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MAKING BALANCED SCORECARD WORK TO IMPLEMENT BUSINESS STRATEGIES AT MAGIC TECHNOLOGY

In August 2008, Magic Technology (“Magic”) launched an initiative to implement the balanced scorecard in its organisation. Alan Lo, the chief executive officer (“CEO”), oversaw the implementation of the balanced scorecard at the company’s headquarters. Lo encountered both strategic and execution difficulties during implementation. Yet, such difficulties hinted at a more fundamental issue of too many formulated strategic directions in the first place.

In late 2009, Lo was in the middle of the execution phase when he considered pushing the design of the balanced scorecard towards the department level. How would the difficulties encountered at the headquarters influence an initiative of departmental design of the balanced scorecard?

Magic Technology

Magic was established in 1994 in Taipei to manufacture electronic components, particularly passive components. Magic was a leading manufacturer of electromagnetic interference (“EMI”) components and wire-wound inductors. The company had a registered capital (2009) of about NT\$250 million.¹ CEO Alan Lo oversaw the company’s headquarters in Taipei and three factories in mainland China (two in Shenzhen and one in Suzhou) with a matrix organization [see **Exhibit 1**].

Electronics industries became more and more specific along the value chain [see **Exhibit 2**]. This value chain began with the raw materials, semi-conductors and components in the upper stream, electronic systems, to the information accessories, photo electronics, communications and consumer electronic products in the lower stream.

¹ On 30 June 2011 the exchange rate was US\$1 = NT\$28.795.

Ka Wai Bobby Shiu prepared this case under the supervision of Dr Neale O'Connor for class discussion. This case is not intended to show effective or ineffective handling of decision or business processes.

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This value chain of electronic products, however, was founded on the manufacturing of electronic components. Electronic components included active components and passive components. Active components were independent components that could perform calculations and processing functions, eg, integrated circuits and central processing units. Compared to active components, passive components could perform the functions of moderating electric current and voltage, storing static electricity, preventing electromagnetic interference, and filtering impurities in electric current. Resistors, capacitors and inductors together formed the three main passive components. Magic focused on passive components with the main revenue coming from inductors, which had intense competition in the region.

In order to adapt to the changes in the business environment in the region, electronics manufacturers had gradually switched to a globalised business model. This globalised business model involved the offshoring of manufacturing factories and a proactive approach to foreign investments. Magic had followed this globalised trend to enter mainland China. However, Lo began to see the business gaps between the company's headquarters and the three factories in mainland China, and between different departments in Magic.

Magic summarised five main business challenges before importing the balanced scorecard. First and foremost, the business strategy process was unclear. The outcomes of previous strategic planning processes, in which strategies were formed through discussions in meetings, using past experience as the basis for decision making, were not obvious. In addition, there was no mechanism to evaluate the strategy execution, so it was difficult to observe the effectiveness of different strategies. Second, the operational execution in the factories was weak. The mainland factories were still constructing the standard operating process, and the stability of production quality was not reliable. Third, the performance checking mechanism had not been completed. The mainland factories had evaluated and tracked the key performance indicators ("KPIs"), but had not connected them to performance. The Taiwan headquarters did not have a system of KPIs at all. Fourth, the management systems needed to be strengthened. There were several management systems implemented at Magic, but Lo felt that these systems had not been fully implemented and the data had not been systematised. Last but not least, the product analysis was insufficient. Product prices had been set by referring to market prices, and there was no data to support the decisions regarding either internal-made or external-procurement products.

These five business challenges drove Lo to start searching for new management systems for Magic. The balanced scorecard was proposed to deal with the first four of the five business challenges: unclear business strategies, weak execution, difficult performance assessment and weak management systems for Magic.

Preparation Phase

To start with, Lo and Magic's management team assessed the current state and the target state of management in three areas: strategy formulation, strategy execution and performance management.

First of all, Magic was not equipped with a relevant existing management and operational mechanism for strategy formation. Lo hoped to construct an integrated structure and logic of strategy formation management, in order to build a more comprehensive strategy formation mechanism. Second, there was no concrete mechanism for strategy execution, causing issues like the miscommunication of strategy, the lack of management for strategy execution and the reduced effectiveness of strategy. Through the discussion about the strategy map, the design of the balanced scorecard and the subsequent implementation, Lo wanted the top

management's strategic thinking to be understood more effectively and accurately by the staff. This was meant to help improve execution and management, thereby allowing senior management to spend more time on strategic thinking. Third, Magic had tried to improve the current state of performance management by importing the KPI system, but this KPI system was a bottom-up setting, which could easily lose focus in the long term or when Magic expanded. Lo wanted to integrate the KPI system with the balanced scorecard, in order to increase the visibility of the linkage between the KPIs of departments and staff and the business strategy. Under this new structure, it would be easier to resolve the problem about the fairness of the incentive mechanism.

With the management objectives borne in mind, Magic set up a project team to oversee the overall project planning, including expected project aims and benefits, project scope and schedule, project team formation, and the related training and communication for change management. The project aimed to turn the intangible strategy into a more concrete one, and accurately execute strategy management. For the project benefits, it was hoped to build up a management and execution mechanism of strategy formation. This helped form a consensus of Magic's strategy among the staff, and build up the specific execution mechanism of the strategy, in order to assist different departments to focus on Magic's overall strategy and to realise the achievement of strategic objectives. Moreover, the project team hoped to connect the balanced scorecard to the KPI mechanism for better performance management.

The project team set up a project plan to implement the balanced scorecard at the headquarters from August 2008 to August 2009 [see **Exhibit 1** and **Exhibit 3**]. The project was expected to be implemented at the headquarters—auditing, sales and marketing, product development (research and development ["R&D"] and quality control), purchasing, accounting and finance, and human resources—in three phases: preparation before implementation, designing the balanced scorecard and executing the balanced scorecard. In late 2009, the implementation would be pushed towards the department level (manufacturing and three factories). Because the project scope involved a number of departments in Magic, its implementation had to cause a great amount of change inside Magic, so the project team member selection and operation were very important. After careful consideration, the project team consisted of an overall project leader, a project manager, project members and external consultants [see **Exhibit 4**]. Moreover, in order to gain the agreement and support from the department managers, the project team scheduled a series of internal learning and training sessions about the conceptual framework of the balanced scorecard, so that the department managers would be more willing to actively participate in and assist with the project implementation.

Design Phase

Lo and the project team based Magic's strategy on the SWOT-Scorecard model and the five forces model. This was the first task because a clear strategy is critical to form the structure of the balanced scorecard before implementation. The formation of the strategy was a long process. To make sure that Magic was heading in the right direction, the team met in a long and iterative discussion process to form a detailed strategy and gather the content to structure the balanced scorecard. The formation of strategy underwent six stages, described as follows.

Strategy Formation

In the first stage of the discussion process, the project team did an internal and external environment analysis of Magic. This analysis clarified the equipped competencies of Magic to assess the parts that required strengthening and supplementation and to shape the future state of Magic.

Second, the team used the SWOT-Scorecard question set for a strategy discussion. This SWOT-Scorecard question set integrated the SWOT analysis and the four areas of the balanced scorecard to form a matrix, in which each intersected box contained corresponding questions for team members to answer [see **Exhibit 5**]. This question set was used to increase the team's understanding of Magic, but in addition the team found that the less obvious competitors' situation was better observed through this question set. Thus the strengths insisted on in the beginning did not seem to be unique for Magic in the end. Furthermore, upon the completion of the SWOT-Scorecard, the most important point became how to allocate the existing resources.

To first strengthen the advantages, or to first improve the weaknesses? How to make the decision to allocate the existing resources?

- Alan Lo, CEO of Magic²

Thus the discussion turned to exploring the most core issues, what the competitive elements of Magic were, and what the advantages compared with the competitors were, in order to decide the allocation of the existing resources.

Third, the team could see the SWOT-Scorecard from multiple perspectives, which could result in a lot of different strategies, but not all of the strategies were suitable for the current state of Magic. Thus the team needed to have discussions in order to determine the suitable strategic direction. Magic, for example, had the strength of low-priced raw material for testing and importing. On the other hand, it had to respond to the threat of the frequent revisions of labour laws in mainland China, which increased the wage costs, and the threats of products that had low technical entry barriers, high substitutability and high potential to be imitated. Thus the two things together inspired the team to form the strategic direction of automating existing products (Assembly-type plug-in inductor ["APL"] in the motherboard ["M/B"] market, IRON, and the multi-turn loop market).

Fourth, up to this step, the team had formed the strategic directions to pursue operational excellence. But these strategic directions were too broad for different product series, which had different customers, different selling methods, different market shares and different life cycles, in order to guide their required execution plan. Thus, the team used a product matrix of industry attractiveness versus company strength to determine specific product strategies.

Fifth, based on the strategy analysis results, the team formed and summarised specific product strategies and determined the priority of different product strategies. According to the SWOT-Scorecard model with the in-depth analysis of each department, the product strategies were further summarised as three parts. First, because the factories had a problem of insufficient productivity, and a lot of original equipment manufacturers existed in the market and had different automated equipments, the project team hoped to set up an outsourcing department. This outsourcing department would make the product categories of buying and outwork clear, and would set up a clear outsourcing process. Second, besides consolidating the existing printed circuit board market, the team hoped to enter the new notebook board ("NB") market to increase the market share. This was because demand was greater than supply in the NB market, and the team could use existing relationships to enter the market, while there were not many existing Taiwanese factories able to mass produce NB moulding products. This would help push Magic's products into a new market. Third, the team hoped to consolidate and strengthen the existing main product series, and the existing M/B market as well.

² Lo, P. C. (2009) "The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer", EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

Strategy Map

Lastly, the team set up the strategy map to formulate Magic's strategic objectives. The strategy map was a standard structure to describe strategy, using a set of consistent and standard strategic language, for the internal staff to align, focus and integrate their ideas with the four perspectives of the balanced scorecard, such that the strategy could be more concrete for the implementation of the balanced scorecard. The strategy map formulated the strategic objectives that would be used in the next stage [see **Exhibit 6**].

Strategic KPI Design

The project team considered the previous formulated strategic objectives for the design of strategic KPIs in the balanced scorecard. Strategic KPIs were one or several strategic and representing indicators, which emphasised quantifying the formulated strategic objectives and setting up the estimated target value for management. The project team first thought about and designed the related parts of the strategic KPIs, including the KPIs themselves and their formulae, frequencies and target values. Then the strategic KPIs were discussed with an external consultant during the learning sessions. During the discussions, it was discovered that some KPIs were repetitive, and these were deleted from the balanced scorecard.

Then, the project team connected the formulated strategic objectives and the strategic KPIs together during the design [see **Exhibit 7**]. One example was entering a new NB market, which was prioritised and ordered as one of the very important short-term strategies. In the customer perspective of the balanced scorecard, the strategic objectives included rapid entering of a new market, cost advantages, and quality advantages. The NB products were new products for Magic, so when these strategic objectives were connected to the financial perspective, Magic's financial objective was to "develop new targeted product's revenue". In the process perspective, its objective was "development management in new market". This was to achieve a rapid entering of a new market and a cost advantage, such as the rapid importing of R&D and production, and activity-based cost management ("ABCM"). Towards the downstream of the learning and growth perspective, the objective was "development management capability in new market". Because it had been confirmed that the new product was the SMD Power Choke product series in the new NB market, the learning and growth objective was set to develop the R&D, the production capability and the cost management capability for the SMD Power Choke product series. From this example, it could be seen that, besides the fact that each strategic objective in different perspectives had a casual relationship with each other, each respective KPI in different perspectives had a casual relationship with each other for entering a new NB market too.

Besides, during discussions, the team had difficulty in setting out the calculation formula of KPIs. For the target value, because a lot of KPIs had not been used before, their target values were thus difficult to define.

After the company's headquarters had designed the KPIs, the KPIs were passed on to respective responsible departments for further discussion. The department managers discussed the KPIs' rationale, the difficulty and the method of data collection, in order to understand whether the data tables from the data sources were sufficient, whether the data tables were integral, and whether the KPI's data sources were enough. This could further determine whether the KPIs could be used to evaluate the extent of achievement of strategic objectives, and whether there was a need to revise and add tables in the data sources.

Because Magic had implemented an enterprise resource planning ("ERP") system, to obtain accurate and easily collected content, around 50% of the table sources came from the many direct outputted tables of the ERP system, while the remaining 50% needed hand-made

statistics. But, if there were too many KPIs to be concentrated on at the same time, this would cause a diverse focus and a lack of attention on the most key strategic KPIs and strategic objectives.

Too many directions meant no direction. We should use the strategic KPIs which needed the most attention and which were immediately implementable as our management emphasis.

- Alan Lo, CEO of Magic³

Thus, in order to control and manage the most important strategic KPIs, during the discussions, the project team asked different department managers about which strategic KPIs were the most important and which they were most unwilling to give up. These discussions had produced the strategic KPIs' collection method, and the operational guide to create different strategic KPIs [see **Exhibit 8**].

Execution Phase

Lo was aware that a lot of other companies were executing numerous action plans, but those action plans were usually fragmented, in which they had no relationships to the set strategic objectives but competed for limited resources. This inappropriate use of human resources and financial resources could result in a failure to create a competitive advantage, or even a loss to competitors. If Magic could use the balanced scorecard as a foundation for its management system, cohesion could be formed between different action plans to pursue Magic's strategic objectives and measurements all together. The action plans, which aimed to achieve strategic objectives, were called strategic action plans. Strategic action plans had obvious and close connections to Magic's strategies, and could be connected to the budget and the staff's performance as well. Because enterprise resources were limited, to ensure that the strategic objectives reflected on the balanced scorecard could be realised and implemented, there was a need to use the strategic action plans. Therefore, the existing action plans needed to be reviewed, in order to clarify their connections with the strategic objectives. Those action plans that did not have a strategic meaning were deleted, while new strategic action plans had to be created for those strategic objectives that lacked support.

The project team listed out all the action plans in Magic first in the execution phase. Then, the team used the matching table of strategic objectives against action plans to filter out the strategic action plans. New strategic action plans could be added and existing action plans could be deleted. However, as a result of the discussion, a total of 10 action plans were filtered out, which would require too many resources for Magic.

Are these 10 action plans all required to complete within this year? How to make the decision to prioritize and order the action plans?

- Alan Lo, CEO of Magic⁴

Thus, the filtered strategic action plans were prioritised and ordered [see **Exhibit 9**]. The priority and order of the strategic actions plans were determined using six weighted criteria. The six weighted criteria covered a wide range of areas, including strategic connections, resource requirements (key personnel), demanded completion time, dependency and total costs. In addition, in the matching table, each strategic objective was marked with its

³ Ibid.

⁴ Ibid.

importance and completion period, and this could help determine the order of strategic action plans as well.

For each strategic action plan, the team made a strategic action plan proposal, detailing the expected benefits, KPIs, responsible departments, team structure and managers, contents and time schedule, and communication plans. These strategic action plan proposals could guide the follow-up implementation actions at Magic.

Lastly, the follow-up implementation actions were to integrate the balanced scorecard into the normal operations at Magic. These implementation actions would develop the management system for the balanced scorecard, collect the KPI information, hold the strategy evaluation meetings and push the implementation of the balanced scorecard towards the department level. These implementation actions, however, had not been completed in late 2009.

Departmental Design

In late 2009, Lo was in the execution phase when he considered pushing the design of the balanced scorecard towards the department level. As a result, Lo and the project team evaluated the early progress of the process at the company's headquarters to investigate the encountered difficulties and the respective solutions. This evaluation would make the project team better manage the departmental design of the balanced scorecard in the late execution phase.

The evaluation was done for the previous three phases of implementation: preparation before implementation, design of the balanced scorecard, and the early progress of the execution of the balanced scorecard.

In the preparation phase, the project team encountered several difficulties in understanding Magic's real requirements. In the beginning, Magic's managers could only roughly describe their own challenges, but they did not know what the most urgently required management system was for them. Magic's managers were unfamiliar with the balanced scorecard system, and had difficulty understanding why and how this system could deal with their challenges.

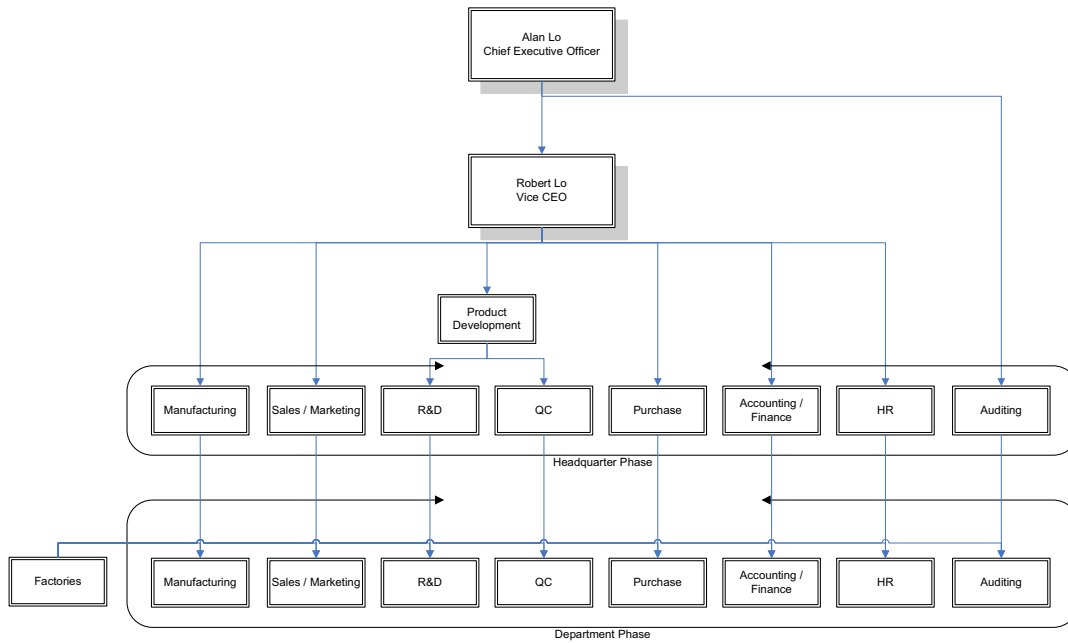
One other preparation issue was related to the project's overall planning. Would the managers need to formulate a strategy, or need to complete some basic foundation and management system, before constructing the balanced scorecard? How to decide the unit level of implementation of the balanced scorecard? Would headquarters need to begin implementation first? Furthermore, the managers did not understand the main difficulties associated with implementing this system, how to overcome them, and how long it would take to import this system into Magic as well.

In the design phase, there were some problems in preparing the SWOT-Scorecard analysis and the quantification of strategic KPIs. For the SWOT-Scorecard analysis, after the completion of the analysis, how should Magic's existing resources be allocated? Should Magic reinforce the strengths first, or should it improve the weaknesses first? For Magic, what would be emphasised when selecting strategies? How to match the strategic position of different product series into Magic's business portfolio? For the quantification of strategic KPIs, if there were some KPIs currently unobtainable, should the balanced scorecard still continue to be implemented, or should the implementation be held until all the KPIs were obtainable? To avoid KPIs being manipulated by employees, it would be better to directly obtain them from the information systems, but should Magic invest in huge costs for setting up information systems for this purpose? Furthermore, would the KPIs fail to achieve their

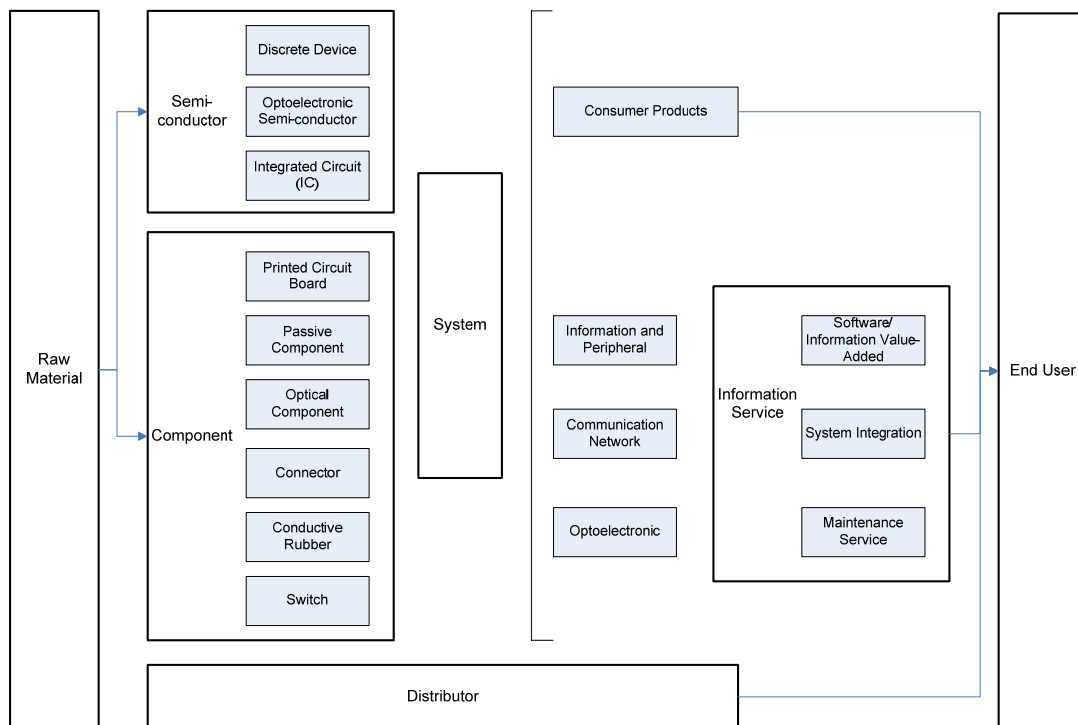
functions or to reach their targets, because of little motivation (eg, the KPIs not connected to incentives) or because of the design of the KPIs themselves?

In the early execution phase, some problems with the strategic action plans had confused the project team as well. How to closely connect the strategic action plans to the strategic objectives, and what could be counted as a close connection to the strategic objectives? These were the difficulties that could hinder the future departmental design of the balanced scorecard.

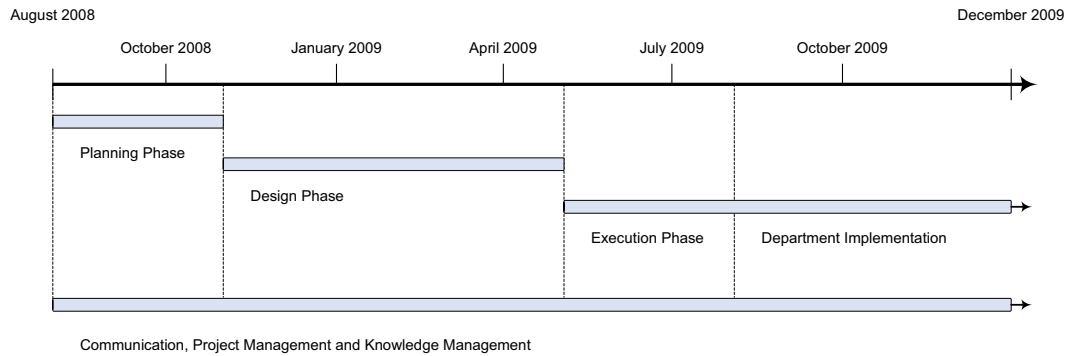
In late 2009, Lo had to consider some problems with managing the departmental design of the balanced scorecard in the late execution phase. The departmental level often undertook the strategies designed by headquarters, but when the headquarters had set up the strategy map and had designed the strategic KPIs in the balanced scorecard, would the departmental level need to set up the strategy map, or just to undertake the strategic KPIs in the balanced scorecard? The departmental level had some important work items that had not appeared in the headquarters' strategy map. Should these work items be shown on the departmental strategy map, or should just the departmental part of the headquarters' strategy map be shown on the departmental strategy map? How to connect the departmental strategic KPIs to departmental functions that were not strategic?

EXHIBIT 1: ORGANISATION CHART

Source: Lo, P. C. (2009) “The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer”, EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan; Magic Technology’s website: <http://www.magictec.com.tw>; Company interview on 10 March 2011.

EXHIBIT 2: ELECTRONICS INDUSTRY

Source: Lo, P. C. (2009) "The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer", EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 3: BALANCED SCORECARD PROJECT PLAN

Source: Lo, P. C. (2009) “The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer”, EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 4: BALANCED SCORECARD PROJECT TEAM

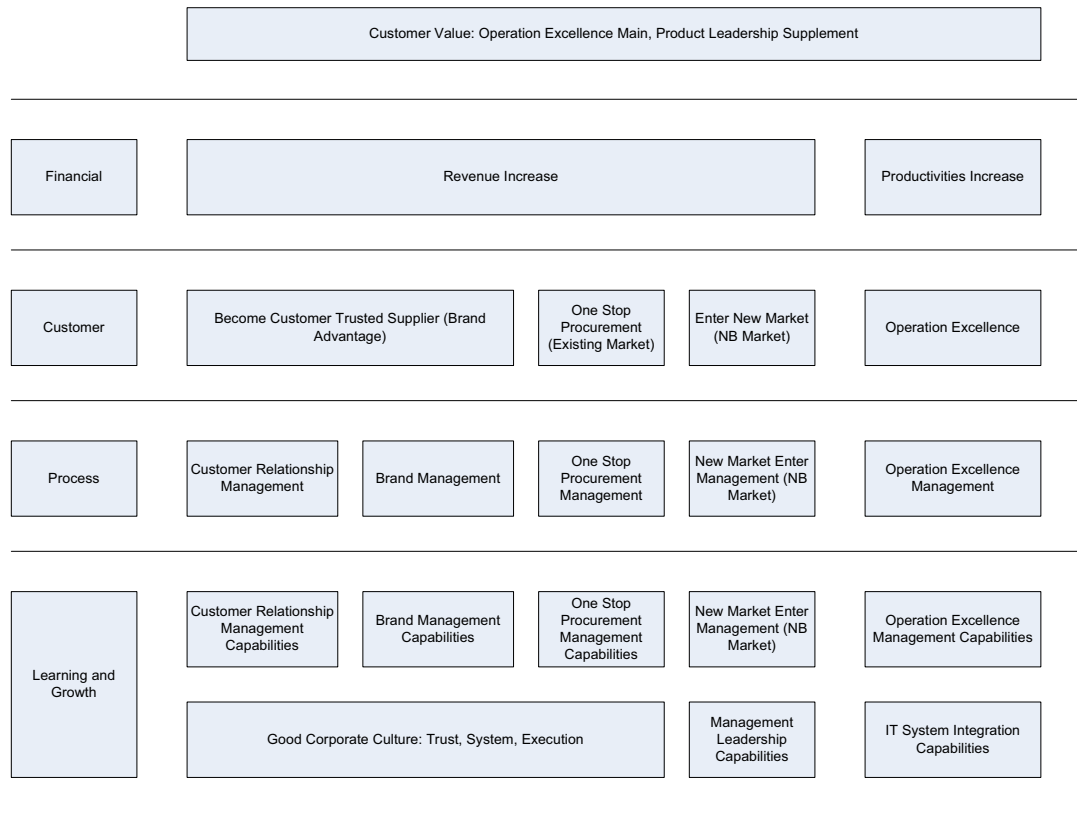
Project Team Member	Position and Responsibility
Overall Project Leader (CEO and vice-CEO)	• Guide the strategic direction of the project • Guiding and ruling the important agendas
Project Manager	• Assist to exclude the encountered obstacles in the implementation process • Provide cross-departmental communication and coordination • Command execution staff to complete related operations according to scheduled progress • Project detailed planning • Coordination and control of productivity and progress • Arrange meeting and education training
Project Members	• Project execution tasks
External Consultants	• Guiding of project direction • Raise suggestions specific to the encountered difficulties in the project implementation • Project quality control, and regular productivity inspection

Source: Lo, P. C. (2009) “The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer”, EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 5: MAGIC'S SWOT-SCORECARD (STRENGTH)

Perspective	Strength
Financial	• Own funding is sufficient, with healthy financial structure and relatively low debt ratio • Good credit with banks • Material procurement advantage in specific markets and vertical integration capability • Low-priced raw material for testing and importing
Customer	• APL product has high share and importing new products is fast • High customer segment understanding and good customer interaction • High M/B market understanding helps increase the NB market entering advantage • Appearance on international renowned brand's vender list can be used to extend to other markets
Process	• APL semi-automatic manufacturing can reduce costs and increase productivities • Strong R&D capability • Granted patents • Stable and high retention of core personnel • Granted patents can hinder competitors
Learning and Growth	• Importing BSC • Strong operation capability can satisfy customer R&D demand that provides a wider range of services than the competitors

Source: Lo, P. C. (2009) "The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer", EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 6: STRATEGY MAP

Source: Lo, P. C. (2009) “The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer”, EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 7: STRATEGIC OBJECTIVES AND KPIS (NEW MARKET)

Perspective	Strategic Objective	Definition	KPI
Financial	Develop new targeted product's revenue	Targeted products have revenue growth in all markets, including internal-made or external-procure parts.	Revenue growth rate
Customer	Rapid entering of new market	To win the first opportunity, competition of timing is the most important element.	Gross profit R&D progress chart
Customer	Cost advantage	Except the timing is right, the low cost of targeted products is also the need in NB market.	Cost achievement rate No of customers transacted in new market
Customer	Quality advantage	The quality of targeted products is one of the top considering items for customers	Customer complaint rate
Process	Rapid importing of R&D and production	Rapid entering of new market must speed up the R&D and production importing internal process. Besides, to adapt customer needs, the improvement of old products and development of new products are both critical.	Annual R&D and production plan No of old products improved No of new products developed
Process	ABCM	To achieve cost advantage in new market, the right timing of using ABCM is needed for management purpose.	Time to implement ABC
Learning and Growth	R&D and production capability for SMD Power Choke	The understanding and production capability of targeted products must be sufficient, for rapid importing of R&D and production.	No of recruited staff
Learning and Growth	Cost management capability for SMD Power Choke	The capability to manage the cost of targeted products must be equipped, in order to achieve cost management for cost advantage.	Training hours

Source: Lo, P. C. (2009) "The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer", EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 8: KPI OPERATIONAL GUIDE TEMPLATE

Process/Step	Explanation	Document/System Source
1. Collect this quarter's new product number	1. Enter DataSystems ERP, Inventory management system, "Product number creation operation".	DataSystems ERP System
	2. Enter "Product number creation operation". Search for 'Advance Setting'. Set condition to be "Creation date >= This quarter's start date" and "Creation date <= This quarter's end date".	DataSystems ERP System
	3. During collection of results, open the "Management column" in 'Function', in order to see the 'Creation Date' column.	DataSystems ERP System
2. Count this quarter's old series' new part number	1. Export the search results to EXCEL, to count new product numbers.	EXCEL
	2. Add "Count" column. Add "1" in each property, to count new parts. Sum this item to obtain this quarter's valid number of mass produced R&D products.	EXCEL

Source: Lo, P. C. (2009) "The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer", EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan.

EXHIBIT 9: PRIORITY AND ORDER TABLE OF STRATEGIC ACTION PLANS

Criteria	Weighting	Explanation	Score (Plan A)	Weighted Score (Plan A)
Strategic connection	45%	Have positive influence to the success of strategic objectives or not		
Resource requirement (key personnel)	20%	Required key personnel, investing time and resource		
Demanded completion time	10%	Estimated completion time		
Dependency	10%	The extent of influence from the success of other action plans		
Total costs	15%	Total costs including human resource and material		
Total	100%			

Source: Lo, P. C. (2009) “The Difficulties Encountered and Suggestions Related to Implementing the Balanced Scorecard: A Case Study of an EMI Components Designer and Manufacturer”, EMBA Dissertation, College of Commerce, National Chengchi University, Taiwan; Niven, P. R. (2002) *Balanced Scorecard Step by Step: Maximizing Performance and Maintaining Results*, John Wiley & Sons, Inc.: Hoboken, NJ, p. 194.