you have is a major challenge." Engaging staff and moving forward as a team was the most important challenge identified by that manager while supervisor replied "Getting the team to own the Balanced Scorecard is a challenge. Also we may be challenged to review our service and change it in light of what our performance are and maybe also show up what we don't do well." The lack of time to complete the measures and collate the information and having the in-depth knowledge to use the Balanced Scorecard were the challenges identified by assistant manager. In spite of the hurdles and challenges to overcome to successfully implement the system, the balanced scorecard is a powerful tool which will help align action to strategy and enable the organization to achieve its goals.

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