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Measuring IT service performance- A balanced scorecard approach

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The study, in form of a product-oriented thesis, aimed to provide company X, particularly in service desk area, with a tailored package including a service evaluation performance platform and an implementation plan. An additional research, whose type was case embedded, was conducted to gain the insight of how the measurement system performs in practice and to encourage the company's involvement. The balanced scorecard measurement platform was the combination of the original author's design and the company's suggestion. It was designed using Microsoft Excel, which was easy and convenient to use. And the implementation plan was presented as a part of the report.

The theoretical framework comprised three aspects: introducing the IT service business which relates to ITIL knowledge base, highlighting the benefits of creating a measurement system, and designing the balanced scorecard for evaluation. The literature review aimed to build a robust base for the platform and the implementation plan. Additionally, semi-structured questionnaires and in-depth interviews with two experts in the field were carried to obtain the reliability and validity of the analyzed information.

The findings reveal that this system of service performance evaluation is considerably applicable in the case company thanks to its simplicity and manageability. However, in order to generalize the platform, it required more of management's commitment, company's research and investment. Based on the fundamentals of creating the evaluation document, the platform can be updated to adapt to the company's changes in goals and strategies.

Key words: Measuring, IT service, performance, balanced scorecard.

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Glossary

ITIL: Information Technology Infrastructure Library

ITSM: Information Technology Service Management

CSF: Critical Success Factor

KPI: Key Performance Indicator

BSC: Balanced scorecard

SLM: Service Level Management

SLA: Service Level Agreement

1 Introduction

This chapter describes the purpose of whole study. The background of the study will be introduced first, while the thesis objective and thesis tasks are shown in sub-chapter 1.1. The rest of the chapter discusses the key concepts, scope of the thesis, and company overview. The structure of the report will be indicated in sub-chapter 1.6.

1.1 Background of the study

As technology changes rapidly, many cheap but high quality products/ services are produced in seconds and offer customers opportunities to have more choices with lower price; hence, businesses have to deal with more demanding and less loyalty customers who will not accept any dissatisfaction. Perceiving the important of customer relationship, many researches demonstrate that those businesses with customer-driven strategy will definitely win the market in long term. To transform from product-driven to customer-driven, company must focus on customer relationship management, measure their position in customer's heart and improve their services to achieve customer's satisfaction.

This thesis aims to design a platform to evaluating the service performance in IT industry for the case company. Due to the privacy, the author will named company as X in this thesis. Company X main activities are to provide sales/ retail management software for FCMGs clients and offer IT service support to client's IT department to utilize all functions in company's software product. Thus, it is vital to evaluate the efficiency of the service to reduce cost and enhance manifestation not only for the company business purpose but also for the stakeholders.

This thesis is product-oriented type, offering the case company a complete package of a customer services performance measurement platform using appropriate Key Performance Indicators (KPIs), set those into Balanced Scorecard (BSC) .The figure below can précis this idea :



Figure 1: Process of the thesis

1.2 Research objective and research tasks

Since company X has not applied any formal and serious processes or systems to evaluate its service performance, this thesis targets is to create a tailored form and use company's Philippines branch as trial for the platform which includes an empirical analysis of the additional research conducted.

Project objective is: Creating measurement platform for the Service desk in IT industry. Case company X.

The research tasks (T) are respectively achieved during the thesis process:

T1: Literature review

T2: Designing platform for service performance evaluation

T3: Apply the platform in Philippines branch as case embedded

T4: Interview with management to analyze the designed balanced scorecard.

In more details, the main theories of the study are presented in T1. T2 creates the main aimed product of this thesis: the platform for evaluating service performance, which consists of collecting data in order to select appropriate KPIs and build balanced scorecard. Afterwards, T3 is the research executing by collecting metrics from company's internal documents to experience the balanced scorecard in practice, moreover, this part includes the analysis of the case embedded. Finally, T4 is the feedback from management on the platform and author's suggestion. This table below presents the overlay matrix for the product.

Study objectives: Creating measurement platform for the service desk in IT industry. Case company X		
Research tasks (T)	Descriptions	Chapter
T1: Literature review	Main theory	2
T2: Creating platform for service performance evaluation	Service performance measurement, CSFs KPIs and Balanced scorecard	3
T3: Implementing measurement	Applying measurement platform: Embedded case study: Philippines branch	5
T4: Management's feedback and author's suggestion	Management feedback and author's suggestions	6

Table 1: Research tasks

1.3 Key concept

In this thesis, there are four main key concepts focusing on service performance management. They are service performance management, service performance measurement, key indicator performance and service scorecard.

IT service management (ITSM)

Service Management is a set of specialized organizational capabilities for providing value to customers in the form of services. The capabilities take the form of functions and processes for managing services over a lifecycle, with specializations in strategy, design, transition, operation and continual improvement. The capabilities represent a service organization's capacity, competency and confidence for action. (OGC, 2011)

IT service measurement

The whole purpose of Service Measurement is to gather appropriate information and data to enable informed decisions to be made throughout the organization at various levels in order to continually improve. (OGC, 2011)

Balanced scorecard

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. (Kaplan, 1998)

1.4 Scope of the thesis

From the broad field of service management, this report will only focus on one specific branch: call center/ service desk, suppose that the supply chain part which has a huge impact on service performance is a perfect process. There are numerous aspects to gauge concerning the performance of service in general, but the scope of the thesis aims to study the evaluation of service desk performance. Customers who are mentioned in the report would be B2B customers of company X. This report also focuses on the IT industry as this is the sector within the company X operates.

1.5 Aimed benefit for stakeholders

Company X: The company will receive a ready to use measuring platform for future, with which they can improve their operational process, reduce unnecessary cost, quality control and development in order to gain more competitiveness and sustainable. In addition, the company can enhance their relationships with their clients and perhaps acquire more long-term contract and customers. Lastly, the brand image of the company will be strengthened from different stakeholders: B2B clients, partners, and employees.

For the B2B clients: Indirectly, company X's client would increase their productivity by the quick response and solution of the issues of company X's service desk. Moreover, during the improvement of operational process, company X may reduce cost which leads to the better sale price. The evaluation result is also a report for company X and clients to understand each other profoundly and increase.

For the employees: Basically, the main benefit employees will achieve is a better insight of their job, it means that they can analyze their job performance, recognize their customers need in other to ameliorate of performing.

For the author's field of specialization and further studies: The author wishes to gain a deeper understanding of customer service aspects, specifically in evaluating service desk. Experiences in the design of documentation and carrying out research and interviews should be academically achieved, precious and enjoyable.

1.6 Company X

This sub-chapter discusses about case company: X. General information about the firm is provided to generate a picture of its business and operation, and then followed by the description of their service desk processes.

Overview of the company

Founded on 1999, company X is a subsidiary of a leading IT corporation in Vietnam operating primarily in software development, software solution and helpdesk services. According to company's annual report year 2012, the human capital is over 4000 employees bring more than 80 million of profit to company. Company X includes four independent strategic business units with different business lines and markets, in this study, the author will only focus on DMS unit.

DMS business line concentrates on R&D software, 24/7 helpdesk service and implementation (appendix 1). In R&D and implementation business, the company provides software and consults technology solutions for sale management, human resources, and supply chain for such customers like PepsiCo, Unilever, P&G, Ajinomoto and many other brands. Furthermore, DMS also offers 24/7 helpdesk service in order to ensure customer business operation process works perfectly.

Despite of the complicated hierarchy structure of parent company-X, DMS still has its own organizational structure with easier operation to manage effectively. With 300 employees, the firm is divided into two sub-groups; the production group work directly with customer and production and the administrative group is for internal management. Head of the firm are the board of directors, consisting of one director and two vice-directors. At the second level is the manager of each department; human resources, administrative service, finance and infrastructure handle internal activities in order to support the production group work swimmingly. Development, implementation, quality assurance and purchasing concentrates on producing software and R&D, on the other hand, call center/ helpdesk service deliver the product to customer.

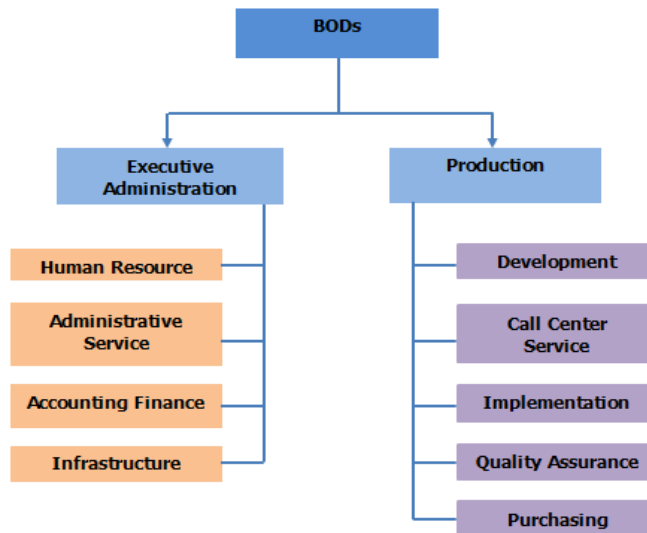


Figure 2: Company X organizational structure. Company X's profile document.

Call center/helpdesk activities with clients at DMS

According to the director of DMS, at the beginning, the core vision was to produce best IT solutions, however, as customer's loyalty is the key success factor nowadays, the firm need to switch its business to customer-centric to adapt with the environment. The firm has a huge number of employees who onsite at the client's office for daily support. Most of the clients are located in South East Asians such as Vietnam, Philippines, Thailand or Malaysia. According to the company X's annual report in 2012, call center service held 55% of profit; following is development service with 26% and implementation service with 19%

Basically, there are two types of call center service activities was offered. The majority one is call center which is located at client's IT office, with high cost, this type of call center serves big clients. The other one is for small customers which call center will be placed at DMS office.

T1: Literature review

2 Service performance evaluations

This chapter of thesis briefly reveals all the theories, definitions, and models which are the base for the empirical research and other research tasks. The definition, benefits for implementing the system, considered features, criteria, methods and approaches, and implementing process will be discussed in the following sub-chapters.

2.1 IT service management based Information Technology Infrastructure Library (ITIL)

The Information Technology Infrastructure Library (ITIL) is a set of practices for IT service management (ITSM) that concentrate on aligning IT services with the requirement of business. ITIL describes processes, procedures, tasks and checklists for establishing integration with the organization's strategy, delivering value and maintaining a minimum level of competency.

2.1.1 Service lifecycle

The IT service management lifecycle is developed by ITIL which consists of the strategy, design, transition, operation and continual service management. The lifecycle demonstrates the significant of alignment and management across various functions, processes, and system to achieve the best service. Each stage of the lifecycle is described in a set of five publications (Brewster et al 2012, 7). According to the overview in every ITIL publications by OGC (2011), service strategy is "about ensuring that organizations are in a position to handle the costs and risks associated with their service portfolios and are set up not just for operational effectiveness but for distinctive performance". After setting the strategy, service design offers organization the principle to develop and design the service management in order to maximize customer value. Service transition plays a role as a bridge between the development and operation department with the aim of guarantee service operation requirement will be well-prepared before implementing, moreover, service transition is also take responsibility for service change and risk

management. In order to deliver an efficiency service as service strategy aims, it is important for service operation to manage daily business activities and optimize the service process which is designed in previous stage. As businesses changes rapidly and customer's demand increases, organizations must measure their service performance to analyze the strength and weaknesses and seek for opportunity to improve a better quality service with reducing cost, at that stage, the continual service improvement are provided with different measure framework ready for manager to use. In this study, the author will mix these components to fit with the firm's business strategy.

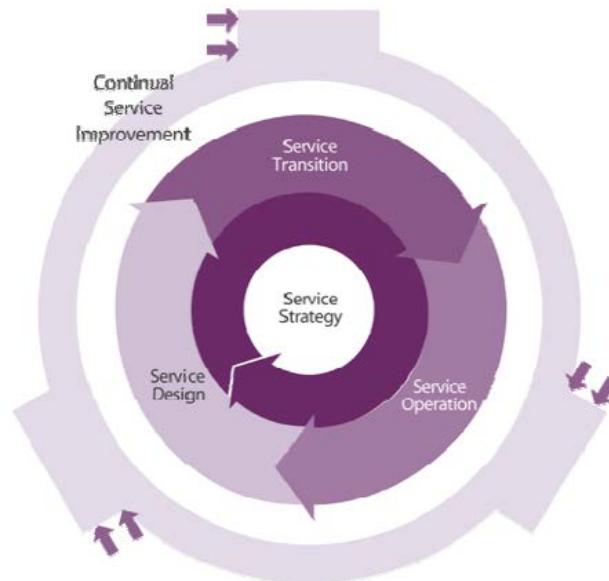


Figure 3: IT service management life cycle. OGC, 2011.

2.1.2 Service Management

Since the study focuses on service desk performance, it is necessary to understand the components of service desk which are service support and service delivery. Donko and Traljic (2006) summarize the service desk activities based on five publications of ITIL into two main areas: service support and service delivery.

Configuration Management	Improving process through IT infrastructure	Service support
Change Management	Control change	Service support
Release	Planning, Design, Testing	Service support

Management	software and hardware to release component for live environment	
Incident management	Identify, analyze risks to restore normal service, minimize impact on business operation	Service support
Problem management	Enhance situation by classifying root of incidents	Service support
Service Level Management (SLM)	Managing relationship between service provider and customer, ensure the service connects with service level agreement	Service delivery
Financial Management	Budgeting, accounting	Service delivery
Capacity Management	Establish long term strategy by analyzing latest trends	Service delivery
IT service continuity management	Measuring to reduce risk occurring and for the production IT recovery plan	Service delivery
Availability Management	Design, implementation, measurement and management of IT infrastructure	Service delivery

Table 2: Service support and service delivery key areas. Donko & Traljic, 2006.

2.2 Service desk concept

Realizing the indispensable of technical support of software usage, help desk was first introduced by IBM in 1970s. After 20 years, help desk is no longer just "a single point of contact within the company for technology related questions and incident" but it transform to a service desk which includes more responsibilities "that included serving as the single point of contact for managing customer incidents and service requests and communicating with customers". (Knapp, 2008)

Typically, customer-centric company's biggest mission is to acquire customer satisfaction by delivering high quality customer service. A good customer service must ensure to offer maximum customers value by supporting customer to realize the benefit of products or service. Every contact to service desk is an opportunity for company to improve their image, increase sale and tighten relationship with their patron. By that, technical support must be expanded to customer support which includes ongoing support such as software upgrading, fixing bugs, answering customer's questions, etc. (Knapp,2008)

The original service desk is a group of IT engineers whose duties are to answer the phone and to solve the IT related problems with the aim of providing best customer value. However, due to the rapid growth of technology and customer demand, service desk is assigned more tasks in order to satisfy the customer as well as achieve excellent service quality. The new adding tasks must ensure to minimize the time to solve incident, increase end-user's productivity and monitor database. Besides monitoring and owning incidents or service requests, the service desk also plays a vital role as a bridge between customers and IT firm. (Thum, 2010)

According to Heckman & Guskey (1998), service desk are operated in two types which are in-house and external. Established by the firm with the aim of solving domestic IT related issues, in-house service desk also can be outsourced as a third party at client's office. External service desk is set up to serve the company's customers who purchase the products and would like to be assisted to receive the best value of products.

2.3 Definitions and Benefits of service performance evaluations

Service Performance Evaluation

Neely (1995) simply defines performance measurement as "the process of quantifying action, where measurement is the process of quantification and action leads to performance, in term of efficiency and effectiveness", or in another definition by Gleich (1997): "Performance measurement is the development and deployment of (often several) quantifiable measurement of various dimensions which are applied to assess the performance potential of different objects within enterprise".

Modern technology offers available reporting package which makes the service desk evaluation easier. Consequently, most managers are trapped and fail in measurement. Particularly, the reliable on the available impressive performance indicators lead managers to forget to examine profoundly and link those metrics with their business strategy. There is saying: "Figure cannot lie, but it does not show everything either", especially in the service sector, the non-financial are considered as the most crucial indicators and difficult to gauge by number. Hence, the involvement of management level impacts enormously in the designing performance evaluation process to avoid subjective in choosing appropriate indicators, as a result, room for improvement will be clearly identified. (Thum, 2010)

Tyagi & Gupta (2008) suggest perceiving deeply the service's characteristics before creating performance measurement system in order to find the right metrics for the firm, moreover, besides quantitative measuring method, qualitative method should be used to gauge the intangibility of services such as production development, employee skills, customer satisfaction, and company's reputation should be pertained. "Service measurement will require someone to take the individual measurements and combine them to provide a view of the true customer experience. Too often we provide a report against a component, system or application but don't provide the true service level as experienced by the customer". (OGC, 2007)

Benefit of performance measurement

There is saying: "You cannot manage it without measure it". Generally, a well-balanced performance measurement system benefits in different aspects of the firm. With a detailed analysis performance report, manager is able to monitor the performance. Without effective performance measurement system and detailed analysis, management is unable to track the performance tendency with the aim of ascertain the weaknesses and opportunity to improve the business. Moreover, linking an appropriate performance measurement system with organization's goal and strategy can support organization not to lose track and take all advantages (time, resources, and energy) to reach the target. Additionally, the measurement also brings the managers opportunity to make unbiased decision by offering various indicators that matter. "Quantifying achievements and the impact of activities enables organizations and programs to demonstrate results to internal and external stakeholders" (Thum, 2010). As the result of enhancement, company will gain more customer satisfaction and leverage employee skills as well as business process.

Surprising with the report by eG Innovation (2012) on the relation between IT service performance and business, the question is: "What are the most critical business impacts of poor IT service performance to your organization?", it is reported that 52.8% of 150 organizations from around the world respond poor IT service performance decreasing customer satisfaction, 43.8% vote for the increase in cost of IT operations, and the decreased user productivity hold the same number. Following that is the decrease of 36.1% in the effectiveness of IT staff and 33.3% in direct revenue loss. Poor performance also affects business agility (31.9%) and brand reputation (31.3%). 29.9 percent of informants believe that employee engagement dropped down due to the poor performance, as the consequences, Service Level Agreement (SLA) will not be warrant (20.8) and lead to the inability to

launch new business services (19.4%). Obviously, IT service performance is a crucial part of business which requires more attention from management level.

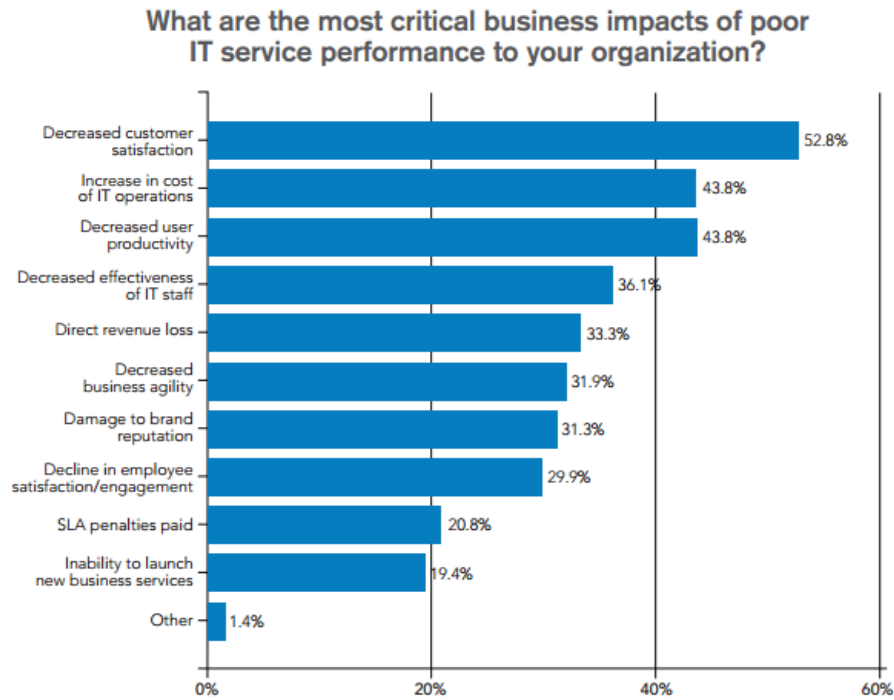


Figure 4: Impact of poor service performance. eG Innovation, 2012.

2.4 IT service performance measurement

OGC (2007) describes the seven steps to identify enhancement opportunities for IT service. Basically, from step 1 to step 5, it can be perceived as the measurement process. The model will be used as an evaluating outline to develop the performance platform.

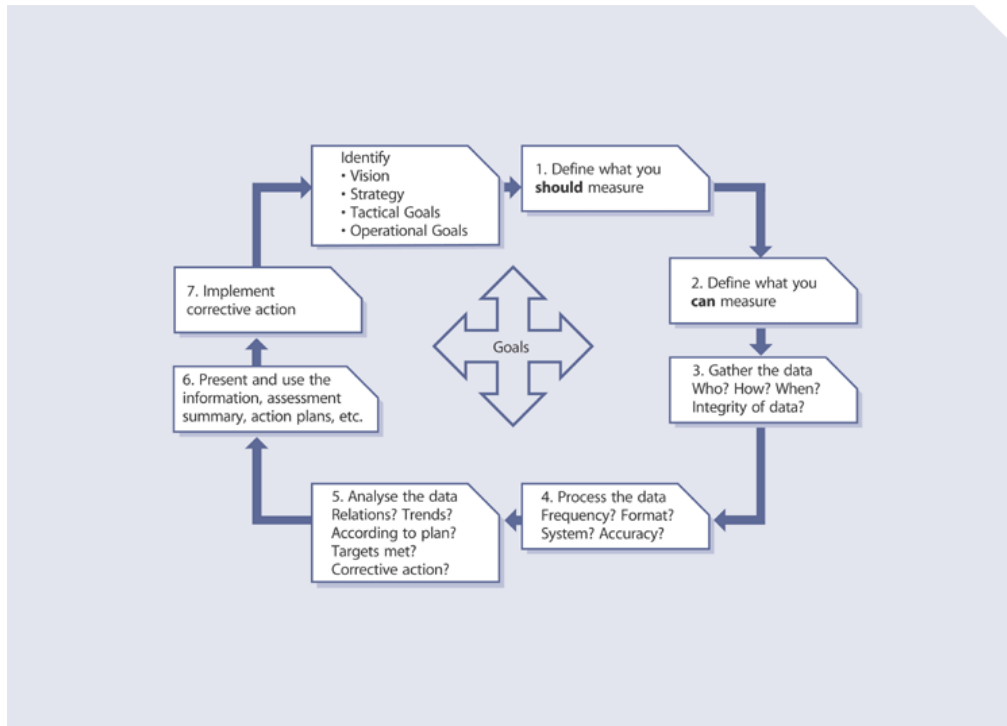


Figure 5: The 7-step improvement process. Brewster, 2012.

Step 1: Define what you should measure

Before establishing a benchmarking, the firm must define their current situation compared to business goal. At this stage, the whole service lifecycle will be involved with the aim of providing information. The data collected should answer the question: "Where are we now".

Step 2: Define what you can measure

The main activity of this step is to identify the business trend and requirement of high service quality the company desire. After analyzing the resources and capabilities, a set of critical success factor, which will effect on the success of business, will be establish.

Step 3: Gathering the data

The data to be collected based on business's goals and objectives. Normally, the data is purely raw.

Step 4: Processing the data

The data above will be arranged as Key Performance Indicators form which must be related to Critical Success Factors.

Step 5: Analyzing the data

At this point, the data become information to be analyzed in order to identify service gaps, impact on business, cost waste or weaknesses.

2.4.1 Baselines

There are many different definition of baseline from various field. In general, baseline is a document which contains evaluation data which will be used to compare with later measurement in order to find the change or improvement.

“An important beginning point for highlighting improvement is to establish baselines as markers or starting points for later comparison. Baselines are also used to establish an initial data point to determine if a service or process needs to be improved.”

ITIL library

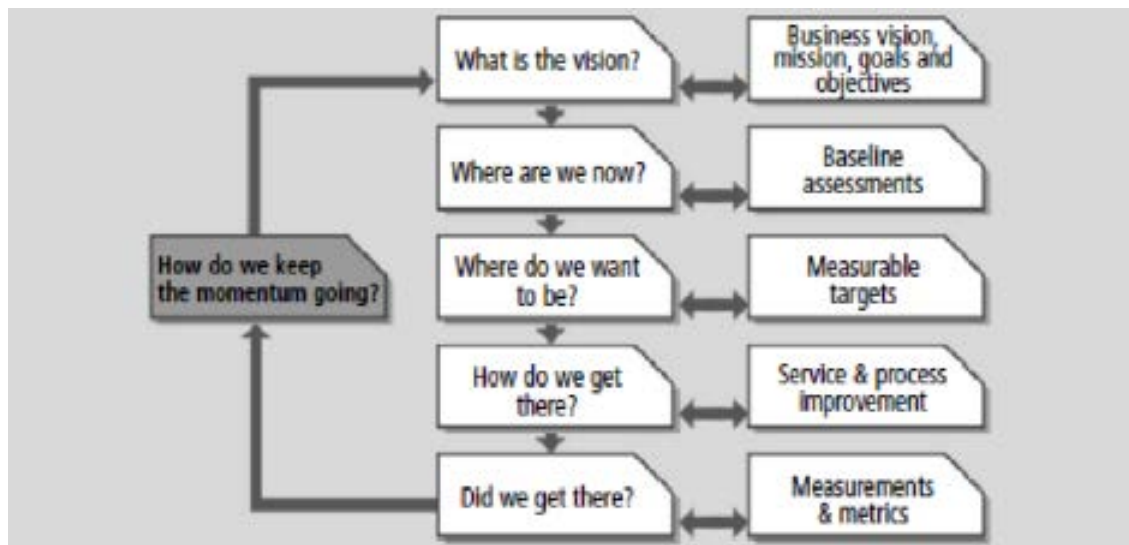


Figure 6: Baseline in measurement. OGC, 2007.

Baseline should be defined through every level of measurement, from strategic goal to KPIs. As baseline function is a reference to be compared after implanting measurement, it will be difficult to accomplish evaluation if the company do not have any baseline, in that case, the first measurement will become baseline and the first measurement will be compared with one of options following: with goal or target, with other organization which has similar business, with day comparing or month comparing, with other business units. (OGC, 2011)

2.4.2 Critical success factors (CSFs)

The concept of CSFs was first introduced by D. Ronald Daniel (1961), but it was widely used after Rokart refined it in his journal "Chief executives define their own data needs" in 1979. Critical success factors (CSFs) is defined as "few key areas that must go right to the business to flourish".

Brewster (2012) and OGC (2007) suggest that to attain a prosperous measurement, CSFs should be limited around two to four per perspectives. CSFs describe the most important factors effect on the businesses success or failure; therefore it should be put into consideration not only by senior management but also by middle managers who have strong knowledge of business process and operation, moreover, CSFs should align with business objectives. To gauge CSFs, analyzing CSFs to ramify into smaller part called Key Performance Indicators is vital, by doing this, manager will be able to collect numerical values that demonstrate if the business performance is achieved.

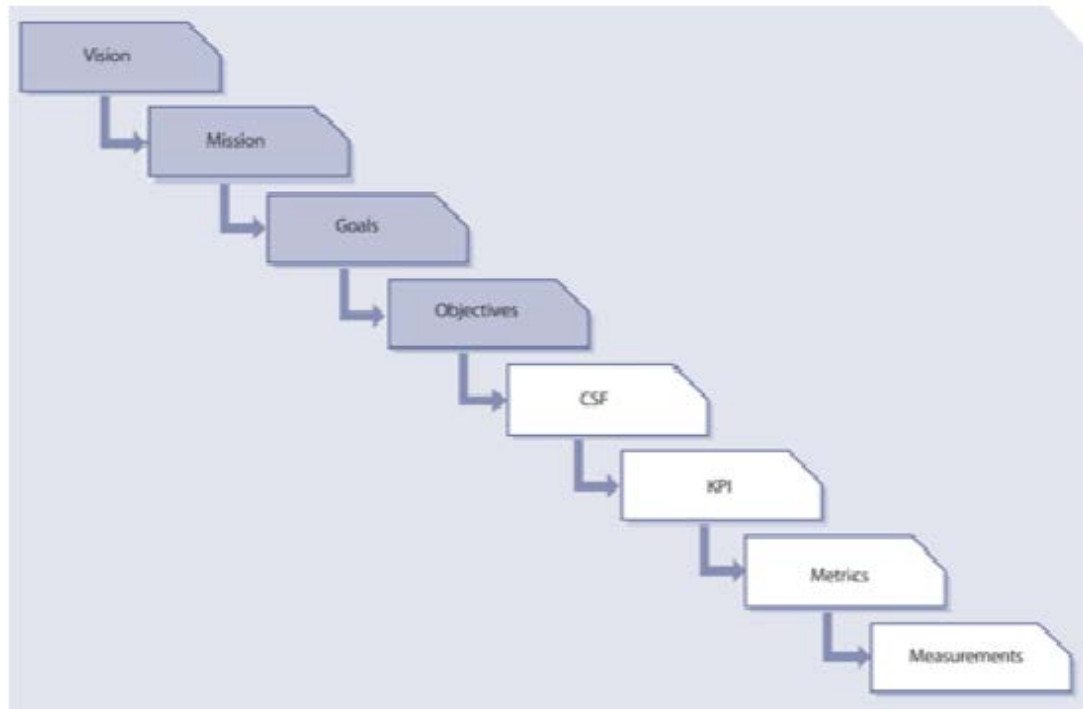


Figure 7: From CSFs to measurement. OGC, 2007.

There are many CSFs for IT service management proposed such as enhancing IT service productivity, value-added service, business process, accountability, continuous improvement, customer satisfaction. (Moerkens and Pollock, 2004; Hoschtein, 2005; Sakurai, 2007). Nevertheless, different organizations set different business goals depend on their competitive advantage, business resources and situation. Therefore, available CSFs from IT packages should not be used to avoid misleading the whole measurement purpose.

2.4.3 IT service KPIs

“A key performance indicator (KPI) is a metric that is used to help manage an IT service, process, plan, project or other activity. KPI are used to measure the achievement of critical success factors. Many metrics may be measured, but only the most important of these are defined as key performance indicators and used to actively manage and report on the process, IT service or activity. They should be

selected to ensure that efficiency; effectiveness and cost effectiveness are all managed.”

(Brewster, 2012)

According to Pollock (2009), there are three fundamentals of KPIs required in the establishing KPIs process. Firstly, the organization’s goal and KPIs should have a tight linkage. The example below show how KPIs should attain to business objective, a firm primary goal is provide customer fast service delivery by enhancing waiting time to achieve customer satisfactions should use KPIs which reflect the efficiency of service in Time perspective. However, if the firm goal is to improving staff skills, the KPIs should be related to Human Capital perspective.

Goals	KPIs
Reducing waiting time of service	Average time to respond (%) Call abandon rate
Improving front-line staff skills	Average time of training course Staff evaluation

Table 3: Example of the connection between business’s goals and KPIs.

Secondly, the KPIs used must also be quantitative and quantifiable. The service performance is difficult to measure in nature as there are many intangible factors involved, especially in IT service industry where service performance evaluation required various invisible components from service design, service operations and service transition in order to arrange a perfect measurement platform, as the result, the manager must select KPIs which can be quantified in order to avoid subjective in evaluation. By translate the performance into numeric value and percentage, manager can easily analyzing the situation of their performance.

Finally, the organization’s success and KPIs must be linked together. Pollock (2009) also states that “simply tracking data over time and reporting it back to management is not useful if the data itself is not meaningful to the measure of success.” In other words, the KPIs must be associated with critical success factors.

The report from Aberdeen Group (2009) presents how the Best-in-class service organization use KPIs to run their service measurement. The report collects

responses from 230 service enterprises from various industries include finance, logistic, manufacturing, etc.; however, the number of IT service companies holds the highest percentage at 16%, therefore, the report can be align with IT service measurement.

Figure below demonstrates the five most important individual KPIs which Best-in-class organizations put in their evaluation. For them, customer satisfaction rating is the most critical KPIs with the score of important is 4.90, customer retention rate is 4.53, following that is service operations profitability with 4.37, service level agreement compliance 4.26 and first-call resolution rate 4.13. In this report, Aberdeen Group mentions of the laggard firms focus more on availability (4.43) more than best-in-class (4.10).

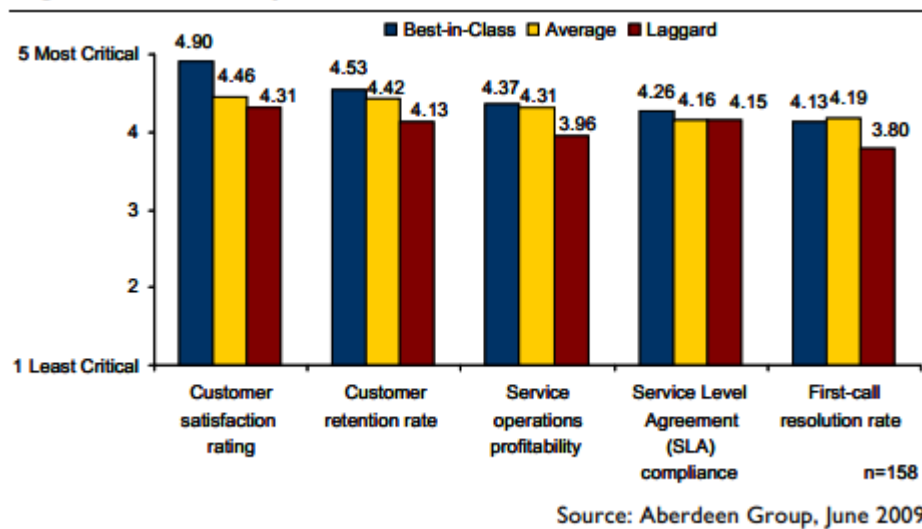


Figure 8: Most important KPIs to measure service performance. Aberdeen Group, 2009.

In five publications about ITIL, OGC (2011) proposes more than 60 KPIs to measure the whole lifecycle which can directly or indirectly make a huge impact on service performance, Gacenga (2013) re-arrange those KPIs in a table ready to use (Appendix 2), and management can choose which type of KPIs is the most appropriate for their business.

2.5 IT service balanced scorecard

2.5.1 IT Balanced scorecard

Balanced scorecard is developed by Kaplan and Norton (1998), has been widely applied as a strategic management system that focalize on the drivers of revenue, success, and value in organizations. Balance scorecard proposes a three layered structure for the four perspectives: mission, objectives, and measures. Key Performance Indicators (KPIs) is the metric included in the scorecard which can be altered to be conformable to market situation, product strategies, business size and competitive environment of organization.

The main benefit of the scorecard is to facilitate the manager to identify the future competitive advantages and notify employees of current and future success by converting organization's mission and strategy into a set of performance measurement. It measures company performance through four balanced perspectives: financial, customers, internal business processes, and learning and growth. (Kaplan & Norton, 1996)

According to Rudd (2010, 130), the balanced scorecard is difficult to apply in IT industry due to its rigidity. However, many studies prove that this platform can be implemented without any obstacles (Chang & King, 2005; Basili et al, 1994). Rudd (2010) suggests the IT balanced scorecard should be as the following:

- Client perspective: How client see the firm? In this perspective, IT plays a role as service provider, Service Level Management will the main key areas to measure.
- Internal business process: How could the firm excel their process? Service operation will be considered at this point which include Incident, Problem, Change, Configuration and Release Management as well as other IT processes.
- Learning and growth: Software investment, business development, and flexibility of IT and products.
- Financial - Align IT with the business objectives, manage costs, manage risks, deliver value; IT Financial Management is the process used to allocate costs and calculate ROI.

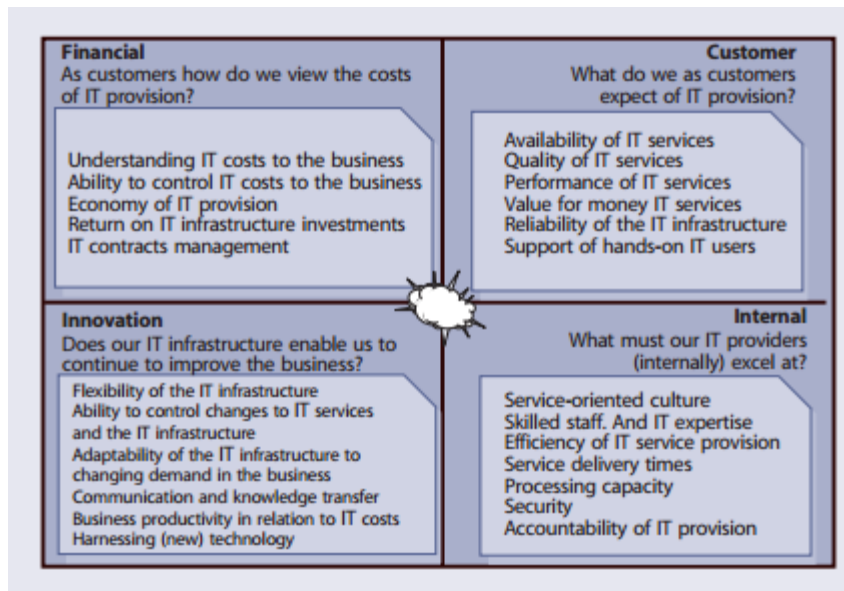


Figure 9: Example of IT balanced scorecard. Rudd, 2010.

2.5.3 IT service balanced scorecard

Marcos et al (2012) develop new way to approach the balanced scorecard for IT service. The four perspectives are changed due to cause and effect in service delivery and support. However, the financial perspective from Marcos approach is not likely appropriate with the IT service in IT industry but rather IT service in another industries. The main reason is IT service in IT industry earns profit from their service and normally works independently with the other department; therefore, it is not necessary to ask for funding to develop tools for project since there is R&D department takes responsibility for that. As the result, the financial perspective will be alternated by Donko & Traljic (2006) approaching.

- Financial perspective: Business value is the key of this perspective, in order to achieve high service productivity, it is essential to control budget, manage the use of resource at suitable level and measure cost wasting.
- Operation perspective: the key of this perspective is IT Operation excellent. In cause and effect, an outstanding operation effect on service productivity and customer satisfaction mostly. Service operation and service design will be put in consideration when establish KPIs for this perspective.
- Client perspective: the client's (who pays for IT services, and asks for client requirements) required a service standard as agreed in Service Level

Agreement, therefore, putting characteristic of service level agreement in measurement is compulsory in order to gauge if the service offered meet the demand, moreover, customer survey is necessary to understand customers profoundly.

- Future perspective: this replace Learning & Growth perspective, this depends on the strategy of the moment. Marcos et al (2012) suggest concentrating on technology trends and opportunity in the future. However, in the service performance, it is crucial to focus on human capital, and human is the key success factors to customer satisfaction.

Implementing IT service balanced scorecard

In service continual improvement publication, OGC (2011) states that the balanced scorecard should be disposed at strategic business units (SBUs) level. To succeed in using balanced scorecard, it is crucial to start selecting only two to three CSFs for each perspective which is most related to business, this stage often requires times and contributions from various level of management. "Implementation is not the most difficult part of using the Balanced Scorecard - consolidation is. Usually, consultants are employed to assist in the introduction of the Balanced Scorecard. The challenge is to keep measuring once they are gone. The danger is in the temptation to fall back on prior measuring techniques or not measuring at all." (OGC, 2007)

Figure 10 describes the process to develop balanced scorecard, goals and objectives will be defined with the aim of identifying critical success factors, after that, CSFs will be break down into KPIs and finally the metrics.

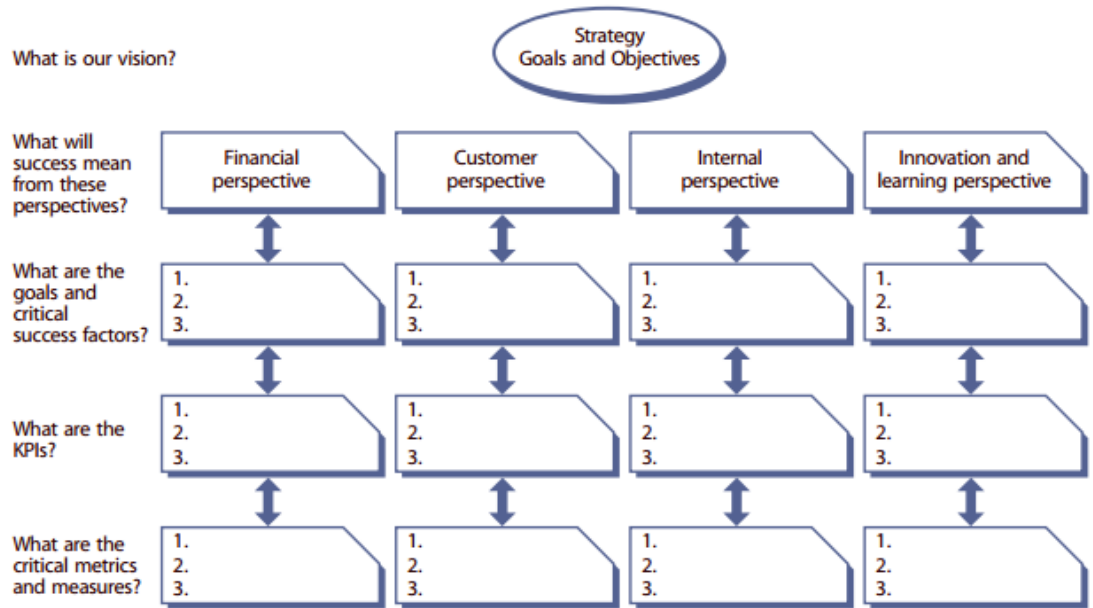


Figure 10: Balanced scorecard process. OCG, 2011

T2: Designing service performance measurement platform

3 Creating IT service balanced scorecard

This chapter presents the process of design the documentation of IT service balanced scorecard for company X. After studying about the company's strategy and target, critical success factors and key performance indicators are considerably chosen to establish a complete balanced scorecard for service desk business of the firm.

3.1 Data collection

There are three main sources of information to build this platform: literature review, interviews with company X' director (Director X) and service operation manager (Manager X) who is responsible for outsourcing the service, and company X's evaluating document. The data which includes goals, strategy, and critical success factors was the outcome of continuous discussion via meetings, email with the director on week 30 and directly interview with the service operation manager on 20th September. This interview aimed to explore profoundly the service sectors of the company and collecting the significant information of service business to design the evaluating platform. The service operation manager requested to test the platform by gauging the service performance in one of these available service desk branches: Thailand, Vietnam, Singapore, Malaysia or Philippines. The author decided to choose the Philippines branch since the internship there brought the opportunities to understand deeply the business process, moreover, it would be easier to discuss with local staffs and client. Key Performance Indicators were developed by combining and selecting from management's viewpoint, available evaluating's document and author's observation.

The main method to collect the data was qualitative method which is expounded thoroughly in chapter 4. As the IT service consists of many components and requires specialist knowledge, it is complicated to understand without comprehending the fundamentals, therefore, the author presents the data as chart in order to draw a simple view for the readers, and those will be designed by Microsoft Excel and Words.

3.2 Company goal and strategy

Theoretically, the chosen CSFs should relate to company's goals and objectives. They should focus on the same goal and finally, be able to generate practical results.

Company goals

According to director X, the company mission is to provide Information Technology Solution for sales department of Fast Consumer Growing Market (FCGMs) industry with reduction cost and better quality. Moreover, since DMS business unit expand rapidly, the importance of qualified middle managers and skilled staffs is necessity; however, this recognition has never been discussed in board of directors meeting due to the wrong mindset that product is the key to success. As the IT business growth, many big, medium and small companies try to swim in the software service business; it is an advantage that company X is the leading of the competitive market and has the highest reputation among those. This brings the long-term relationship with its clients, especially multinational clients who are potential in offering the opportunities to expand the outsourcing service outside Vietnam. Director X also states that the firm desires to invest more in product's Research & Development (R&D) to create sustainable competitive advantage over their competitors. Even though the service brings 55% of the profit, company X strategy mainly concentrates on software development, director X confesses that, the company is influenced by the stakeholders of Mother Company which take the core business is product innovation. Consequently, the firm is struggling with transforming from product oriented to service oriented and that is the reason for setting the new mission as successfully become customer-centric service.

The interviewing with head of service operation- manager X provides inside information which mostly focuses on the service business of the company. Manager X describes the current business situation as "lacking of service delivery mindset and professional IT service skills among middle managers, team leaders and staffs" which prevent the business from achieving the first-class services standard. Furthermore, expanding the business too fast causes the low quality in preparation and operation which make a huge impact on service delivery in long term. Manager X emphasizes that to achieve excellent service, the processes need to be improved as well as the human resources.

After discussing with each other, the director X and manager X agree that the biggest goal of service business as well as company is not to attain more clients but

keep the current clients by providing the most satisfaction service. The sub goal for each perspective is discussed thoroughly in the choosing KPIs process.

3.3 Critical Success Factors and Key Performance Indicators

The reasons for selecting these CSFs and KPIs are based on, firstly, company goal, mission and strategy (3.2) and other essential requirements; secondly, the 2011's performance evaluating version which only contains random KPIs which manager X developed but it has never been used; thirdly, the study and suggestion of the author based on company situation and capabilities plus metric's feasibility. The CSFs and KPIs are classified into 4 perspectives according to balanced scorecard platform.

Description of Financial perspective

In this perspective, goal was defined to be "Cost efficiency" which means increasing the service quality without cost investment and decrease the waste cost. In order to achieve these goals, it is critical to build a strong operational cost structure and augment the profit. By restructure the cost, it allows company to track the cash flow throughout the process and identify the gap engendering the cost-waste. Figure 12 describes the hierarchy KPIs of financial perspective.

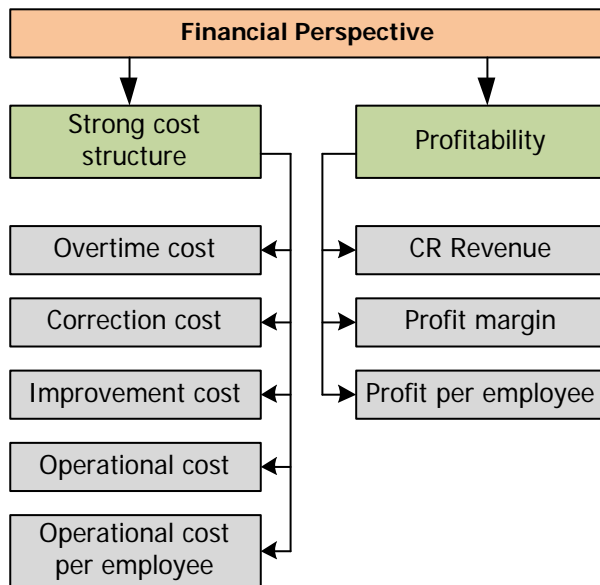


Figure 11: CSFs and KPIs hierarchy of financial perspectives

- Overtime cost: This indicator reflects the overtime salary due to low service performance. Besides impact directly on the profit, the overtime cost proves whether the manager delegates right tasks to right employees and quality of human resources.
- Correction cost appears when the supporters erroneously solve the ticket that leads to the need of correcting the ticket. Correction cost is a waste cost which employee is the only cause. The rate of correcting ticket also affects the customer satisfaction.
- Improvement cost describes the total cost spent on training staffs, developing package performance, and investing infrastructure. In the past, director X took the view that the improvement cost is a negative cost which should be minimized. However, after observing the business through years, the improvement cost is now considered as positive cost. Because perfect service does not exist, therefore, it is important that the manager can identify the gaps caused failure and fulfill those gaps.
- Operational cost is the total expenses require running the business such as salary, electricity, rental, etc. Managing the operation cost effectively is prerequisite for achieving high profit.
- Change request (CR) revenue: when the service performance meets customer's expectation, clients often demand an upgrading in package or new resolution in solving the ticket in order to make their process more

efficiently. This is called change request, the rate of change request contributes directly to the profit.

- Profit margin demonstrates the total profit of the service desk; profit is an important tangible key indicator to evaluate the growth of the business.
- Profit per employee: this metric examines the effectiveness of the human resources. How the human capital has been used? Whether waste cost appears because of the human perspective?

Description of customer perspective

Customer perspective is the most important perspective that company X concentrates the utmost. Manager X states that the core of service business is customer satisfaction, especially with the case of company X, where business type is business to business (B2B) and customers are multinational organizations. To increase client's loyalty, the goal was set to maximize the customer perspective by offering high service availability and quality. The KPIs of this perspective is presented as following:

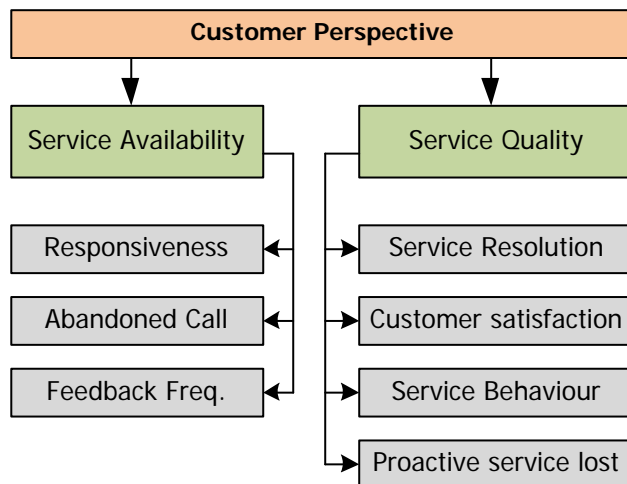


Figure 12: CSFs and KPIs of customer perspective

- Responsiveness relates to the response time and effectiveness of the supporters. How fast and sufficient the supporters respond to the clients for tickets, requests and problems.
- Abandoned call is the phone calls from customers which are abandoned by the customers because of the long waiting time. High percentage of this

indicator expresses the poor service availability of business which will cause the dissatisfaction of clients.

- Feedback Frequency Time is the frequency status update, more specifically, clients always expect the supporters to inform the current situation of the problem, issue or ticket which need to be solved without client's request. The degree of frequency of feedback to customer demonstrates the profoundly understanding of the service supporter.
- Proactive service lost: instead of frequently reporting the status of the ticket to customer, the supporters wait until receiving the updating request from clients which is considered as reactive service support and poor quality service.
- Service resolution: this metric is rated by customer to evaluate the quality of the service, how effective the solutions have been provided, whether the supporting contribute any effort in the success of client's business.
- Customer satisfaction measures the experiences customers have with the firm. By collecting this data, company X will gain customer insight and perceive customer's expectation.
- Employee's service behavior: gauging the attitude of employee toward customers. Have the employee listen to customer? Welcome customers in hospitality way? Whether customers dissatisfy by any inappropriate action of employee?

Internal/Process perspective

Internal perspective is also called as process perspective which may be difficult to understand for business background reader due to the heavy knowledge of Information Technology. According to manager X, the firm has never been well-prepared in operation process which is the main cause of daily problems. Hence, the goal is to improve operation to optimize the use of the resources and cut the waste effort, moreover, the firm also seek for the opportunity to standardize the service quality. The critical success factors to reach those goals are to augment system productivity with less system's error, enhance employee productivity by reducing supporter's error plus increasing innovative ticket's resolution, and finally, implement service improvement. The CSFs and KPIs of internal perspective are presented as following.

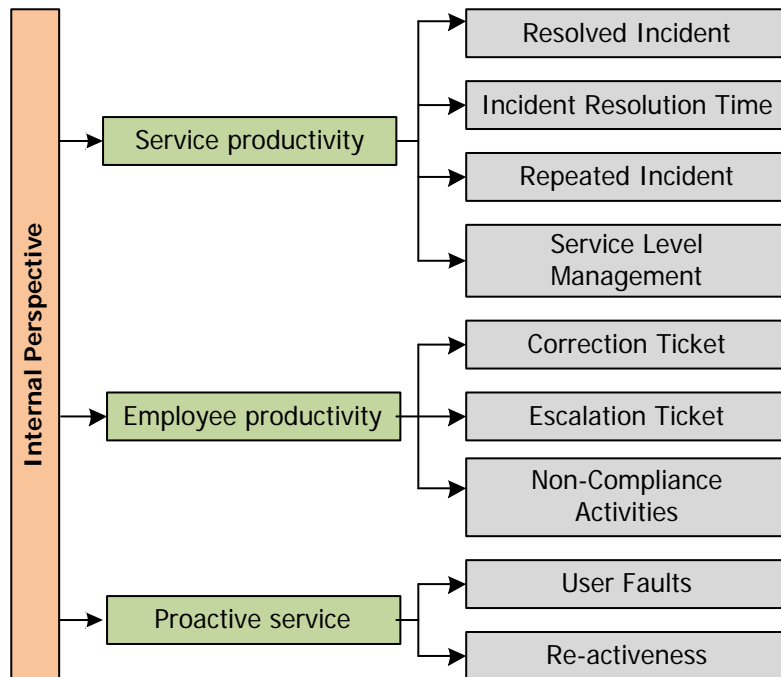


Figure 13: CSFs and KPIs of internal perspective

- Resolved Incident is the incident which has been completely solved and closed by supporter. High percentage of resolve incident depicts the high capacity of service in order to restore customer operation back to normal.
- Incident Resolution Time is the average time to solve the incident, normally, the manager judges the proactive of supporter through this indicator, however, he admits that fast resolution does not mean effectively.
- Repeated Incident is the result of poor quality resolution, the degree of repeated incident gives the point that either the process encounters problem or supporters lack of skills.
- Correction tickets: Correction is the action that service desk need to implement to cover the mistake cause by supporters. High value means supporter performance is very low and he/she lack of required skills.
- Escalation tickets: Escalation appears when the assigned supporter cannot resolve the ticket, high rate of escalation tickets means supporter need to improve his/her competences.
- External tickets is the ticket not belonged to service level agreement (SLA) between company X and clients, these tickets is under client's IT department responsibility. There are two reasons for transferring the ticket to company X's supporters: client's IT department cannot solve the ticket

due to lack of skills or lack of time or customer sometimes only knows company X when they need help. The rate of external tickets shows the degree of proactive and increase service's reputation.

- Non-compliance activities such as supporting, creating report/document or processing tickets are activities which do not conform to the pre-defined process. Those induce stakeholder's confusion, require more time to communicate and can cause a correction related effort.
- Service Level Management (SLM): Resolved incident is not only to restore customer operation back to normal but also to be solved within agreed timely to minimize customer's damage. Service Level Management is a service contract which the firm agrees which it ensures to offer to clients.
- User Operation Faults: problems occur due to user's fault. It will take more effort to resolve because it can be repeated by another user. This metric evaluate how effective that company X process to minimize number of user's fault by giving training/instructing users. This is part of service improvement as well as a proof of pro-activeness service.
- Re-active service: as mentioned in customer perspective, supporter is responsible for updating the incident's status to customer timely which is considered as high-class service. Re-active supporter do not follow up customer's concern, do not communicate with others to meet service level agreement (SLA). Re-active service is a poor quality service which dissatisfies customers.

Learning and Growth perspective

To provide sustainable service with ameliorative quality, the goal of this perspective consists of two components which are increasing human resources quality and product development. Figure 15 describes the CSFs and KPIs required for innovation & learning perspective.

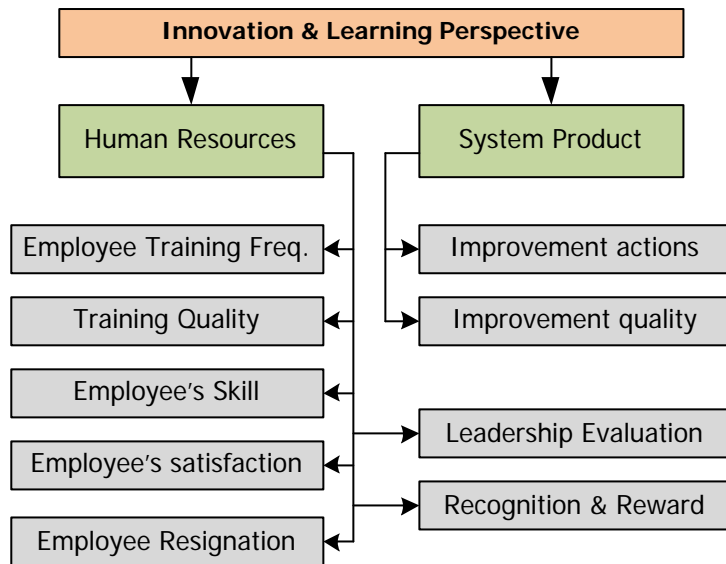


Figure 14: CSFs and KPIs of Innovation & learning perspective

- Employee's training frequency examines company's effort to develop employee's skill to meet service standard. High rate of training frequency gives the point that the recruitment is not effective, on the other hand, low rate demonstrates either the employee gain enough skills or the company underestimates human factor.
- Employee's resignation: percentage of resigning employees.
- Employee's skill: company X developed an internal test to evaluate quality of employee. This indicator presents the percentage of employees pass the test.
- Employee's satisfaction: measuring employee's experience towards company culture, leadership, income and working environment.
- System improvement actions: number of actions which helps to improve service performance, package quality and process compliance. The number of action certifies the operation's health.
- System improvement quality: if there is improvement, it should be measured to scrutinize how the improvement actions have affected the system.
- Leadership evaluation is applied to managers and team leaders to know whether they posse the ability to interact with clients and staffs.

4 Research methodologies

In both process of designing the documentation and conducting the research to come up with the implementation plan, besides the secondary research literature review, the main information source was collected by qualitative research. Hence, the description of qualitative method chosen below was applied for chapter 3 and 5.

Saunders et al (2009) suggests that there are two main research approaches: deduction and induction. The research strategy aims to test the theory and hypothesis which is already developed called deductive. With induction, data are collected and a theory developed as a result of the data analysis. It is also possible to utilize the combination of both inductive and deductive approaches which includes both building and testing of the theories. In this thesis, the mix type approach was chosen due to the nature of the research. Deductive approach was applied during the designing measurement platform process, after testing the platform on chosen branch, the data analysis supports to answer the research objective: How the balanced scorecard can be improved to implement it in real life?

In addition to primary literature sources includes company's report and evaluation's document, secondary literature sources allow the author to access to rich data base related to researches and studies (Fielding et al, 2010). In the case of designing the balanced scorecard, besides the qualitative data collected from interviewing and primary sources from company, secondary sources from journals, books and researches play a vital role as fundamental knowledge to create the platform.

The **qualitative research** method is mainly applied in this thesis due to the in-depth nature of the studies. According to Dr. Duangtip Charoenruk (no date), "the strength of this methodology employed lies in the fact that it has as holistic focus, allowing for flexibility and the attainment of a deeper, more valid understanding of the subject than could be achieved through a more rigid approach". Qualitative research's data collection method is usually flexible, unstructured and concentrating on general and broad understanding of the issue. By using qualitative methodology, this study achieves the free flow of information and profounder insights when choosing and prioritizing the KPIs. Besides designing measurement platform, the author also attempts to apply the platform in practice to gain better understanding of the whole measuring's process and proposes an implementing plan, therefore, qualitative research is suited to this thesis context. There are 4 method strategies to serve the aim of the research which are: semi-structure interview, observational, document review and embedded case study.

The **semi-structured interview** is the key strategy in this study; it contributes in collecting in-depth information and viewpoint from management level of company. Ghauri and Grønhaug (2010, 125- 126) state that this type interview is appropriate for determined topics and respondents, target small group, not by random chosen. Nonetheless, the sub-questions are not pre-determined, where the respondents can give their insight out of the question and widen their answer to reveal unknown aspects. Matthews & Ross (2010, 181- 183, 322) support this concept by outlining three characteristics of semi-structured interview. The first one is a mutual topic and set of questions for each respondent; then, the topic can be introduced in different orders to suit each interview. Finally, the questions should be mainly open-ended questions to provide the respondent opportunities to express their ideas. In this study, the semi-structured interview offer industry's professional perspective from expert which adds value to the research.

Besides interview strategy, in order to bring more evidences to the thesis, **participant observation and document review** are also taken into consideration as important strategies to collect primary data. Participant observation enables researchers to share their experiences by not merely observing what is happening but also feeling it (Gill and Johnson, 2002, 144). Document review is a study method that review available document to collect data. The documents can be internal of the organizational or external. The participant observation came from the experiences which the author's gained during the 6-month-internship at the company, and document review came from the internal report, chart and data. In the process of choosing KPIs, it is critical to use these two strategies to increase the reliable of the research.

To identify the shortcomings of the designed platform and seek for improvement, **embedded case study** method is applied. As Yin (2007) describes embedded case study provides the opportunities to understand a real-life phenomenon in depth, however, such understanding includes important contextual condition- because they were highly pertinent to the phenomenon of study. Newton (2003) demonstrates the role of embedded case study in evaluation program as "address the overall nature of the program, and ideally evaluate the effectiveness of the program in achieving worthwhile goals", he also states that case studies deliver in-depth investigations which enables the researcher to develop profoundly tacit knowledge about the evaluation platform they are designing. The embedded case study is conducted in a chosen branch of company X to examine the feasibility of the platform in real life and analyzing the pros and cons for enhancement. Moreover, the author also pursues the management's approval and opinion of the designed scorecard.

T3: Applying the platform

5 Case embedded - Philippines branch

Since the balanced scorecard is a fairly new platform in service performance of evaluation, the management of company's X showed their interested and concern in the realizable of the platform, therefore, case embedded was established for two reasons: evaluating the effectiveness and possibilities of the program and, collecting data for implementing plan proposal.

Generally, the data presented below was collected on October of 2013 after the quarterly report published internally, besides that source, operation manager of Philippines branch with his colleagues worked together to come up with the data collection. The red spot described the KPIs which failed compared to the target; the blue spot described the KPIs which met the target.

Financial perspective

Financial Perspective KPIs	Target	Actual PHP	Result
Overtime cost	< 10%	25%	Failed
Correction cost	< 2%	1.5%	
Improvement cost	5% - 10%	7%	
Operational cost	<= 70%	67%	
Change request revenue	5% - 10%	3%	Failed
Profit margin	>= 25%	33%	
Profit per employee	>= 9,000 \$	\$ 9,160	

Table 4: Data of financial perspective of Philippines's branch

Overall, the financial perspective of Philippines branch's service desk is well managed with 71% (5/7) of KPIs reaches the goals, especially the profit margin exceeds the target 8% which demonstrates the business is productivity. Furthermore, the degree of operational cost, correction cost and improvement cost achieve the target plays as evidence of strong cost structure. However, there are two KPIs which failed in financial category: overtime cost and change request revenue. As mentioned above, overtime cost appears due to poor service performance and inefficiency in delegating tasks. With 15% over than the target, the overtime cost percentage is considered as a high waste cost. It is necessary for

the management to investigate the reason of this high rate, whether the main cause is employee's performance, lack of human resources or problem in task division. Change request is the adding service which customer is willing to pay in order to improve the effective of their system or business, change request revenue percentage describes customer's satisfaction of the service as well as the innovative of product the company offers. Hence, with only 3% of revenue from change request, service support quality and service package are required to be concerned.

Customer perspective

Customer Perspective KPIs	Target	Actual PHP	Result
Customer satisfaction	≥ 9	8	Failed
Employee's service behavior	≥ 8.6	6.8	Failed
Service Resolution	≥ 8.2	8.26	
Responsiveness	≤ 4 business hours	6	Failed
Abandoned call	$\leq 15\%$	25%	Failed
Feedback Frequency Time	≥ 2	2	
Proactive service lost	$\leq 5\%$	~ 10%	Failed

Table 5: Data of customer perspective of Philippines's branch

Emphasizing by manager X, customer perspective is the most important factor for the firm's business, it describes not only how the service serve customers but also customer's loyalty and opportunity for long term relationship. Despite of such importance, customer perspective is the weakest among 4 perspectives in balanced scorecard. Only 29% (2/7) of KPIs succeeded the target, and those two KPIs are mainly about resolving problem (Service Resolution and Feedback Frequency). Indeed, customer highly appreciate the solution service desk provided (8.26/10) and service feedback frequency (2 times per incident), nonetheless, being updated on the problem cannot create satisfaction because there is no factor surpass customer expectation.

The data presents clearly the reasons of customer dissatisfaction. For the Fast Growing Consumer Goods clients, the industry is dynamic and time is money, therefore, responsiveness is expected to be haft-days business working (4 hours). The average response time of the branch is 6 hours which is closely a business day, by that, customer has to wait for 6h to receive the first answer of their concern, this can be the problem from the employee's working attitude or poor human

resources, they only pick up the problem that they know how to resolve. The failure of responsiveness makes a huge impact on the reputation for service support and delivery quality of company. In service business, it is significant to not miss any call because customers barely come back again; the abandoned call should be controlled and limited to ensure the service standard. 25% of abandoned call means every 4 calls there will be 1 not answered by the supporters. Indeed, each abandoned call represents a missed opportunity for the firm to provide excellent service and generate adding revenue. Besides, there are some cases that service does not update status to customer timely, keeps customers wait without any confirmation whether their issue is being processed, this is the reason why Feedback Frequency value reached the target but the Proactive Service Lost KPI is failed. Hence, those failed KPIs will cause a lot of customer's questions such as: "how is my inquiry going on?" and/or "is that service available/able to pick up my problem?" This is also a question mark for training activities of company, resource quality and management's attitude about employee's customer service mindset.

Internal perspective

Internal Perspective KPIs	Target	Actual PHP	Result
Resolved Incident	$\geq 95\%$	95%	
Incident Resolution Time	≤ 8 business hour	8	
Repeated Incident	$\leq 5\%$	3%	
Correction tickets	$< 2\%$	~ 1%	
Escalation tickets	$< 5\%$	~ 10%	Failed
External tickets	$\geq 2\%$	0	Failed
Non-compliance activities	$\leq 2\%$	~ 10%	Failed
SLM (Service Level Management)	$\geq 90\%$	91%	
User Operation Faults	$\leq 10\%$	~ 10%	
Re-active service	$\leq 5\%$	10%	Failed

Table 6: Data of internal perspective of Philippines's branch

Even in the interview with manager X, he confirmed the poor quality in operational preparation, internal/process perspective still hold an over average percentage of success KPIs with 60% (6/10). The goal of this perspective is to enhance operation to utilize the use of the resources and cut the waste effort, in addition, the firm also aims to standardize the service quality. The goal was divided into 3 critical success factors which are system productivity, employee's productivity and proactive service. As the data presented, all 3 KPIs of system productivity (resolved

incident, incident resolution time, repeated incident) are accomplished. Since the branch has been operated for 4 years and the system has been improved every year, the KPI's result can be predictable and it proves the effectiveness of improvement activities that company is performing.

In employee's productivity, 2 out of 3 KPIs had failed. Escalation ticket is unsolved ticket at the first time it is undertaken and it must be escalated to higher level of support which the group of experienced supporters. Escalation ticket is unsolved ticket at the first time it is undertaken and it must be escalated to higher level of support which the group of experienced supporters. Revealing earlier, system productivity attains desired target, for that reason, most of received tickets are not concerned to the system's issue but the business's. This can describe staff's ability to perceive the nature of business. The low rate of External ticket (0) means the service is busy with daily activities that do not allow service to solve ticket of outside scope.

Though, 1 % of correction ticket is a positive number that presents the perfection in service solution offering. In order to standardize service quality and process, a set of KPIs was grouped under the CSF "proactive service". With 2 failed KPIs (non-compliance activities and reactive service) examined the degree of service proactive are failed, take note that company doesn't have plan to measure proactive monitoring of ticket status (Reactive service KPS). Service Level Management (SLM) evaluated the service quality management, the result of this KPIs verify all resolved cases are fixed timely within the agreement (meet 91% of agreement). From the data of proactive service, it can be concluded that the service is in pre-mature stage that only focus on delivering as in agreement rather than offering over customer's expectation.

Innovation and Learning perspective

Innovation and Learning KPIs	Target	Actual PHP	Result
Training frequency	2	3	
Employee's resignation	<= 5%	0%	
Employee's skill	>= 95%	N/A	Failed
Employees satisfaction	>= 8.0	N/A	Failed
Leadership evaluation	>= 7.5	N/A	Failed
System improvement actions	2/month	2	
System improvement quality	>= 3 %	5%	

Table 7: Data of Innovation & Learning perspective of Philippines's branch

This perspective shows company's effort to invest in human resources and improvement's activities. According to the management level, the company does not have any evaluation document to measuring employee's skill, satisfaction and leadership. As the result, these 3 KPIs are marked as failed. If there is no evaluation, there will be no problem identified, plus, lacking identified problem will lead to deficiency of further activities to improve weaknesses as well as maintain the strong area of knowledge and skill; therefore, this can be seen as the weakest point of the company. Employee may receive training but it does not prove they posse the skills for high quality service, moreover, in service business, supporters work directly with customer, and if they are not satisfy with working environment or their leader's behavior, the service's attitude will be affected constantly. Through the high proportion of training frequency, the firm demonstrates it's interested in staff's skill. However, as the author's observation, all of training offered was professional skill such as business knowledge update, case study training rather than soft/ interpersonal skills. Despite of the absence in personal evaluation, regulation, activities to motivate employees, surprisingly, the percentage of resignation employee is 0% in 2 years, and this can be described by the working environment and benefit the company's providing are over expectation and the work labor situation in Philippines is tough. The difference between System improvement actions and System improvement quality is that system improvement action is the number of actions which helps to improve service performance, package quality and process compliance, but System improvement quality is the indicator measuring how the improvement actions have affected the system. Both KPIs achieve the goal explaining the reason of the successfulness oh system productivity (Internal Perspective).

General conclusion of the case

#	Reach Target	Fail	% Success
Financial Perspective	5	2	71%
Customer Perspective	2	5	29%
Internal Perspective	6	4	60%
Innovation & Learning Perspective	4	3	57%
Overall	17	14	55%

Table 8: Philippines's branch performance based on Balanced Scorecard

After collecting and analyzing independently 4 perspectives, it is crucial to draw a conclusion to answer whether the firm's performance follow the strategy. Table 8 illustrates the overall performance of the case, with 55% of success KPIs, Philippines branch cannot achieve its goal to be fist-class service. Firstly, the financial is the strongest perspective of the branch, as the goal of this perspective is to minimize the waste cost and maximize the profit; those KPIs that were success serve the goal well. Since the branch has been operated 4.5 years, the operational is stable; therefore, most of operational expenses are well-managed and reasonable. Completely contrary to financial, customer perspective is the weakest part of the balanced scorecard, with only 29% successful KPIs. For a service business, customer satisfaction is a key element which require attention from management level, however, as the data revealed, the branch has issue with customer service's mindset and attitude, besides that, customer care was not invested enough. To transform from an unremarkable service to high quality service, the branch has to provide more than just good solution, employee's attitude and quality of human resources are the key to improvement. Next is the internal perspective, this perspective is over average which represents the sustainable in service delivery and support, however, to provide excellent service, the branch need to develop and invest more in the process to attain the proactive. Finally, innovation and learning perspectives demonstrate the weaknesses in analyzing the workforce of the company. Company should create official evaluation not only to measure human resource's quality but also to motivate leaders and staffs update their skills as well as knowledge.

Additionally, during analyzing process, it is crucial to analyzing the cause-effect of the 4 perspectives as it is part of balanced scorecard analysis. The figure below describes the relationship of the perspectives and KPIs:

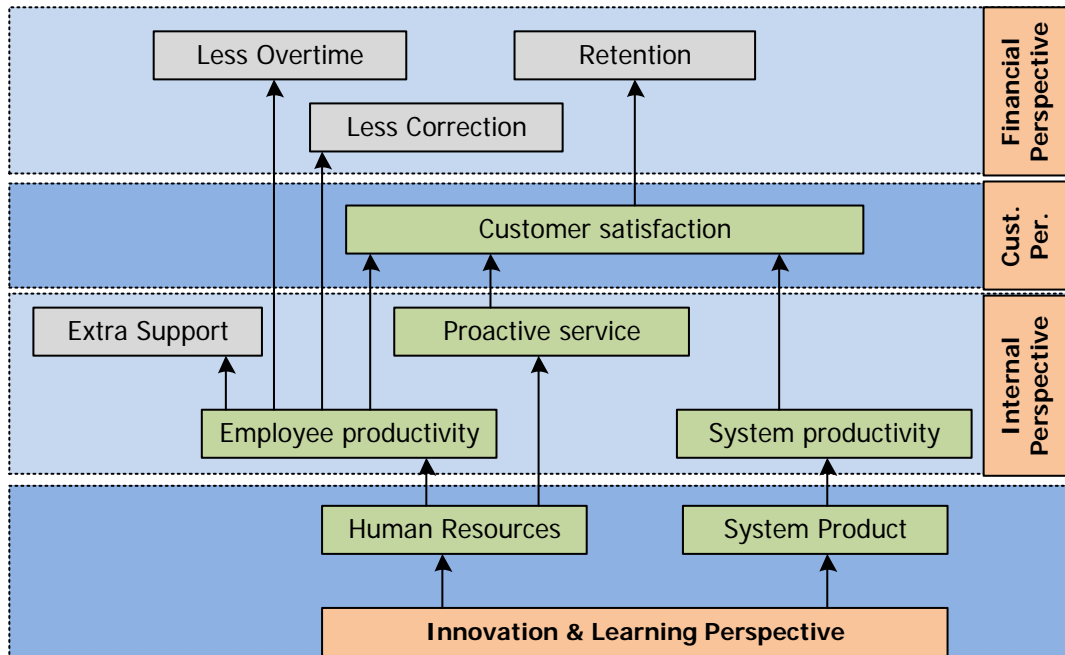


Figure 15: Balanced scorecard cause-effect diagram

Balanced scorecard recognizes the importance of both intangible and tangible assets, and of financial and nonfinancial measures. The diagram describes how each perspective interrelates to the others. Starting with innovation & learning perspective, if company does not measure employee skill individually, there will be a deficiency of improving plan, which will affect directly the quality of human resources. Low quality in human capital means increase the waste cost due to employee's lacking skills and that also leads to customer's dissatisfaction, as a consequences, the loss in profit is unavoidable. Besides the human resources, the quality of system productivity is also caused by innovation activities of the firm. In conclusion, understanding the relationship between 4 perspectives and KPIs can help company to identify the root of problem.

T4: Company's feedback and implementing plan proposal

6 Balanced scorecard in real life

After applying the balanced scorecard in company X's Philippines's branch to examine the feasibility of the platform, data collection and analysis were sent to director and manager X by email with the purpose of receiving feedback. An interview with manager X was conducted on 20th of November to collect the data for improving the balanced scorecard.

6.1 Manager X's view on the designed balanced scorecard

Generally, manager X was impressed by the designing of balanced scorecard in term of template, content and preciseness. However, there are still weaknesses and incorrect KPIs which will be elaborated thoroughly.

For the financial perspective, the author received compliment for displaying the needed content/KPIs, moreover, the financial analysis reflected exactly the current situation of the branch which were professional cost structure that allowed the firm to control waste cost efficiently. However, managers X suggested paying attention to these KPIs to make the balanced scorecard more appropriate for the company:

- Overtime cost should be computed by employee's effort instead of salary, because the overtime may come from avoidable reason such as change schedule (24/7 service), personal matter (sick, accident, family reason ...), etc. Therefore, measuring actual employee's effort (declare on timesheet format) is more suitable to gauge the waste cost.
- Change Request Revenue: since the main objective of the firm is to maintain service quality so this KPI is not such important. Moreover, instead of measuring in percentage (%), it is suggested to use the amount of revenue. Currently, the measurement in % is failed, however, if gauging by number it will be 5000\$, which is considered as a success KPI.
- The financial perspective should contain KPIs which can describe the trend of expenses within operation per employee, by that, the firm is able to predict the cash flow and come up with plan to reduce waste cost effectively.

For customer perspective, the firm was really curious about service performance while transforming from product-oriented service to customer-oriented service. Manager X expressed his disappointment in the result of customer perspective. However, he stated that, this result illustrated true situation of the firm. With goal's division into 2 CSFs, it perfectly convinced company the important role of customer in customer service. The customer analysis contributed to company's future strategy as many questions that management level needed to concern: What does customer expect about the service to have a good experience? How is current service performance in customer's view? What should company do to migrate successfully to high quality service standard? Besides that, the result also disabused the wrong mindset of service from the board of directors to staffs, bring along new ideas and viewpoint for the management level. The key points that impact to the success of company which were: customer satisfaction, response time, abandoned call, Proactive service and Service Behavior require more attention. An excellence customer service should include both Technical Quality as well as Service Quality to obtain customer satisfaction, and there are 5 steps to attract customer to the service: Welcome, Value, Listen, Help, Invite back, absence in any steps can cause customer's dissatisfaction. However, there was a mistake in segmenting the KPI which the author should alternate: Proactive service loss belongs to Service Quality CSF instead of Service Availability.

For the internal perspective, manager X was impressed on the IT knowledge which the author presented during the selecting KPIs and analyzing. The chosen KPIs depict almost activities that company do and will do to improve and elevate service to higher level; this perspective evaluation can be used in measurement immediately. The balanced scorecard identifies the degree of service quality performance in term of system productivity and employee productivity. Furthermore, it also helps company to determine the gap or weaknesses for enhancement. Nonetheless, it is necessary to re-group and replace the KPIs to correct CSFs as following

- Service Level Management (SLM) pertained to service productivity instead of a proactive service since it followed an agreement between company and customer.
- Non-compliance process belonged to Employee productivity because process was pre-defined; whereas, pro-activeness was about how to avoid it happen in advance than following such a pre-defined thing.
- The External ticket KPI should be removed because this is a business specific service, not a common service. The main task of common service was to provide the excellent service to customer to help them operate business properly. When customer reached supporters, they already knew the scope

of service already, even if customer requested anything out of scope, the proportion of that case was too small that should not be considered.

For the Innovation and Learning Perspective, along with internal perspective, this one was another excellent balanced scorecard perspective which the firm was happy to apply in its measurement. Innovation and learning perspective emphasized the significant of human resources and improvement activities for high quality service. The firm totally agreed with author analysis that company must invest more in employee by putting more effort to understand employee expectation to motivate them to improve their productivity, creating evaluation document to measure employee's skill more exactly and develop professional training courses for employees. According to the analysis, the firm suggested to add 2 more KPIs in the balanced scorecard includes:

- Training quality: to evaluate the quality of training activities
- Recognition & Reward: to measure the motivation activities to the employee

In term of service management, company would like to introduce a different view besides balanced scorecard with the intention of offering deeper insight of company's functional operation. The brief analysis presents below is the suggestion from the firm to the author to perceive another analysis technique.

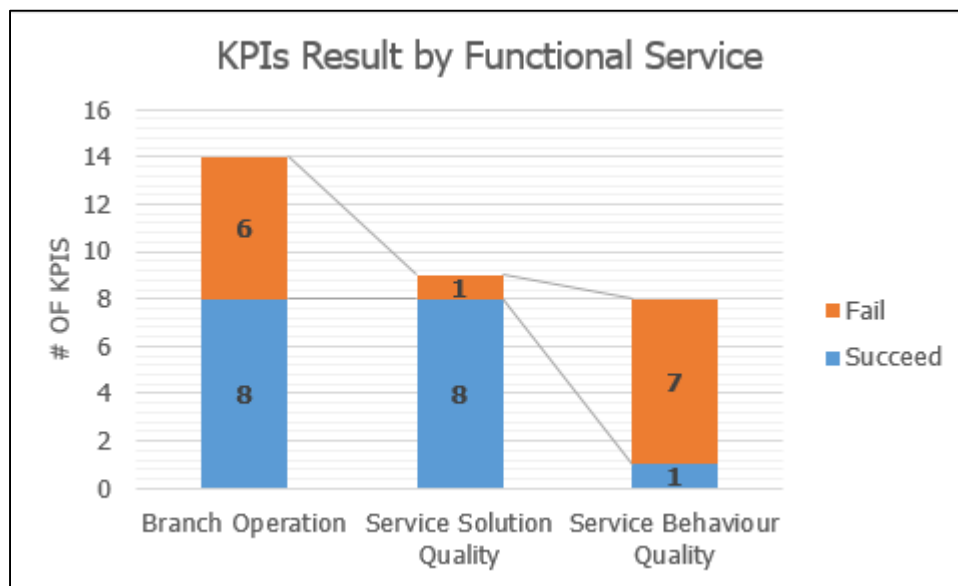


Figure 16: KPIs result segmented to functional service

Base on the designed balanced scorecard, 31 chosen KPIs were re- grouped into 3 functional operations enclosed in the appendix(6): Branch operation included KPIs relating to operational and process, Service Solution Quality consisted of KPIs reflecting the quality of the service in term of technical, and Service Behavior Quality contained KPIs impacting customer's satisfaction. According to the chart, branch operation achieved average results since company has experienced in operational for long time, therefore, it was well-managed and no major issue could impact to current operation. Outstanding result was service solution quality with 8/9 success KPIs, the result proved the strength of current vision which focused on Software-oriented service. Finally, the weakest part of business was customer service behavior, which would be discussed in board of director meeting and became new mission for company to improve.

6.2 Successful implementing balanced scorecard

Establishing a complete balanced scorecard does not guarantee the successful in measuring and analyzing. In this sub-chapter, the author analyze the critical factors to implement the balanced scorecard, this part delivers several rules which need to be considered when applying the platform.

Top management commitment and support

Due to the strategy relating, it is clear that the top and senior management should be committed to the balanced scorecard. Moreover, measuring by balanced scorecard is a huge project demanding company's effort, and the role of top management is not only to support but also to cascade it down through the organization. To engage stakeholders of organization to use balance scorecard, it is vital that the top and senior management totally perceive the concept and the process of the balanced scorecard. Workshops and seminars can offer the knowledge. The role of the board of directors is especially important in the success of the balanced scorecard. They should be the leader of developing and implementing the platform. Even though the top management of company X recognizes the benefit of balanced scorecard, there are still slow move to develop the platform caused by lacking of this platform knowledge. As consequences, the concept is old to management level but strange to the employees and no investment in establishing the scorecard.

Engaging stakeholders

From the beginning of building the balanced scorecard to implement it, stakeholders play an important role in data collection and designing. In developing scorecard stage, the vast majority of organization involve in the process in different level. Commonly, it is believed that balanced scorecard audience's is top management level, however, many studies demonstrates that employee need to understand the scorecard more than management. The reason for that is because balanced scorecard translate the strategy, offers the general view on how company perform to follow that strategy, therefore, it is crucial to employee to perceive the strategy and comprehend company's future. Furthermore, middle managers, team leaders and staffs who encounter business daily activities more frequent, acknowledge the business process and nature better than top management. As the results, they should be requested to contribute in developing the KPIs. Besides employees, customer is also a key element to the successful of balanced scorecard. There is saying: "You do not know your weaknesses", usually, the BSC designers choose KPIs which support the business performance rather than reflect the true situation. For that reason, customers help with offering viewpoint in different angle and unbiased. Finally, it is the shareholders, who can influence in strategic decision of company. Shareholders should be implicated from the goal setting stage. In the case of company X, the absence of employee's satisfaction can prove the non-engagement of employee in the measuring process.

Updating measurement metrics

The available balanced scorecard will not lead the organizations anywhere unless it is updated and changed to suit with organization's situation and environment factors. The balanced scorecard is not a template that can be applied to businesses in general or even industry-wide. Different market situations, product strategies, and competitive environments require different scorecards. Business units devise customized scorecards to fit their mission, strategy, technology, and culture. Reviewing company's X case, even though the platform designing was followed the suggestion of manager X, when applying to the embedded case- Philippines branch, the balanced scorecard shows its weaknesses and some KPIs are considered as inappropriate. In fact, to keep the platform update frequently, it requires money and efforts. That is the barriers most companies use balanced scorecard cannot overcome. However, executive support and sponsorship is the common thread that associates the entire end-to-end process. Without a strong and vocal leader present at each and every juncture, the effort can quickly stall. Simply put, nothing can

take the place of an energetic and knowledgeable executive willing to work tirelessly toward the cause of advancing the Balanced Scorecard.

Preparing resources

Resources that are needed to successfully implementing balanced scorecard consist of: software and materials. To achieve long term benefit of balanced scorecard, company should invest in the tracking system which ensures the measurement will be stored and tracked timely. Without involving IT into the platform, it is difficult to use the evaluation frequently due to the cost of executing. Besides, material such as customer's survey, employee's survey, etc. should be prepared beforehand in order to lessen the measurement's time. In the case of company X, aligning IT software with the measurement system is not difficult because the firm already have some applications which serve the balanced scorecard well.

Communication

Another key to successfully implement BSC is to make sure that all relevant stakeholders (employees, managers, leaders, shareholders and even customers) has the same vision and understand on company's Balanced scorecard is a tool to communicate goals and strategy to all level of organization. It provides same language even customers can understand. It will lead to the synchronized activities to make it become true, decrease the adverse influences and vice versa, and obtain collaboration of all level of organization. In this research, communication occurs among top management, evaluator and Philippines branch's staffs. The top management should always make clear and update their expectations and strategies to the employees. Communication from management to evaluator should be managed to avoid the gap in understanding, overlapped or misused information and feedback. Workshops, seminars, training course should be plan before deployment to introduce about BSC vision, mission and implementation plan; during deployment, Weekly/Monthly/Quarterly meeting should be celebrated to update the status of implementation, experience learning, lesson learned sharing.

Link strategic planning, balanced scorecard, and budgeting process

The strategic initiatives to meet the targets require funds. The strategic planning process that builds a balanced scorecard should be linked to the budgeting process to set priorities and allocate resources to strategic initiatives. A details plan must be created before starting the implementation, during this planning process, there

are some notes that company should pay attention. Firstly, company should define the scope of implementation exactly, how many areas of operation will be involved during this project, the level and degree of involvement should be elaborated clearly and should break initial scope to details activities list and its sequence and evaluation (time and resource). Secondly, it is necessary to estimate the time required to implement BSC from the scope definition, milestone and target. Thirdly, to accomplish the project within the given time schedule, planning the cost including human resources and necessary material is crucial. Finally, the project team who is responsible for the measurement must ensure to determine future risk and change to come up with plan or strategy to minimize the waste cost and failure occurring during the measuring process.

7 Discussions

This chapter discusses in-depth validity and reliability of the study; moreover, recommendation and future research are suggested. The conclusion mentions briefly the main result of the study and author's personal evaluation.

7.1 Validity and reliability

According to Matthews & Ross, the definition of reliability is shown

A measure of research quality, meaning that another researcher would expect to obtain the same findings if they carried out the research in the same way, or the original re-searcher would expect to obtain the same findings if they tried again in the same way. (Matthews & Ross 2010, 479).

During the data collecting process, combining with interviews, selected and believable document offers by the company should secure the quality of the findings. The informants hold high position in the firm and have huge experiences in the industry and study's field. The language is Vietnamese, which is translated to English afterwards for the analysis process. The interviews were recorded and transcribed while emails were used for further concerns and explanation, which can ensure the accuracy of the findings.

Furthermore, they also take the view of reliability as dependability. These features of research should be able to demonstrate throughout the whole process and be

reflected with transparent decisions made by researcher. In the meantime, validity is regarded as the credibility. Mathews and Ross define the meaning of validity as:

A measure of research quality, meaning that the data we are planning to gather and work with to address our research questions is close representation of the aspect of social reality we are studying (Matthews, B. & Ross, L. 2010, 480).

Ghuri and Grønhaug (2010, 210- 211) state that the validity concerning qualitative research, consisting of descriptive, interpretative, theoretical and generalizable factors requires researcher's cautious. The descriptive validity implicates the precision of description. In this research, the bias may appear during the interviews, for that reason, the secondary research is carried out in order to support the designing platform process. The second factor is interpretative validity. Since the interpretation is the important stage in the research, therefore, semi-interview is applied not only for profounder insight but also for acknowledging the limitation of result analyzing. Moreover, author's observation and experience during the internship are also contributed in this analyzing stage which allows different viewpoint on the subject. The third one is theoretical validity, which refers to the adequacy of discussed theory for explanation. In this research, due to the heavy knowledge of Information Technology, the theory cannot be explained in-depth some terms relating to IT, however, the theoretical validity are ensured in business's perspective. Coming last is the validity of generalizability. Although the sample size is limited to 3 interviewees includes director X, manager X and branch's operation manager, the interviews were deep and various in topics discussed. Moreover, since the study particularly demands the involving of top management, the generalizability is warranted.

7.2 Further research and development

There is room for further development in this platform. Due to the limit of time and resources, the author cannot investigate in-depth some factors which is necessary in developing the balanced scorecard. As mentioned, balanced scorecard gauges performance of a company to interconnect operational management and strategic goals. Every business has its own set of KPIs - key performance indicators which are known as values representing the most important aspects of business. In the case of company X, the balanced scorecard was designed to translate company's goal. However, each branch has different specify service which the general balanced scorecard may inappropriate. Consequently, the necessary of IT knowledge in choosing KPIs is undoubted; it will contribute enormously not only to the balanced

scorecard but also to the analyzing process. Moreover, in balanced scorecard, some KPIs are more important than the others and impact more on business. Hence, the further research should focus on weighting the KPIs in each category, by doing that, the company can identify performance's trends and set up plan to manage effectively.

7.3 Conclusion

The purpose and the aim of this thesis project were to create a performance measurement platform for IT service industry and to examine the feasibility of the platform in practice. The idea of the research was developed during the author's internship at the case company. This research is also a part of a larger research at company which was aimed at building performance measurement platform to enhance management system. Two research questions were seeking to be answered: "How to create a service balanced scorecard which is ready-to-use"; and "How the balanced scorecard performs in practice".

The study was divided into 2 smaller researches according to the questions. The first research was regarded to creating balanced scorecard for the case company. Different study methods were applied with the aim increasing validity for the platform. Besides interviewing with top management level, document review and observation supported the choosing KPIs process. Due to the knowledge requirement of Information Technology, the author tried her best to comprehend the fundamental and principle of the industry in short time. By that, the IT knowledge complement to business knowledge to create a different viewpoint on company's balanced scorecard. However, since this is a business study, there were limitations in explaining IT glossary and discuss in-depth IT descriptions, which may cause the difficulty for business's reader.

The second research was to reveal how the balanced scorecard in practice. After designing the platform, the author conducted a case embedded which was a service desk branch of the firm. Besides the purpose to give the platform a trial and seek for management's approval/feedback, the reason for establishing the case embedded was also to offer an example for future user/developer how the balanced scorecard would be like. The data collected at this stage was provided by operation manager of the branch and his staffs. After the data analysis finished, it was sent to director and manager X to review, an interview with manager X was accomplished to discuss the practicably of the platform and feedback. Feedback from the manager contributed enormously in the reliability of the platform.

The main findings lead to the suggestion and recommendation for case company. Based on the principles and nature of measurement system, company X can flexibly update and adjust the contribution percentage of each metric or add new ones. The benefit from this evaluation system was confirmed by the CEO of the company as: "Balanced scorecard helps company to follow its goal and strategy; moreover, it also improves the quality of management and creates sustainable competitive advantage". The firm should encourage the philosophy of trust, win-win situation and objectiveness in evaluation. Nonetheless, foremost, company X must establish an applicable strategy, vision and mission, which guarantee all the employees aligning the same goals to achieve.

To optimize the ready-to-use platform, company X should invest in an information system to store and track the measurement results that are used for strategic decision in the future. Indeed, there is one software can support the platform which is available as a company's product - it is ERP software. To acquire the profit of this system, it requires a long-term commitment from the top management, time and effort, because the continuous improvements as well as quality control are not short-term gains and vivid concepts to see and measure.

The firm also revealed, through their comments that the thesis project given allowed them to increase their knowledge and give them tools for their future work on measurement system. They admitted that the materials were practical and helped bridge the gap between theory and practice through the analyzing of case studies.

This research is only a small scale, Bachelor's thesis study and in order to get more reliable information about developing and implementing a performance measure system in IT service, further research is needed. My aim, moreover, was to offer company a different approach out of IT scope. Despite some obvious lacking in the study, I believe that it has succeeded in designing the balanced scorecard for company as well as applying the platform in practice. This is the first and only performance measurement system for company's service desk business.

Finally, this thesis achieves all four tasks set in the beginning of the project, which has been officially accomplished in 5 months, from June to end of November 2013. The process of contacting the case company, collecting general information and choosing the topic happened in a few months previously.

To ensure the quality of the study, I have done extra research on IT industry, specifically service desk business, plus, reviewed materials, document, generated idea and communicated with company X includes conducting interview and process the design effectively. Continuous revising, updating and restructuring have been

repeated during the project to attain the best flow of information. Fortunately, every step went smooth and on track owns to the active involvement of all participants. Company X has been supported and committed during the research by providing documents, giving feedback frequently and actively responding whenever I reached.

I am enormously fascinated to learn and apply theory to practical tasks. It is not only me working on the project to align theory into design the platform and implementation, but also does the company in its business. It is amazing to follow real company in implementing quality control and management, which reflects the knowledge of business management, was taught from school. In conclusion, this thesis has brought me a delightful opportunity to lead and experience an interesting journey on my academic study.

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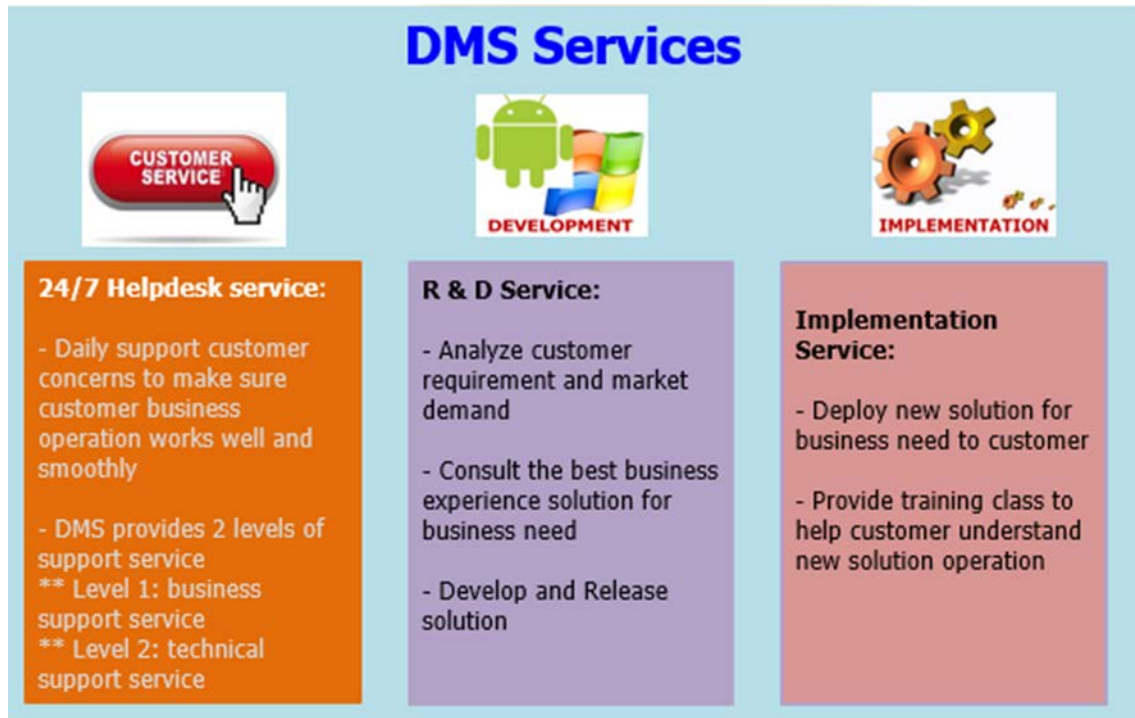
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ATTACHMENTS

Appendix 1: DMS services.



Appendix 2: ITIL function metrics

Table E.4 ITIL function metrics from OGC (2009) categorised

ITSM Function	OGC Key Metrics	ITSM Metric Category
Service desk function	Average Service Desk cost of handling an incident	Cost management
Technical management function	Achievement of service levels to the business, both positive and negative, for example the number of incidents related to a Technical Management team (measurement of agreed outputs)	Customer satisfaction
Technical management function	Service level achievement (measurement of agreed outputs)	Customer satisfaction
Application management function	Reports and files transmitted to users in accordance with service levels (measurement of agreed outputs)	Customer satisfaction
Technical management function	Training and skills development	Knowledge management
Application management function	(Training and skills development)	Knowledge management
Service desk function	Percentage of incidents resolved by the first line without the need for escalation	Process improvement
Service desk function	Average time to resolve an incident (by first line)	Process improvement

ITSM Function	OGC Key Metrics	ITSM Metric Category
Service desk function	Average time to escalate an incident	Process improvement
Service desk function	Percentage of customer or user updates conducted within target service levels	Process improvement
Service desk function	Average time to review and close a resolved call	Process improvement
Technical management function	Technical management teams contribute to many process activities (process metrics)	Process improvement
Technical management function	Mean time between failures of specified equipment - to support purchasing decisions and effectiveness of maintenance	Process improvement
IT operations management function	Number of exceptions to scheduled activities and jobs (IT operations control)	Process improvement
IT operations management function	Number of data or system restores (IT operations control)	Process improvement
IT operations management function	Equipment implementation, number of items, success, etc. (IT operations control)	Process improvement
IT operations management function	Process metrics - IT operations Management contributes to many process activities (IT operations control)	Process improvement
IT operations management function	Number of incidents related to the buildings, power and cooling, etc.	Process improvement
Application management function	Transaction rates achieved (measurement of agreed outputs)	Process improvement
Application management function	Application management teams contribute to many process activities (process metrics)	Process improvement
Application management function	Number of maintenance windows exceeded (measurement of maintenance activity)	Process improvement
IT operations management function	Power usage statistics	Resource management
IT operations management function	Number of security incidents	Risk management
Application management function	Ability of users to access applications (measurement of agreed outputs)	Service improvement
Technical management function	Transaction rates and availability (measurement of agreed outputs)	System improvement
Technical management function	Utilisation rates of memory, availability of systems, etc. technology performance)	System improvement
Technical management function	Measurement of maintenance activity - for example, number of maintenance windows exceeded	System improvement
Application management function	Response times, availability of systems, data integrity, etc. (application performance)	Systems availability

Appendix 3: Interview questionnaire for director X

Part 1: General information

1. Can you describe the company structure?
2. Please state the company goal and mission.
3. Which strategy company applies to achieve that goal and mission?

Part 2: Service desk business

4. How important service desk with company's business?
5. Which types of clients is the target which company tries to reach?

Part 3: Goal and Critical success factors.

6. Here is the 4 perspective of balanced scorecard; can you divide your goal and strategy accordingly to each perspective?
7. Based on the goals, can you indicate the critical success factors to achieve the goals?

Part 4: Extra questions

8. What do you think about performance measurement system, particularly the balanced scorecard?
9. Shall you support to implement the balanced scorecard in long term?
10. In your opinion, what challenges may occur caused the failure of implementing the platform? (For example: Technology, Human capital, etc.)

Appendix 4: Interview questionnaire for manager X (Designing stage)

Part 1: General information

1. Can you describe the service desk structure?
2. Can you describe the service desk current situation?
3. Please states service's goal and strategy.

Part 2: Service desk business

4. How do you think about your clients? (Ex: Easy, difficult, etc.)
5. What types of complaint service desk received from clients?
6. In your opinion, what is the biggest challenge service desk has to encounter?

Part 3: Goal and Critical success factors.

6. Here is the 4 perspective of balanced scorecard; can you divide your goal and strategy accordingly to each perspective?
7. Based on the goals, can you indicate the critical success factors to achieve the goals?

Part 4: Extra questions

8. I have here the evaluating document with a set of KPIs, why do you think these KPIs are needed for measuring service performance.

Appendix 5: Interview questionnaire for manager X (Feedback stage)

1. How do you think about the designed balanced scorecard?
2. How do you think about the embedded case? Does the embedded case bring a new viewpoint for the company?
3. If yes, can you please demonstrate how the embedded case contributes?
4. In your opinion, what need to be improved before officially applying the balanced scorecard?
5. Why do you think those KPIs need to be replaced?
6. In your opinion, what challenges will occur during the implementing process?

Appendix 6: KPIs grouped as functional service.

	Objectives	Measures	Targets	Results
Company Operation	Strong structure cost			
	- Overtime cost	- Overtime Performance-related effort		
	- Correction cost	- Correction effort		
	- Improvement cost	- Improvement effort		
	- Operational cost	- Total Operational expense		
	- Operational cost per employee	- Total Operational expense per employee		
	Profit growth			
	- Change request revenue	- Change Request income		
	- Profit margin	- Profit performance		
	- Profit per employee	- Profit performance per employee		
Efficient Service Management				
- SLM (Service level management)	- % of success SLA			
- Non-compliance activities	- % of Non-compliance tasks			
Well Workforce Management				
- Training frequency	- # of training session			
- Employee's resignation	- % of employee resignation			
- Employee's skill	- Employee Performance Evaluation			
- Employee's satisfaction	- Employee Rating			
- Leadership evaluation	- Employee Rating			
- Recognition & Reward	- R&R frequency			
- Training quality	- Employee Rating			
Service Behavior	High Service Satisfaction			
	- Customer satisfaction	- Customer rating		
	- Employee's Service behavior	- Customer rating		
	- Proactive service lost	- Customer rating		
	Improve Service Availability			
	- Responsiveness	- Average response time		
- Abandoned call	- % of abandoned call			
- Feedback Frequency Time	- Average feedback frequency			

	- Re-active service	- % of Reactiveness tickets		
Service Resolution	High Service Resolution Quality			
	- Service Resolution	- Customer rating		
	- Resolved Incident	- % of Resolved Incident		
	- Incident Resolution Time	- Average resolution time		
	- Repeated Incident	- Number of repeated issue		
	- Correction tickets	- % of correction ticket		
	- Escalation tickets	- % of Escalated ticket		
	- User Operation Faults	- % of User Faults tickets		
	- Improvement actions	- # of improvement activities		
	- Improvement quality	- % of reduced service effort		

Appendix 7: Service Balanced Scorecard.

	Objectives	Measures	Targets	Results
Financial	Strong structure cost - Overtime cost - Correction cost - Improvement cost - Operational cost - Operational cost per employee Profit growth - Change request revenue - Profit margin - Profit per employee	- Overtime Performance-related effort - Correction effort - Improvement effort - Total Operational expense - Total Operational expense per employee - Change Request income - Profit performance - Profit performance per employee		
	Improve service satisfaction - Customer satisfaction - Employee's Service behavior - Service Resolution - Proactive service lost Improve Service Availability - Responsiveness - Abandoned call - Feedback Frequency Time	- Customer rating - Customer rating - Customer rating - Customer rating - Average response time - % of abandoned call - Average feedback frequency		
Internal	Improve service productivity - Resolved Incident - Incident Resolution Time - Repeated Incident Improve employee productivity - SLM (Service level management) - Correction tickets - Escalation tickets - Non-compliance activities Enhance proactive service - User Operation Faults - Re-active service	- % of Resolved Incident - Average resolution time - Number of repeated issue - % of success SLA - % of correction ticket - % of Escalated ticket - % of Non-compliance tasks - % of User Faults tickets - % of Reactiveness tickets		

Innovation & Learning	Human Resource improvement			
	- Training frequency	- # of training session		
	- Employee's resignation	- % of employee resignation		
	- Employee's skill	- Employee Performance Evaluation		
	- Employee's satisfaction	- Employee Rating		
	- Leadership evaluation	- Employee Rating		
	- Recognition & Reward	- R&R frequency		
	- Training quality	- Employee Rating		
	Service improvement			
	- Improvement actions	- # of improvement activities		
- Improvement quality	- % of reduced service effort			