



Knowledge sharing and competitive intelligence

Knowledge sharing

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Abstract

Purpose – This research excursion through shipping companies in Vietnam sought to investigate whether organizational culture, ethics, and emotional intelligence influence knowledge sharing, which in turn enhances competitive intelligence scanning. This paper aims to discuss the above issue.

Design/methodology/approach – In total, 401 responses returned from self-administered structured questionnaires relayed to 635 middle level managers were processed through structural equation modeling approach to test hypotheses.

Findings – Knowledge sharing was proved to positively relate to clan, market, or adhocracy culture, ethics of care, and high level of emotional intelligence. Knowledge sharing also shows a positive effect on competitive intelligence scanning.

Originality/value – For competitive intelligence scanning to be effective, knowledge should be shared among organizational members, which necessitates the three building blocks: supportive knowledge sharing culture (clan, market, or adhocracy culture), ethics or care, and heightened emotional intelligence.

Keywords Knowledge management, Competitive analysis

Paper type Research paper

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Introduction

Although shipping industry in Vietnam has recently witnessed transparency dilemma in some state-owned shipping companies such as Vinashin and Vinalines (Thao, 2012), it still has reflected a growth leap since Vietnam opened its door in 1986. Myriad cargoes reaching seaports of Vietnam as well as its neighboring countries such as Indonesia or Thailand have been recently carried by Vietnam flag young vessels. In accommodating their operations to international shipping standards and practices, shipping companies have welcomed numerous talents in business or shipping area. These talents, however, do not seem to expose their full potentials in shipping operations inherently filled with technical procedures in the architecture of rules and policies as a trace of management paradigm of central planning economy.

An organization is not a name. It manifest itself not purely through its anatomy or structure, but also through its physiological activities, especially touches or frictions among its members as well as their values, which produce kinetic energy for organizational processes. This looks like the organizational Krebs cycle which releases ATP for organizational operations. Organizational culture reflects the contagion effect of these touches or frictions among members and their values for non-aging growth of the organization. Therefore, an organizational culture type which activates and sustains these touches will orientate members toward the sharing of professional intelligences for the growth of others as well as the organization as the whole. Touches with emotional and ethical maturity as reflected in members' social emotional intelligence and ethical deeds also enhance the profundity of sharing. Sharing is an experiment or an action research for members to discern the intelligence gap in order to fill, thereby they can discern opportunities for the organization in the marketplace with which their own opportunities are aligned.



The fact that economies become more knowledge intensive makes it evident to most companies that knowledge is a precious resource (Howell and Annansingh, 2013). In companies in Vietnam, desires for new knowledge have flourished since “doi moi” (literally “renovation”) in 1986 for the adaptation to globalization (Luu, 2012a). Nonetheless, desires for new knowledge are only strong drives to individually access organizational knowledge rather than contributing their own knowledge to organizational knowledge or sharing their knowledge intra-organizationally or interorganizationally (Luu, 2012a). Fatalities for organizational survival can be caused by the unwillingness of knowledge sharing (Lin, 2007). As a special form of sharing, knowledge sharing is cultivated by ethical and emotional intelligence. Emotional intelligence has been reported to indicate the positive link with knowledge sharing (Endres *et al.*, 2007; Rivera-Vazquez *et al.*, 2009). Cultural factors are also found to influence knowledge transfer (Zheng and Zhong, 2011). However, the convergence of all such precursors as organizational culture, ethics, and emotional intelligence into knowledge sharing remains an untapped area in knowledge management literature. These three antecedents build organizational health, which influences knowledge sharing (Luu, 2013a). This paper therefore aims to look into the role of organizational culture, ethics, and emotional intelligence in knowledge sharing, which in turn influences competitive intelligence scanning in the shipping companies. Besides, an organization’s marketing strategy commences with customers and competitive intelligence (Jaworski *et al.*, 2002) since competitive intelligence produces knowledge of competitors and their marketing actions (Nasri, 2011). Through the role of competitive intelligence in marketing strategy building, this research also increases the depth of marketing literature.

This prelude of the research reflects a necessity for the review of the constructs of organizational culture, ethics, and emotional intelligence, leading up to a discussion of knowledge sharing and competitive intelligence as the dependent variables, whose bonds contribute to the formulation of hypotheses. The research concludes with implications for managerial practice and future research avenues.

Hypotheses development

Organizational culture and knowledge sharing

Most definitions on organizational culture converge into the shared nature of the beliefs, philosophies, assumptions, norms, values, meanings, etc. (Luu, 2010). Hamilton’s (2011) research reveals that the organizational culture is aligned with the faith and values of the organization. From Hu *et al.*’s. (2012) view, organizational culture is reflected in the emergence of congruent schemas among the members.

Integrating the essence of all definitions on organizational culture, Luu (2011, 2013b) view organizational culture as the interaction among assumptions, values, and meanings in an organization which builds a momentum, either centripetal or centrifugal, for its members’ deeds. Spinning around the organizational strategy, this momentum produces control and internal maintenance if it is of centripetal nature and produces flexibility and external positioning if it is of centrifugal nature. Denison (2001), on the other hand, deems organizational culture as incorporation of tensions or contradictions between demands for stability and flexibility and between the need to attend to internal demands and the need to comply with the external challenges.

Though slightly dissimilar, these perspectives on organizational culture are built on Quinn’s (1988) organizational culture model predicated on two dimensions: organizational process (organic vs. mechanistic) and organizational orientation (internal vs external), which are expressed by the vertical axis and the horizontal axis,

respectively, whose intersection produces four quadrants portraying four culture types dubbed as Adhocracy, Clan, Hierarchy, and Market. Four sets of attributes of organizational culture types are recapitulated in Table I (Luu, 2012b).

Momentum to create platforms for capturing knowledge of competitive strategic value for organizations has been increasing in both academic research and industry (Ziegler, 2012, p. 51). One of these platforms is organizational culture due to the role of cultural elements in effective knowledge sharing in both developed and developing countries (Kerr and Clegg, 2007; Al-Alawi *et al.*, 2007; Oliver and Kandadi, 2006). A right organizational culture is crucial in promoting tacit knowledge sharing within and between organizational members (Selamat and Choudrie, 2004) since certain cultures are more open to sharing knowledge than others (Hofstede and Hofstede, 2005). Turban and Aronson (2001, p. 355) also contend that “the ability of an organisation to learn, develop memory, and share knowledge is dependent on culture.” Culture therefore can hamper or promote knowledge sharing (Usoro and Kuofie, 2006).

Organizational culture resembles motion of the sea resulting from forces inside the earth, which are values in the organization. Some values bring members closer on the surface, but some values can bridge hearts. Values of hierarchy culture involve the adaptation to rules and policies. This adaptation tends to be involuntary, reflecting members’ thin consent as a result of their slight job chance in the job market. Rules and policies may involve members in formal as well as informal gatherings; however, their interactions may spin around grapevine, rather than exchange of intellectual assets to increase the work quality. Bonds among members which are constructed through rules (i.e. rules require member A to communicate or work with member B) are not magnetic enough for mutual trust for knowledge sharing. Renzl (2008) highlights the magnitude of interpersonal trust in general and trust in management on knowledge sharing. Under a hierarchical architecture, managers also may become more wary of sharing knowledge with subordinates (Lichtenstein and Brain, 2006). Knowledge sharing cannot be forced by any rules or powers, but are built from a shared intrinsic motivation to share, for which the relationship between individual and collective interests pave (Wasko and Faraj, 2005). The subsequent hypothesis is consequently postulated:

H1a. Hierarchy culture negatively relates to knowledge sharing.

Clan culture, on the contrary, is the melt of strong interpersonal values which produce family climate throughout the organization. As a father or mentor figure, the manager

	Adhocracy	Clan	Hierarchy	Market
Dominant attributes	Adaptability, creativity and innovation, entrepreneurship	Cohesiveness, affiliativeness, sense of family	Regulations, order, alignment, uniformity	Market knowledge sharing, competitiveness
Dominant leadership	Change agent, innovator, opportunity creator, entrepreneur, strategist	Mentor, facilitator	Monitor, coordinator, administrator	Reactive, achievement-oriented
Bonding	Flexibility, vision orientation, thick consent	Interpersonal cohesion, teamwork, belonging, loyalty	Rules, policies, procedures, and calculation	Customer – centeredness, competition
Strategic emphasis	Toward innovation, value creation, sustainability	Toward human resources development, commitment	Toward stability, predictability, smooth operations	Toward competitive advantage and market superiority

Table I.
Attributes of organizational culture types

shares their professional experience to help their “entire family” to be successful in the marketplace. Harmonious interpersonal relationships, as the focus of human resource strategy in clan culture, reduces shyness or fear to share knowledge. Costs of sharing knowledge also inhibit knowledge sharing (Luo *et al.*, 2006); however, the calculation of loss or gain through knowledge sharing process will also be lessened on the infrastructure of this harmonious interpersonal relationships. The relationship between individual and collective (community, group, team, or organization) is focal to knowledge sharing behavior (van den Hooff *et al.*, 2012). Experiences in sustained relationships, expectations of reciprocity in relationships, acceptance into social groups, and trust influence individual predisposition toward knowledge sharing (Obembe, 2013). Trust in management has been found to magnify knowledge sharing through decreasing fear of losing one’s value and increasing the member’s motivation to document knowledge simultaneously (Renzl, 2008). Newell (1999) also alleges that strong group culture may nurture knowledge dissemination. The following hypothesis therefore surfaces:

H1b. Clan culture positively relates to knowledge sharing.

In a similar vein, market culture promotes knowledge sharing; nonetheless, in a different mechanism. External orientation or competitive orientation creates sustainable urgency and readiness in members for individual change as well as organizational change. Members therefore learn to change, especially through sharing of their existing knowledge from which they can discern the knowledge gap of themselves as individuals as well as of the entire team or organization, activating their momentum to learn to fill this knowledge gap in order to share more new knowledge with their co-members. Market culture mirrors the focus on the connectivity between the organization and its customers (Luu, 2011). Customer focus also reveals a positive link with middle management employees’ knowledge sharing (Ooi *et al.*, 2012). In the light of cooperative knowledge sharing, knowledge sharing is activated by simultaneous cooperation and competition (Loebecke *et al.*, 1999) which do not increase the gap among members or teams in the organization, but synergically reduce the intellectual gap between the organization with its stronger competitors.

Likewise, adhocracy culture also energizes the momentum to change or innovate (Luu, 2011), especially in terms of technology, among members in the organization. Therefore, in this culture, with high absorptive capacity and learning momentum among members, seeds of sharing will thrive since this is the best way to test their novel ideas, even through debates, to arrive at the best innovative strategy. Moreover, adhocracy culture involves members in complex problems, which stimulate them to bring knowledge and experience to the situation, and create, use and share tacit knowledge (Shariq and Vendelo, 2011). This chain of discussion contextualizes the ensuing hypothesis and subhypotheses to take shape:

H1c. Market culture positively relates to knowledge sharing.

H1d. Adhocracy culture positively relates to knowledge sharing.

Ethics and knowledge sharing

Ethics is an integral sentimental part of human attributes and the subjective portion of the starting points of any human behavior process encompassing business (Potocan and Mulej, 2009). As one of the two contrastive types of ethics (Plot, 2009), ethics of

care is a way to sustain the focus of the process on people rather than on policies (Begley, 2006). Ethics of care tilted the focus on ethics from individual rights to relational prerequisites (French and Weis, 2000). That the identity of the self – who one is – is predicated on the caring relationships the self has with others, serves as the underpinning for ethics of care (Lantos, 2002). Caring relationships increase “giving” momentum in individuals.

Voluntary giving or dissemination is an effective form of sharing. Dixon (2002) views knowledge sharing as a voluntary deed; therefore, efficient knowledge sharing involves direct commitment on both sides of the exchange, both on the transmitter and the receiver side (Bouty, 2000). Extrinsic forces such as rules or even rewards may “motivate” members to share knowledge. The role of rewards in facilitating knowledge sharing in organizations has been observed (Al-Alawi *et al.*, 2007), and analyzed through the economic exchange theory (Bartol and Srivastava, 2002). Nonetheless, the sharing through extrinsic forces tends to be at the superficial layer, and usually, a discernible compliance with rules or a performance vs expectation of the organization, but not go beyond them. This deed of sharing reflects the pre-conventional stage of Kohlberg (1969, 1976) cognitive moral reasoning framework.

Voluntary sharing of knowledge is activated by the value of “care about” and even “care for” the interests of other stakeholders at different levels in the organization. “Caring for” stands above “caring about” and denotes direct encounters in which one person cares for another, whereas “caring about” refers to care as a virtue and take us to a more public realm (Debeljak and Krkac, 2008). Members share knowledge to help increase competencies of others as individuals and core competencies of the team and the organization as an entire entity. The value of care in organizational relationships is viewed as the underlying key factor behind knowledge creation (Von Krogh, 1998; Styhre *et al.*, 2002). Care in organizational relationships will inspire organizational members to bestow knowledge on others and welcome knowledge from others (Von Krogh, 1998). Furthermore, when the value of “care” transcends operational levels to the strategic levels of the organization and the community where the organization belongs to, its members share knowledge to produce synergetic strength of knowledge to navigate the organization and the community to the strategic destination. Ethics of care looks toward the dignity and intrinsic value of each person, and “desires to see that persons enjoy a fully human life” (Starratt, 2003, p. 145). Ethics of care, therefore, amplifies such a stakeholder-oriented impulse of knowledge sharing. Ethics of care in members denotes that the more knowledge we share, the more knowledge we gain, looking like the more energy produced in the splitting of an atom in the fission reaction. Under the guide of “ethics of care” compass, members share knowledge to dedicate to the success of the organization they belong to, with less concern about their loss of superior “knowledge-based positioning” in the organization (Luu, 2013c). Sitko-Lutek *et al.* (2010) furthermore claim that organizational members are better equipped with skills and knowledge when they engage in knowledge sharing.

Three crucial attributes differentiating ethics of justice from ethics of care, as Tronto (1993, p. 79) observe, include: first, ethics of justice focusses on rights and rules rather than responsibility and relationships; second, it is abstract, formal, and universal rather than being embedded in specific circumstances; and third, it is best expressed not as an activity, the “activity of care,” but as a set of principles. While ethics of care is concerned with consideration, sentiments, and responsibility, ethics of justice centers round such notions as rationality, rights, and justice (Plot, 2009). Organizational members, with ethics of justice, are concerned with whether rules enforce knowledge sharing, what they

gain as a return for this knowledge contribution, and whether resources are justly distributed for their knowledge building and sharing as Starratt (2003, p. 145) highlights that ethics of justice is embedded in fairness – the equitable allocation of resources and implementation of rules. Since ethics of justice reflects the dualistic tension between benefit maximization and esteem for individual rights (Strike, 2003), ethics of justice reduces knowledge sharing to a minimal level due to the obsession of unfairness in the gain from this knowledge sharing process, or even fear to be less “bright” or less “valuable” in the organization when their stock of knowledge is shared and “declines.” This line of discussion leads to the ensuing hypothesis:

H2. Ethics of care positively relates to knowledge sharing, but ethics of justice negatively relates to knowledge sharing.

H2a. Ethics of care positively relates to knowledge sharing.

H2b. Ethics of justice negatively relates to knowledge sharing.

Emotional intelligence and knowledge sharing

Intra-personal intelligence is viewed as the competence to precisely read oneself and utilize to operate effectively (Duckett and Macfarlane, 2003). From the magnitude of the functional relationship among organizational members has emerged the concept of social intelligence, which is defined as the competence to perceive one’s own and others’ internal states, motives, and behaviors and to act toward them optimally predicated on that information (Salovey and Mayer, 1990, p. 187). Looking at the power of influence of social intelligence, Gardner (1983) referred to interpersonal intelligence as the competence to decipher other people, what motivates them, how they work and how to work collaboratively.

Intra-personal intelligence and interpersonal intelligence converge into the concept of emotional intelligence, which denotes one’s competence to decode and regulate emotions in oneself and others (Goleman, 2001a; Zadel, 2008). As such, one of the key facets of emotional intelligence is the capacity of an individual to recognize emotions in others (DeBusk and Austin, 2011). By and large, emotional intelligence is the capacity to implement sophisticated information processing about emotions and emotion-relevant stimuli and to utilize this information as a guide to thinking and behavior (Mayer *et al.*, 2008) since emotional intelligence – the meso layer between cognition and behavior – can activate behavior, the outermost layer as well as cognition, the innermost layer of the human cognition-action translation process (Luu, 2013d).

Salovey and Mayer (1990) structured emotional intelligence around three aptitudes: aptitude for appraising and expressing emotions in self and others; aptitude for regulating emotions in self and others; and aptitude for using emotions in adaptive ways. Goleman (1998) defined emotional competence as a learned capability based on emotional intelligence that yields outstanding work performance, and clustered emotional competencies under two dimensions: personal competence, which encompasses self-awareness, self regulation, and motivation, and social competence, which encompasses empathy and social skills.

Goleman’s (2001a, b) new version of emotional intelligence model is more organizationally aligned to provide a means of EI-based performance, specifically for leaders. Reflecting statistical analyses (Goleman *et al.*, 2002), the new version

reduces the 25 competencies into 20 competencies and the five domains into four domains under two dimensions: first, personal competence determines how we manage ourselves and is categorized by two domains and their associated competencies: self-awareness: emotional self-awareness, accurate self-assessment, self-confidence; and self-management: emotional self-control, transparency, adaptability/flexibility, achievement/drive for performance, initiative, optimism, and second, social competence determines how we manage relationships and is contained within two domains: social awareness: empathy toward others, awareness of organizational-level currents, decision networks and politics, service to others; and relationship management: inspirational leadership, influence tactics, developing others, change catalyst, conflict management, building bonds, teamwork and collaboration/cooperation (Goleman *et al.*, 2002, 2007).

Members with high EI level not merely adroitly and profoundly manage their own emotions but also responsibly manage other members' emotions, especially when others with egoism, are too arrogant to share what they know as well as when they have too low self-efficacy to be ready for learning from others. High social EI, as other-focussed emotions which are associated with others with whom a member identifies (van den Hooff *et al.*, 2012), will be contagious to other members through dedicated actions as Pascale and Sternin (2005) maintain that actions can shape thinking. Emotion is the meso layer between cognitive layer and behavioral layer of the attitude pyramid, so when other members develop social EI as a contagion effect, this emerging social EI in them will activate neighboring cognitive layer and behavioral layer so that they start to think and act more socially, especially in terms of knowledge sharing. Momentum to share and momentum to obtain through knowledge sharing process will thus increase. Furthermore, high EI reflects psychological safety which nurtures knowledge sharing process (Kessel *et al.*, 2012). Above discussions serve as a premise for the ensuing hypothesis:

H3. High level of emotional intelligence positively relates to knowledge sharing.

Knowledge sharing and competitive intelligence

Resources for which companies compete incrementally tend to be knowledge rather than the ownership of land or access to capital (Dunford, 2000). Knowledge, as Tsoukas and Vladimirou (2001) highlight, is a portmanteau term covering a wide array of capabilities, skills, and experiences, including cognitive, perceptual, emotional, and tactile resources.

Two types of knowledge, explicit and tacit knowledge, are complementary and indispensable to knowledge creation. Explicit knowledge is referred to as the knowledge codified and expressed in formal language (Nonaka, 1991) whereas tacit knowledge is intuitive, unarticulated, and can not be verbalized (Li and Gao, 2003) reflecting that "we can know more than we can tell" (Polanyi, 1967, p. 4). Tacit knowledge is acquired through experience sharing, and through observation and imitation (Hall and Andriani, 2002; Kikoski and Kikoski, 2004; Seidler-de Alwis and Hartmann, 2008). Knowledge grows from the local level and is embedded in a certain cognitive and behavioral context. Knowledge is asymmetrically dispensed in any organization and may remain non-accessible to certain members of the organization (Davenport and Prusak, 1998). Knowledge sharing is a way to enhance the access to knowledge. Hogel *et al.* (2003) view knowledge sharing as a social interaction culture,

entailing the exchange of employee knowledge, experiences, and skills through the entire department or organization. Knowledge sharing occurs when organizational members share organizationally relevant information, ideas, suggestions and expertise with one another (Bartol and Srivastava, 2002). Knowledge sharing is also depicted as the process by which individuals reciprocally exchange their knowledge and collaboratively generate new knowledge (Magnini, 2008).

Levels of knowledge sharing are not discrete, but display the flows of interaction among members, subsets, and sets (Luu, 2012a). Knowledge sharing mirrors all interactions among members, between members and their group, and between groups for the synergy of knowledge rather than the sum of knowledge (Luu, 2012a). Knowledge sharing is thus also viewed as activities of transferring or disseminating knowledge (embracing implicit and tacit knowledge) from one person, group or organization to another (Lee, 2001). Furthermore, through knowledge sharing practices, organizational knowledge bases are coordinated with workers' knowledge (Nonaka and Konno, 1998). Knowledge sharing also can activate the transformation of collective individual knowledge to organizational knowledge (Yang, 2007).

Knowledge sharing, as Ardichvill *et al.* (2003) contend, entails both the supply and the demand for new knowledge. Similarly, Van den Hooff and Van Weenen (2004b) identified two processes of knowledge sharing, namely, knowledge donation and knowledge collection. They refer to knowledge donation as "communication based upon an individual's own wish to transfer intellectual capital" and knowledge collection as "attempting to persuade others to share what they know." These two distinct processes are dynamic in the sense that one is either immersed in dynamic communication with others for the aim of transferring knowledge, or consulting others so as to gain certain access to their intellectual capital (Van Den Hooff and De Ridder, 2004).

Voelpel *et al.* (2005) view the sum of knowledge acquired externally and internally as constituting a sustainable resource for maintaining competitive edge. Knowledge sharing thus multiplies knowledge of individuals into organizational intellectual competency in scanning environmental forces. An organization's competency to forecast change in time to proactively act is wrapped into the term "intelligence." This competency has foresight and insight connotations in discerning imminent change which may contain opportunities or threats (Breakspear, 2013). Competitive intelligence also denotes the process of building data on the competition, competitors, and the market environment as a whole using sources (McGonagle and Vella, 2012, p. 9), among which the richest one is organizational members' knowledge.

Competitive intelligence is an act of creating market opportunities from outwittingly discerning and zooming in on the right information favorable as well as unfavorable to the organization in the competitive race (Luu, 2013e). Competitive intelligence, therefore, mirrors market-oriented force, like Archimedes's force, "pushes" market opportunities to the surface within the organization's vision. This force creates the human ecological balance or harmony between its competitive advantage and coplayers' lives in the marketplace rather than weakening the symbiosis in the value chain of other market players. Such a strong and sophisticated force is built from the intellectual capital of the organization which should be the exponential function of multiple intelligences of multiple members rather than the sum of individuals' knowledge. Knowledge sharing creates not merely such a knowledge exponential function, but also the sharing of values of responsibility as a special form of knowledge, which increases the sensibility and accountability for the external positioning of the organization as well as other stakeholders. Sharing of knowledge is

the sharing of the organization's values, vision, and strategies, and aligns members' interests to its vision and minimizes deviant deeds, so that knowledge of members can converge into evolutive sustainability of the organization.

Additionally, competitive intelligence is viewed as external knowledge (Davenport and Prusak, 1998), so sharing of external knowledge will augment competitive intelligence scanning. Knowledge sharing is also reported to provide an opportunity for reciprocal learning and promote the creation of novel knowledge and ideas (Tsai and Ghoshal, 1998), contributing to new competitive positioning. Members' unwillingness to share knowledge causes fatalities for organizational sustainability (Lin, 2007) due to the organization's poor competitive intelligence. Knowledge sharing also enhances organizational learning, which relates to competitive intelligence (Luu, 2013f). In other words, knowledge sharing lifts competitive intelligence scanning to higher level as posited in the following hypothesis:

H4. Knowledge sharing positively relates to competitive intelligence scanning.

Figure 1 displays the hypothesized interconnections among organizational culture, ethics, emotional intelligence, knowledge sharing, and competitive intelligence scanning.

Research methodology

Sample and procedure

The sample for this study was derived from a population of 1,028 shipping companies listed in the 2012 Vietnam Trade Directory. Since companies should be sufficiently large to ensure that organizational variables apply (Miller, 1987), merely 127 companies

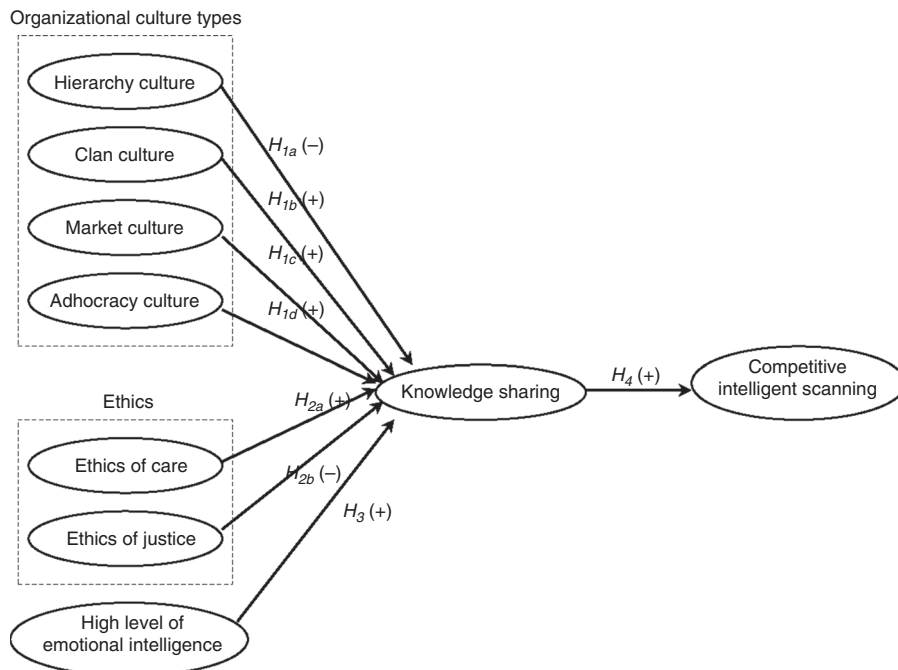


Figure 1.
Hypothesized framework

reached the two criteria: annual sales are at least Vietnam Dong25 billion (equivalent to \$1,19 thousand US); and at least 100 employees are working. The criterion on sales is based on average sales of small enterprises in Vietnam market context (Ministry of Planning and Investment, 2008). Data on such variables as organizational culture, ethics, emotional intelligence, knowledge sharing, and competitive intelligence scanning were collated via self-administered structured questionnaires dispatched to 635 middle level managers in these 127 companies, an average of five middle managers in each company. Middle management members were relied on as the respondents since they would have more opportunities to observe high as well as low layers of organizational behavior than would lower level members. Data collection was conducted between August 2011 and May 2012. As displayed in Table II, the demographic profile of the sample represented a relatively wide range of company ownership types.

Due to scanty time among middle and top managers, the response rate range of 15-25 percent has been encountered in several empirical research studies (e.g. Baines and Langfield-Smith, 2003; Spanos and Lioukas, 2001). In this study, however, out of 635 questionnaires distributed to middle level managers, 401 were returned in completed form for a response rate of 63.15 percent. This high response rate resulted from the voluntary co-operation from these 401 managers with most of whom the relationships were forged through the researcher's close business partners in the snowball sampling process (Robson, 1993).

Instruments

While the quantitative approach utilized in this study does not allow for an analysis of the most profound level of the constructs, it, as a "journey of the facts" (Smith, 1983, p. 10), enables the investigation of respondents' perceptual realities (Ashkanasy *et al.*, 2000).

Organizational culture. Further adapting Cameron and Freeman's (1991) the operationalization of the culture construct, Deshpande *et al.* (1993) constructed succinct scenarios to portray the dominant features of each of the four culture types. The validity of this instrument has been substantiated (e.g. Zammuto and Krakower, 1991). In the research instrument, all four culture types are displayed as alternatives in each question. Respondents were invited to dispense 100 points among the four scenarios in the questions, contingent on how analogous respondents reckoned each scenario was to their organization. The scenarios, where organization A denotes clan culture, organization B denotes adhocracy culture, organization C denotes hierarchy culture and organization D denotes market culture, are consistently arranged in the questions, appraising the organizational attributes, leadership, bonding, and strategic accents.

Ethics of care and justice. Nine moral dilemmas containing the first component of the measure of moral orientation (MMO) (Liddell *et al.*, 1992; Liddell and Davis, 1996) were employed to measure leader inclinations to ethics of justice and care. Each of the nine dilemmas was pursued by six to nine potential responses, half of which denoted the justice dimension and half of which denoted the care dimension. Respondents were asked to study each dilemma and indicate on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) how they consented to each of the potential responses. Leaders were supposed to possess a propensity to justice when the mean score across all dilemmas on responses reflected a justice orientation and possess a propensity to care when the mean score across all dilemmas on responses reflected a care orientation.

Characteristics	State-owned companies		Private domestic companies		100% foreign-invested companies		Joint-venture companies		F test	Sig.
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Company size (number of employees)	309.2	322.6	128.6	109.2	249.2	154.7	204.1	119.2	31.07	0.00
Company age (years)	27.5	13.9	16.1	9.5	12.4	14.2	14.3	14.5	7.49	0.09
Respondent average age (years)	40.7	5.1	32.7	3.4	30.1	3.9	35.4	2.8	1.07	0.00
Respondent average tenure (years)	15.2	5.7	9.6	4.7	8.9	3.2	9.2	2.1	24.58	0.06
Respondent education (years after high school)	5.8	3.2	4.2	1.6	6.8	2.5	6.9	2.3	1.23	0.00
<i>Respondent position</i>	Number	%	Number	%	Number	%	Number	%	Chi-square	Sig.
Chief accountant	145		123		66		67			
HR manager	16	11.03	11	8.94	3	4.55	5	7.46		
Operations manager	24	16.55	14	11.38	8	12.12	8	11.94		
Logistics manager	29	20.00	23	18.70	17	25.76	13	19.40		
Marketing manager	24	16.55	25	20.33	12	18.18	9	13.43	12.09	0.01
Sales manager	27	18.62	23	18.70	8	12.12	16	23.88		
Others	20	13.79	22	17.89	16	24.24	14	20.90		
	5	3.45	5	4.07	2	3.03	2	2.99		
<i>Respondent gender</i>									1.38	0.02
Male	103	71.03	70	56.91	42	63.64	39	58.21		
Female	42	28.97	53	43.09	24	36.36	28	41.79		

Table II.
The demographic profile of the sample

Emotional intelligence. Emotional intelligence was examined using the Emotional Competence Inventory (ECI) based on the work of Goleman *et al.* (2002). This instrument comprises 20 emotional competencies arrayed into four clusters: self-awareness, self-management, social awareness, and social skills. The ECI is a self-report measure of individual differences in the competence to reflect on (or monitor) and manage one's emotions and handle others'. Participants respond on a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree.

Knowledge sharing. Adapted from studies by Van den Hooff and Van Weenen (2004a) and by De Vries *et al.* (2006), knowledge donation and collection were each investigated through four items. Knowledge donation items measure how willingly employees transfer or disseminate knowledge to others, and knowledge collection items examine collective beliefs or behavioral routines as regards the spread of learning among employees.

Competitive intelligence scanning. A 27-item questionnaire adapted from Beal's (2000) scale was used to gauge competitive intelligence scanning. Respondents were asked how extensively and frequently they scan information from six market sectors: customer (three items), competitor (five items), supplier (three items), corporate resources (six items), technology (two items), and socioeconomic (eight items) sectors.

The items of the survey questionnaires were reworded to mirror the establishment level analysis by changing the focus of the items to the establishment (reference-shift consensus model; Chan, 1998). For instance, an item for gauging the degree of organizational awareness of emotional intelligence was adapted by rewording it as: "Reading the organization's emotional currents and power relationships." The respondents were invited to respond to in terms of the average for the employees in the establishment. This reference-shift approach is consistent with the guidelines built by researchers focussing on multilevel issues (Klein *et al.*, 1994) to specify and expound the level of the constructs in a study.

Reliability and validity. Data collated from the questionnaire survey was analyzed using LISREL 8.52. The measures' reliability was potentially enhanced through the utilization of multiple-item measures (Neuman, 2000). The internal consistency of these multivariate scales were measured through Cronbach's α reliability estimates. The Cronbach's α of each construct in this research ranged from 0.7966 upwards, which denotes a robust reliability for the survey instrument. The criterion validity of each scale is deemed satisfactory as the item-to-total correlations of each measure was 0.5607 as the lowest. Construct validity of the instrument was built through exploratory and confirmatory factor analyses. The exploratory factor analysis and internal consistency values are displayed in Table III. The confirmatory factor analysis comprising the convergent and discriminant validity was analyzed following Campbell and Fiske's (1959) criteria. Discriminant validity was examined by counting the number of times an item correlates higher with items from other factors than with items from its own factor. Campbell and Fiske suggest that this number should be <50 percent.

Content validity was established through the adoption of existing and validated scales utilized in the existing literature. In addition, the questionnaire underwent three-phase pretest. The questionnaire was first examined and edited by numerous academics. Ten top managers in a CEO training class were then invited to complete the questionnaire and to share comments on its form and content. The students in an MBA class were then involved in the completion of this questionnaire. Minor adjustments on wording and presentation were eventually conducted.

Dimension	Factor	% of variance	Cumulative %	Item-to-total correlations	Cronbach's α
Organisational culture	Hierarchy culture	26.059		0.5607	0.8133
	Clan culture	27.104		0.5677	0.8456
	Market culture	27.922		0.5798	0.8399
Ethics	Adhocracy culture	28.428	80.427	0.5770	0.8522
	Ethics of care	38.202		0.6209	0.9117
	Ethics justice	38.671	76.149	0.6182	0.8064
Emotional intelligence	Self-awareness	32.122		0.6308	0.8644
	Self-management	32.786		0.6292	0.8449
	Social awareness	34.723		0.6399	0.8727
	Social skills	35.933	81.409	0.6414	0.8813
Knowledge sharing	Knowledge donation	34.558		0.6407	0.8458
	Knowledge collection	35.004	80.032	0.6405	0.8213
Competitive intelligence scanning	Customer sector	28.805		0.5788	0.7966
	Competitor sector	29.822		0.5702	0.8248
	Supplier sector	22.582		0.5806	0.8026
	Corporate resources	30.851		0.5739	0.8512
	Technology	28.724		0.5684	0.8185
	Socioeconomic sector	28.291	79.528	0.5790	0.8173

Table III.
Factor analysis and internal consistency values

Findings

The structural model's fit statistics prove rational: Model fit: $\chi^2 = 556.8$, $df = 354$; incremental fit index (IFI) = 0.92; Tucker-Lewis coefficient (TLI) = 0.92; comparative fit index (CFI) = 0.92; root mean square error of approximation (RMSEA) = 0.01, which are consistent with the criteria of goodness-of-t indices suggested by Kline (1998) that χ^2/df ratio is under 3; the values of IFI, TLI, and CFI are above 0.90; and RMSEA is up to 0.05. Path coefficients between variables are displayed in Table IV.

A multiple regression analysis was first performed with the four organizational culture types, ethics of care, ethics of justice, and emotional intelligence as independent variables and knowledge sharing as dependent variable. The explanatory power of the structural model was appraised based on the amount of variance in the dependent construct for which the model could account (R^2). As for organizational culture types

Hypothesis	Description of path	Path coefficient (β)	Z statistics	R^2	Conclusion
H1a	Hierarchy culture → knowledge sharing	-0.104	-1.82*	0.10*	H1a (-): S
H1b	Clan culture → knowledge sharing	0.115	1.62*	0.12*	H1b (+): S
H1c	Market culture → knowledge sharing	0.202	2.07*	0.15*	H1c (+): S
H1d	Adhocracy culture → knowledge sharing	0.218	3.01**	0.21**	H1d (+): S
H2a	Ethics of care → Knowledge sharing	0.309	3.37**	0.14**	H2a (+): S
H2b	Ethics of justice → knowledge sharing	-0.082	-1.51*	0.10*	H2b (-): S
H3	Emotional intelligence → knowledge sharing	0.257	3.17**	0.18**	H3 (+): S
H4	Knowledge sharing → competitive intelligence scanning	0.231	3.28**	0.22**	H4 (+): S

Table IV.
Findings from the structural equation model

Notes: S, supported; NS, not supported; Model fit: $\chi^2 = 556.8$; $df = 354$; IFI = 0.92; TLI = 0.92; CFI = 0.92; RMSEA = 0.01; tests of hypotheses are one-tail tests. * $p < 0.05$; ** $p < 0.01$

as independent variables, hierarchy culture variable accounted for 10 percent of the variance in knowledge sharing, clan culture accounted for 12 percent for knowledge sharing, market culture accounted for 15 percent for knowledge sharing, and adhocracy culture accounted for 21 percent for knowledge sharing. The independent variable of ethics of care accounted for 14 percent of the variance in knowledge sharing and ethics of justice accounted for 10 percent for knowledge sharing. Emotional intelligence variable accounted for 18 percent of the variance in knowledge sharing. These surpassed 10 percent, which was suggested by Falk and Miller (1992) as indication of substantive explanatory power.

Each hypothesis corresponded to a path in the structural model. Thus, support for each hypothesis could be determined by examining the sign (positive or negative) and statistical significance for its corresponding path. The absolute value of the beta coefficient (β) reflects which of the independent variables have a greater impact on the dependent variable in the multiple regression analysis. The findings in Table IV display positive and significant path coefficients between clan culture ($p < 0.05$), market culture ($p < 0.05$), or adhocracy culture ($p < 0.01$) and knowledge sharing; ethics of care and knowledge sharing ($p < 0.01$); high level of emotional intelligence and knowledge sharing ($p < 0.01$), and knowledge sharing and competitive intelligence scanning ($p < 0.01$).

The positive and significant relationships between clan culture and knowledge sharing (0.115; $p < 0.05$), between market culture and knowledge sharing (0.202; $p < 0.05$), and between adhocracy culture and knowledge sharing (0.218; $p < 0.01$) corroborate hypotheses *H1b*, *H1c*, and *H1d*, respectively. Hierarchy culture is too barren a garden for knowledge sharing deeds to flourish, which is reflected through the negative and significant relationships between hierarchy culture and knowledge sharing (-0.104 ; $p < 0.05$).

H2a was corroborated due to the positive and significant coefficient between ethics of care and knowledge sharing (0.309; $p < 0.01$). Ethics of justice, on the contrary, does not tend to motivate members to share knowledge as demonstrated through the negative and significant link between ethics of justice and knowledge sharing (*H2b*: -0.082 ; $p < 0.05$).

H3 and *H4* were substantiated through the positive and significant associations between emotional intelligence and knowledge sharing (0.257; $p < 0.01$) and between knowledge sharing and competitive intelligence scanning (0.231; $p < 0.01$).

Discussions and conclusion

While organizational culture has been found to be generally associated with knowledge sharing (Michailova and Minbaeva, 2012), the findings of this research pinpoint the degree of knowledge sharing in different organizational culture types. Cultural issues impact the way knowledge exchange is implemented (Boden *et al.*, 2012). This impact can be interpreted through bonding – a crucial component of organizational culture. Like bonds between atoms in a molecule, multiple bonds rather than a single bond between members, between teams or between internal stakeholders and external stakeholders of the organization, build sustainable strength of an organization's culture. Both quantity and quality, namely, the number and energy, of bonds contribute to this strength. In the organization, this energy is reflected in members' "caring" momentum in the form of accountability and commitment toward the vision of the organization as the whole as well as its stakeholders. High accountability and commitment melt members' interests into one another's interests

and into the organization's interests. They therefore find sharing, especially sharing of knowledge, as a learning expedition, rather than the oozing of intellectual capital. Relation-based motivation reflects a positive association with one's intention to share knowledge (Chen *et al.*, 2013); therefore, bonds or bridges among members built on regulations as in hierarchy culture are too delicate to enable the vehicle of knowledge to move through. Contrarily, clan culture with strategic focus on intermember relationships, and market culture and adhocracy culture with strategic focus on market orientation, navigate members' cognitive inclination toward others for the success of the organization to which they belong. They thus contribute their own resources, of which knowledge is an important portion, to "for others" orientation.

Voluntary social act is the phenotype of utilitarian DNA. Knowledge sharing is not an exception. To promote knowledge sharing process in the organization, managers need to bond members together using the affinity of "care" since ethics of care "focuses on the demands of relationships, not from a contractual or legalistic standpoint, but from a standpoint of absolute regard" and "love" (Starratt, 2003, p. 145). When members increase the density of care toward the sustainable strategy of the organization, they not merely endeavor to build or reinforce their intellectual strength but help co-members to build or reinforce theirs as well, which ultimately converge into the organizational knowledge. Knowledge sharing is augmented by social responsibility for learning from one another (Luu, 2012c). "Care" as the highest level of "human touch" should be built step-by-step from fundamental "human touches" such as daily interactions on tales of life to goals of life, or professional interactions. Member cohesiveness with low ethics of care and high ethics of justice which focusses on policies (Begley, 2006) tends to produce low level of voluntary sharing among members.

Shipping is an industry in which conflicts from problems in technical and operational procedures tend to occur from minor issues such as the accuracy of details on shipping documents or coordination with all concerned parties for cargo inspection, to major issues such as berth arrangement during port congestion or slow cargo discharging. Nonetheless, competency to surmount these issues can be augmented through knowledge sharing process. In an industry like shipping which involves multi-directional interactions among stakeholders within and beyond the company, knowledge still can be isolated rather than being diffused, and members' inner impulse to acquire and share knowledge can also remain at a low threshold if interactions without empathy predominate the company. Emotional intelligence with the contagion of empathy will transform formal interactions in the value chain into more emotionally intelligent interactions among members, leading to more voluntary sharing of knowledge. Emotional intelligence (also termed emotional maturity) is a trait at the individual level that may increase sharing of knowledge (Magnini, 2008), especially affective tacit knowledge which necessitates cultivation of emotional intelligence (Bennet and Bennet, 2008).

The isolation of knowledge within a member or a small group of members may produce an expert or an expert team with expert power that is capable of elevating the external positioning of the organization. Nevertheless, knowledge sharing pushes up members to a new threshold of knowledge in terms of values, conceptual skills, and professional skills, which help members to decipher the market landscape for discerning its imperfections of the landscape which they, in a fusion reaction fashion, synergize their knowledge to emit new added values to. Sharing of knowledge should commence with the analysis of other members' needs thereby the redundancy as well as irrelevance of shared knowledge can be evaded, so the anaphylactic reaction to the

transmission of knowledge from member to member can be minimized. Through knowledge sharing, members can empathize other members' accountability and dedication to organizational change and side with them to create novel competitive advantage for the organization.

A theoretical base behind the chain effects of ethics of care or emotional intelligence through knowledge sharing to competitive intelligence is probably schema activation. It is the propinquity between cognitive layer or schema and affective layer (Luu, 2013d) that impulses from affective layer tend to spread to cognitive layer to build new values in individuals' thinking. From the insight into this physiological mechanism, managers should "stir" members' emotion to augment their social EI level through "touching" legends around the organization such as a legend of a member who voluntarily cancels his holiday to share workload with his colleagues under the simultaneous influx of numerous vessels, a legend of a member who whistleblows on the offering of unseaworthy old vessels with invalid P&I certificates, or a legend of a manager who refuses his increased salary when the company keeps ignoring the theft of cargo at zero buoy or ignoring employees' petitions for logical compensation or their non-financial contributions. These "touching" legends, as crucial artifacts of organizational culture (Schein, 1985), will activate adjacent cognitive schema, which shape novel values such as care and knowledge sharing in members' thinking and deeds. Knowledge then will be shared among members as the categorical imperative (Kant, 1785/1993) for the organization's knowledge accumulation for market strategy intelligence, rather than the superficial compliance with rules and policies which are suffocating the organizational climate. However, competitive intelligence must be looked at differently than general market knowledge and companies may leverage competitive intelligence to their tactical advantage at the salesperson-customer interface if managed effectively, especially through transformation of culture (Hughes *et al.*, 2013).

Managers, in their steering of their shipping companies to their strategic vision, should center on the creation of added value of knowledge sharing process rather than the mere encouragement of individualistic learning such as financial support toward courses of MBA or professional skills.

Purely via planning of ethics can organizational ethical behavior be built (Luu, 2012d). Transforming ethics plan into actions, managers should inject meanings or values of "care" about and for other members to activate sharing process. For stakeholder-centered strategy, board officers/agents should provide regular updates of loading or discharging process to operation officers who update shippers as well as all parties to improve loading or discharging rate. Lack of "caring" interactions may produce ineffective use of resources, for instance, erroneous details on the bill of lading may make the shipper to travel more than 120 kilometers from Hanoi to Hai Phong port to get the BL originals revised.

In a nutshell, this research adds to knowledge management literature a model of knowledge sharing in shipping industry – an industry which tends to involve unprogramed decision making, which can be enhanced by knowledge sharing. The three antecedents to knowledge sharing in the research model, though being different values in the organization, point to the degree of openness, whether the openness of organizational members to others (reflected as ethics of care and emotional intelligence) or the openness of organizational culture (beyond hierarchy culture). This research model presents to managers the dynamic nature of organizational culture (Luu, 2012e) and the magnitude of engaging in cultural transform (for instance from clan culture to adhocracy culture) for optimizing knowledge transfer. Another contribution of the

research to knowledge management literature is the role of knowledge sharing in building competitive intelligence – competency in decoding external forces especially from customers and market players in order to increase internal strengths accordingly in proactive response to the dynamic evolution of the marketplace (Luu, 2012f). As a telescope to scan forces in the marketplace, competitive intelligence plays a crucial role in building strategic marketing decisions (Dickson, 1992) and market-oriented organizations (Jaworski and Kohli, 1993). Furthermore, competitive intelligence, which acts as a precedent for marketing strategy formulation (Dishman and Calof, 2008), augments marketing effectiveness and sales (Powell and Allgaier, 1998). This study thus inspires marketers to activate competitive intelligence's power to tailor marketing (Scullin *et al.*, 2004; Johns and Van Doren, 2010).

Some limitations remain untreated in this research. Its cross-sectional nature and the use of single-sitting self-report measures raise the need for further test. Through controlling the impact of past performance on the perceptions of organizational culture, ethics, and emotional intelligence, the research can infer that CSR, trust, and upward influence behavior influence knowledge sharing. However, dissecting organizations at a single point in time makes inferences about causality impossible (Luu, 2012g). Research on changing knowledge sharing phenomenon over time will be most valuable in discerning factors behind knowledge transfer. Luu (2010) also unveils a dynamic organizational culture model to address its dynamic reactions to internal and external forces. The hypotheses in the current cross-sectional research should be re-corroborated in a longitudinal or experimental study.

The research model should also be retested in other service industries as well as manufacturing industries, especially industries with constant flow of technological change, which necessitates the unremitting piling up of knowledge among members, such as healthcare service with continuous research for more effective treatment methods, pharmaceutical industry with swift adoption of technological advances (for instance, from nanotechnology at present to graphene technology in the near future), or digital industry at a high speed of innovation.

Adhocracy culture and market culture reflected a positive impact on integratedness of performance measurement (Luu, 2010). The mediating role of integrated performance measures between organizational culture and competitive intelligence can be examined in a future empirical study. Furthermore, the role of business ethics in relation to alternate leadership styles has been reported (Luu, 2012h); thus, a model in which ethics regulates the interplay between leadership and knowledge sharing should be attested on a new research path. Due to the connectivity between ethics and corporate governance (Luu, 2012i), another research path can be an inquiry into the joint effect of ethics and corporate governance on knowledge sharing.

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