PROCEEDINGS

2015 3rd International Conference on Adaptive and Intelligent Agroindustry (ICAIA)

ICAIA 2015

August 3rd - 4th, 2015
IPB International Convention Center
Bogor, Indonesia

ISBN : 978-1-4673-7404-0
IEEE Catalog Number : CFP15C67-CDR

IEEE
INDONESIA SECTION

Proceedings of

2015 3rd International Conference on

Adaptive and Intelligent Agroindustry (ICAIA)

IPB International Convention Center, Bogor, Indonesia

August 3rd – 4th, 2015

Published by :

Department of Agroindustrial Technology

Bogor Agricultural University

Bogor, Indonesia

Welcome Message from The General Chairs of ICAIA 2015

On behalf of the organizing committee, it is our pleasure to welcome you to International Conference on Adaptive and Intelligent Agroindustry, Bogor, Indonesia. This is the 3rd conference on the topic that is held by the Department of Agroindustrial Technology, Bogor Agricultural University, Indonesia.

The conference is expected to provide excellent opportunity to meet experts, to exchange information, and to strengthen the collaboration among researchers, engineers, and scholars from academia, government, and industry. In addition, the conference committee invited five renowned keynote speakers, i.e. Prof Irawadi from Bogor Agricultural University; Prof Kenneth De Jong from George Mason University, USA; Dr Yandra Arkeman from Bogor Agricultural University; and Dr Guillermo Baigorria from University of Nebraska-Lincoln, USA.

The conference committee also invited Prof Noel Lindsay from University of Adelaide, Australia; Kiyotada Hayashi from National Agricultural Research Center-Tsukuba, Japan; Prof Margareth Gfrerer from Islamic State University of Jakarta, Indonesia; Dr Barry Elsey from University of Adelaide, Australia; Dr Gajendran Kandasamy from Melbourne University, Autralia; and Imperial College London-British, Prof Allan O'Connor from University of Adelaide, Australia; Dr Wisnu Ananta Kusuma from Bogor Agricultural University ,Indonesia; and Dr Frank Neumann from University of Adelaide, Australia, as invited speakers.

This conference was organized by Department of Agroindustrial Technology, Bogor Agricultural University and Asosiasi Agroindustri Indonesia, and technically sponsored by IEEE Indonesia Section. Furthermore, it was supported by Departement of Computer Science, Bogor Agricultural University; Surfactant amd Bionegergy Research Center; PT Bogor Life Science and Technology; Indonesian Ministry of Industry; PT Pachira Distrinusa; and PT Kelola Mina Laut.

I would like to take this opportunity to express my deep appreciation to the conference's committee members for their hard work and contribution throughout this conference. I would like to thank authors, reviewers, speakers, and session chairs for their support to participate in the Conference. Lastly, I would like to welcome you to join ICAIA 2015 and wish you all an enjoyable stay in Bogor.

Sincerely,
Dr Yandra Arkeman
General Chairs, ICAIA 2015

WELCOMING ADDRESS

Prof. Dr. Ir. Nastiti Siswi Indrasti
Head of Agroindustrial Technology Department
Faculty of Agricultural Engineering and Technology
Bogor Agricultural University

on

3rd International Conference on Adaptive and Intelligence Agroindustry (3rd ICAIA)

Bogor, August, 3 – 4, 2015

Assalamu'alaikum Warohmatullahi Wabarokatuh
In the name of Allah, the beneficent and the merciful,

Distinguish Guest, Ladies and Gentlemen
Let me first thank you all for accepting the invitation to participate in this 3rd International Conference on Adaptive and Intelligence Agroindustry (ICAIA). In particular I would like to thank Rector of IPB (Institut Pertanian Bogor/Bogor Agricultural University) Prof. Herry Suhardiyanto for supporting this event as part of the series academic event in celebrating the 52nd Anniversary of Bogor Agricultural University.

We are certainly proud to have been able to assemble this event in IPB, Bogor. The range of participants and audience at this conference is precisely something I would like to stress. Participants who followed the event more than 150 people, coming from various countries including the USA, Australia, Japan, Vietnam, Philippine, Germany and Indonesia. The main goal of the conference is to provide an effective forum for distinguished speakers, academicians, professional and practitioners coming from universities, research institutions, government agencies and industries to share or exchange their ideas, experience and recent progress in Adaptive and Intelligent Agroindustry.

The 2015 3rd International Conference on Adaptive and Intelligent Agro-industry (ICAIA) is the third forum for the presentation of new advances and research results on various topics in all aspects of innovative agro-industry that highlights the development and improvement for today and tomorrow's global need for food, energy, water and medicine. The aim of the conference is to stimulate interaction and cohesiveness among researchers in the vast areas of innovative agro-industry. Innovative Agro-industry has the ability to adapt intelligently to future global challenges, i.e. food, energy, water, and medical. Global challenges needs a new breed of Agroindustry which could produce innovative products to fulfill the needs through advanced processing technology, production systems and business strategy supported by cutting-edge information and communication technology.

The topic for this event is "Empowering Innovative Agroindustry for Natural Resources, Bioenergy and Food Sovereignty". The topics clustered into four main parts:
Track 1 : Innovative Agroindustrial and Business System Engineering

Track 2 : Frontier Approaches in Process and Bioprocess Engineering
Track 3 : Frontier Approaches in Industrial Environmental Engineering
Track 4 : Intelligent Information and Communication Technology for Adaptive Agroindustry of the Future

This event also hosts four (4) workshops: (1) Strategies for Agroindustry Development (2) LCA for Agroindustry (3) Innovation and Technopreneurship for Agroindustry and (4) Agroindustry Informatics.

Distinguish Guest, Ladies and Gentlement,
Agroindustry transforms agricultural commodities into high value-added products. Agroindustry is industry that process agricultural products to increase their value added significantly by using technology and by considering environmental aspect and sustainability. However, with changing global demand and technology advancement, innovative agroindustry is needed in order to be competitive as well as sustainable. The challenge of future agroindustry is not merely efficiency and productivity anymore, but also the challenge to appropriately apply frontier technology as well as meeting future global demands.

Agroindustry needs to deal with the application of advance technologies and cope future global issues. Current global issues which arise and expected to exist in the future are food sovereignty, renewable energy, sustainable water management and pharmacy. The ability of agro-industry to respond the future global issues and the undoubtedly substantial increase in demand in future decades will be highly dependent on the increased application of existing technologies as well as the exploitation of new and innovative technologies.

The emergence of high technology could be applied in the agro-industry are: nanotechnology, biotechnology, bioinformatics, food processing, food packaging-waste, state-of-the-art computation and many others. The aforementioned high-technology along with computation technology could greatly advance agro-industry from a traditional system into a smart-intelligent and innovative technology. Therefore, in the new millennia, adaptive-intelligent and innovative agro-industry will contribute to solutions to global problems and brings agriculture into perfection.

Hope this conference will also discuss this issue in more detail as it is an important matter for all of us. We should no more think just how to produce high value product but it is also necessarily important how to keep our live in good quality by understanding following old saying… “You do not live at once. You only die once and live every day”.

I do not to take up any more of your time with these opening remarks. Let me simply thank you once again for sharing your thoughts with us. Here’s wishing every success for the conference. May Allah bless all of us.

Thank you for your kind attention,
Wassalamu’alaikum Warohmatullahi Wabarokatuh

COMMITTEE

Condescendent
Prof. Dr. Ir. Herry Suhardiyanto, M.Sc (IPB's Rector)

Steering Committee
Chairman
Prof. Dr. Ir. Nastiti Siswi Indrasti

Vice
Dr. Ir. Yandra Arkeman, M.Eng

Board member
Prof. Dr. Ir. Aziz Darwis
Prof. Dr. Ir. Irawadi Djamaran
Prof. Dr. Ir. Eriyatno, MSAE
Prof. Dr. Ir. Anas M. Fauzi
Prof. Dr. Ir. Syamsul Maarif, M.Eng
Prof. Dr. Ir. Machfud, MS
Prof. Dr. Ir. Djumali Mangunwidjaja

Organizing Committee
Chairman
Dr. Ir. Yandra Arkeman, M.Eng
Co-chairs :
Prof. Dr. Ir. Suprihatin
Prof. Dr. Ono Suparno, S.TP, MT

Treasury
Dr. Indah Yuliasih, S.TP, M.Si
Dr. Elisa Anggraeni, S.TP, MSc

Programs
Dr. Hartrisari Hardjomidjojo, DEA
Dr. Endang Warsiki
Ir. Lien Herlina, MSc
Dr. Ika Amalia Kartika

Funding
Dr. Meika Syahbana Rusli
Dr. Dwi Setyaningsih
Prof. Erliza Hambali
Dr. Mulyorini Rahayuningsih

Secretariat
Dr. Titi Candra Sunarti
Dr. Prayoga Suryadharma
Dr. Sugiarto, MS
Dr. Faqih Uddin
Niken Ayu Permatasari, STP, MSi
Angga Yuhistira, STP, MSi
Luthfa Jamilah, STP
Yulianti
Elvin Septiana

Paper & Proceedings
Prof. M. Romli
Prof. Marimin
Prof. Ani Suryani
Prof. Erliza Noor
Dr. Liesbetini Hartoto
Dr. Moch Yani

Accomodation dan Logistics
Dr. Andes Ismayana
Dr. Ade Iskandar
Dr. Muslich
Dr. Sapta Raharja

Design, Web and Publication
Dr. Taufik Djatna
Dr. Aji Hermawan
M. Arif Darmawan, MT
Teguh Adi Setia, AMd

AGENDA

Time	Activities
Monday, August 3rd 2015	
08.00 - 09.00	Registration
09.00 - 10.00	Opening Ceremony • Welcoming Address: Prof. Nastiti Siswi Indrasti (Head of DAT, Fateta, IPB) • Welcoming Speech Head of Bogor Regency • Conference Opening: Prof. Herry Suhardiyanto (Rector of IPB) • Opening Speech and Conference Opening : Minister of Industry Indonesia * • Launching Expose International program DAT
10.00 – 10.05	*Photo Session*
10.05 - 10.15	*Coffee break*
10.15 - 10.45 10. 45 - 11.30 11.30 – 12.00 12.00 – 12.30	Keynote Speech : 1. Prof Irawadi (Bogor Agricultural University, Indonesia) 2. Prof. Kenneth De Jong (George Mason University, USA) 3. Dr. Yandra Arkeman (Bogor Agricultural University, Indonesia) 4. Dr. Guillermo Baigorria (University of Nebraska, Lincoln, USA)
12.30 – 13.30	Lunch break
13.30 – 13.50 13.50 – 14.10 14.10 – 14.30 14.30 – 14.50 14.50 – 15.10 15.10 – 15.45	Plenary Session 1 : Prof. Noel Lindsay (University of Adelaide, Australia) Dr. Kiyotada Hayashi (National Agricultural Research Center, Tsukuba, Japan) Prof. Margareth Gfrerer (Islamic State University of Jakarta, Indonesia) Dr. Barry Elsey (University of Adelaide, Australia) Ir. M. Novi Saputra (Marketing Director KML Food Group) *Discussion*
15.30 – 15.45	*Coffee break*
15.45 – 18.00	Parallel session A, B and C
18.00 – 21.00	Welcome Dinner

Time	Activities
Tuesday, August 4rd 2015	
08.30 – 09.00	Registration
09.00 – 09.20 09.20 – 09.40 09.40 – 10.00 10.00 – 10.20 10.20 – 10.45	Plenary Session 2 : Dr. Gajendran Kandasamy (PhD in Physic, Melbourne University ; PhD in Innovation Imperial Collage, London) Prof. Allan O'Connor (University of Adelaide, Australia) Dr. Eng. Wisnu Ananta Kusuma, ST, MT (Bogor Agricultural University, Indonesia) Dr. Frank Neumann (University of Adelaide, Australia) *Discussion*
10.45 – 13.00	Parallel Session A, B and C
13.00 – 14.00	Lunch break
14.00 – 15.30	Parallel Workshop • Strategies for Agroindustry Development • LCA for Agroindustry • Innovation and Technopreneurship for Agroindustry • Agroindustrial Informatics
15.30 – 15.45	Coffee Break
15.45 – 16.15	Closing remark

TABLE OF CONTENTS

Managing Innovation through Knowledge Sharing In an Indonesian Coconut SME

Muchammad Kodiyat P[1], Machfud[2], Nastiti S Indrasti[2]
[1]Center for Industrial Research and Standardisation, Manado Indonesia
[2]Faculty of Agroindustrial Technology, Graduate School, Bogor Agriculture University
Email: muchammad.prianggodo@gmail.com, machfud21@gmail.com, nastiti.indrasti@gmail.com

Abstract **- This research seeks to know and understand how knowledge sharing is developed to enhance innovation processes in an Indonesian coconut SME. This research conducted a case study approach in an innovative coconut SME, in which 3 competent people were interviewed in the company as a data collection method. The research has found that knowledge sharing is developed by two methods, direct and indirect. While the direct method focuses on the interaction of knowledge contributor and receiver, the indirect method uses the help of media as a means of knowledge sharing. The research results indicate that direct method has been a considerably more effective in achieving knowledge sharing, due to tacit knowledge usage. Meanwhile, the indirect method serves as leverage for the company to ensure that knowledge is available and accessible. Moreover, the role of knowledge brokers has given an additional understanding on how knowledge sharing is developed in an SME by broadening the knowledge throughout the company. This study has also explored that absorptive capacity becomes the main factor influencing the knowledge transfer success. Employees' awareness to become self learners, motivation, reward system, and level of education has emerged as reasons that determine the level of knowledge acceptance.**

I. INTRODUCTION

Indonesia supplies more than 19 million metric tonnes of world coconut needs, or 30% of total world production. However, despite being a number one producer of coconut all over the world, Indonesia has not yet felt the benefits from the advantage.

Manuscript received July 29, 2015. This work was supported in part by the Ministry of Industry of Indonesia.

Muchammad K Prianggodo is with the Balai Riset dan Standardisasi Industri, Manado Indonesia (phone: +62 431 852 395; fax: +62 431 852 396;
(e-mail: muchammad.prianggodo@gmail.com).

Machfud is with the Agro industrial Technology Study Program, Graduate School, Bogor Agricultural University (IPB), Bogor, Indonesia (e-mail: machfud21@gmail.com).

Nastiti S Indrasti is with the Agro Industrial Technology Study Program, Graduate School, Bogor Agricultural University (IPB), Bogor, Indonesia (e-mail: nastiti.indrasti@gmail.com).

Most Indonesian coconut products are sold in forms of low end products, such as copra and crude coconut oil, which has less value compared to high end products. The condition of low added value products from Indonesia arises from the lack of innovative practices of coconut producers, due to the fact that the majority of producers are small and medium Enterprises (SMEs). Consequently, to raise Indonesian coconut products to a higher value, innovation is needed. There are many ways for SMEs to perform innovation. One of which is by having knowledge sharing in its organisation. The reason why knowledge sharing can be important for SMEs is because it becomes the foundation by which individuals can continuously contribute to the development of knowledge creation and management. However, only a small number of researches have focussed on knowledge sharing strategies in SMEs, where most literature has discussed knowledge sharing as part of knowledge management in large firms. Therefore, this study aims to investigate how the knowledge sharing is practiced in SMEs, especially in an Indonesian coconut SME, as an important factor that produces innovation.

II. LITERATURE REVIEW

A. The Nature of the Indonesian coconut SMEs

The Indonesian coconut industry is dominated by small scale companies in which, the majority of the products are produced using low technology. For example, Lay and Pasang (1998) mention products like copra, charcoal, and palm sugar involves only a small number of technologies in their production. Therefore, the quality of these products is considerably poor Suliyanto (2013). Meanwhile, the high-end exported products e.g. desiccated coconut, coconut oil, and active charcoal are produced by medium and high level enterprises. In this level, the technology involvement is more intense compared to the small level. Moreover, Lay and Pasang (1998) formulate strategies needed by Indonesian coconut SMEs to achieve sustainable development of Indonesian coconut industry. One of which is to have product diversifications. Product diversification in coconut industry can be varying, in which coconut trees provide a range of opportunity.

For Indonesian coconut SMEs, this condition is contradictory, since coconut trees provide a whole range of products opportunities, where added value

from the coconut should be maximized to create a competitive advantage for SMEs. Dewi (2011) states that the opportunities of Indonesian coconut industry are: increasing market demand; opportunity on free export taxes; and the development of higher value added products.

B. Knowledge Management and Innovation

Knowledge in general is a conversion process of collected data to information. This information then becomes knowledge when it is applied into something we need. In most knowledge paradigms, it clearly states that knowledge comes from individual awareness and/or experience, which further becomes personal knowledge. Additionally, knowledge can be classified into two types; tacit and explicit. Polanyi (1967) defines tacit knowledge as a knowledge that we know more than we state. Meanwhile, explicit knowledge is the form of knowledge that has been already codified, thus make this knowledge as reachable and easy to communicate (Nonaka 1991) . Seidler-de Alwis and Hartmann (2008) argue that both tacit and explicit serve equally in knowledge creation. To be able to use knowledge, the explicit requires the presence of tacit.

Knowledge management comprises of three dimensions; knowledge creation, knowledge sharing, and knowledge utilisation. The basis of knowledge creation theory came from Nonaka and Takeuchi's work. They emphasize that knowledge creation comes initially from personal knowledge, and mostly in forms of tacit. In order to make knowledge becomes public domain and reachable, it needs to be socialized with other members within an organisation.

In addition, knowledge as a part of knowledge management (KM) has been discussed widely for its benefits in supporting innovation in organisations. For example, Maqsood (2006) explains that the link between innovation and knowledge management is that innovation comes from tacit knowledge of one person who acts as agent of change, and begins to influence people to innovate. Adding to this, Du Plessis (2007) views knowledge management serves as a 'catalyst' for innovation, as it provides the access to knowledge based resource that is needed to perform innovation. Firestone et al. (2005) define knowledge management as a continual process of knowledge development to improve results and the knowledge itself.

Leal-Rodríguez et al. (2013) argue that KM works by providing management with the necessary framework that is needed to perform innovation. This structure is essential for organisations so that they can keep improving their capability to innovate. Moreover, López-Nicolás and Meroño-Cerdán (2011) claim that KM supports companies to be creative, proficient and productive which raises their competitive advantage. Therefore, it is inevitable that KM leads to better firms performance through innovation process (Du Plessis 2007).

C. Knowledge Sharing in SMEs

Baptista Nunes et al. (2006) argue that SMEs are still low in applying knowledge management as part of their business strategy. As a result, SMEs need to apply knowledge management strategy as their core competency (McAdam & Reid 2001). Moreover, Guzmán, Serna and de Lema (2012) demonstrate three benefits of KM for SMEs as follow. Firstly KM can make SMEs aware of the outside knowledge that might be useful for them and bring it to the company. Secondly it helps the company to develop outside knowledge and utilize it to create competitiveness in their production. Thirdly KM is beneficial to ameliorate management system. Riege (2005) argues that SMEs are lack in maximizing their potential to use knowledge as their competitive strategy and do not have strategic approach to share knowledge, leading to a lack of innovative performances.

Du Plessis (2007) views that the absence of explicit knowledge in an organisation makes knowledge transfer process hard to achieve, leading to constraint in the innovation practice. Therefore, the process of shifting tacit to explicit is important for any organisation. Tsui et al. (2006) characterise three ways as knowledge sharing strategy based on the media used, which is writing, speaking and information technology. Although it is generally believed that knowledge sharing strategy has different outcomes between companies, some researchers have found similarities in methods of knowledge sharing practices. For example, Ohiorenoya and Obadan (2014) found that the most frequently used method for KS is verbal communication, in forms of face to face meeting. Extending this idea, McAdam and Reid (2001) compared 46 large firms to 49 SMEs in regards to their perspective in knowledge management, and found that the most practiced method to share tacit knowledge is by informal discussion. This method also appears to have full support from the companies. This view indicates that dialogue (in forms of informal discussion) has significant contribution in acquiring tacit knowledge. Besides methods of sharing knowledge, it is also important to explore factors that contribute to knowledge sharing processes. Much literature focuses on the individual factor as the main factor that influences knowledge sharing in organisations. Riege (2005), for instance, addresses three elements that need to be fulfilled by a company in order to have an effective knowledge sharing process, that is: individual factor (such as motivation, support, and incentive of employees to capture and share their knowledge); organisational factor (company goals and strategy in relation to knowledge sharing practices); and technological factor (knowledge accessibility to the organisation). From this framework, it can be seen that the knowledge sharing characteristic of a company will be different to others (due to the difference of company's culture), which means a

competitive advantage for one company cannot be copied by others.

Szulanski (1996) states the effectiveness of knowledge transfer in organisations depends on three factors, namely: absorptive capacity of the recipient; causal ambiguity; and relationship between the source and the receiver. However, in SMEs where informal interaction dominates the activity, the causal ambiguity and individual relationship do not significantly affect the knowledge sharing process. Hence, the possible factor that might influence knowledge sharing in SMEs is absorptive capacity of recipients.

Similar to previous notions, Haldin-Herrgard (2000) points out main difficulties in tacit knowledge sharing are awareness and language. The issues are not only communicating and articulating what we know, but also how to make tacit connects to explicit. This idea is strengthened by Finally, the use of IT as a strategy to share knowledge has drawn attention to many academics. Several researchers have tried to discuss the importance of IT on knowledge sharing effectiveness. To illustrate, Choi, Lee and Yoo (2010) suggest that to have an effective knowledge sharing process, a company needs to consider the selection of their IT tools. A more general example is from Baptista Nunes et al. (2006) who state that the use of ICT as knowledge management approach has demonstrated to bring values for large companies, while in SMEs KM is performed in an informal way, which does not rely much on ICT systems.

TABLE 1
PROPOSED RESEARCH FRAMEWORK

Research Questions	Factors Examined	Key Literatures
How is knowledge sharing developed in an Indonesian coconut SME?	Method for sharing knowledge	Nonaka and Takeuchi (1991); McAdam and Reid (2001); Smith (2001);
What Factors are important to share knowledge in an Indonesian coconut SME?	Absorptive capacity, Role of knowledge broker, Role of IT	Riege (2005); Szulanski (1996); Haldin-Herrgard (2000); Tsui et al. (2006); Baptista Nunes et al. (2006)

III. RESEARCH METHOD

The data was collected using semi-structured interview in *SR* company. The company was selected as source of information for this study due to the reason of the company has been successfully practicing innovation in its daily activities and becoming source of knowledge for other coconut SMEs in Indonesia. It indicates that the company has knowledge sharing as a part of their business innovation. In addition, 3 people were selected as source of information for this research. They were selected for their abilities and experiences in relation to innovative practices in the company.

The interview was conducted in two periods. The first interview was done in person with the owner, and IT staff. The second was done by phone to the owner and marketing manager. The second interview was needed to complement data from the first interview. Each interview was tape-recorded and lasted between 40-60 minutes. Finally the data was analysed using descriptive and interpretive approach, in which researcher's interpretations were contrasted with past researches and literatures to give a more general understanding of knowledge sharing practices.

IV. FINDINGS AND DISCUSSION

A. How is knowledge sharing developed in an Indonesian coconut SME?

Knowledge sharing is developed by two methods, one direct and one indirect. The Direct method includes direct mentoring from the owner, training, apprentices, and assignments. The Indirect method involves media as means of knowledge transfer, such as information technology (IT) and paper. This method covers Standard Operating Procedure (SOP), digital video disk (DVD), and television.

The Direct method plays an important role in the effectiveness of knowledge sharing in the SME, as a majority of knowledge is shared in forms of tacit knowledge. Direct mentoring from the owner to selected employees has made the knowledge sharing more effective, where, both parties can make real-time communication, and then extend the learning process through dialogue. Although many researches and studies view tacit knowledge as knowledge that difficult to be shared because it's still in the forms of personal knowledge, which means that the tacit knowledge is only presence in people minds and hard to be accessed, but for companies that do not apply knowledge management strategy in its businesses tacit knowledge might serve as their valuable capital. This is probably because these companies have different culture with big companies. For example, Sumber Rejeki has an informal culture in their activities, in which most of information and knowledge sharing activities take place by informal discussion.

This finding accommodates McAdam and Reid (2001); and Smith (2001) theories, in which direct communication and informal interaction between the knowledge source and the recipient as a preferred method for SMEs to share knowledge. Since in this company tacit knowledge holds the biggest proportion of knowledge, this then confirms Nonaka and Takeuchi's theory in relation to tacit knowledge as an important part to create competitive advantage in an organisation.

Additionally, the role of knowledge brokers is surprisingly crucial in the SME. They work as trainers whose role is to spread knowledge wider inside the organisation. While, Tsui et.al. (2006) suggest that

knowledge brokers are important to bridge knowledge from organisation to outside parties (e.g. government and academics), the data shows that it is also important to have knowledge brokers inside small firms.

However, the data also indicates that the company only absorbs 30% of the owner's knowledge. Given this fact, the researcher considers that this might create disadvantage for the company in terms of performing innovative activities. Because, inadequate knowledge in the company might limit new ideas to be developed to create innovation.

The second method, indirect, contributes 30% of company knowledge. This method varies from media used to help knowledge transfer processes. The most used media is information technology (IT), where the owner tries to store and transfer his knowledge by using media such as company's website, and video instruction. Adding to this, the company also collaborates with local television channel to record his views, and then it can be accessed through a video-sharing website.

Seeing that the use of IT dominates all the indirect methods, company supports to accommodate these needs is important. Although the use of IT as part of strategies to share knowledge would be challenging for small companies in terms of providing designated person to manage IT, but the possibility of knowledge to be shared effectively is too important to be neglected. Hence, the role of government is crucial to help small companies to be competitive, one of which is by providing trainings in IT field. Additionally, the use of IT as tools to help knowledge sharing process (storing and accessing) resonates with Choi et.al (2010) who view that IT could help for knowledge sharing to be more effective. On the other side, this finding differs to Nunes et.al (2006) opinion that SMEs do not rely upon ICT as their knowledge management strategy. This is noticeable from the IT usage as the most frequently means to transfer explicit knowledge in the company. The owner's effort in shifting tacit to explicit is regarded as a risk managing strategy for the company. As the owner is aware of possible drawbacks that might arise if the tacit knowledge is not made explicit, he then codified his knowledge into manuals, website articles, and video instructions which can be accessed further by employees or anyone outside the company. The owner stated the following:

'Yes, indeed it becomes a threat. That is why if you visit our website, there will be a link to YouTube video. It has been 3 episodes, and we cooperate with local TV station. Thus, from the written knowledge I made it recorded into digital video disk. But the educational level determines the acceptance of someone'

As a result, the availability of explicit knowledge can help the company to ensure that its knowledge asset is accessible to anyone in the company. Another benefit to have explicit knowledge in the company is to ensure that the company can access knowledge when tacit knowledge becomes obsolete or when the key people leaving the company and bring their knowledge with them. In other words, explicit knowledge is as just as important as tacit knowledge for the company, and any company needs to make explicit knowledge to become its organisational knowledge. This finding is in accordance with Du Plessis's (2007) belief that the absence of explicit knowledge in a company might inhibit the innovation process.

However, the explicit knowledge in the company has an obstacle in relation to knowledge utilization. Employees often find difficulties in understanding and utilizing this explicit knowledge. The owner argues that level of education might influence the knowledge acceptance of employees. As Riege (2005) mentions education level as one of barriers in KS in large companies, this aspect appears to have an effect on small firms as well. In contrast with this finding, the level of education in tacit knowledge sharing does not affect knowledge acceptance of employees. This is probably because of the expertise of the owner who knows how to address recipients, and find ways to suit them.

B. What factors are important in knowledge sharing effectiveness in an Indonesian coconut SME?

Absorptive capacity (or knowledge acceptance) from receivers would appear to be the most significant contributing factor for establishing an effective knowledge sharing process in this company. Szulanski (1996) claims that absorptive capacity is one of the attributes that is significant for sharing knowledge, and the result of this study has acknowledged his view. Since absorptive capacity is influenced by individual factors, it is important for the company to deal with this issue by providing facilitating support. It means that the company needs to have secondary sources for employees accessing knowledge. For instance, employees have access to text books or manuals to enrich their knowledge or the company can allocate time to have discussion session with employees.

The owner claims that employees' awareness to become self-learners determines the effectiveness of knowledge sharing. This result shows that the motivation of individuals play a significant contribution to the progress of knowledge sharing.

Reward also serves as an enhancing factor for knowledge sharing. This relates to employees' motivation to be actively involved in the knowledge sharing process. The more employees contribute to knowledge use, leading to innovation processes, the greater the reward they can achieve. As this company rewards its employees by shares (not on a salary basis), it indicates that a person can have more shares if he/she makes a greater contribution in the knowledge sharing and innovation processes.

This study also supports Riege's (2005) idea about SMEs' strength in knowledge enabling environment. This might be because the company has an informal environment. Thus, the differences (e.g. age, level of education, status) among employees do not create obstacles to share ideas and experiences, and presumably new knowledge could arise from this condition.

Another important factor in effective knowledge sharing process is patience. The owner explains that it takes a certain time to be able to comprehend knowledge. Hence, a continual effort is required to apply knowledge. Due to this reason, the owner suggests patience as an important factor in effective knowledge sharing. In relation to theoretical contribution, this aspect extends the Baptista Nunes et al. (2006) and Cavusgil et.al, 2003 theory that argues if (tacit) knowledge requires effort and time to be transferred.

In addition, direct mentoring from the owner, who holds most of knowledge in the company, is seen as a preferable technique for knowledge sharing process. Direct mentoring provides guidance and supervision in drawing tacit knowledge from the source of knowledge. This can be perceived from the owner's statement, as he said: *'Yes, I feel that the direct mentoring is the most effective method to share knowledge. Even though i already provided them with instructional video and SOP, but at some extent they did not confident enough to do it. This is not only happen to people who have less formal education, but also for those who have tertiary education. I think this probably because they have a lack of achievement.'*

Therefore, this method implies that to be effectively shared, tacit knowledge requires continuous collaboration from both the knowledge contributor and receiver. It indicates that it is important to have people whose knowledge can guide the knowledge transfer within a company

C. Limitation of the Study

This research mainly concentrates on the practicality of knowledge sharing process and does not examine comprehensively the relationship between individuals e.g. trust among employees, motivation and retention to share knowledge. Because, addressing the interrelationship among individuals (e.g., motivation or retention to share knowledge) would be more difficult in the limited time frame. Therefore this research focuses on the individual factor as well as the practicality of knowledge sharing in a company.

D. Recommendation for Future Research

Although much of the literature has discussed the importance of explicit knowledge as an asset to perform innovation, this research found that the explicit knowledge is not the preferred option for the SME to share knowledge. This study also found that the role of knowledge broker may well increase the effectiveness of knowledge sharing in SMEs. Therefore, future research is required to further investigate factors that may contribute to the improvement of explicit knowledge sharing as well as the potential role of knowledge broker in SMEs.

E. Summary

Since knowledge serves as capital to conduct innovative activities, it is essential for SMEs to manage knowledge as one of its competitive advantage. Although tacit knowledge is a more preferable option for SME to share knowledge, but the presence of explicit knowledge needs to be considered as an important part in sharing knowledge strategy. SMEs also require facilitating knowledge management, and maximizing information technology as tools to enhance innovation towards knowledge sharing processes.

REFERENCES

[1] Ardiana, I, Brahmayanti, I & Subaedi, S 2010, 'Kompetensi SDM UKM dan Pengaruhnya Terhadap Kinerja UKM di Surabaya', Jurnal Manajemen dan Kewirausahaan, vol. 12, no. 1, pp. pp. 42-55.

[2] Baptista Nunes, M, Annansingh, F, Eaglestone, B & Wakefield, R 2006, 'Knowledge management issues in knowledge-intensive SMEs', Journal of Documentation, vol. 62, no. 1, pp. 101-119.

[3] Choi, SY, Lee, H & Yoo, Y 2010, 'The Impact of Information Technology and Transactive Memory Systems on Knowledge Sharing, Application, and Team Performance: A Field Study', Mis Quarterly, vol. 34, no. 4, pp. 855-870.

[4] Circiumaru, LPDD 2009, 'A Study Regarding the Value Added of the SMEs from the District of Dolj, Romania', European Research Studies Journal, vol. 12, no. 4, pp. 145-156.

[5] Dewi, AP 2011, 'Strategi pemasaran produk agroindustri kelapa berorientasi ekspor'.

[6] Du Plessis, M 2007, 'The role of knowledge management in innovation', Journal of Knowledge management, vol. 11, no. 4, pp. 20-29.

[7] Firestone, J, McElroy, MW, Firestone, JM & McElroy, MW 2005, 'Doing knowledge management', The Learning Organization, vol. 12, no. 2, pp. 189-212.

[8] Guzmán, GM, Serna, MdCM & de Lema, DGP 2012, 'The Relationship between Knowledge Management and Innovation Level in Mexican SMEs: empirical evidence', in Proceedings of the European Conference on Knowledge Management, ECKM, vol. 1, pp. 659-664.

[9] Haldin-Herrgard, T 2000, 'Difficulties in diffusion of tacit knowledge in organizations', Journal of Intellectual capital, vol. 1, no. 4, pp. 357-365.

[10] Hoffman, K, Parejo, M, Bessant, J & Perren, L 1998, 'Small firms, R&D, technology and innovation in the UK: a literature review', Technovation, vol. 18, no. 1, pp. 39-55.

[11] Kumara, N & Kapoorb, S 2010, 'Value chain analysis of coconut in Orissa'.

[12] Lay, A & Pasang, P 1998, 'Strategi dan implementasi Pengembangan produk kelapa masa depan', Balai Penelitian Tanaman Kelapa dan Palma Lain Manado.

[13] López-Nicolás, C & Meroño-Cerdán, ÁL 2011, 'Strategic knowledge management, innovation and performance', International journal of information management, vol. 31, no. 6, pp. 502-509.

[14] Maqsood, T 2006, 'The role of knowledge management in supporting innovation and learning in construction', RMIT University.

[15] McAdam, R & Reid, R 2001, 'SME and large organisation perceptions of knowledge management: comparisons and

contrasts', Journal of Knowledge management, vol. 5, no. 3, pp. 231-241.
[16] Nonaka, I 1991, 'The knowledge-creating company', Harvard business review, vol. 69, no. 6, pp. 96-104.
[17] Ohiorenoya, JO & Obadan, JA 2014, 'Knowledge Sharing In Small And Medium Scale Enterprises In Benin City, Edo State', European Scientific Journal, vol. 10, no. 1.
[18] Polanyi, M 1967, 'The tacit dimension. 1967', Garden City, New York, vol. 217.
[19] Riege, A 2005, 'Three-dozen knowledge-sharing barriers managers must consider', Journal of Knowledge management, vol. 9, no. 3, pp. 18-35.
[20] Seidler-de Alwis, R & Hartmann, E 2008, 'The use of tacit knowledge within innovative companies: knowledge management in innovative enterprises', Journal of Knowledge management, vol. 12, no. 1, pp. 133-147.
[21] Smith, EA 2001, 'The role of tacit and explicit knowledge in the workplace', Journal of Knowledge management, vol. 5, no. 4, pp. 311-321.
[22] Szulanski, G 1996, 'Exploring internal stickiness: Impediments to the transfer of best practice within the firm', Strategic management journal, vol. 17, no. S2, pp. 27-43.
[23] Takeuchi, H 2006, 'The New Dynamism of the Knowledge-Creating Company', Knowledge Economy, p. 1.
[24] Tamer Cavusgil, S, Calantone, RJ & Zhao, Y 2003, 'Tacit knowledge transfer and firm innovation capability', Journal of business & industrial marketing, vol. 18, no. 1, pp. 6-21.
[25] Tsui, L, Chapman, SA, Schnirer, L & Stewart, S 2006, A Handbook on Knowledge Sharing: Strategies and Recommendations for Researchers, Policy Makers and Service Providers, Community-University Partnership for the Study of Children, Youth, and Families Edmonton.
[26] Vermeulen, PA, O'shaughnessy, K & De Jong, JP 2003, 'Innovation in SMEs: An empirical investigation of the input-throughput-output-performance model', EIM, Zoetermeer.
[27] Yin, RK 2013, Case study research: Design and methods, Sage publications.