

Original Research Paper

# A Social Content Management Model based on the DART Model

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**Abstract:** Web 2.0 has increased the volume of unstructured content which gives rise to the need for a Social Content Management (SCM) model. A review of the literature reveals that research specific in SCM is broad and fragmented. It also highlights the need for a comprehensive SCM model. Due to the specific nature of social content, existing Enterprise Content Management (ECM) models are not directly amenable for managing social content. However, existing ECMs could be the basis on which the model could be built upon. Hence, this paper proposes a comprehensive SCM model that is suitable for researcher and practitioner, to assist organizations to manage the social content. In this study, the basis for a comprehensive SCM model could be obtained by drawing insights from the existing ECM models which consist of four elements: capture content and interaction; manage content and access; content analysis and reflexivity; and maintain content. In order to operationalize these elements and to make the model suitable for practical applications, the concept of value co-creation via the DART model is incorporated into the comprehensive SCM model. The proposed model is then validated by the experts.

**Keywords:** Enterprise Content Management, Social Content Management, Value Co-Creation, DART Model

## Introduction

Nowadays, information and content are valuable assets to the organization. Content is obtained from various sources such as structured and digital content, which, if well managed, could assist organizations in making decisions and help to innovate services. Organizations face the challenges in managing digital content since 80% of the content in the organizations are from unstructured digital content such as emails, documents, slide presentations and word files (De Kraker *et al.*, 2013; Herbst and vom Brocke, 2013; O'Callaghan and Smits, 2005; vom Brocke *et al.*, 2011). A study showed that the rate of unstructured content is increasing yearly (Alalwan and Weistroffer, 2013). Therefore, organizations need a method to manage unstructured digital content to ensure that the content is useful to the organizations. As such, Enterprise Content Management (ECM) is introduced to manage content in an organization including unstructured digital content. Based on past research, ECM is an integrated approach that involves strategy, tool, processes and skills that are required by organizations to manage content inclusive

digital content within the lifecycle of content (AIIM, 2016; Alalwan and Weistroffer, 2013; Herbst and vom Brocke, 2013; Munkvold *et al.*, 2006; O'Callaghan and Smits, 2005; Smith and McKeen, 2003).

The advent of Web 2.0, however, has caused the volume of unstructured content to increase, contributed largely by content from various social media channels (Sun *et al.*, 2015). Indeed, this lead for further organizational challenges in managing unstructured content where existing ECMs should be enhanced in order to encompass social content. This gives rise to Social Content Management (SCM), which is the latest generation of information management to enable management of content from social media interaction (Aladwani, 2014; Herbst and vom Brocke, 2013).

A review of the literature reveals that research specific in SCM is broad and fragmented. Seeing the importance of managing social content (Kilgour *et al.*, 2015; Sultan, 2013; Sun *et al.*, 2015; Villanueva *et al.*, 2015), it is thus timely that a comprehensive SCM model is developed (Aladwani, 2014). A comprehensive SCM model should include the elements that are deemed important for its success and

should be applicable in practical situations. As such, this article would elaborate on the elements of a comprehensive SCM and their relationship.

The following sections in this article are organized as follows; the 2nd section describes the literature review, which focuses on ECM, SCM, value co-creation and related works that contribute to a comprehensive SCM model. The 3rd section describes the results and analysis. The proposed comprehensive SCM model and the details are explained in the 4th section. The 5th section reports the evaluation of the proposed model by experts. Finally, the last section concludes and provides recommendations for further research.

## Literature Review

This section explains the reviews of current literature which consist of four subsections: Enterprise Content Management, Social Content Management, Value Co-Creation and Related Works.

### *Enterprise Content Management*

ECM has become a driver in content management in accordance with the increase of digital content in the organizations. Based on previous studies, the implementation of ECM enables organizations to enhance information sharing, collaboration and productivity (Alalwan and Weistroffer, 2012; Smith and McKeen, 2003; vom Brocke *et al.*, 2011). As such, the content obtained is more transparent, improve knowledge management in the organization, increasing the ability of communication and interaction as well as reduces the geographical divide.

Past literature explores the elements of effective ECM. Based on Smith and McKeen (2003), an effective ECM contains the following elements:

- a) Capability of capturing and collecting content
- b) Managing content in an organized manner, including providing access
- c) Analysing content to facilitate decision making
- d) Maintaining the latest and up-to-date content

Effective ECM proposed by Smith and McKeen (2003) includes the technology, tool and methods that are suitable with the complete content lifecycle, which are capture, manage, store, preserve and deliver content. Besides Smith and McKeen (2003), there is consensus among other researchers which also define ECM in the context of ECM processes within the content lifecycle (Herbst and vom Brocke, 2013; Munkvold *et al.*, 2006; O'Callaghan and Smits, 2005). In order to ensure ECM could effectively support the organization's needs, O'Callaghan and Smits (2005) has defined a strategy for ECM which comprises of content management; reusable and available content; and collaborative content management process.

The evolution of Web 2.0 especially the use of social media has put challenges on existing ECM. These changes are not only related to the type of content which is a social content as opposed to enterprise content, but also the process by which this content is generated and shared (Moore, 2011). The existing ECM could be enhanced to include the management of unstructured content from social media interaction. Hence, SCM was introduced to manage the content from social interaction as explained in the next subsection.

### *Social Content Management*

According to Aladwani (2014), SCM could be defined as "the deliberate and dynamic management of all aspects of internal and external social content in a business, including data, technologies, processes, human and organizational elements in order to create and maintain long term value for the business". As stated in the introduction, review of the literature reveals that research specific in SCM is broad and fragmented. One study (Aladwani, 2014) elaborates on a process oriented view of SCM framework and one study (Herbst and vom Brocke, 2013) explained on the managers' perceptions of the challenges and potentials of SCM systems in internal organization; nevertheless, it did not describe the SCM in details. Studies from Miles (2011) and Moore (2011) show the evolution of systems of record which reflecting the ECM to systems of engagement, reflecting the SCM. Based on the previous research, there is a need for detail study on comprehensive SCM in order to assist organization to deal with the social content (Aladwani, 2014; Herbst and vom Brocke, 2013).

Due to limited study in SCM, elements of effective ECM could be a reference to develop a comprehensive SCM. For the purpose of this study, effective ECM could be referred as a need for capturing content; managing content and access; process and analyse content to facilitate decision making; and maintain an up-to-date, available and reusable content.

However, elements of effective ECM are organizational lead, which concern on the process and value within an organization only. In the environment of systems of engagement, involvement of social media interaction needs the collaboration and content co-created via interaction between organizations and customers or between customers. Thus, a value co-creation concept could be incorporated in the development of comprehensive SCM. This creates a win-win situation not only to the organization, but also to the customer. As such, value co-creation is referred to as a new dimension to develop a comprehensive SCM model as described in the next subsection.

### Value Co-Creation

Value is very important to SCM, which is the result of collaboration between the organization and customer. However, previous studies in ECM did not emphasize on value for both parties. Value that produces from collaboration between organizations and customer only focuses on value to the organization (Smith and McKeen, 2003; O’Callaghan and Smits, 2005). Based on past research, value for both parties could be obtained from the concept of value co-creation that emphasis on the needs of customer and organization as well as customer experience in co-creating the content (Brian and Leavy, 2014; Prahalad and Ramaswamy, 2004a; 2004b; Ramaswamy and Gouillart, 2010; Ramaswamy and Ozcan, 2013; Vargo and Lusch, 2004; 2008; 2016). It is supported by Mohamed Nazul (2012) that value co-creation focuses on the value obtained by both parties. Apparently, most researchers accentuate the importance of value co-creation in creating value to organization and customer.

In this article, the DART model of value co-creation is used as a basis to ensure that the value co-creation is embedded in a comprehensive SCM model. This model was introduced by Prahalad and Ramaswamy (2004b). It was updated by Ramaswamy and Ozcan (2014) that improve the R’s building block, from Risk to Reflexivity. The DART model is one of the earliest models that highlight the concept of value co-creation and often used in general, in order to consider the value co-creation in developing service or product.

The DART model comprises of four key building blocks, which are Dialogue, Access, Reflexivity and Transparency. Combining different block in the DART model lead to new capabilities (Prahalad and Ramaswamy, 2004b). All blocks in the DART model are interconnected to produce the value co-creation. Table 1 explained the key building blocks of the DART model with the justification.

### Related Works

This study combines the related works in SCM and social media interaction model. Therefore, this section elaborates the related work on SCM model, namely the

6As Model of SCM by Aladwani (2014). Based on previous study, interaction with participating stakeholder is very important in capturing and collecting content which is one of the elements of effective ECM (Smith and McKeen, 2003). Based on Prahalad and Ramaswamy (2004b), interaction with stakeholders could create loyal community. As such, social interaction model, namely Megaphone, Magnet and Monitor (3-M) Framework by Gallagher and Ransbotham (2010) is also reviewed in the context of interaction with people.

### The 6As Model of Social Content Management (Aladwani, 2014)

The 6As Model of SCM aims to assist business managers to deal with social media resources effectively. This high-level process-oriented view framework consists of six components, namely activity sources, abridgements, activity context, affordances, ascertained boundaries and actors as stated in Table 2.

Generally, this model emphasizes on interaction of process within SCM. This model gives attention on the process oriented view, which suits with the aim of the model, to help the manager to deal with the social content. However, based on Munkvold *et al.* (2006) and O’Callaghan and Smits (2005), interaction should include interaction with people, tool, content and process. Therefore, besides interaction with the process, there is a need to understand other interactions.

### Megaphone, Magnet and Monitor (3-M) Framework (Gallaugher and Ransbotham, 2010)

Basically, organization and customer interactions focused on two direct relationships (organization-to-customer and customer-to-organization) and one indirect relationship (customer-to-customer). In order to illustrate the concept, 3-M Framework was introduced to elaborate on interaction, especially on customer dialogue management in the emerging social media environment.

3-M Framework contains three components, namely megaphone, magnet and monitor as stated in Table 3. This model explains on “know how” and “know what” especially on the interaction of people in the context of customer dialogue management. However, there is a need to understand the other interactions besides interaction of people.

Table 1. Justification on key building blocks of the DART model

Building block	Justification
Dialogue (D)	Dialogue, means interaction and engagement, is a basic process in getting the value co-creation from participating stakeholder, which are organization and customer. The interactive and conducive interaction process occurs across the stakeholder. Besides assemblage of stakeholder (namely people), interaction should involve interaction with interfaces, process and artefacts, which designed in creating value together (Brian and Leavy, 2014)
Access (A)	Access to content and related tool
Reflexivity (R)	The development process of innovation and learning generated to increase the value
Transparency (T)	Provision of trust between the customer and the organization could attract more customers. Transparency could facilitate interaction between organization and customer

Source: (Prahalad and Ramaswamy, 2004b; Ramaswamy and Ozcan, 2013; 2014; 2015)

Table 2. The 6As model

Components	Explanation
Activity source	Source generated from social media and internet-based social services
Abridgement	Dealing with content in different ways. Social media content is captured via tool for data extraction. This stored social content is analysed using tools such as data mining and presented in understandable form such as data visualization. This process helps managers in capturing social content and enhance control over content to speed up the decision-making process
Activity content	Three major action, namely orchestration, enrichment and suffusion for occupying relevant social content. It is followed by embedding it into organizational processes and take advantage on social content
Affordance	The impact of social media on customer engagement, act as a risk management tool, a game changer for innovation and the use of social content to gain value for business
Ascertained boundaries	The need of new legislation, privacy issues and lack of basic IT-related abilities that could influence business processes such as decisions related to investment in information technology
Actors	New types of actors that involve in social interaction

Source: (Aladwani, 2014)

Table 3. 3-M framework

Components	Explanation
Megaphone	Important flows of communication from organizations-to-customers, to enable organizations to convey message and approach customers
Magnet	Flows of communication from customers-to-organizations which customers could provide feedback using social media on products or services
Monitor	Communication flows from customers-to-customers, where organizations monitor post from public interaction to get useful feedback

Source: (Gallaughar and Ransbotham, 2010)

Table 4. Effective ECM elements mapping to the concept of value co-creation

Effective ECM element	Value co-creation	Comprehensive SCM elements	Reference
<ul style="list-style-type: none"> <li>• Capturing content</li> </ul>	<ul style="list-style-type: none"> <li>• Dialogue and interaction with people</li> <li>• Collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Capture content and interaction (combination of dialogue and collaboration)</li> </ul>	(Aladwani, 2014)
<ul style="list-style-type: none"> <li>• Manage social content</li> <li>• Access</li> </ul>	<ul style="list-style-type: none"> <li>• Dialogue and interaction with interface and artefact (tool and content)</li> <li>• Platform</li> <li>• Access</li> <li>• Integration</li> </ul>	<ul style="list-style-type: none"> <li>• Manage content (including platform) and access (Sun <i>et al.</i>, 2015)</li> <li>(Vargo and Lusch, 2004; 2008; 2016)</li> </ul>	(Pralad and Ramaswamy, 2004a; 2004b) (Ramaswamy and Ozcan, 2013) (Smith and McKeen, 2003)
<ul style="list-style-type: none"> <li>• Process</li> <li>• Content analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Dialogue and interaction with process</li> <li>• Reflexivity</li> </ul>	<ul style="list-style-type: none"> <li>• Content analysis (including process) and reflexivity</li> </ul>	
<ul style="list-style-type: none"> <li>• Maintain content                             <ul style="list-style-type: none"> <li>o Up-to-date</li> <li>o Reusable</li> <li>o Available</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Dialogue and interaction with artefact (content)</li> <li>• Transparency</li> </ul>	<ul style="list-style-type: none"> <li>• Maintain content</li> </ul>	

Table 5. Factors related to element of comprehensive SCM

Element of comprehensive SCM mapping to value co-creation	Factors	Reference
Capture content and interaction (interaction with people)	Interaction and collaboration with stakeholder relates to e-collaboration between the organizational stakeholders, including customers and other partner in organizations	(Aladwani 2014) (Herbst and vom Brocke, 2013) (Munkvold <i>et al.</i> , 2006) (O'Callaghan and Smits, 2005)
Manage content and access (interaction with tool and content)	<ul style="list-style-type: none"> <li>• Platform, tool and repository</li> <li>• Content access</li> <li>• Index, classification and relationship between content</li> </ul>	(Smith and McKeen, 2003)
Content analysis and reflexivity (Interaction with process)	<ul style="list-style-type: none"> <li>• Content analysis</li> <li>• Content visualization</li> </ul>	
Maintain content (interaction with content)	<ul style="list-style-type: none"> <li>• Reusable</li> <li>• Up-to-date</li> <li>• Transparent</li> <li>• Available</li> </ul>	

## Result and Analysis

Mapping of the element of effective ECM and value co-creation that could lead to comprehensive SCM are as depicted in Table 4. To elaborate the study, factors that match with the element of comprehensive SCM also be identified. This would define the relationship between the elements to produce a comprehensive SCM model. Mapping of factors that relate to comprehensive SCM is depicted in Table 5.

## Proposed Comprehensive SCM Model

Based on the elements of effective ECM and the factors found in related works, elements of a comprehensive SCM model could be described as capability in capturing content, including element of interaction; managing social content systematically including access; analysing social content to assist decisions making; and maintaining the up-to-date, reusable, available and transparent content, which in turn enhance the performance of the organization. Apart from listing the elements, a comprehensive SCM model should also comprise of the relationship between the elements. This is to ensure that the SCM is comprehensive not only listing the elements, but also elaborates the relationship between the elements.

Combination of all the elements, Fig. 1 introduces a comprehensive SCM model comprises of the elements of comprehensive SCM mapping with value co-creation concept, with the adaptation of The 6As model of SCM and 3-M Framework. This model also describes the relationship between the elements. A comprehensive SCM model is formed and proposed based on four elements, listed as follows:

### *Element 1 Capture Content and Interaction*

First element, Capture Content and Interaction are focused on interaction with people. This element is adapted from the 3-M Framework, introduced by Gallagher and Ransbotham (2010) that emphasizes on interaction between focal organization, focal customer (the external user), other customer and other organization. Capturing content is closely related to interaction of stakeholder. Based on Vargo and Lusch (2004; 2008; 2016; Prahalad and Ramaswamy, 2004a; Munkvold *et al.*, 2006; Ransbotham *et al.*, 2014), the interaction should include multiple actors (internal and external stakeholder).

Hence, this model suggests focal organization to be divided into three segments namely policy maker, service provider and internal user. Policy maker is a person who sets the direction and innovates the services while service provider is a person who provides the services in managing tool and content. While, internal

user is a person who use the services to serve the focal customer, dealing direct and co-create the content with focal customer. By having social media, focal customer could influence the other customer from their feedback on services. Hence, the organization should monitor the interaction between the customers to maintain the credibility of the organization. This indirectly would increase the level of organization competitiveness with other organization.

### *Element 2 Manage Content and Access*

Second element, Manage Content and Access are focused on interaction with tool and content. Referring to Aladwani (2014), social content is captured via tool or platform. Due to the volume of data, the tool must be accessible via collaborative environment and content must be organized to support the data extraction and data analysis. The service provider should manage the tool and content to ensure the availability of tool and content. The relationship between the content is also a concern. Based on Smith and McKeen (2003), taxonomy and metadata are the key concept of organizing the content.

### *Element 3 Content Analysis and Reflexivity*

Third element, Content Analysis and Reflexivity are focused on interaction with process. This element is adapted from The 6As Model of SCM by Aladwani (2014). Data captured by the tool should be analysed in order to provide information and innovative solution to assist the policy maker to speed up the decision-making process. This is because not all content could be accounted for to assist the organization in making decision. In order to present the finding, data visualization should play a major role to ensure the content is presented properly and in an understandable way. Hence, this would provide business value, lead to transformation and facilitate in risk management. In other word, it would bring value to the organization in the context of innovating the services. All analyse content should be maintained accordingly.

### *Element 4 Maintain Content*

Final element, Maintain Content is focused on interaction with the analysed content. Content captured via tool and being analysed should be reusable, available, up-to-date and transparent. This would keep the interest of the customer in dealing with the organization in the form of customer engagement. This is supported by Herbst and vom Brocke (2013), that the customer always wants to be updated and served with available and transparent content. Thus, it would bring value to the customer in the context of customized services gain from the organization as well as having a customized service based on their own need. Besides

that, contents should also be reusable for other purpose. In the era of big data and open data, the content should have connected with each other in order to support agile

business model. This indirectly brings value to the organization in the context of hunting the content to provide valuable information.

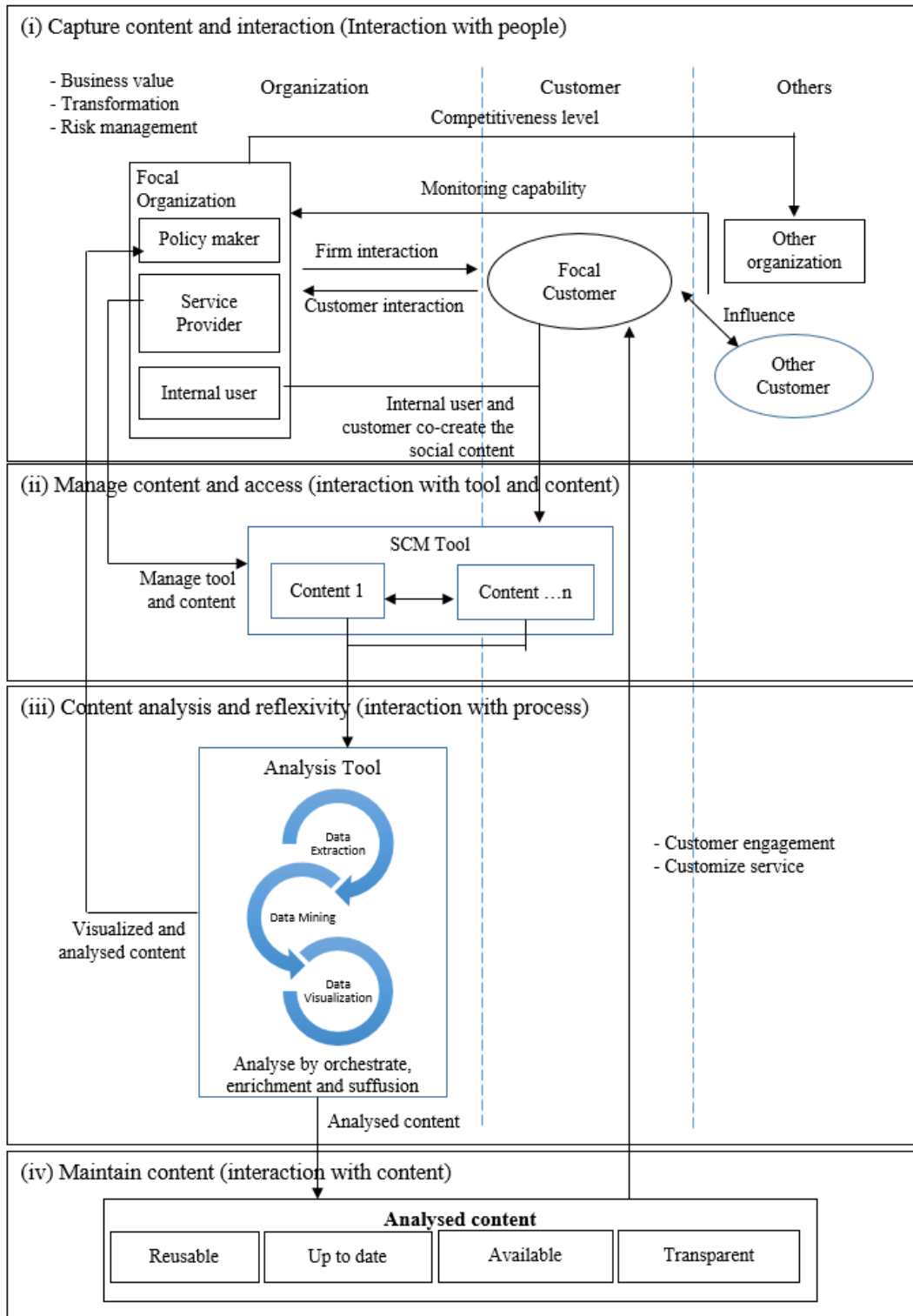


Fig. 1. Comprehensive SCM model based on the DART model

## Validating a Comprehensive SCM Model

This model is validated by ICT Experts in Information Management domain in Malaysia's Public Sector to determine the practicality of the model. ICT Expert (Information Management) is recognized by the Public Service Department of Malaysia as a person who

actively involves and experienced in the project that is related to information and content management across government agencies. Characteristic of ICT Experts who involve in the evaluation based on years of experience in the public sector, experience in related field and their roles in current organizations are as depicted in Table 6.

Table 6. ICT experts' characteristic

ICT expert and category	Years of experience in public sector	Experience related	Current position
ICT Expert 1 Top management	35 years	<ul style="list-style-type: none"> <li>ICT Manager in 5 Malaysia's government agencies</li> <li>ICT Consultant (Information Management) for 7 years</li> <li>ICT Principal Consultant (Strategies) for 3 years</li> <li>Project Director for more than 10 information management's projects</li> </ul>	ICT Principal Consultant (Strategies) in Malaysia's Public Sector
ICT Expert 2 Senior executive	25 years	<ul style="list-style-type: none"> <li>ICT Manager in 4 Malaysia's government agencies</li> <li>Team leader for more than 5 system development and information management's projects</li> </ul>	ICT Expert (Information Management) in Malaysia's Public Sector
ICT Expert 3 Junior Executive	11 years	<ul style="list-style-type: none"> <li>ICT Executive in 3 Malaysia's government agencies</li> <li>Team member for more than 5 strategic planning and information management's projects</li> </ul>	ICT Expert (Information Management) in Malaysia's Public Sector

Table 7. Summary of interview result

Theme	Result of interviews
Comprehensive SCM	<ul style="list-style-type: none"> <li>Comprehensive SCM includes:                             <ul style="list-style-type: none"> <li>√ Interaction with relevant stakeholders</li> <li>√ Platform, channel and appropriate tool</li> <li>√ Suitable process including, data analysis</li> <li>√ Conformity retention of content such as the latest content and transparency</li> </ul> </li> <li>Interaction is not only focusing on people, but also should include interaction with tool/platform and process</li> <li>Interaction with people should consider:                             <ul style="list-style-type: none"> <li>√ Service providers should concern on suitable technology and the ability to manage content</li> <li>√ Policy maker should use analysed content to produce innovated services</li> <li>√ Relationship between internal users and focal customer also need to be considered while using technology and co-create the content</li> <li>√ Communication customers-to-customers should be monitored to maintain the image of the organization</li> </ul> </li> <li>Interaction with tool and content should consider:                             <ul style="list-style-type: none"> <li>√ Content should be captured by the tool</li> <li>√ Analyse content should be maintained</li> <li>√ Analyse content should be informed to the focal customer to gain engagement</li> <li>√ Analyse content could offer customized services based on the customer's need</li> </ul> </li> <li>Interaction with process should consider:                             <ul style="list-style-type: none"> <li>√ Content should be analysed</li> </ul> </li> </ul>
Suitability of proposed model in public sector environment	<ul style="list-style-type: none"> <li>In the public sector, there is no specific model was referred in managing social content. Social content is managed through management meetings. For sensitive issues that resulting from social media interaction, it is managed via a complaint log</li> <li>Based on the elements proposed in this study, it was found that this model could be applied in public sector agencies to manage content from social interaction</li> </ul>
Value on social content management	<ul style="list-style-type: none"> <li>Value aspect of the content includes:                             <ul style="list-style-type: none"> <li>√ Value of services should be obtained by organization and customer</li> <li>√ Not all the data obtained from social media interaction could be taken in decision-making process. There is a need for analysing, further assessment and prioritization</li> </ul> </li> <li>Value to the customer includes:                             <ul style="list-style-type: none"> <li>√ A service based on specific requirement</li> <li>√ Transparency of content</li> </ul> </li> <li>Value to the organization includes:                             <ul style="list-style-type: none"> <li>√ Innovate the services tailored to the need of the customer</li> <li>√ Customer loyalty from customer engagement</li> </ul> </li> </ul>

The ICT Experts' opinion on the proposed model gathered based on their experience and insights of use in Malaysia's Public Sector. Firstly, semi-structured interviews were conducted and the interview sessions were taped and transcribed. Subsequently, internet communication tool, namely whatsapp was used for follow-up questions to the respondent. Finally, the interview results were analysed by the researcher.

From the interview session, all ICT Experts agree with the proposed model, including the elements, factors and relationships between the elements. The ICT Experts dictated that elements, namely: capture content and interaction; manage content and access; content analysis and reflexivity; and maintain content, are the elements towards a comprehensive SCM. These four elements could be adopted by the public sector agency to implement the SCM. Detailed explanations on interview results are depicted in Table 7.

## Conclusion

According to the importance of social media, organization should treat social content as a means to achieve important benefits and avoid decisional biases to more clearly perceive the informational needs. Due to this circumstance, this article introduces a comprehensive SCM model with adaption of the 6As Model of SCM and 3-M Framework. This model emphasizes on the elements of comprehensive SCM with the mapping of value co-creation's concept. The proposed model has four major elements, namely: capture content and interaction; manage content and access; content analysis and reflexivity; and maintain content. These elements are also linked by the mode of interaction, which are interaction with people, interaction with tool, interaction with content and interaction with process. Even this model elaborates the elements and their relationship, it does not mean the model is exhaustive. This article reported the validation process. However, there is a need for further validation to carry out. This model is a starting point that aims to help researcher and the practitioner to understand the relationship between elements that could facilitate the use of SCM.

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## Author's Contributions

Both the authors have equally contributed to this manuscript.

## Ethics

This article is original. The corresponding author confirms that all of the other authors have read and approved the manuscript and no ethical issues involved.

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