

TOWARDS SUSTAINABILITY FRAMEWORK DEVELOPMENT: IDENTIFYING ORGANISATIONAL CAPABILITY FOR SUSTAINABILITY PRACTICES

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Abstract

The growing awareness of the importance of sustainability motivates companies to engage in sustainability practices. However, practising sustainability is challenging since most initiatives are inter-organisational in nature. The implementation depends heavily on the capability of multiple organisations within the supply chain, which are not easily assessed. Although a few scholars have proposed a number of frameworks to help organisations identify the required organisational capabilities, none of them is comprehensive enough due to the limited scope. In order to develop a more comprehensive sustainability framework, a complete understanding of organisational capabilities needed for sustainability practices is necessary. This research-in-progress paper therefore aims to synthesize the required key capabilities based on widely implemented sustainability guidelines/standards. The identification of key capabilities is important to understand and explore how ICT can be used by organisations to develop the required sustainability capabilities. This study will potentially contribute to the development of a holistic sustainability framework.

Keywords: Sustainability, Organisational Capabilities, ICT Roles

1 INTRODUCTION

Sustainability has become a global concern among organisations, governments and societies. In particular, daily industrial and commercial activities have significant impacts on ecological systems (Dickinson et al. 2002). Industrial activities consist of several processes within the supply chain including production and distribution, which contribute to the production of carbon footprints. The concern about this issue has then motivated a number of companies to reform their supply chain activities and aim for implementing sustainability practices (Nikbakhsh 2009). The awareness of the sustainability concern has grown rapidly in the last 15 years as indicated by the increasing effort among organisations listed in the Global 250 Fortunes in reporting their sustainability practices (Kolk 2003).

In addressing the sustainability concern, the principle of sustainable development should be embedded within the company practices. Sustainable development is a development that meets the current needs without compromising the future generations' capability to meet their needs (Brundtland 1987). It can be achieved by addressing three dimensions of sustainability — people, planet, profit — known as the triple bottom line (TBL) (Elkington 1998). Addressing the dimensions, however, is challenging because of the nature of inter-organisational activities of a company. Companies and their trading partners within the supply chain are inter-dependent in carrying out their business activities. Introducing various sustainability initiatives addressing the TBL also requires inter-organisational interactions and collaboration. Most initiatives cannot be adopted by a single organisation in isolation from its trading partners (Kurnia & Johnston 2000). The involvement of different parties who often have different and conflicting interests in practising sustainability initiatives within the supply chain complicates the implementation of sustainability (Kurnia et al. 2014).

Having multiple different parties involved enforces companies to understand their trading partners' capability before engaging in sustainability practices. A number of existing sustainability related capability maturity frameworks (CMF) have been developed to assess the capability maturity of an organisation. However, we argue that the existing sustainability CMF do not adequately address all the key capabilities required for implementing sustainability practices (Cagnin et al. 2005; Baumgartner & Ebner 2010). Each CMF only focuses on capabilities in certain areas depending on the focus. Therefore, a new holistic CMF containing a set of general capabilities for sustainability practice implementation is required. In order to develop such CMF, a complete understanding of the key capabilities required for sustainability practices should be firstly established. Currently, based on the existing sustainability framework, there is still no agreement on what capabilities required in sustainability CMF (Cagnin et al. 2005; Baumgartner & Ebner 2010; Donnellan et al. 2011; Kurnia et al. 2014).

Considering the knowledge gap outlined above, this research-in-progress paper aims to identify the key organisational capabilities required for implementing sustainability practices. The research question addressed: "*What are the key organisational capabilities for implementing sustainability practices?*" This study addresses the research question through a critical analysis and synthesis of four widely used sustainability standards/guidelines. Such guidelines and standards are useful to understand what organisational capabilities are required by organisations to address sustainability concern. We use content analysis technique (Berg & Lune 2012) to identify the key capabilities implied in each of the sustainability standards. The main processes in content analysis involve open coding process using criteria and rules to conduct the analysis. The detail of the process is described in research methodology section. Eight core organisational capabilities required for practicing sustainability have been identified from our analysis.

The paper is structured as follows. The next section explains the key concepts related to sustainability capability and a brief overview of related studies. Then, we present the synthesis of sustainability capabilities, followed by a brief explanation of the next step of the research, contribution and possible future study directions.

2 SUSTAINABILITY AND ORGANISATIONAL CAPABILITY

Sustainability topic has been a topic of discussion for years. However, there is a lack of consensus in the literature in defining the scope of sustainability practices. In the early sustainability concept development, the sustainability concern is addressed from an environmentalist perspective and therefore, the environmental dimension of sustainability is the main focus (Adams 2003). However, the term sustainability itself is generic which may represent any sustainability activities in any dimension aside from environment area. Brown et al. (1987) reviewed the definition of sustainability in different areas such as in biological resource, agriculture, energy, social and economy in order to identify a broader sustainability definition. Brown et al. (1987) found that each area focuses on a different aspect of sustainability. The aspect on which they focus determines the required sustainability practices and therefore each area may have a different practice depending on the aspect of concern.

Over the years of economy and industry advancements, the concern of sustainability has been getting broader. More disciplines have investigated sustainability implementation within their scope, including business and industry. Having engaged in environmental and social aspects of the modern capitalist structure, Elkington (1997) explores the sustainability values in a corporate context. He introduces the concept of the Triple Bottom Line (TBL), which consists of three areas of sustainability: environmental, social, and economic. The TBL concept remarks the importance of addressing the three dimensions of sustainability instead of addressing the environmental dimension only.

For organisations to practise sustainability, certain capabilities need to be developed. Capability is defined as the power or ability to do something (Capability 2014). In organisational context, a capability is manifested as competence, skill, and expertise, which emerges when companies combine the competencies and abilities of its individual (Ulrich & Smallwood 2004). Another study defines capability in organisation as operating routines and collective activities (Zollo & Winter 2002). Similar to Zollo and Winter's (2002) definition, Paulk (1993), in his Capability Maturity Model (CMM) concept, considers a capability as a process which has a range of expected results. Based on those definitions, organisational capability is described as skill or competency to achieve certain predetermined organisational goals. Since our study focuses on the concept of sustainability, we are specifically concerned with the concept of 'sustainability capability' of organisations. In line with the definition of capability, sustainability capability is defined as competency or skill that is required to achieve sustainability goals.

Sustainability goals, however, may vary in different contexts and across different existing sustainability guidelines and frameworks. As a result, organisational capabilities required for implementing sustainability practices has been discussed in a fragmented manner. For example, Baumgartner & Ebner (2010) propose Corporate Sustainability Maturity Framework (CSMF) in which two specific capacities are identified: sustainability governance strategy and risk mitigation. Within governance, the need for human capital development and corporate citizenship capabilities are highlighted. In a recent study, Kurnia et al. (2014) introduce the notion of measuring maturity of sustainable supply chain. They recommend organisations to develop capabilities in six specific areas: sustainability data collection, sustainability benchmarking, sustainability reporting, sustainability risk analysis and sustainability governance. Furthermore, Donnellan et al. (2011) propose Sustainable ICT capability maturity framework (SICT CMF) and suggest the need for a number of capabilities to support sustainable ICT capability: performance reporting, and governance involving compliance capabilities. All these studies collectively pinpoint the need for developing multiple capabilities for business organisations to successfully support implementation of sustainability practices. While these existing studies have identified a number of common capabilities such as sustainability reporting and governance capabilities, no conclusion can be drawn regarding what key capabilities organisations require to successfully practice sustainability. Therefore, a more comprehensive understanding of the core capabilities is still required to help organisations progress in their sustainability practice and to assist IS researchers to

better position the role of ICT in supporting organisations which is currently not well understood (Dao et al. 2010; Kurnia et al. 2012)

3 RESEARCH METHODOLOGY

In order to develop a more holistic understanding of sustainability capability required by organisations to address the TBL, a synthesis of various capabilities to support sustainability practices identified from widely used sustainability standards and guidelines is an important first step to do. There are a number of international guidelines in sustainability development, which have different foci and priorities corresponding to the areas of concern. We examined a number of studies in the sustainability context to identify what sustainability guidelines and standards commonly used in sustainability literatures. Based on careful examination and consideration, three guidelines and one standard are selected. The number of studies referring to them and the context of each standard/guideline are considered in the selection process. The guidelines and standard selected include SIGMA, DJSI, G4 Guidelines, and ISO 14001.

Firstly, SIGMA Guidelines are intended for both profit and non-profit organisations (Knight 2006). They consist of a set of Guiding Principles and Management Framework to help organisation understand sustainability and integrate it into organisational core processes and decision making (SIGMA Project 2006). SIGMA is selected to represent the guidelines from industry standard perspective which provides process-oriented guidelines. Meanwhile, DJSI and G4 Guidelines, as a framework for sustainability reporting, are selected to represent industry standard that provide sustainability criteria. DJSI was launched in 1999 as the first global sustainability benchmark (DJSI 2014). One of their products is Corporate Sustainability Assessment (CSA), which provides sustainability criteria to assess the level of sustainability practices within corporations. As for G4 Guidelines, it is designed by GRI (Global Reporting Initiatives), a leading organisation in sustainability field. GRI promotes the use of sustainability reporting as a method of encouraging sustainable development in organisation (GRI 2006). Since its establishment in 1997, GRI keeps improving their reporting guidelines resulting in G4 Sustainability Reporting Guidelines as the latest version in 2014. Finally, ISO 14001 is a standard and guidance for environmental management systems, which was developed by International Organisation for Standardizations (ISO) and has been implemented in more than 159 countries worldwide (ISO 2004). ISO 14001 is selected to represent the standards from regulation perspective. ISO 14001 has been referred to in many sustainability studies and became a widespread tool for corporations to implement sustainability, particularly in environmental related practices (MacDonald 2005). As an international standard, ISO 14001 could be used as a tool for promoting organisational change and to design sustainable supply chain strategy that leads to sustainable development (Curkovic & Sroufe 2011; Sebhatu & Enquist 2007).

Each guideline/standard has a specific focus and therefore is only concerned with particular organisational capabilities. By synthesizing the various capabilities implied across these four guidelines, a more complete understanding of the required organisational capabilities can be obtained. In order to analyse and identify the required capabilities from those guidelines and standards, a content analysis technique is used. Berg and Lune (2012) define content analysis as “a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meanings” (p. 349).

This study uses a conventional approach with a purpose to generate theories or theoretically connected explanations of the content of the document under analysis (Hsieh and Shannon 2005; Berg & Lune 2012). Inductive analysis involving open coding, creating categories and abstraction (Elo & Kyngäs 2008) is applied in this study to identify the key organizational capabilities expected by the current sustainability guidelines and standards. The identification is conducted by interpreting the required component, aspects, process, or activities to perform sustainability practices specified by those guidelines and standards. The analysis process started with open coding to identify the potential capa-

bility implied by each guideline/standard. Systematic criteria and rules are established to conduct the process. In the first run, the criteria for open coding were defined in general manner to cover a wide range of possibilities. The results from each document were cross-analyzed to see if there were similar capabilities that could be combined into one broader capability that was consistent with previous studies. The reading and cross-analysis were then repeated and the criteria and rules were refined according to the previous iteration finding. This process was done repeatedly until valid results were obtained indicated by the consistency of the rules.

4 SYNTHESIS OF SUSTAINABILITY CAPABILITIES

We do not provide the detail of each standard and guideline in this research-in-progress paper. In this section we provide a synthesis of the core capabilities identified from our content analysis of the four sustainability standards and guidelines, as summarized in Table 1. From the synthesis, we identified eight distinct capabilities which also correspond to the capabilities mentioned in a number of previous studies (Baumgartner & Ebner 2010; Cagnin et al. 2005; Donnellan, et al. 2011; Kurnia et al. 2014). Each capability is discussed briefly below.

No.	Capabilities	SIGMA Guidelines	DJSI	G4 Guidelines	ISO 14001	TBL Dimension		
						Economic	Environmental	Social
1.	Sustainable partnership	√	-	-	-	√	√	-
2.	Sustainable corporate governance	√	√	√	√	√	-	√
3.	Sustainable communication	√	-	-	√	√	√	√
4.	Risk and disaster management	√	√	√	√	√	√	√
5.	Sustainability compliance management	√	√	√	√	√	√	√
6.	Sustainable human capital development	√	√	√	√	-	-	√
7.	Culture and change management capabilities	√	-	-	-	-	-	√
8.	Corporate citizenship	-	√	√	-	-	-	√

Table 1. Required Sustainability Capabilities

4.1 Sustainable partnership

Sustainable partnership is one of the core capabilities required for sustainability practices, although our analysis indicates that only SIGMA Guidelines address this capability. Sustainable partnership can be defined as a capability to build and maintain relationship between parties involved in achieving organisation's sustainability goals including business partners, governments, and NGOs. Bengtsson and Kock (1999) point out the importance of business relationship between companies through which a company can develop and expand its businesses. It cannot be avoided that company must work together in attaining sustainability. Sustainable partnership has a broader scope which covers the partnership not only between business partners, but also government, NGO, and other sustainability related stakeholders. The sustainable partnership addresses the economic dimension by maximizing performance improvement between partners. It also addresses the environment dimension by collaborating with government agencies and environmental related NGO.

4.2 Sustainable corporate governance

Corporate governance is defined as mechanisms, processes and relations of how corporations are controlled and directed (Aglietta & Rebérioux 2005). This capability is commonly addressed in the four guidelines assessed. Sustainable corporate governance uses the inclusive approach as Elkington (2004) explained in the revolution of corporate governance paradigm. Inclusive means that external stakeholders can have a portion of control to ensure the success of sustainability practices implementation. Inclusive approach supports the need for transparency and accountability as specified in the four good corporate governance principles (transparency, accountability, responsibility, and fairness) (Aras & Crowther 2008). To establish sustainable corporate governance, the organisation should regularly conduct review and refinement of internal controls and corporate governance arrangements (SIGMA Project 2006). Procedures should also be established to control the documents or records to maintain the legibility, accountability, and traceability of the documents/records (ISO 2004). In addition, code of conduct and corruption and bribery prevention mechanism should be established to support the accountability in the working environment (DJSI 2014; GRI 2006). Corporate governances address the economic and social dimension by achieving the firm's goals and keeping a balance between economic and social benefits (Aras & Crowther 2008).

4.3 Sustainable communication

Sustainable communication capability aims to support the sustainability practices by building awareness among stakeholders and strengthen internal and external information exchange. SIGMA Guidelines and ISO 14001 remarks the importance of communication within sustainability practices through regular information sharing (SIGMA Project 2006). Sustainable communication capability enables organisations to produce complete report and information regarding sustainability issues including audit/assurance findings and recommendations to the relevant stakeholders (SIGMA Project 2006). Considering the multiple parties involvement, communication scope should cover the internal and external organisation. ISO 14001 recommends the organisation to establish, implement, and maintain procedure for internal and external communication. Sustainable communication helps companies to strengthen their inter-organisational relationship and supply chain that will also improve company's economic performance. In addition, sustainable communication is used to build awareness of sustainability, including environmental sustainability. Therefore, sustainable communication addresses the economic, social, and environmental dimension.

4.4 Risk and disaster management

Alexander (2002) describes that the purpose of disaster management is to reduce the risk posed by potential and actual hazards. In ISO 31000 (2009), risk management refers to a coordinated set of activities and method to control risks that can affect achieve organisational objectives. As the objective in sustainability practices is to maintain organisational continuity, risk and disaster management can be defined as a capability to ensure the continuity of the organisation life by forecasting, mitigating, and managing the risk and disaster faced by the organisation. The risk and disaster management should cover three areas of potential hazards: natural, technological; and complex emergencies (O'Brien et al. 2006). ISO 14001 describes that processes of risk and disaster management include the forecasting, mitigation, and recovery process. In SIGMA Guidelines, this process is included in the monitoring process. Therefore, risk and disaster management also needs to be coordinated with other capability that performs monitoring process. In terms of the scope, DJSI put this component as part of economic dimension criteria, but G4 Guidelines includes this as aspect in social and environmental dimensions using a term of 'grievance mechanism'. Based on those guidelines, risk management and disaster management capabilities cover the three dimension of sustainability.

4.5 Sustainable human capital development

Human capital development (HCD) ensures the availability of resources and therefore maintains the sustainability of the corporation. The practices in HCD can be diverse such as implementing knowledge management and conducting training. Knowledge management is used to maintain the organisation competences by managing and transferring the knowledge across employees. Knowledge management is found to have a contribution to achieve corporate sustainability (Robinson et al. 2006). In addition of knowledge management, training is also an important practice in human capital development. Training supports sustainability implementation by building skills related to sustainability and increasing awareness among employees (SIGMA Project 2006; ISO 2004). SIGMA Guidelines recommend that organisation shall also establish training for planning and executing the organisation's internal audit/assurance programmes. The form of HCD practices, such as training and knowledge management, contributes in developing human capital to assist sustainability goals achievement. However, human capital indirectly influences the economic growth (Benhabib and Spiegel 1994) so that HCD is not considered addressing economic dimension. HCD mainly address the social dimension as identified by DJSI and G4 Guidelines.

4.6 Culture and change management

The purpose of sustainability development is to ensure the continuity of the organisation with the dynamic changes as challenges. Changes are inevitable for organisation to improve their performance. The problem is that people are reluctant to change and this has been a challenge for many organisations (McNabb & Sepic 1995). Therefore, in order for the organisation to be ready for changes, it should have culture and change management capabilities. One of the aims in culture and change management is to ensure that the organisational culture is supportive of a move towards sustainability by agreeing and implementing change management approach/methodology (SIGMA Project 2006). Culture and change management deal with human behaviour, which is part of the social dimension of TBL. The result of culture and change management also influences the economic and environmental aspect. However, the dimension mainly addressed by this capability is the social dimension.

4.7 Sustainability compliance management

Compliance management function is to ensure the compliance to internal and external regulations, policies or standards (Silverman 2008). In sustainability practices, the regulations that must be adhered are the regulations in the economic, environmental, and social aspect. Therefore, this capability addresses the three dimensions of TBL. The process of sustainability compliance management includes: identifying the relevant regulations/policies/standards required to be adhered; planning program to meet the regulations/policies/standards; monitoring, evaluation, and reporting; and preparing a mechanism to address non-conformities (SIGMA Project 2006; ISO 2004; DJSI 2014; GRI 2006). Monitoring, evaluation, and reporting are crucial activities in the compliance management because its role to ensure the conformity and compliance of all business activities. The monitoring, evaluation, and reporting have to be conducted regularly at planned intervals. Top management shall also review the high level implementation of sustainability practices (ISO 2004). In order to obtain assurance statements and accountability, external organisation can also review the organisation performance (SIGMA Project 2006). In addition to performance monitoring, monitoring of environmental impact of organisation operations is also required (ISO 2004).

4.8 Corporate citizenship

The definition of corporate citizenship (CC) is changing over decades. Matten and Crane (2005) describe two different views of corporate citizenship. The first view, an early view that is still used today, identifies CC as charitable donations and other forms of corporate philanthropy undertaken in

local community (Matten & Crane 2005). In this definition, CC is limited in the social dimension even though the impact of good CC can improve the economic performance of the organisation. In the second view, CC is understood similarly as Corporate Social Responsibility (CSR) concept covering aspect of economic, legal, ethical, and philanthropic (Matten & Crane 2005). Unlike the first view, CC covers not only social but also economic dimension. In order to determine the definition of CC used in this study, where the CC capability is derived is put into consideration. In this study, CC is identified from DJSI and G4 Guidelines that include CC in social dimension. Therefore, CC capability has to focus on building local communities by donation, charity or other form of philanthropy. It means that CC addresses the social dimension of TBL.

5 CONCLUSION AND FUTURE WORK

Sustainability capability is recognized as an important component within sustainability frameworks. However, currently there is no study found that adequately describes the capability required in sustainability practices within business organisations. In this research-in-progress paper, we have identified 8 core capabilities required by organisations to practice sustainability based on four sustainability guidelines and standards including SIGMA Guidelines, ISO 14001, G4 Guidelines and DJSI.

This research-in-progress paper is part of a longer term research project aiming to develop a holistic framework for sustainability practices. Before developing a holistic framework, the next step of our research is to understand how ICT can contribute to the development of sustainability capabilities identified in this study. While the importance of ICT for sustainability practices have been recognised in the literature, limited study has been conducted to specify how ICT contributes to the organisational capability development needed to support sustainability implementation (Kurnia et al. 2014; Rahim et al. 2014). To address this gap, we plan to apply the four roles of ICT highlighted by Dao et al. (2010) and map with each of the 8 core capabilities identified in this paper. The four possible roles of ICT in supporting practices which are Automate, Informate, Transform and Infrastructure are arguably comprehensive enough and embrace other possible roles that IT may play in organisations and supply chain management (Dewett & Jones 2001; Love 1996). We propose that these roles of ICT can enable organisations to develop eight types of capabilities needed for implementing sustainability practices.

We acknowledge that there are some limitations in this study. This research attempts to identify the capabilities required for business organisation. However, there is a limited degree of generalization since the capabilities have not been validated within different types of organisation. In addition, this research may not identify all capabilities from the standards, such as innovation capability. Future studies are needed to extend the coverage of the standards and guidelines to capture other important capabilities. Although we do not claim that we have identified all capabilities required for sustainability practices, we believe our study have identified the key capabilities. Reflecting on a number of existing prior studies assessing the sustainability capabilities, our findings have covered the capabilities identified across a number of studies in this area. In addition, none of those previous studies have addressed all the capabilities we identified within a single study. Thus, the current frameworks developed in those prior studies are limited in supporting sustainability implementation since they do not provide a comprehensive set of capabilities required to implement sustainability practices. Therefore, our paper offers a modest contribution through the identification of these core capabilities that can guide future studies in developing a more comprehensive framework to guide and help organisations assess their own capabilities and those of their trading partners before engaging in particular sustainability practices. Such assessments will be useful to increase the likelihood of success in implementing sustainability practices.

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