Construction Claims Management System Features and Requirements

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Abstract--- This study endeavors to reveal a lot of insight into the claim management (CM) in the construction industry projects. This paper provides an inclusive overview of the existing literature on construction CM. The objective of this paper is to provide the features and requirements for construction claims management system (CMS) to facilitate contractor claim submission by creating an "as complete as possible" history of a claim from its initiation to the settlement, which is supplemented by the relevant substantiating documents from different involved parties and in line with contract clauses requirements. The qualitative methodology has been selected for this paper as the topic requires a collection of sensitive information from experienced professional. A study conducted from 43 expertise in Malaysia and UAE in CM field working at contractor firm's category A in both of building and infrastructure projects. Feedback of this study confirmed that the most important feature for CMS was Tracking Claim Status 99.5%, the second was Supporting all types of document 96.3%, the third was Categorize Claim Documentation 93.0%, the fourth was Centralized Database 91.4%, and the lowest was Provide Templates for letters and reports 64.3%. Finally, the expert program facilitates dispute resolution by using alternative dispute resolution methods instead of going directly to arbitration or litigation.

Keyword: Claim Management, Contractor, Construction, Document Control, Information Technology.

I.   INTRODUCTION

Claims have been found to be the most cited fact in most of the construction projects (Ho et al., 2016). Claims become more common overall in the world. The claim preparation usually is not a straightforward task, as the claim submittal shall contain evidence, supported documents, impacted programs to substantiate the claim. In addition, there are procedures shall be followed as per contract within a certain time frame (Ali, 2015). This task may be made much more difficult and take too much time to prepare because of the absence of an effective document control system and capable staff to administer the entire task. Furthermore, the unavailability of the key person in the project especially the person who knows the history about a claim. In absence of a productive system for managing and controlling claims during the claims life cycle, disputing parties may wind up at the losing end, as challenging the claims by an opposing party who will face troubles to prove his right (Tan and Anumba, 2013).

Taking into account that about 70% to 80% from claims analyst's professional time digging into the history and documentation of the project (Hammad, 2001). This issue became bigger and bigger when project documentation is confined in an unstructured database (Hammad, 2001). It is more significant if the claims preparation is carried out after the project completion date. At such occasion, most of the contractor team would have left the project, the contractor will lose the history of the project as it will become fade or fuzzy. Accordingly, it will so difficult for new staff to understand fully what really happened during the project period.

One of the most important deliverables of the system envisaged is the feature that allows the useful knowledge about claims generated to be captured for reuse in current or future projects. In this regard, the shortcomings of the approach of just adopting an either purely information technology (IT) or non-IT solution have been discussed widely in many types of research (Rollett, 2003). Utilizing knowledge through IT alone is regularly difficult to accomplish as there are human, cultural and organizational issues for example reluctance to share knowledge which is not readily resolved by IT. On other hand, a purely non-IT method is not going to benefit from the faster, less expensive and broader source of data and means of communication to allow people to share knowledge offered by IT (Tan et al., 2011). Hence, many have advocated for a more balanced approach which comprises a combination of IT system and non-IT knowledge management technique in order to tap from the best of both worlds.

II.   Claims Management System Feature and Requirements

CMS shall contain some requirements and features which are essential for the program to facilitate. The concept adopted for the development of the system is to create an overview of the history of a claim from its initiation to the claim finalization, which is claim notice, particulars supported with relevant contemporary substantiating documents. To achieve this, the framework comprises an IT system called Claims Management system (CMS), to administer the workflow for claims and the claim's documentation. In addition, the following features are required for the end user to facilitate the program in an easy way which is not limited to friendly use, accessibility, consistency, security, and to be suitable for different types of contractor claims by providing well-designed forms (Tan

and Anumba, 2013). These are basic since the program is to be made accessible as an administration through the Web. The particular prerequisites recognized are as per the following:

i.Tracking Claim Status

The cycle of the claim life time begins with the inception of a claim and finishes with the final engineer determination of the claim. During claim life cycle time, there might be also a series of dispute, negotiations, and counterclaims as this is not a really straightforward process. It can be going forth and back many times between parties. Therefore, it is worth to use CMS to track the submission of claim documents, status, engineer claim termination, and the action shall be taken by the contractor (Tan et al., 2011).

ii.Raising Reminder

A reminder function is very essential to alert the contractor about the deadline for the required submittal (Tan and Anumba, 2013). Construction contract contains specific procedures and time frame for submission for processing the claims, including notices and particulars. If the contractor failed to submit his notice and particulars within the specified time frame, can lead in many cases to reject contractor's claim by the employer who can simply justify his rejection due to non-consciousness of the conditions or occasions.

iii.Centralized Database

Recording and managing claim in project basis directed to the kind of non-sharing information and documents and it became not easy to access to this information. Example of documents related to claim such as notices, letters, drawings, programs, reports, and others are in the possession of the contractor team. Moreover, these documents are saved in a non-organized way which makes it hard to contractor team to find and recognize their association with the claim. Subsequently, an incorporated database can give immediate access to every one of the information and data about any claim of any undertaking carried on by the organization through the intranet.

iv.Contractual support

Once the claim event took place and the contractor became aware of a claim, then the contractor can be able to start expressing his claim. The contractor shall submit a well-structured claim based on the contractual basis. Many of claims rejected because of no contractual base supporting these claims. Based on that, the contractor shall be familiar with contract clauses to give contractual support for his claim.

v.Templates

It is important to establish templates for claim submittal in any format such as Microsoft Word, which is implemented in certain steps and format, for the purpose of preparation of construction claims for different projects. These templates will improve the efficiency of claim team by using a verity of draft contractual letters and the submittal of claim particulars which will also save time comparing to do the same from scratch. Moreover, it will be useful for junior staff and the staff with less experience (Tan et al., 2011).

vi.Online claims transmittal

The transmittal of claims should be operated online on the web, which will enhance the effectiveness of the general procedure and control pay off because of expanded straightforwardness. With this quality, the status of a claim and termination of the Engineers with regards to the claims should be made visible to everyone including the employer (Tan and Anumba, 2013).

vii.Categorize Claim Documentation

The design of the system has to be able to categorize the different type of claim contemporary records. It is a very essential feature of the program to differentiate between entering different types of information or claim are made available. The system may be able to scan the documents and then upload so that it can oblige as a centralized system for the document's access related to claim.

viii. Combining a Number of Claims Into One

The engineer may be asked the contractor to combine a number of different claims that occurred during the same duration into a single claim. Consequently, the program must be able to serve this in an efficient way (Tan et al.,2011).

ix. Customization

One of the problems that face any system is the adaptive to customization issue when it can be automatically and adjust itself to new conditions of interaction with users. Adaptive systems should consider company and user profiles, the user's capacities and following company process.

x.Friendly User

The system should be a friendly user using a simple user interface for recording and retrieving the documents related to the claims. This will reduce the workload of the claiming team by allowing the clerk/secretary to enter the contemporary records into the system instead of doing it themselves.

III. Survey in Construction Claims Management System Requirements

A qualitative study with semi-structured interviews conducted between Malaysia and UAE for 43 expertise in construction claim field working on contractor firm's category A in both of building and infrastructure projects, the respondent's experiences with regard to a number of relevant functions. As shown in Table 1, the highest average of years' experience is on planning (over than 18 years), then experience on claims preparation (over 16 years) then experience on site management (over 12 years). This is reflecting the fact that the largest category of respondents was made up of planners, claim specialists and site management by profession.

Also, 86% of the respondents' dealt with more than 30 numbers of claims in average. This percentage indicate that they good experience in practice construction claim in their professional life

Table 1: Experience of Respondents

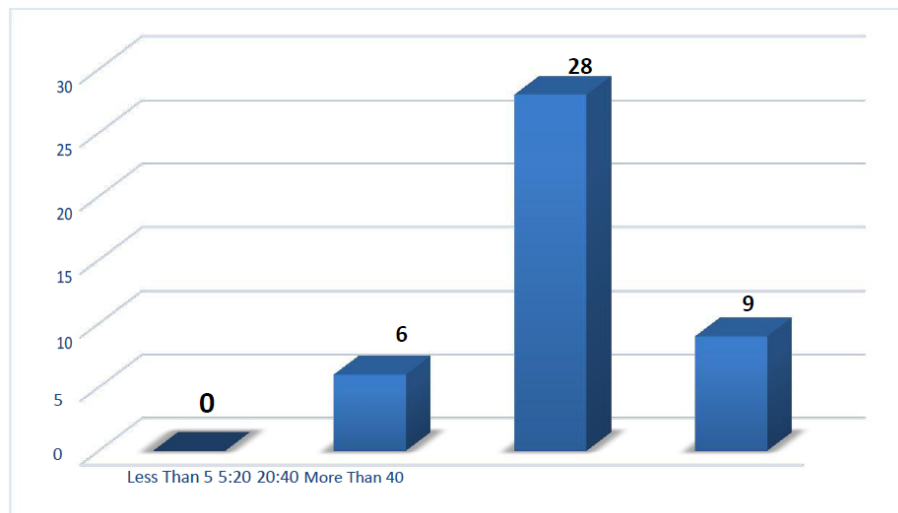| Experience of Respondents	<5	5:10	11:20	21:30	>30	Mean Years
Planning	0	0	30	13	0	18.5
Site Management	9	9	20	5	0	12.3
Quantity Survey	39	4	0	0	0	3.0
Claim preparation	0	5	31	7	0	16.2
Contract Management	24	6	10	4	0	6.0

Figure 1: Number of claims did Interviewees deal with.

Interviewees were asked to rank construction claims management system features, on a 5-point Likert scale to evaluate the level of importance for each feature (1 for "not important" and 5 for "very important").

Table 2: Construction Claims Management System Features Rank

Feature	Frequently	Rank
Tracking Claim Status	99.5%	1
Raising Reminder	83.7%	6
Centralized Database	93.0%	3
Online Claims Transmittal	63.7%	8
Provide Templates for letters and reports	64.7%	7
Categorize Claim Documentation	89.8%	4
Combining a Number of Claims into One	34.4%	11
Customization based on company profile	58.6%	10
Friendly Use	88.8%	5
Supporting all types of document	96.3%	2
No software needs to be installed	60.9%	9

The results, shown in Table 2, indicate that there was strong consensus among contractors and consultants in their rankings (W= 0.69) and this was statistically significant at 95% confidence level It demonstrates that the "Tracking Claim Status" ranked first followed by "Supporting all types of document" and "Categorize Claim Documentation", while "Combining a Number of Claims into One" comes at the bottom followed by "Provide Templates for letters and reports" and "No software needs to be installed".

Conclusion

This paper proposes features required to establish construction claim management. The feedback was collected from the survey conducted among 14 expertise in construction claim management. It attempts to address some of the feature required to facilitate claimer works claims such as the management of the processes, relevant documents, and preserving the knowledge to ensure that similar mistakes made will not be repeated. It consists of a claims transaction system for managing the workflow and the documentation to capture the knowledge generated by the claim.

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