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Integration of Corporate Social Responsibility into New Product Development

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This study investigated seven core subjects of ISO 26000 to explore the way in which new product development (NPD) links corporate social responsibility (CSR) strategy with product development planning. This study thoroughly discussed the implementation of policies that achieve social responsibility within the context of NPD planning. Rapid changes in science and technology mean customer needs are changing faster than ever before, making it increasingly difficult to identify critical customer needs in a timely manner. NPD therefore is essential to enhance enterprise competitiveness. The construction of a CSR-based NPD model can help enterprises in NPD. Using the CSR based NPD model to plan materials selection, specification setting, manufacturing procedures and methods, distribution, servicing and recycling increases enterprise friendliness and happiness, and benefits their sustainable development. The findings of this study suggest that traditional enterprise activities focus on profit maximization and cost minimization. The profit-oriented strategy influences product design, purchase, production, manufacture and delivery. Poor working environment, overtime, low wages, neglect of health and safety, and various deficiencies in CSR frequently occur. If a CSR based perspective is initially adopted to implement public expectations regarding product design, it can be both beneficial and environmentally friendly.

Keywords: New product development (NPD), corporate social responsibility (CSR), ISO 26000, sustainable development, competitive advantage

JEL: L15, M11, M14

The traditional business model aims to enhance shareholder wealth to emphasize laborer quality of life, careers, and social progress. Enterprises mostly are profit-oriented, but limit their attempts to achieve this to seeking to maximize profits and minimize costs. Therefore, many issues related to Corporate Social Responsibility (CSR), such as poor working environments, overtime, unpaid wages, and neglect of health and safety issues,

frequently occur.

For example, in 2005 Hong Kong Disneyland was found selling shark fins, culling stray dogs, causing noise pollution through daily fireworks, and even hiring child workers, whether directly onsite, or indirectly as workers in the factories of suppliers. In 1993 Coca-Cola's Indian factory caused various environmental problems, including water shortages caused by large-volume extraction of groundwater, industrial wastewater pollution, and the spread of toxic waste and other

materials. In June 2006 a newspaper published an article entitled "Sweat Factory Inside Story: Labors Work Over 12 hours Standing Up" which identified issues of forced overtime and other forms of abuse that affected laborers in Foxconn Shenzhen (Coolcloud, 2012). Enterprises should be responsible, and should prioritize issues such as resource management, and worker health and safety, as well as building shareholder wealth. People can now easily share information online, which makes it increasingly difficult to hide any scandals. Enterprises thus must adjust their strategies to consider not only profitability but also sustainability, thus reinforcing their achievements in terms of CSR (Kolk 2016; Strand *et al.*, 2015; Baumgartner, 2014; Marín *et al.*, 2012; Gold *et al.*, 2010).

Enterprises are encouraged to implement three main dimensions in CSR topic, namely financial, environmental, and social issues. CSR is not only becoming a critical concern in sustainability but also crucial to competitive survival. In manufacturing, all products must strictly accord with international quality and safety regulations, which represent basic expectations regarding CSR. With the promotion of CSR, many enterprises realize that following CSR requests can solve the conflict between labor and capital, balance economic activities and resources and create a friendly environment (Sánchez and Benito-Hernández, 2015). To date numerous companies implement self-norms based on common industry regulations and create a friendly environment to manage with a perpetual going-concern system.

New product development is important for enhancing competitiveness, and so companies can maximize profits through new product development, and meanwhile can take social responsibility to further build their reputations (Chang, 2015; Luo and Du, 2015). If companies implement CSR concerns as a basis for new product innovation and development during the early stages, this can also become a niche new business model (Costa *et al.*, 2015). This approach attracts significant corporate interests, and is also ecologically helpful since it promotes positive and smooth development. Therefore, this study focuses on the construction of new systems, and attempts to incorporate CSR concerns into new product development planning, including material selection, specification setting, manufacturing procedures and methods, product distribution and delivery, customer service, and recycling. Such incorporation can make companies into truly friendly enterprises.

This paper is structured as follows: Section 2 provides the literature review of NPD, CSR, and ISO 26000. Section 3 focuses on investigating the extent to which enterprises integrate CSR issues into NPD activities. Section 4 discusses the product planning. Section 5 discusses the deployment for the action plan. Finally, the paper concludes the main findings and implementations.

LITERATURE REVIEW

New Product Development (NPD)

Rapid changes in technology make it difficult for customer demand to catch up, and stimulate fierce competition in industrial environments, as

new product development becomes the key to enhancing competitiveness (Shinkle and McCann, 2014). Thus, many companies expend effort on NPD activities, which include product design, engineering, planning, manufacturing, service and other activities. NPD involves four main issues, namely process complexity, product features, environmental characteristics and component definition (Bacciotti *et al.*, 2016; Wowak *et al.*, 2016; Fang *et al.*, 2015; Schilke, 2014).

NPD is not only the first step to achieve customer satisfaction but also increase competitiveness (Schilke, 2014; Kettunen *et al.*, 2015). NPD involves numerous considerations, including customer demands, technical skills, competitive strategies, and various consumer protection and environmental factors. Therefore, to satisfy customer demand, companies must coordinate their various departments and define their functions. For example, the R&D department oversees material section, technical implementation, and component specification (Singer *et al.*, 2014; Lawson *et al.*, 2015). Meanwhile, the manufacturing department oversees resource control, quality, costs and manufacturing feasibility (Van den Broeke *et al.*, 2015; de Brentani and Kleinschmidt, 2015; Lawson *et al.*, 2015).

Product development involves devising numerous new technologies to improve design quality, strengthen technology integration and decrease design time. Reverse Engineering (RE), Value Engineering (VE), the Taguchi method, design for manufacturing / design for assembly (DFM/DFMA), robust design, modular design,

Quality Function Deployment (QFD), Concurrent Engineering (CE), and collaborative design, all help companies to improve NPD efficiency and strengthen their competitiveness (Annacchino, 2003; Lu and Yang, 2004; Krajewski and Ritzman, 2005; Kumar and Phrommathed, 2005; Chase *et al.*, 2006).

During the stages from product innovation to mass production, frequently face many restrictions that include physical limitations (lack of resources, regulatory requirements, cost control, and so on) and intangible constraints (environmental issues, social demands, higher standards of competitors, and so on), and these restrictions affect the strategic decisions of the management team (Ertay and Satoğlu, 2012; Diestre *et al.*, 2015; Kumar, 2009). Especially for CSR issues, ignoring these issues can gradually erode competitiveness (Carvalho *et al.*, 2015; Perera and Chaminda, 2013). Companies thus must remain aware of both NPD activities and CSR issues, so as to achieve sustainability.

Corporate Social Responsibility (CSR)

The EU defines CSR as the voluntary integration of social and environmental concerns into a business by its stakeholders. The International Organization of Employers (IOE), defines CSR as the voluntary integration by a company of social and environmental concerns into the interactions of its business operations and stakeholders. However, the International Labor Organization (ILO) defines CSR as a way that enterprises consider the social impact of their operations, and affirm their principles and values, both in their internal methods and processes, and in their

interactions with others. CSR is a voluntary, enterprise-driven initiative, and refers to activities considered to comply excessively with the law. Additionally, both EU and ILO defined CSR needs to include the following elements:

1. Voluntary: Enterprises voluntarily exceed their legal obligations and adopt socially responsible conduct.
2. Integrity: CSR is integral to good corporate management. Business performance within the enterprise approach is also expressed to stakeholders. Moreover, most contemporary companies consider employees stakeholders.
3. Responsiveness: Enterprise responsiveness to the expectations and demands of stakeholders (including employees) is important to CSR.
4. Systemic: Based on CSR, enterprises must adopt integrated management systems and processes to fulfill normative expectations. In terms of best practices, enterprises must consider their corporate decisions and actions at all levels, and in terms of each aspect of recurrent issues, rather than taking incidental or individual actions.

Promotion of CSR by the international community is very positive. Various organizations, such as international, government and non-government organizations, academics, etc., have started formulating relevant CSR programs, standards, guidelines and specifications. There are currently eight global organizations that promote CSR: Global Compact, ILO conventions, OECD Guidelines for Multinational Enterprises, Global Sullivan Principles, ISO 26000 Guidance, Social Responsibility Standards, Accountability

Standards, and the GRI sustainability report (Eight global CSR norms, 2012).

Further, Grayson and Hodges (2004) are the pioneers in the opportunities associated with social issues, and proposed a seven step process for performing CSR. Trigger sources confirm the definition of key areas, the establishment of the business case, and make commitments regarding action, integration and resource gathering, stakeholder involvement, measurement, and reporting. In 2006 the ISO worked to develop an improved CSR based on the ISO 9000 and ISO 14000 standards, called the ISO 26000 guidance standards. Therefore, many enterprises have already issued corporate sustainability and social responsibility reports. The program is mostly based on the ISO 26000 Guidelines. This trend proves that CSR is becoming an international issue.

ISO 26000

ISO 26000 guides businesses and organizations on how to operate in a socially responsible manner. It helps clarify social responsibility, helps businesses and organizations translate principles into effective actions, and shares global best practices relating to social responsibility. The CSR definition of ISO 26000 is that the enterprise should take responsibility for society and the environment. Such behavior must meet social interests, the requirements of sustainable development, compliance with laws and government intergenerational contracts, and must be fully integrated into enterprise activities. Figure 1 shows the framework of ISO 26000.

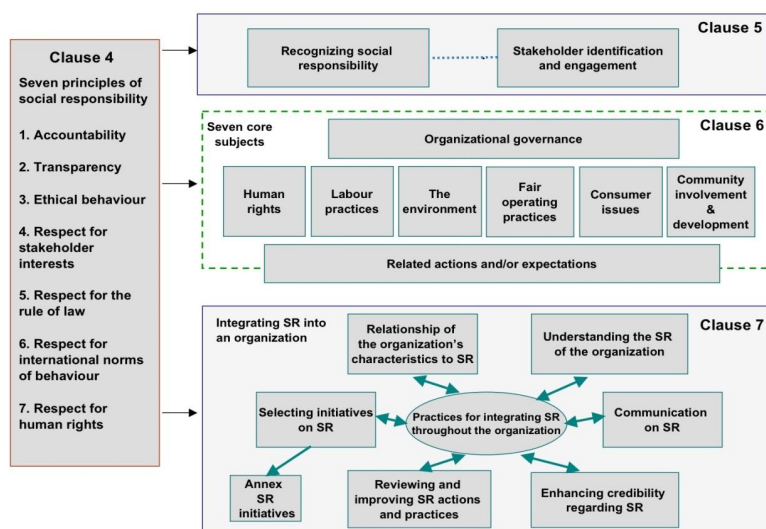


Figure 1: The Framework of ISO 26000 (BS ISO 26000:2010, 2010)

ISO 26000 highlights the seven principles of social responsibility named accountability, transparency, ethical behavior, respect for stakeholder interests, respect for the rule of law, respect for international behavioral norms, and respect for human rights. These principles are then applied to the following seven core subjects (Frost, 2011):

1. Organizational Governance: This describes the system by which organizations make decisions and implement actions to achieve objectives. It is a core function for all organizations since it provides the framework for decision making.
2. Human Rights: Human rights are basic rights to which all humans are entitled, and comprise two categories. The first category contains political and civil rights, such as the right to life, freedom, and equality; the second category contains economic, social and cultural rights, such as the rights to work, food, health, education and social security.
3. Labor Practices: Organizational labor practices must comply with all policies and actions related

to the work done by or for the organization, including subcontracted work. Labor practices extend beyond the relationship between the organization and its employees.

4. The Environment: Regardless of organization location, its decisions and activities always impact the environment, and these impacts are normally associated with resource use, activity location, pollution and waste generation, and the impact of activities on natural habitats.

5. Fair Operating Practices: Fair operating practices refer to the ethical conduct of organizations and their transactions with other organizations. Within social responsibility, such practices refer to the way organizations use their relationships with other organizations to achieve positive results.

6. Consumer Issues: Organizations that provide products and services to consumers and customers have responsibilities towards those consumers and customers. Those responsibilities include product education, accurate information, fair use, transparent and helpful marketing

information, contractual processes, promotion of sustainable development, and design and service that are accessible to all, including vulnerable or disadvantaged groups where appropriate.

7. Community Involvement and Development: Organizations have a relationship with and influence on the communities that host them. This relationship should be based on community involvement, and contributing to community development. Both community involvement and development form part of sustainable development.

Research Framework

This study investigates the extent to which the

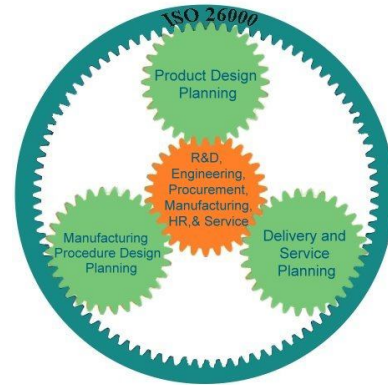


Figure 2: Research Structure

NPD (namely, government or social requirements).

Therefore, the seven core subjects of ISO 26000 offer a great opportunity for enterprises that combine CSR issues and NPD activities.

Enterprises should consider how to balance

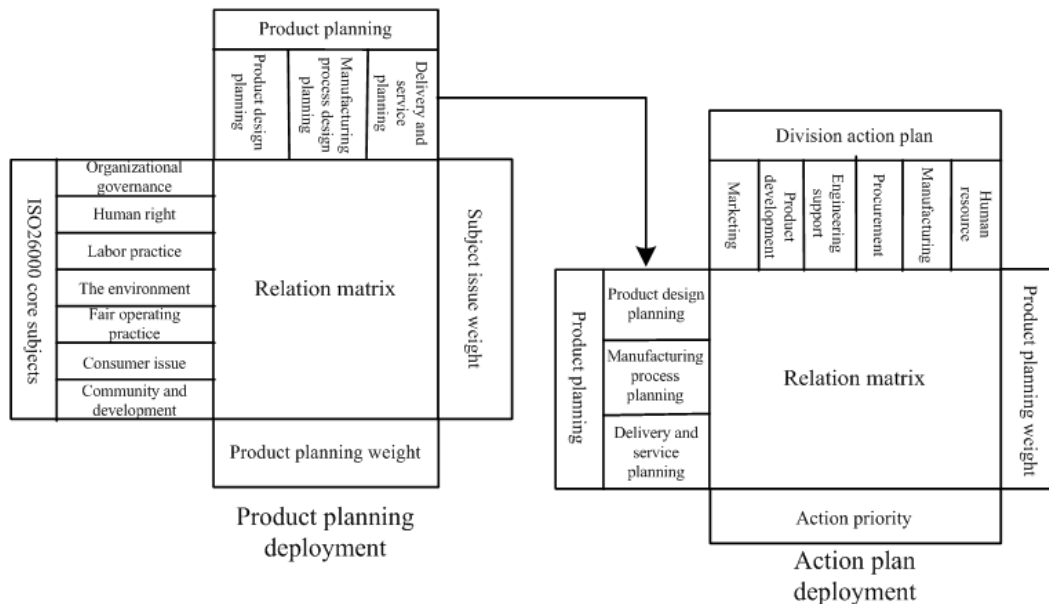


Figure 3: The Deployment Plan of NPD Management

enterprises integrate CSR issues into NPD activities to become friendly and profitable, and consider issues related to CSR when companies execute NPD, which include programs, standards, guidelines, and norms edition and planning. The question arises of what methods are effective in business processes for bearing social responsibility and avoiding passive behavior in

product development from the design stage, through to planning, distribution, and then service, and profit improvement. Integration of all relevant activities and synchronization of work instructions can improve efficiency. Figure 2 shows the study structure. The quality function deployment (QFD) method was applied to conduct product planning which investigates how enterprises develop

products and services plan to meet customer satisfaction and social responsibility. Figure 3 indicates the product and action plans of NPD management.

The integration of ISO 26000 requirements into NPD deployment involves three phases.

1. Arrangement of ISO 26000 issues: Integrate the seven core subjects of ISO 26000, international standards, regulations and norms to produce a list of NPD requirements.

2. Product plan deployment: Product plan deployment includes product design plan, manufacturing process design plan, delivery and service plan. Enterprises review current work flow and develop priority solutions for sustainable improvement.

3. Division action plan deployment: Each division must intend to fulfill necessary objectives, standards, work instructions, and performance evaluations. Each Division must review current job functions and solve defective product issues. The overall aim is to increase profits and achieve CSR objectives.

Deployment for the Product Planning

Demand for CSR

ISO 26000 identifies that enterprises compromise current objectives, rules, organizations and value chains based on entrepreneurship. To fulfill CSR, enterprises should consider the seven core subjects of ISO 26000 and the related procedures. To define competitive rating, this study consults experts with more than ten years of practical experience. This study invited six experts, including an R&D manager, Production Manager, Procurement Manager, Quality Manager, Project Manager and Product Validation

Manager, selected based on their experience in prioritizing NPD for CSR issues. In this rating list, the highly important item has a numerical value of 9; a numerical value of 3 denotes ordinary importance, while a value of 1 denotes unimportance. Table 1 (see Appendix-I) indicates weighting of CSR issues.

Product Planning

Functional product planning is divided into product design, manufacturing, delivery and service planning. Table 2 describes each function.

1. Product Design Plan: Product design is the process of creating a new product. Product design essentially comprises the efficient and effective generation and development of ideas through a process that yields new products. However, many companies also stress brand image and value. Product design thus comprises the four aspects of product image concept, target market definition, product specification design and component setting and selection. Input of CSR requirements during the initial stage of product design can minimize the need for frequent design changes. Consideration of CSR in product design thus not only reduces waste but also enhances company image.

2. Manufacturing Plan: The plan of manufacturing is to integrate firms' resources for manufacturing purpose effectively. Specifically, this plan includes operating, financial, scheduling and quality controlling planning to meet customers' expectation and satisfaction in provided products and services.

3. Delivery and Service Plan: Customer service describes the provision of services to customers

before, during and after a purchase. According to Turban *et al.* (2002), "Customer service is a series of activities designed to enhance customer satisfaction – that is, the feeling that a product or service has met customer expectations". Enterprises require a good sales strategy to survive in a competitive environment. Delivery and Service is divided into four parts: Trade and Channel Management, Logistical Support and Maintenance, Customer Service Support and Marketing Research. Table 2 (see Appendix-II) indicates the items of product planning.

– Product Planning Deployment

In QFD on New Product Development, inputs are the seven core subjects of ISO 26000 with 48 concern issues to customer needs, and the three main NPD activities with 12 work flows to Engineering Requirements. The House of Quality (HOQ) can then construct a relationship matrix that describes the relationship between CSR requirements and product planning. This relationship matrix uses signs to represent the relationship between CSR requirements and product planning. In this matrix, ◎ denotes highly related items, and has a numerical value of 9; ○ represents a secondary relationship between two items, and has a numerical value of 3; and Δ represents weakly related items, and has a numerical value is 1. In the absence of any relationship between the CSR requirement and product planning, this column is left blank. Scores for interrelated elements among deployed items are multiplied by elements of the CSR requirements and then summed to obtain the absolute weight below the quality house. Table 3

(see Appendix-III) shows the quality house used in product planning.

– Discussion

Consolidating the results, the top five functions are manufacturing scheduling, customer service support, manufacturing setting and selection, product specification design and product image concept. These five functions thus are analyzed and discussed below.

1. Manufacturing Scheduling: This study considers economical production planning, including production planning, production costs, materials management and outsourcing management. Companies should arrange manufacturing practices. Instructions are given below:

(1) Organizational Governance: Create and nurture the environment to practice social responsibility, fair treatment of all employees, and provide promotional opportunities to socially vulnerable groups.

(2) Human Rights: Companies must comply with laws and regulations, must not discriminate against social vulnerable groups, and must pay attention to basic level work and regular self-checking. Furthermore, organizations and management should be careful to avoid common crime opportunities.

(3) Labor Practices: Employment and employment relationships should be clarified, and should comply with relevant regulations. Furthermore, specific training should be implemented, and career plans should be continuously developed. Especially for junior staff, working environment should be a focus of

safety efforts and the protection of occupational injuries.

(4) The Environment: An indirect relationship exists between manufacturing practices, pollution prevention, and sustainable resource utilization. However, enterprises shall implement planning requirements and fix job functions.

(5) Fair Operating Practices: Enterprises should strive to promote a socially responsible value chain, including improved efficiency, development of production technology, outsourcing of technical cooperation and profit sharing.

(6) Community Involvement and Development: Actively develop various technologies and create employment opportunities, to create positive growth trends in business and society.

2. Customer Service Support: Customer service support includes product-related knowledge and customer education or customer feedback comments. Commitment to improving customer satisfaction with products and services improves product competitiveness. This study summarizes general business as the leading marketing business units and logistical support units. Companies should arrange customer service support specific practices, as follows:

(1) Organizational Governance: Enterprises shall create an environment to achieve CSR strategies, objectives and targets.

(2) Human Rights: Enterprises need to comply with regulatory requirements to avoid the risk posed by human rights issues.

(3) Consumer Issues: Enterprises are committed to marketing objectives and presented information on fair deals. For

consumer services, support, complaints and dispute resolution must have relevant management practices.

(4) Community Involvement and Development: Utilize social community to recruit enthusiasts and establish internal knowledge communities to share knowledge. Strive to generate more creation and innovation concepts.

3. Manufacturing Setting: The proposal focuses on process optimization. Enterprises must take direct costs, indirect costs and related expenses. Based on CSR, enterprises must also consider social costs. Instructions are given below:

(1) Organizational Governance: Enterprises need to efficiently use financial, natural and human resources, and foster a practice environment.

(2) Human Rights: Working arrangements should consider basic human rights, monitor responsibilities and comply with relevant regulations to avoid the risk of missing checks.

(3) The Environment: Define an appropriate procedure for waste and emissions. However, the consideration of ecological design and pollution prevention at the beginning of the design process can reduce frequent design changes.

(4) Fair Operating Practices: Intellectual property rights must be respected in the process design, and all manufacturing equipment or processes must comply with the relevant requirements. Intellectual property rights should not be plagiarized.

(5) Community Involvement and Development: Production process must be sustainable and based on sophisticated technological

techniques. Besides developing methods of cost reduction, enterprises can also explore the issues associated with social responsibility, such as ecological design, resource utilization and labor safety.

4. Product Specification Design: The design should comply with customer requirements, including intellectual property, technology standards, security, and economic issues. Instructions are given below:

(1) Labor Practices: Emphasis on staff health and safety and staff education should follow relevant procedures to reduce any risk.

(2) The Environment: To avoid various external costs, the R&D division must consider pollution prevention, sustainable resource use and climate change mitigation in product specification design.

(3) Fair Operating Practices: Respect of intellectual property rights is an important basis for maintaining profits. R&D divisions must legitimately obtain licenses to further promote the CSR value chain.

(4) Consumer Issues: While emphasizing consumer health and safety protection, the R&D division must disable hazardous substances and potential health risks in product material selection. The R&D division should not ignore the rights and interests of others for purposes of self-profit.

(5) Community Involvement and Development: Accompany educational institutions, research organizations or industry partners to work on product development, product integration or the replacement of existing functionality. Besides pursuing

corporate profits, work to fully utilize resources in a positive way.

5. Product Image Concept: The goal is to achieve overall corporate image, and focusing on product design to convey a good corporate image can increase product market competitiveness. Instructions are given below:

(1) Organizational Governance: To reflect the product concept, the R&D division shall implement CSR objectives in product design to demonstrate commitment and leadership.

(2) The Environment: Consider environmental and resource factors to implement pollution prevention and sustainable resource utilization strategies.

(3) Fair Operating Practices: Implementation of the value chain of CSR can promote an energetic ambience. Besides using an internal corporate strategy, strategic cooperation with outsourcing can create more value.

(4) Community Involvement and Development: Expand community participation to maintain a positive image of acting as a good advocate. Social investment can then generate positive results for product publicity.

Deployment of the Action Plan

– Division Action Plan

Launch additional functions based primarily on the results of NPD activities. Each division must work to realize these additional functions and restructure the work flow. According to expert meeting minutes, the division action plans are as follows:

1. Marketing Division

The Marketing Division includes marketing research, customer service and order

management. General functions that include perspective job content, are customer-oriented and adopt a long-term perspective, must be integrated to strengthen internal development and organization. Additionally, business management, production operations, organizational logic and human resource management interact closely with one another.

2. Product Development Division

The main functions are Product Specification Define and Project Review. First, ensure the structure of R&D organization, then build up a design team to improve the efficiency. A suitable research and development platform can support the R&D division to keep its work on schedule and even to develop better innovations.

3. Engineering Support Division

The main functions of this division are quality control, component engineering and reliability validation. These activities support improved project efficiency or yield rate and reduce production costs.

4. Procurement Division

Appropriate procurement tactics and on time purchasing provide an accurate schedule to smooth production. The main functions are Supplier Management and Purchase Management. However, various elements of the procurement plan preparation demand changes to direct procurement. The various procurement processes are adopted into a flexible process that includes material purchase and outsourcing.

5. Manufacturing Division

This division focuses on maximizing the efficiency of resource control to reduce production costs, and thus production scheduling plan, material

storage and transportation planning and production technology are the main activities in the manufacturing process.

6. Human Resources Division

Manage human resources within the organization and contribute to value creation. The functions of this division combine education, ability, skills, experience, physical and recruitment. Human resources are divided into Employee Training and Dispatch management in NPD activities. The proposal is designed to optimize business operations. Table 4 (see Appendix-IV) indicates the instruction of division action plan.

– Action Plan Deployment

In NPD expansion, input NPD three main activities with 12 work flows to Customer Needs. And input 15 division functions to Engineering Requirements. In this matrix, ◎ represents highly related items, and has a value of 9; ○ represents a secondary relationship between two items, and has a value of 3; and △ represents weakly related items, and has a value of 1. This column is left blank where no relationship exists between the work flow requirements and division functions. Scores for interrelated elements among deployed items are multiplied by elements of the work flow requirements and then summed to obtain the absolute weight below the quality house. Table 5 (see Appendix-V) presents the quality house used in action plan deployment.

– Discussion

Based on the QFD results, the top five work flows are product design, project review, production technology, production management and quality verification. For the first five work flows to

feedback to the 48 issues of concern involved in ISO 26000, the highly related items are listed in Table 6 (see Appendix–VI). Based on the seven core subjects related to ISO 26000, input concerns into each division and obtain the new instructions listed below in Table 7 (see Appendix–VII).

CONCLUSION

This study uses the seven core subjects (organizational governance; human rights; labour practices; the environment; fair operating practices; consumer issues; community involvement and development) of ISO 26000 to explore the way in which NPD links corporate social responsibility strategy with product development planning. This study thoroughly discusses the implementation of policies that achieve social responsibility within the context of NPD planning. The construction of a CSR-based NPD model can help enterprises in NPD. Using the CSR based NPD model to plan materials selection, specification setting, manufacturing procedures and methods, distribution, servicing and recycling increases enterprise friendliness and happiness, and benefits their sustainable development.

The results of this study list the following five issues: respect for intellectual property rights, reinforcement of technological developments, regular audit and reporting, provision of specific training, consideration of pollution prevention and consideration of sustainable resource use. To conclude, this study uses seven core subject requirements associated with ISO 26000 to apply two-stage NPD deployment of QFD expansion.

The issues of critical concern are identified and implemented in NPD during the initial stage. Before mass production, all the activities implemented related to CSR concerns, which increased profits and enhanced social responsibility. Furthermore, enterprises can identify new opportunities while reinforcing the technology and manufacturing research.

IMPLICATIONS

This is the first study (according to our knowledge) using the seven core subjects (organizational governance; human rights; labour practices; the environment; fair operating practices; consumer issues; community involvement and development) of ISO 26000 to explore the way in which NPD links corporate social responsibility strategy with product development planning. The study thoroughly discusses the implementation of policies that achieve social responsibility within the context of NPD planning. The construction of a CSR-based NPD model can help enterprises in NPD. Using the CSR based NPD model to plan materials selection, specification setting, manufacturing procedures and methods, distribution, servicing and recycling increases enterprise friendliness and happiness, and benefits their sustainable development.

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ISO 26000 Core Subjects	Issues	Weight
Organizational Governance	Developing strategies, objectives, targets for social responsibility commitment	4.33
	Showing leader accountability	6.00
	Creating and training organizational environment in practicing the principle of social responsibility	3.00
	Creation of social responsibility performance of the economic and non-economic side surface of the system to encourage	3.00
	Efficient use of financial, natural and human resources	5.00
	Promotion of unfairly disadvantaged groups, such as women and different ethnicities	1.50
	Organization and balancing stakeholder needs	2.67
	Creating and bi-directional stakeholder communication channels	2.83
	Encourage staff to participate in all levels of social responsibility issues related to decision-making	2.50
	Equip employees with decision-making power balancing powers, responsibilities and capabilities	3.83
	Record the results of decision-making to fulfill	2.17
	Conduct regular internal audits and evaluations	4.67
Human Rights	Perform due diligence	6.33
	Avoid situations that would put human rights at risk	2.50
	Avoid complicity	2.50
	Resolve grievances	2.67
	Prevent discrimination and protect vulnerable groups	2.00
	Civil and political rights	1.67
	Economic, social and cultural rights	1.67
	Fundamental principles and working rights	3.33
Labor Practices	Employment and employment relationships	3.00
	Work conditions and social protection	3.67
	Encourage social dialogue	1.17
	Promote workplace health and safety	5.00
	Human development and workplace training	5.00
The Environment	Pollution prevention	7.67
	Sustainable resource use	6.67
	Climate change mitigation and adaptation	3.33
	Environmental protection, maintenance of biodiversity and restoration of natural habitats	2.67
Fair Operating Practices	Encourage Fair Operating Practices	1.00
	Encourage Responsible involvement in politics	1.00
	Encourage fair competition	2.50
	Promote social responsibility in the value chain	5.00
	Respect property rights	7.67
Consumer Issues	Engage in fair marketing, factual and unbiased information and fair contractual practices	4.17
	Protection of consumer health and safety	5.67
	Sustainable consumption	6.00
	Consumer service, support, and resolution of complaints and disputes	7.00
	Protect consumer data and consumer privacy	5.33
	Access to essential services	6.00
	Encourage consumer education and awareness	3.33
Community Involvement and Development	Community involvement	1.67
	Community education and culture	1.17
	Employment creation and skills development	5.00
	Technology development and access	6.67
	Wealth and income creation	6.67
	Health	5.00
	Social investment	2.00

Table 1: Weighting of CSR Issues

Appendix-II

Activity Planning	Function	Description
Product Design Planning	Product Image Concept	To achieve overall enterprise image, and develop the systematization basis of product design as the core, ultimately aims to establish a good product image to increase product market competitiveness.
	Target Market Definition	Following market segmentation, the enterprise is ready to launch the corresponding products or services to satisfy the target market.
	Product Specification Design	Based on the requirements of product purpose and scope of use, to extend requests regarding related intellectual property rights, technical, safety, economic and society, and execute the related control measures.
	Component Setting and Selection	The selection for semi-finished products or accessories with highly versatile features not only considers reliability but must also consider requests related to green procedures, suppliers, manufacturing processes, and intellectual property issues.
Manufacturing Process Design Planning	Manufacturing Setting and Selection	Perform production optimization, including outsourcing, and not only consider internal costs, operating costs and procedure stability, but also external costs, such as environmental costs and green manufacturing procedures.
	Operation requirement Definition	Product quality stability management following mass production, including equipment operation, materials usage, and pollutant disposal, is required to formulate standard operating and inspection procedures.
	Manufacturing Scheduling	Planning and considering the production cost, including production schedule, production costs, material control planning and outsourcing procedure control required for economical mass production.
	Quality Control	Execute product quality inspection, including tests and inspections of product size, appearance, function, reliability, and related regulatory requirements.
Delivery and Service Planning	Trade and Channel Management	To arrange market channels following product launch that include delivery planning, distributor management, marketing planning and inventory management.
	Logistical Support and Maintenance	Have a complete post-sale plan that includes after-sales services related to product repair, replacement and return, or alternative plans.
	Customer Service Support	Execute training in product knowledge or customer feedback, to enhance customer satisfaction with products and services, and increase product competitiveness.
	Marketing Research	Collect market information, including analysis of causes of product defects, information on potential customers useful in predicting demand, information on competitor products, and analysis of market trends.

Table 2: Product Planning Items

Fair Operating Practices	Encourage Fair Operating Practices														1.00
	Encourage Responsible involvement in politics														1.00
	Encourage fair competition		⊙				⊙			Δ					2.50
	Promote social responsibility in the value chain	⊙		⊙	○		○	⊙		Δ	Δ	Δ	○		5.00
	Respect property rights			⊙	⊙	⊙			⊙						7.67
Consumer Issues	Engage in fair marketing, factual and unbiased information and fair contractual practices									⊙		⊙	Δ		4.17
	Protection of consumer health and safety			⊙	○	○			⊙	○		○	Δ		5.67
	Sustainable consumption		⊙								Δ	⊙	○		6.00
	Consumer service, support, and resolution of complaints and disputes										Δ	⊙	⊙		7.00
	Protect consumer data and consumer privacy										Δ	⊙			5.33
	Access to essential services	○							○		⊙	⊙	⊙		6.00
	Encourage consumer education and awareness										Δ	⊙	Δ		3.33
Community Involvement and Development	Community involvement	⊙	○									⊙	⊙		1.67
	Community education and culture												○		1.17
	Employment creation and skills development			Δ	Δ	○	⊙	⊙		○			○		5.00
	Technology development and access		Δ	⊙	⊙	⊙	○	○							6.67
	Wealth and income creation		⊙	○				⊙			○	○			6.67
	Health	○													5.00
	Social investment	⊙													2.00
Absolute weight		429.43	289.87	510.96	414.78	529.42	257.70	591.06	210.59	179.06	196.04	590.93	347.46		
Priority of improvement		5	8	4	6	3	9	1	10	12	11	2	7		

Table 3: The Quality House Used in Product Planning Deployment

Division	Task Item	Description
Marketing Division	Market research	Based on scientific methods, perform marketing research on targeted and systematic data collection, records and archives.
	Customer Service	For both existing and potential customers, product service shall include maintenance, returns and opinion feedback.
	Order Management	Extend customer service management, which can promote economic benefit and differentiation services to enhance customer satisfaction.
Product Development Division	Product Design	Determine various product specifications, including concept, design, manufacturing and product price positioning.
	Project Review	Review each gateway from product design through to mass production. The main concern is that product specifications meet the requested standards.
Engineering Support Division	Reliability validation	Follow international regulations and related norms for reliability validation. Ensure the product design meets quality standards.
	Quality Control	Each product in the process must be monitored by a Quality Control Plan, to avoid mistakes and reduce failure rate.
	Component Engineering	Component selection shall include checks of specifications and performance, and compulsory passing of all related regulatory requirements.
Procurement Division	Supplier Management	Supplier management includes production schedule, quality, price and technical cooperation.
	Purchase management	Materials procurement includes quotation, public bidding and consideration of quality and delivery.
Manufacturing Division	Production management	Production control includes production schedule, efficiency, quality and costs.
	Warehouse Management	Both WIP and finished goods must consider stream lined production, storage environment and delivery order control.
	Production Technical skill	Technical skills include jigs, fixture design and the development of process work flow to improve efficiency and cost saving.
Human Resources Division	Employees Training	Perform employee training, to emphasize output value and develop internal creation ability.
	Dispatch management	Arrange appropriate workload and job rotation, not only to enhance productivity but also to train organizational viability.

Table 4: Instruction of Division Action Plan

Appendix-V

		Marketing Division			Product Development Division		Engineering Support Division			Procurement Division		Manufacturing Division			Human Resources Division		weight
		Market research	Customer Service	Order Management	Product Design	Project Review	Reliability validation	Quality Control	Component Engineering	Supplier Management	Purchase management	Production management	Warehouse Management	Production Technical skill	Employees Training	Dispatch management	
Product Design Planning	Product Image Concept	○			⊙										△		429.43
	Target Market Definition	⊙															289.87
	Product Specification Design				⊙	⊙	○	○	△		△			○	△		510.96
	Component Setting and Selection				⊙	⊙	○	○	⊙	⊙	⊙		△	○			414.78
Manufacturing Process Design Planning	Manufacturing Setting and Selection					⊙						⊙	△	⊙		△	529.42
	Operation requirement Definition					⊙		⊙				○	○	⊙	△	⊙	257.70
	Manufacturing Scheduling							△			△	⊙	△	⊙			591.06
	Quality Control					⊙	⊙	⊙	△	△		△		△			210.59
Delivery and Service Planning	Trade and Channel Management		△	△									○		△		179.06
	Logistical Support and Maintenance		⊙							△	△	△	⊙	○	△	⊙	196.04
	Customer Service Support		⊙	△									△		△		590.93
	Marketing Research	⊙		⊙	○												347.46
Absolute weight		7024.76	7261.79	3897.13	18005.00	17311.10	4672.53	7582.89	4454.57	4139.70	5031.08	11264.10	5200.83	15979.60	2164.12	4613.10	
Priority of improvement		6	7	14	1	2	10	5	12	13	9	4	8	3	15	11	

Table 5: The Quality House Used in Action Plan Deployment

Division	Task Item	Clauses strongly related to ISO 26000
R&D Division	Product Design	<ol style="list-style-type: none"> 1. Developing strategies, objectives, targets for the social responsibility commitment. 2. To show leader accountability. 3. Efficient usage of financial, natural and human resources. 4. Creating and training the organizational environment to practice social responsibility. 5. Regular review and evaluation. 6. Conform regulations and minimize risks associated with human rights issues. 7. Avoid complicity. 8. Work health and safety. 9. Pollution prevention. 10. Sustainable resource use. 11. Climate change mitigation and adaptation. 12. Consult intellectual property rights. 13. Protect consumer health and safety. 14. Technology development. 15. Promote the social responsibility value chain. 16. Train human resources. 17. Fair competition. 18. Job creation and specialized field background. 19. Community involvement. 20. Society investment.
	Project Review	
Manufacturing Division	Production Management	<ol style="list-style-type: none"> 1. Create and train the organization environment to practice social responsibility. 2. Regular review and evaluation. 3. Conform regulations and avoid risks associated with human rights issues. 4. Avoid complicity. 5. Work health and safety. 6. Human development training. 7. Jobs creation and specialized field background. 8. Efficiently use financial, natural and human resources. 9. Discriminate against disadvantaged minorities. 10. Protect the fundamental right to work of employees. 11. The relationship between employer and employee. 12. Pollution prevention. 13. Sustainable resource use. 14. Promoting the social responsibility value chain. 15. Respect intellectual property rights. 16. Technology development.
	Production Technology	
Engineering Support Division	Quality Control	<ol style="list-style-type: none"> 1. Conduct regular reviews and evaluations. 2. Cultivate human resources. 3. Job creation and training of personnel with specialized backgrounds. 4. Protect intellectual property rights. 5. Technology development. 6. Protect consumer health and safety. 7. Pursue fair competition.

Table 6: The Core Clauses are Strongly Related to the Division Action

Appendix–VII

Division	Function	Instruction related to additional functions
R&D Division	Product Design	1. Execute NPD in accordance with the company objectives.
		2. Review related intellectual property regulations.
	Project Review	3. Research green energy, reuse and recycling tactics.
		4. Reinforce strategies for technology development and technology access.
Manufacturing Division	Production Management	5. Provide product knowledge and training
		1. Evaluate and audit CSR objectives and implementation status
		2. Check that product design fits regulatory requirements
	Production Technology	3. Assess the company in terms of its achievement of technological progress and technological development outcomes
		4. Execute regular internal audit and reporting.
		1. Establish a CSR practice environment.
Engineering Support Division	Quality Control	2. Comply with environmental regulations
		3. Create a health and safety plan.
		4. Emphasize the enhancement of employment opportunities
		5. Clarify functional authority to avoid complicity
		6. Execute regular internal audit and reporting.
		1. Provide specialized training for technical staff
		2. Reinforce product development related to production technology
		3. Reinforce green energy, reuse and recycling technology.
		4. Execute regular internal audits and reporting.
		1. Provide quality staff with specialized training.
		2. Examine consumer health and safety protection.
		3. Examine intellectual property rights
		4. Perform regular internal audits and reporting.

Table 7: The Instruction of Additional Functions