



VALUE DRIVERS TO MAXIMIZE STAKEHOLDER WORTH: THE CASE OF TAIWAN HIGH SPEED RAIL CORPORATION CUSTOMIZING



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ABSTRACT

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This study determined that the sustainable value of an enterprise involves not only financial performance but also nonfinancial performance. Therefore, intellectual capital (IC) and corporate social responsibility (CSR) were applied to determine value drivers for creating corporate stakeholder value and sustainable competitive advantages. No overall value drivers can be applied to the same enterprise; therefore, we suggest that top managers customize corporate value drivers and leverage priority resources to maximize firm profit. This study reviewed literature regarding IC and CSR to integrate overall value drivers, and applied statistical methods to demonstrate how corporate management teams could apply our methods to identify leverage drivers and create maximum value for stakeholders. We developed an enterprise questionnaire based on the concepts of IC and CSR to conduct data analysis, and used an importance-performance analysis map and regression to rank priorities for value drivers. We implemented a case study of the Taiwan High Speed Rail Corporation (THSRC). The statistical results reveal three concerns. First, there are gaps in our 10-item questions expect for environmental issues regarding noise and vibration. Second, if the THSRC were to improve salaries and welfare, corporate culture and know-how could maximize corporate sustainable value by using charts of the impact-performance of value drivers. Third, regression analysis demonstrated that the degree of importance of customer loyalty has a considerable impact on the degree of importance of financial performance. Finally, the authors suggest that future studies focus on the interdependency of factors to develop an overall index to measure sustainable stakeholder value.

Contribution/ Originality: This study contributes this first logical analysis of maximizing stakeholder value by IC and CSR. Furthermore, the paper has provided corporations with a base for understanding that the sustainability and strength of competitive advantage depends on the ability to leverage resources to improve a firm's performance.

1. INTRODUCTION

Corporate enterprises constantly face pressure regarding how to allocate scarce resources in rapidly changing and complicated economic environments. Generally, enterprises focus on short-term financial performance, but this study emphasized that corporations should also pay attention to nonfinancial performance to maintain competitive advantages and sustainability. To achieve sustainable competitive advantages, top managers must employ dynamic

resource-based strategies. A resource must enable a firm to employ a value-creating strategy by either outperforming its competitors or reducing its own weaknesses (Barney, 1991; Amit and Schoemaker, 1993). Overall intellectual capital (IC) is an excellent instrument for measuring corporate value because it includes both financial and nonfinancial capital. The value of IC components is also related to corporate social responsibility (Branco and Rodrigues, 2006). The purpose of this study was to first consider a resource-based theory perspective and use IC components combined with CSR to identify corporate value drivers, and to subsequently rank the priorities of value drivers through the methods of gap analysis, importance–performance analysis (IPA), and regression analysis. Suggestions could thereby be offered to top managers regarding how to readily create corporate stakeholder value and sustainable competitive advantages. We implemented a study of the Taiwan High Speed Rail Corporation (THSRC), and suggest that senior managers customize corporate value drivers and leverage priority resources to maximize corporate sustainable value.

2. LITERATURE REVIEW

2.1. Resource-Based View: Leveraging Unique Resources to Maximize Value

As a means by which a firm can realize a competitive advantage, the resource-based view (RBV) primarily involves the application of a group of valuable tangible or intangible resources at the firm's disposal (Penrose, 1959/1995). The RBV indicates that a firm's sustainable competitive advantage is achieved by virtue of unique resources that are valuable, inimitable, non-tradable, non-substitutable, and firm-specific (Barney, 1991). Also Hamel and Prahalad (1993) stated that firms that are successful in global competition usually identify resource-intensive approaches to achieve their goals. These approaches adopt the leverage of resources to complement the strategic allocation of resources. As recent competitive battles have demonstrated, abundant resources cannot guarantee continued industry leadership (Hamel and Prahalad, 1993). Therefore, to create stakeholder value, top managers should leverage resources, rank priorities, and allocate and adjust over a period.

2.2. Corporate Social Responsibility: Sustainable Competitive Advantages

Due to organizations are assessed not only based on the financial outcomes of their decisions, but also on how they measure up to a broader set of societal expectations, decisions regarding strategic resource allocation are always complex. Recent studies have suggested that heavy pressure does not directly originate from concerns regarding age, but instead from concerns about the social issues involved in management (Prahalad and Hamel, 1994).

Similarly, Abigail and Donald (2011) analyzed the creation and use of CSR strategies involving private and social value. The researchers also defined CSR as any “responsible” activity that allows an enterprise to attain a competitive advantage in sustainability, regardless of motive (Abigail and Donald, 2011). This study analyzed CSR as being part of IC, in particular with respect to social capital and human capital.

2.3. RBV and CSR Create Stakeholder Value

Firms involved in repeated transactions with stakeholders based on trust and cooperation have an incentive to behave honestly and ethically because such behavior is beneficial to the firm (Jones, 1995). In an RBV of the firm for certain companies, environmental social responsibility can constitute a resource or capability that leads to a sustained competitive advantage (Hart, 1995). Scholars of institutional theory have stated that institutions play an important role in shaping the consensus within a firm regarding the establishment of an “ecologically sustainable” organization (Zennings and Zandbergen, 1995).

2.4. Intellectual Capital: Knowledge that can be converted into Value

There are many definitions of IC. This study adapted the general and brief definition proposed by Edvinsson (1996) as “knowledge that can be converted into value”. Most IC comprises three categories: human capital, structural (internal) capital, and relationship (external) capital (Roos *et al.*, 1998; O'Donnell, 2000; Dalkir *et al.*, 2007). Human capital refers to the people in an organization, and describes their cumulative tacit knowledge and skill. Structural capital refers to the explicit knowledge embedded in an organization. Relationship capital corresponds to the assets that reside in the social relations and networks between individuals, communities, and society (Curado *et al.*, 2011). Hence, the essential element of relationship capital is the knowledge embedded in a firm's external relations with stakeholders.

In our opinion, in order to sustain competitive advantages, it is vital to strengthen the ability of a firm's resources to continue-superior performance.

3. RESEARCH METHODOLOGY

By interviewing top managers and related senior staff members, we developed an enterprise questionnaire concerning IC (including CSR) and IPA for data analysis including pairwise t testing, gap analysis, IPA, and regression analysis. We implemented a case study of the THSRC, one of the largest public transport companies in Taiwan. First, the target organization had to identify the critical IC components (including CSR factors) to define as value drivers. From a managerial perspective, each organization is unique, and therefore should customize its IC components. Second, we conducted data analysis to customize the value drivers of the corporation.

Table-1. IC value driver multiple-choice questions

IC	IC categories	IC factors
Human Capital	1. Knowledge skills	(1)SKILLS(2)KNOW-HOW* (3)COMPETENCIES (4)EXPERIENCE* (5)EXPERTISE(6)EDUCATION&TRAINING* (7)LEARNING
	2. Creativity and innovativeness	(1)FLEXIBILITY (2)CREATIVITY (3)CHANGEABILITY (4)PROACTIVE (5)EMOTIONAL INTELLIGENCE
	3. Relations with employees (CSR)	(1)SALARY,WAGE&WELFARE* (2)EQUAL PAY FOR MEN & WOMEN (3)SAFE ENVIRONMENT FOR WORK* (4)MAINTAIN EMPLOYEE RELATIONSHIP (5)RECRUIT & RETENTION (6)SAFE WORK CONDITION FOR WOMEN (7)FREEDOM OF ASSOCIATION & COLLECTIVE BARGAIN (8)DIVERSIFICATION & EQUAL OPPORTUNITY
Structural Capital	1. Management skills	(1)ENTREPRENEURIAL SPIRIT (2)LEADERSHIP(3)COMMITMENT*(4)MOTIVATION (5)LOYALTY (6)VOCATIONAL QUALICATION
	2. Innovation	(1)CODIFIED KNOWLEDGE (2)ORGATIONAL KNOW-HOW (3)R&D(4)TECHNOLOGY TRANSFER (5)NEW TECHNOLOGY
	3. Intangible infrastructural assets	(1)MANAGEMENT PROCESS (2)ORGATIONAL STRUCTURE (3)CORPORATE CULTURE* (4)PROCEDURE (5)STRATEGY (6)VISION (7)INTERNAL COLLABORATION
	4. Information	(1)INFORMATION SYSTEM (2)DATA BASE (3)COMMUNICATION (4)TECHNOLOGY (5)DOCUMENTATION SERVICE
	5. Intellectual property	(1)PATENTS (2)COPYRIGHT (3)TRADEMARKS (4)TRADE SECRETS
Social Capital (including CSR)	1. Relations with customers	(1)CUSTOMER SATISFICATION* (2)RETENTION & LOYALTY* (3)CUSTOMER HEALTH & SAFETY (4)PRIVACY (5)PRODUCT PRICE (6)OVERALL SERVICE
	2. Relations with suppliers	(1)DISTRIBUTION CHANNELS (2)SUPPLIER MANAGEMENT (3)PURCHASING PRACTISE
	3. Institutional relations	(1)REGULATORY RELATIONSHIP (2)POLITICAL LOBBY & CONTRIBUTION
	4. Brand Image	(1)TRUST (2)REPUTATION (3)MARKET IMAGE (4)BRAND MANAGEMENT (5)MARKETING & ADVERTISEMENT
	5. Environment Issue	(1)GEOLOGICAL MONITERING (2)NOISE & VIBRATION* (3)CARBON FOOTPRINT REDUCTION (4)ENVIRONMENTAL EVENT & TREATMENT (5)CLIMATE CHANGE MITIGATION
	6. Social Issue	(1)COMMUNITY&URBAN DEVELOPMENT (2)FAIR TRADE (3)CHARITABLE
	7. Relations with investors	(1)INVESTOR RELATIONSHIPS (2)INVESTOR CAPITAL (3)SHAREHOLDERS (4)FINANCIALPERFORMANCE*

Sources: (Petty and Guthrie, 2000; Boedker *et al.*, 2004; Green and Ryan, 2005; Choong, 2008; Marr, 2008; Corvello and Iazzolino, 2013; Global Reporting Initiative, 2013;2015; Cricelli *et al.*, 2014; THSRC CSR Report, 2014).

3.1. Research Steps

3.1.1. Step One: Executive Interviews to Identify Value Drivers

In-depth personal interviews comprising 75 open-ended and multiple-choice questions (Table 1) were conducted with four or five executives from each department. The executives, who could have an impact on decision-making within a firm, were selected from the departments of human resources, operations, senior management, contracture, repairs, the environment, health and safety, and customer relations. The respondents held titles such as senior vice president, director, senior manager, and junior manager. A total of 31 executives were interviewed on a broad range of IC factors (including CSR issues). The results (Table 1) show 11 IC factors (*), weighting over 71%, defined as IC value drivers.

3.1.2. Step Two: Designing Questionnaires on Impact and Performance

By using 11 value drivers (* in Table 1), the authors conducted data analysis as follows:

3.2. Sample

In this study, we increased 17 people (senior staff members from every department) to 48 samples from the THSRC and, using a random sampling method, categorized the samples by position, department, and service years. The samples comprised executives, middle managers, supervisors, and sub supervisors. They also included staff members such as technicians, accountants, engineers, environmental safety staff, and administrative support staff who were deeply involved in the day-to-day activities of the organization administration, thereby creating value for the company. The management positions consisted of 15 people (31.3%), the operation department consisted of 13 people (27.1%), and the service years of the other 26 people were between 11 and 20 years (54.2%).

3.3. Method

A survey technique was applied through the IPA questionnaire, enabling the statistical significance of relationships between survey items to be determined. IC leverage drivers were measured using an 11-item IC driver (* in Table 1) questionnaire involving IPA (Martilla and James, 1977) concepts. This instrument included four dimensions (degrees of importance for internal and external capital, and performance of internal and external capital) measured on a five-point Likert-type scale. In this study, we used pairwise t testing to conduct gap analysis, and the IPA method to rank the priorities of value drivers. Finally, the relationship between the independent and dependent variables was measured using regression analysis. To implement this, the authors measured the relationship between the importance and performance of the IC factor t through a summated scale after the survey process. The study was represented by y = dependent variable, while the other ten IC factors were represented by x = independent variable. The authors considered that all intangible performance is reflected in tangible financial performance.

4. RESULTS AND DISCUSSION

4.1. Data Analysis

The internal consistency reliability yielded Cronbach's α and constructs reliabilities for four constructs between 0.834 and 0.923; therefore, the Cronbach's α values are higher than the benchmark of 0.7 suggested by Nunnally (Nunnally, 1978). In addition, we used confirmatory factor analysis to determine convergent validity and discriminant validity, and standardized factor analysis to test convergent validity; the values were between 0.4 and 0.948, which is favorable (Hair *et al.*, 2006). The square correlations were all below the variance extracted percentages of the four constructs; therefore, the test model had good discriminant validity. We used the Kolmogorov-Smirnov method to test sample distribution. The results showed the P values for all factors to be above 0.05; thus, our sample met the requirements of normal distribution.

For internal capital, the factor with the greatest impact was safe working conditions; the factor with the least impact was organizational commitment. The optimal performance factor was safe working conditions; the lowest performance factor was salary and welfare. For external capital, the factor with the greatest impact was customer satisfaction; the factor with the least impact was environmental issues regarding noise and vibration. The optimal performance factor was customer satisfaction; the lowest performance factor was financial performance.

4.2. Gap Analysis

We used pairwise t testing to analyze the differentials between all 11 IC factors between impact and performance. The test results showed that a set of key discrepancies or gaps existed between all of the IC factors except for environmental issues, and that the scores for performance factors are all below the scores for impact (Table 2).

Table-2. Gap analysis

	Impact Average	Performance Average	Standard Deviation	T value
Experience	4.146	3.750	0.644	-4.260*
Education and Training	4.083	3.833	0.526	-3.293*
Entrepreneurial commitment	4.000	3.625	0.606	-4.289*
Organizational Know-how	4.333	3.729	0.939	-4.456*
corporate culture	4.354	3.646	0.874	-5.614*
Salary and welfare	4.271	3.458	1.003	-5.611*
safe environment for work	4.542	4.146	0.644	-4.260*
customer satisfaction	4.563	4.104	0.582	-5.457*
customer retention and loyalty	4.375	4.063	0.589	-3.675*
Financial performance	4.208	3.604	0.736	-5.685*
Environment Issue	3.854	3.750	0.692	-1.044

*: P value <0.05

Source: IBM SPSS Statistic 22

4.3. IPA Analysis

Figure 1 indicates that the THSRC exhibited favorable impact and performance regarding customer satisfaction, safe working conditions, and customer loyalty, denoting that it should maintain its current operational standards. First, the THSRC should concentrate on salary and welfare for employees, corporate culture, and corporate know-how. We detected a slight overinvestment in education and training for employees.

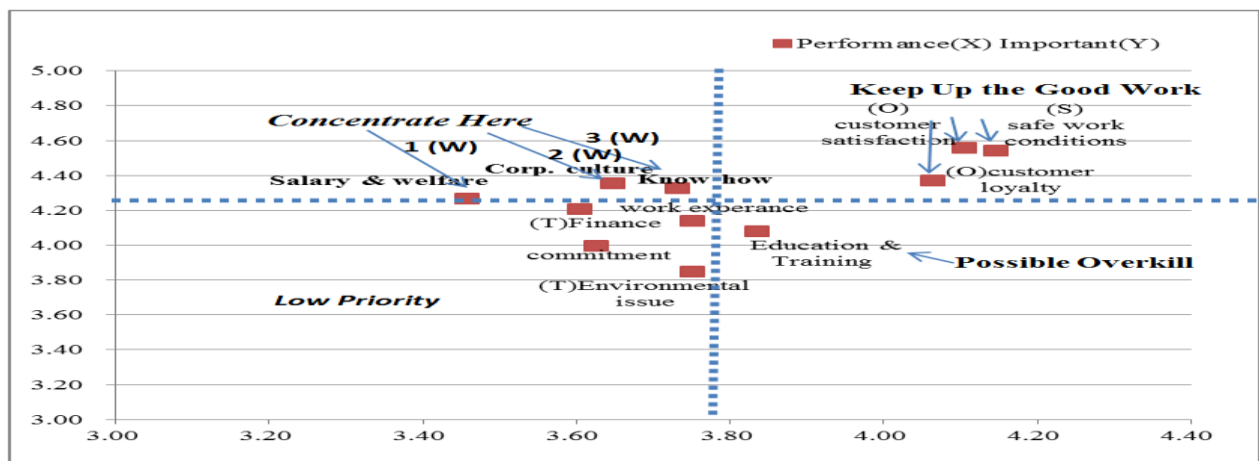


Figure-1. Important-Performance Analysis

Source: figures from Table 2 Impact Average and Performance Average

4.4. Regression Analysis

The authors considered whether intangible performance would reflect on tangible financial performance, and measured the relationship between importance and performance with respect to IC factors. In this study, financial performance was represented by y = dependent variable, while the other ten IC factors were represented by x = independent variable. The Durbin Watson values of importance and performance were 2.336 and 2.072 respectively, denoting that no auto-regression was present in the data. Furthermore, the variance regression factor values of all items were lower than 10, denoting no multicollinearity between the independent values. Therefore, this study was adapted to enable data analysis by using regression. In the regression analysis results shown in Table 4, the F value and R^2 have good explanatory abilities. Furthermore, regression analysis shows only degrees of importance regarding customer loyalty as having a significant impact on the degree of importance regarding financial performance.

Table-3. Regression analysis

	Unstandardized Coefficients	Standardized Coefficients	T	F	R^2
Customer loyalty	.590	.582	2.972	2.744	.426

Note: y = financial performance, x = the other ten IC factors

Source: IBM SPSS Statistic 22 (Appendix 1)

5. CONCLUSION AND SUGGESTIONS

Leverage value-creating resources can generate sustainable competitive advantages. This study applied several theoretical streams such as the RBV, CSR, and stakeholder theory, and considered IC and CSR factors as value drivers in the stakeholder value creation process. We believe that all corporate managers can apply our method for identifying leverage drivers, and thereby maximize profit for firms. The statistical results reveal gaps in the 10-item questions but environmental issues about noise and vibration. The employees of the THSRC were satisfied. The results of IPA analysis showed that if the THSRC were to improve salaries and welfare, corporate culture, and corporate know-how, they could maximize corporate sustainable value. The results of regression analysis indicated that only customer loyalty has a positive impact on financial performance and short-term performance.

There were several limitations to this study. First, there is both a necessity and an opportunity to develop a standardized instrument for measuring stakeholder value to help chief managers judge the extent to which specific resources should be invested or allocated. Second, the researchers are currently required to generate items or statements from CSR, devise appropriate rating scales to measure values with respect to each statement, and condense the set of statements to produce a reliable and concise instrument. Furthermore, the statements generated should be such that, with appropriate changes in wording, the same instrument could be used to measure value in a variety of industries. A key challenge for researchers is to devise methods to measure these values accurately.

This paper contributes further investments and suggestions, corrective actions for allocating resources, improving organizational performance, and maximizing stakeholder value. The second limitation was that this study's major concern with RBV was focused on the ability of a firm to maintain a combination of resources that can create maximum value for stakeholders. Third, the researchers offer guidance to senior managers for achieving stakeholder value. Furthermore, the authors have provided corporations with a base for understanding that the sustainability and strength of competitive advantage depends on the ability to leverage resources to improve a firm's performance. Finally, the authors suggest that future studies focus on the interdependency of factors to develop an overall index to measure sustainable stakeholder value.

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Appendix-1.

	Unstandardized Coefficients	standardized Coefficients	T
Experience	-.030	-.029	-.185
Education and Training	.029	.022	.162
Entrepreneurial commitment	.156	.187	.996
Organizational Know-how	.076	.074	.514
corporate culture	.006	.006	.038
Salary and welfare	-.115	-.128	-.664
safe environment for work	.354	.270	1.444
customer satisfaction	-.135	-.135	-.790
customer retention and loyalty	.590	.582	2.972
Environment Issue	-.006	-.006	-.038

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