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Impact of Alignment between Social Media and Business Processes on SMEs' Business Process Performance: A Conceptual Model

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Abstract

The development of information technology highly affects various business sectors including Small and Medium Enterprises (SMEs). Social media implementation, as one of the most widely used IT application, is expected to support SMEs' performances. Many types of research in social media have focused on the impact of its implementation on the performance of an organization at a macro level. Research that investigates the linkage between social media and how the company performs its business process is lacking in the literature to date. This study aims to fill this gap by conducting a literature review on social media implementation particularly in SMEs. The result of this study is a conceptual model that follows the proposition of Task-Technology Fit in exploring the impact of social media on SMEs business process performances. As a technology, social media functionality must fit the tasks that SMEs must perform. The model proposed social media alignment with business process domain based on the Process Classification Framework (PCF). The performances are measured at a business process level using four indicators i.e. cost, time, quality and flexibility of the business process.

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1. Introduction

Small and Medium Enterprises (SMEs) have important and strategic roles in economic development in Indonesia [1]. Indonesia recently declared The Making Indonesia 4.0, a program that aims to revive the manufacturing sector is facing the Industry 4.0 phenomena. The program focuses on 5 sectors: food products, textiles, automotive, electronics, and chemicals. The program has 10 National Priorities, one of which is "Empower SMEs" or "the empowerment of SMEs" [2]. Several strategies to increase the SMEs competitiveness in the global market are by strengthening the management side, the flow of information and the use of information and communication technology. Business Process Management (BPM) can help businesses to carry out their business activities in facing today's challenges and global competition [3].

The first step in BPM is defining the business processes. One of the frameworks in business process classification proposed by the American Productivity and Quality Centre (APQC) is called the Process Classification Framework (PCF) [4]. In general, defining business processes must meet some certain criteria. PCF is a taxonomy of cross-functional business processes developed as a means to compare organizational performance both internally and inter organizations. In conducting these comparisons PCF provides a high-level process model which does not depend on the industrial models. This means that any type of industry model can use PCF [5]. PCF defines a framework divided into several domains to illustrate business processes in an organization.

The use of IT remains a challenge for SMEs. Many SME owners still imply that their companies have not fully utilized IT. Therefore, further research is needed to investigate IT that support business processes [6]. The most popular IT implementation in SMEs is social media. The development in social media is manifested by the existence of several social media applications that are widely used in Indonesia such as Instagram, Google+, and YouTube channels [7]. Based on [8], social media has 7 blocks of functionalities based on the grouping of social media functions including identity, conversation, sharing, presence, relationships, reputation, and groups. Users need to know about the functionality of each feature and domain that best fit the needs of the users in order to achieve the purpose of social media usage. Thus, the objectives of social media usage and their functionalities will be aligned in a relevant manner [9].

The use of social media in SMEs should be aligned with the needs of existing business processes in SMEs. Suitability between IT and the supported business processes can be measured using the Task-Technology Fit (TTF). In a study conducted by [10], social media was applied to improve the efficiency and effectiveness of supply chain management within the organization. Research conducted by [11] stated that the implementation of IT was intended to prove that the TTF, which affects the use of IT in an organization, can have an impact on the individual performances. After measuring the suitability of business processes with information technology, business process performance is measured.

Based on the above reviews, this study attempts to answer the following questions:

- RQ1: What are the aspects of social media functionality that can help in the business process?
- RQ2: How to measure the impact of social media functionality and alignment of business processes with the SMEs' Performance?

2. Related research

Research by [6] defines business processes of 66 SMEs in Italy using PCF. Questionnaires are circulating to the SMEs to collect data related to the use of IT in SMEs that can help the performance of business processes. The study found that two business processes that have the highest IT supporting capacity are product services and customer services.

Another study conducted by [12] investigated the impact of social media usage against the SMEs. This study emphasized on the factors that influence the use of Facebook, which will have impacts on financial and non-financial performances of SMEs. The research examined the influence of compatibility, cost-effectiveness, interactivity and trust in Facebook usage and its impact on organizational performances. Statistical analyses are applied on data collected through a survey to 259 SMEs in Malaysia. The results stated that the use of Facebook has greater influences on non-financial performances such as information search and customer service. Further research to measure

performance using the performance measurement model proposed by [13] is a study conducted by [14]. The research developed a method of measuring the performance of business processes that have been supported by the existence of IT using four indicators: cost, time, quality, and flexibility.

3. Literature review

3.1. Business process

BPM is a method, technique, and tool used to support the design, management, and analysis of operational business processes. The tools used to support the management of the operational process are called the Business Process Management System (BPMS). In addition, BPM also has BPM theories, standards and specifications. According to some researchers, BPM has a variety of criteria. One of the researchers who explained the life cycle of BPM in detail and relevant manner is [12]. According to [12] the life cycle of BPM has 6 phases:

a   Process Identification
    This phase defines the problems of business processes and solutions that are relevant to the problem. The output of this process is a new business process architecture.
b   Discovery Process
    At this phase, the current status of each relevant process was documented, usually in the form of the *as-is* process model.
c   Process Analysis
    This phase identifies problems related to *the as-is* process, and documents, and measures its performance. The output of this phase is the identification of impacts based on the most influential priorities of business processes.
d   Redesign Process
    This phase identifies changes to address existing problems. The output of this phase is the measurement of several candidate processes for the basis of the next phase.
e   Process Implementation
    This phase makes necessary changes to transition from the as-*is* process to the *to-be* process. Organizational change management refers to the arrangement of activities needed to change the way all participants work related to the process. Process automation, on the other hand, refers to the development and implementation of IT systems that support the process that will occur.
f   Monitoring and Control Processes
    After the redesign process runs, relevant data were collected and analysed to determine how well the process was being adjusted to the measurement of performance and performance targets. New problems can reappear in the same process or other processes, which requires continuous cycle repetition.

3.2. Process classification framework

PCF is a framework that allows organizations to define work processes in detail and to avoid redundancy [4]. The PCF framework was developed by the APQC organization, which consisted of several companies. The PCF framework has a general, and specific industrial process framework such as the product, health, government, and other industries. PCF has several domains that can be used to describe or illustrate business processes in a company/organization. There are 12 domains owned: Develop Vision and Strategy; Develop and Manage Products and Services; Market and Sell Products and Services; Deliver Physical Products; Deliver Services; Manage Customer Service; Develop and Manage Human Capital; Manage Information Technology (IT); Manage Financial Resources; Acquire, Construct, and Manage Assets; Manage Enterprise Risk, Compliance, Remediation, and Resiliency; Manage External Relationships and; Develop and Manage Business Capabilities. Because it is a generic framework, PCF can also be used to define the business process of SMEs.

3.3. Social media

With the advancement of IT, social networking sites like Facebook, Twitter, Instagram, and LinkedIn are available for users to interact with family, colleagues, and friends. As a result, social activity shifts from real things to virtual machines [15]. Behavioral conclusions of social media users can be obtained by gathering information from different sources and analyzing the information and, user behavior [16]. The analysis of social media behaviors is an important thing for business [17]. The company can then target customers who are actively interested in social media in related fields. Individual preferences can be identified by gathering information about user behavior patterns [18].

Honeycomb model depicted in Fig. 1 describes seven functional building blocks. This function block is not interrelated, nor does everything have to be available on a single social media. They are the constructs that allow us to understand how various levels of social media can be used according to their functions [8]. Within the block, there are 7 social media functionalities: identity, conversation, sharing, presence, relationship, reputation, and group.

Fig. 1. Honeycomb Model.

3.4. Task-Technology Fit (TTF)

In the field of Information System (IS), TTF has been considered as an important factor for IS Usage [19] and performance [20]. The TTF theory argues that Information Technology (IT) is very helpful for individual performance, only if the functionality provided by IT is suitable for individual tasks [21]. A number of studies have investigated the antecedents and consequences of TTF in various task and technological contexts. In particular, there are three groups of TTF antecedents proposed in the theoretical model [21], illustrated in Fig. 2.
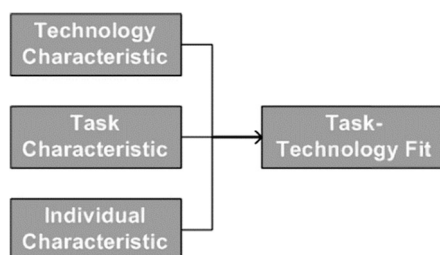

Fig. 2. Task-Technology Fit.

In this study, IT will be implemented in the form of social media as it appears to be the most accessible IT for SMEs. This technological need will be mapped to the business processes of SMEs. Based on this mapping parts of the business process that can be improved by the use of IT (social media) can be identified.

3.5. Measurement of business process performance

Performance measurement can also focus on a single business process, such as statistical process control, workflow-based monitoring or process performance measurement system processes [22,23]. The approach as seen in Fig. 3 taken in measuring business process performance is generally less holistic than Balanced Score Card. The existing BPM handbook [12] positioned time, cost, quality and flexibility as typical performance perspectives to measure business process performance.
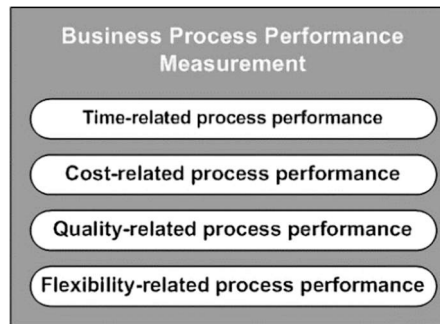

Business Process Performance Measurement

- Time-related process performance
- Cost-related process performance
- Quality-related process performance
- Flexibility-related process performance

Fig. 3. Business Process Performance Measurement.

4. Methodology

This study conducted a literature review to design the conceptual model regarding the use of social media in supporting SMEs business processes. The stages of research can be seen in Fig. 4. The study begins with problem formulation. In this stage, the researcher aims to find the existence of an association or influence of the use of IT on the performance of an organization. The IT investigated in this study is social media. The problem is formulated based on previous studies about the impact of social media usage on the business processes of an organization or the performance of the business process. After formulating the research, a literature review is conducted. First, the keywords that are used as a "search term" are determined. The search terms in this study are "Social Media, SMEs, Information Technology, Task-Technology Fit, Business Processes, and PCF". The search for previous literature was carried out on a database of scientific publications and displaying search results according to the "search term" used. However, not all studies that match the "search term" could be used as references.

GAP ANALYSIS — START — LITERATURE RESEARCH — CONCEPT ANALYSIS — CONCEPTUAL MODEL — FINISH; PROBLEM FORMULATION
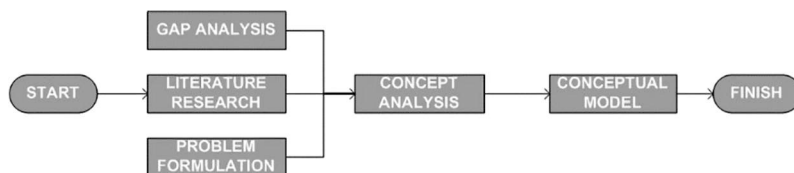
Fig. 4. Research Stages.

The required keywords were not simultaneously used in one search. The authors combined 2 keywords such as "Business Process AND PCF", then reviewed several papers that appear and chose which paper could be used as a reference. Similar processes are done using other keywords such as "Business Process AND Information Technology" or "Business Processes AND Social Media". Finally, the keywords "Business Process AND Social Media AND Task-Technology Fit", are used as search terms combined with "Business Process Performance". To analyze and select the papers, the authors set inclusion and exclusion criteria for the papers. Papers included are those that discuss Social Media in SMEs, or Information Technology that uses Social Media as its object, or the use of social media on the performance of SMEs.

The selection process resulted in 17 papers that are used as references in this research. From the paper that has been obtained, the main references to form the conceptual model were paper related to social media functionality [8], business processes using PCF [4] and information technology [6]. One of the selected references was in the form of books, which became the basis of Task-Technology Fit theory [21] and Business Process Performance theory [12] & [25]. The 17 papers can be classified into several categories, namely the business process category, information technology-social media & social media functionality, SMEs, business process performance measurement, Task-Technology Fit-Business Process-Information Technology.

The design of the conceptual model in this study begins with a literature review of the concepts of social media, business process management, and the suitability of the technology used. Based on the data obtained from the literature results, the data are then integrated and analyzed to develop a conceptual model of the suitability of information technology. In this conceptual model, various social media functionalities and management of business processes suitable for SMEs are identified as an indicator of the suitability of IT with the business processes. Indicators of suitability in using information technology are developed based on business process goals in business, user, and business rules. The purpose of this business process is to enable SMEs to focus on business processes in which the performance can be driven by social media to achieve improved business process performance in SMEs.

5. Findings

The results of the literature review and analysis related to social media research on SMEs, business processes and also the suitability of information technology applied to produce the conceptual model illustrated in Fig. 5.
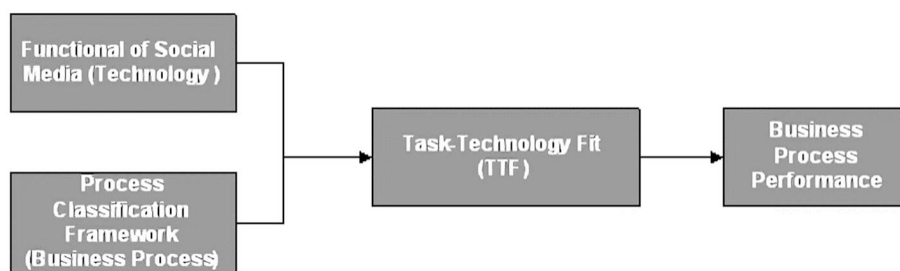

Fig. 5. The Conceptual Model related to Social Media Functionality, Business Processes, and Information Technology Conformity used in SMEs.

In general, this conceptual model is based on the principle of Task-Technology Fit proposed [21]. This principle emphasizes that IT implementation must be aligned with business processes. Organizational contexts include size, strategy, industry, market, business process objectives, and internal factors within the company. This principle is important since failure in implementing business process management in organizations is triggered by, one of which, the application of uniform business process management to all organizations and not paying attention to existing conditions [24]. Therefore, the implementation of business process management must be adapted to the conditions of each SME. This has been related to [13] who conducted research related to the use of social media which had an impact on financial and non-financial management in SMEs.

In the conceptual model that has been defined, social media functionality can be used for several functions that will link one account with another [8]. By using a function that can connect one account with another, this can be very useful for managers of the industrial sector, one of which is SMEs. In addition to using social media, SMEs business processes can be defined based on the Process Classification Framework (PCF). As in the research conducted [11], the business processes described based on PCF can be supported by the use of IT. The use of IT can improve SMEs performance if information technology is chosen according to the needs of its business processes. Social media is included in IT that can support all or several domains of business processes. For example, SMEs use social media to promote goods while, the purchase can be done directly in the offline store, the website, and e-commerce of the SMEs.

In paper [10] studied the use of social media used by a charity engaged in the food distribution for poor populations. Social media is applied to improve the efficiency and effectiveness of supply chain management within the

organization. The study focused on social media that is utilized to help integrate supply chain management systems, it can be measured the suitability of IT use in business processes that will be run by an organization. The function of social media is chosen according to its function which will later have a performance impact on an organization. Furthermore, there is also research conducted by [11] which stated that IT implementation aims to prove that TTFs affect the use of IT in an organization and it may impact individual performance. However, in the previous TTF study, there was no discussion on the suitability of social media usage and how it may impact the performance of SMEs business processes.

The models also show linkages between the TTF to business processes performance. The performance of a business process with and without social media support must be measured. This comparison will be done using business process performance measurement proposed by [12] and referred by [25] which has 4 assessment indicators: Cost, Time, Quality, and Flexibility. This is inspired by conducted [14] that focuses on the concept of measurable process performance. The concept of performance in the study focuses more on measuring business processes and software processes.

6. Conclusion

Based on the results of the conceptual model, there is an indication of the relationship between the application of information technology and business processes where the application of information technology can affect the performance of business processes, particularly in SMEs as the object of research. The primary focus of this article is on social media, which will influence several components of business processes. Social media functionality aligned with the business process will make business process performance more effective and efficient. But able to apply the same social media does not necessarily support the same portion of the business process in different SMEs. This is because every SMEs has different specifications and business processes. The interaction between the functionality of social media and business processes can generate the conformity of the information technology applied to SMEs. Thus, the use of information technology that is the focus of this research can contribute to improving the performance of SMEs.

7. Limitations and further research

This study has several limitations, namely, the results of the study are only conceptual models, the SMEs are described in general term and, the discussed social media are not defined specifically. Therefore, it is expected that this conceptual model can be investigated in further studies. The development of this research can use garment SMEs, this is because garment SMEs are one types of business that utilize social media in doing their business. The research can also refer to certain social media such as Facebook, Instagram, Line, and other social media. In addition to different types of SMEs and social media, further research may investigate the influence of social media functionality on the performance of SMEs business processes.

Acknowledgments

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