

Improving Contract Administration: Information System Approach on Legal Information

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Abstract

An effective contract administration requires proper use of the legal information. However, the information is unstructured and poorly drafted, which caused poor understanding and it may lead to a dispute. Therefore, the paper aims to identify means of enhancing the understanding and appreciation of legal information from the contract documents; and, to develop a template of database system that incorporated the proposed means for improving the practice of contract administration. The template received positive feedback. It is concluded the information system approach on legal information is novel in terms of the proper extraction and use of the information for contract administration.

Key words: Information system, Contract administration, Legal information, Construction

1. Introduction

Contract documents consist of letter of award, form of contract (conditions), bill of quantities, drawings, specifications, instructions to tenderers, and other documents expressly incorporated into the contract. The required information, such as legal expectations and obligations revolve around pre-contract (tendering) stage, construction stage and post-contract stage. All these information are crucial to define the contracting parties' roles and responsibilities. However, contractual related differences between the parties are one of root causes for construction disputes [1-6]. It could be traced to fragmented and adversarial in nature of construction industry [5, 7], complexity of the project [8] or the poor understanding and appreciation on legal information [9-12]. The scope of this paper focuses on the proper use of legal information instead of looking at means of collaboration or contract model to address the fragmentation and complexity issues.

Therefore, the objectives of this paper are (a) to identify means of enhancing the understanding and appreciation of legal information for the contracting parties, and (b) to develop a conceptual model for improving contract administration. The model would highlight how the legal information could be properly stored, managed and retrieved in organizations. The structure of this paper starts with the review on legal information, identification of means to improve the problems on legal information, and subsequently, development of the template. Discussion and conclusion would be drawn at the end of the paper.

2. Problem on Legal Information

Most of the construction projects are executed through contracts which are generally not easy to comprehend even by professionals [13]. It is because the conditions of contracts become more complicated as to the increasing in size and complexity in nature of projects. The contents of contract documents need to be examined and organized properly, especially the all the legal information required for performing the project.

In general, the legal information are still in traditional format and unstructured [14]. Construction contracts or contract forms are among the most important legal documents of a project. The legal information within these documents describe the contracting parties' obligations in and expectations of the project, where construction processes, disputes and their resolutions are taken into account [15]. There is vast legal information that needs to be understood and managed properly since conflicts regarding contractual matters are inevitable in the construction industry [12]. However, interpretation and understanding problems are quite common for the legal information. The interpretation error and misunderstanding of construction contracts can be traced to the poor drafting of contract clauses, such as use of passive voice, negative phrases, ambiguity of terms, legal jargon and so on [9-11], which results in disagreements between the contracting parties on their obligations and expectations.

Worst still, the legal information is only to be referred when problems have occurred via searching the contract documents or provisions of the project. The practitioners are lack of contract awareness, especially at the construction site [16, 17]. The lack of contract awareness could lead to serious consequences as to poor documentation management and failed claim management. The claimant would lose of his/her rights due to improper documentation. This is quite common as to recent study, which shows most of the construction projects had no organized means on contractual claim matters [18]. As a result, prevention is the best means and this could be achieved through the appreciation and proper use legal information to regulate the project.

3. Means for Contract Administration on Legal Information

Two main issues were encountered by the industry regarding the proper use of legal information, namely, the poor drafting and interpretation problems; and the poor appreciation of legal information by the practitioners at construction site. These issues are correlated and need to be addressed accordingly to improve the contract administration's practices for dispute prevention or resolution.

To first issue, two aspects need to be considered, such as re-structuring language use and organization of the contents. The re-structuring language use in contracts could refer to Plain English principles. This concept is well accepted for construction related projects [12]. Twelve guidelines could be applied to clarify the language structure such as:

1. Shorten the sentence for ease of reading to average 15–20 words
2. Reduce the unnecessary words to keep it as short as possible if more than 20 words in a sentence
3. Use vertical list to break up complicated text
4. Avoid too many cross-references between clauses
5. Use positive style rather than negative style
6. Use everyday words and grammar and only include legal terms where it has to Use the active voice instead of passive voice
7. Use verbs instead of noun phrases
8. Use language of obligation correctly: avoid using “shall”, but still using it to express party’s obligation
9. Eliminate the repetition or redundancy of words
10. Put accurate punctuation in a “long” sentence
11. Use illustrative examples or flow chart in treating procedures as processes

Next, the clarified contents or legal information need to be organized into a proper format and classification for ease of reference. The principle of work breakdown structure (WBS) should be considered for the classification since this principle has been applied and established in construction industry. The principles of WBS are to demonstrate the work elements in a hierarchy structure for the ease of understanding, communication and management. It provides a basis for project planning as well as risk management [19]. The legal information could be classified according to the stages that involved in construction projects. The first stage should be pre-construction, pre-contract or tendering stage. After signing the contract or agreement, it should be construction stage and the last stage is post-construction or maintenance stage depending on the roles and scope of jobs required under the contract. Subsequently, each stage could be decomposed into specific project elements for better management and control. Therefore, the contractual issues in this research are organized according to three main stages after reference to literature review, which could be modified or improved and not the exhaustive list, for instance:

- Pre-contract award stage: *estimating and pricing; design information; insurances; performance bond submission; site possession; tender documentation and requirements; work programme, etc.*
- Construction or commencement of work stage: *accessing to site; compensation/loss and expenses; contractual variations; default on notice; delay and extension of time; discrepancy and inconsistency of information; fluctuation of price; interference/problem by subcontractors and suppliers; interference/problem by professionals; interim payment; partial possession; period of honouring certificates; postponement or suspension of work; practical completion; quality of workmanship; set off by employer; site and nature of work; standard and quality of material; statutory obligations; supply difficulties; testing and inspection; valuation and measurement (work done); weather, etc.*
- Post-commencement stage: *defects; defect liability period; determination; dispute resolution; final account and certificate; liquidated damages; outstanding claim and set off; retention monies or fund; unresolved variations, etc.*

The activities within the different stages above are arranged according to alphabetical order. Subsequently, the activities will be sub-divided into more specific issues to enable users to easily locate and obtain the information needed.

On the other hand, the poor appreciation of legal information by the practitioners needs to be addressed subsequently. An effective tool is required with the assistance of information system. Data warehouse is appropriate for managing the legal information. It is an analytical database that efficiently collects, organizes, and stores all relevant data in support of management decision [20, 21]. It serves as a read-only database created by combining data from multiple databases for purposes of analysis [22]. This approach of data storage provides a useful guide in making decisions; especially when a centralized system has been set up for a better accessibility of the legal information at the construction site [23]. However, the research and application on data warehousing are still new and not fully developed in information science. Even though the technology has not completely addressed the full scope of business intelligence, it is worth and vital to further develop the data warehousing technology for certain applications. Eventually, it could provide an important platform for on-line analytical processing at the text level for the interactive analysis of multidimensional documents of varying granularity, by facilitating effective text mining and integrating documents into a business intelligence infrastructure [24]. It provides a means of searching and targeting specific information in a simple and organized way.

4. Information System Approach

In general, the usage of information system is still very low to support organization's function in construction projects. The introduction of information system is current business trend for construction industry [25]. In this legal information context, the transfer of knowledge and information is an important aspect of the information system [26, 27]. The fundamental of information system is to have a collaboration framework to facilitate and transfer the legal information. Therefore, a template was developed based on data warehousing. The content of the database structure has also considered 5W1H principles into the template development [28]. The template has also incorporated Plain English guidelines and WBS into the contents development. The overall process was illustrated in Fig. 1.

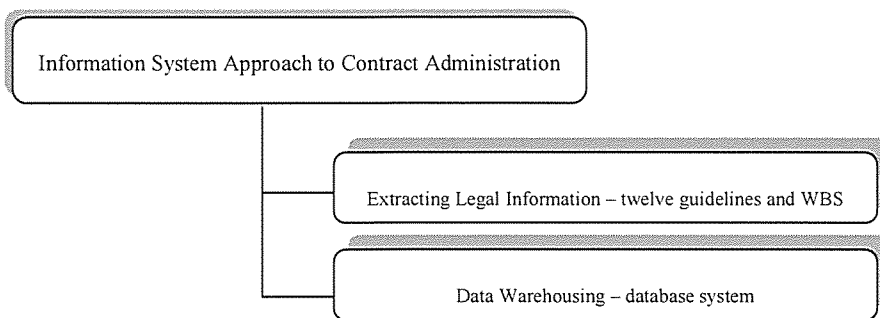


Fig. 1. Overall process

Subsequently, the developments of the template need to be carried out in proper manner as to construction practice. Firstly, the project characteristics need to be categorized for the ease of reference, such as project type, contract type, standard form, location, and other related characteristics. Next, the legal information needs to be organized into stages, from tendering stage until post-construction stage and breaks down into smaller elements or issues. Subsequently, the legal information that captured from contract documents or other relevant sources would be stored in the database system as a read-only analytical tool. The other relevant sources could be derived from court cases or established legal principles as well as previous experiences on the related issue shared by the organization's top-management. As a result, a specific issue, namely validity of variations was demonstrated in the template as illustrated in Fig. 2. This is the most problematic issue, namely variations. It was allocated in construction stage and under the sub-element/issue of contractual variations. From the contractual variations, it could be further broken down into few sub-sections. For example, the validity of variations could have eight more sub-sections for its legal information on definition and explanation.

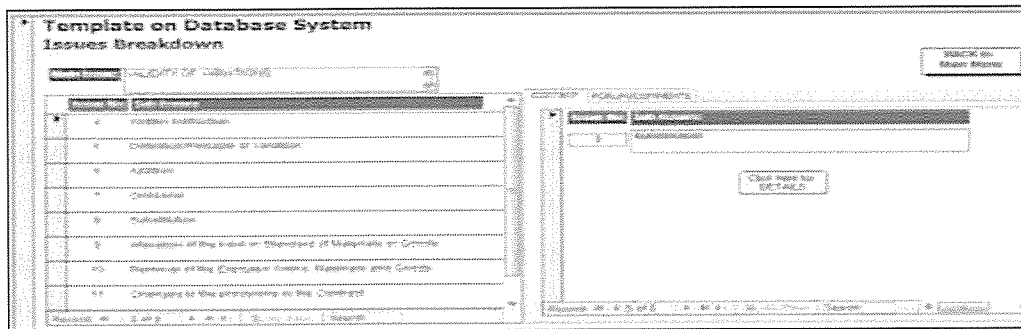


Fig. 2. Breakdown of a specific issue

By looking into the details of item “substitution”, it would pop up the complete legal information as illustrated in Fig. 3.

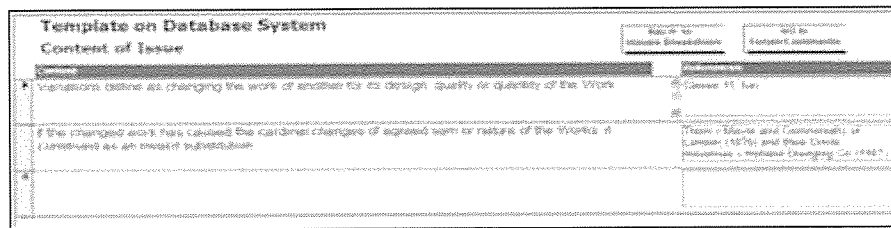


Fig.3. Legal information of a specific issue

The legal information consists of contract provision from the standard form of contract. It also could be derived legal principles regarding to that issue. Eventually, the template was presented and explained by the author to a well-known cost and contract consultant firm. It was held as an in-house seminar that accredited by the local professional body. The template received 74.1% out of 100% satisfaction score for its overall performance from the sixteen professionals of the firm. The score was rated according to clarity, practicality, functionality and coverage of the template. It shows that the template is accepted and satisfied by the professional.

5. Discussion

The approaches on Plain English, WBS and information system has successfully incorporated for contract administration through the template of database system. The template demonstrates an organized and structured type of storing system for legal information, which aims to have a better retrieval of information and data during the process of contract administration. The positive feedback from the industry could be traced to successful information seeking of the template, which the information could be used by the practitioners whenever they need it. This is mainly

contributed by the incorporation of information technology and certain features in the database system. The key features of the template are simplified language structure for the legal information, clear sequencing and breakdown of the issues and user-friendly tools and interface form Microsoft Access. The combination of these features is novel and able to render a useful reference for future practice of contract administration compared to conventional practice of using a whole bunch of complicated and unstructured contract documents for administration.

It is not an easy task to transform the conventional practices of contract administration, particularly on legal information. Certain limitations or issues need to be considered in this scenario. First, adequate knowledge-level of linguistic and law is required to simplify and restructure the poor language structure of the legal information. It is because Plain English has some constraints, which could deviate from the original or intended legal interpretations or implications that developed from laws toward the roles and responsibilities of the contracting parties, such as practical completion, liquidated damages, 'shall' and other related legal terms and phrases. Besides, a proper or accurate interpretation and understanding as to the legal information is a must as a pre-requisite requirement before restructuring the language structure. On top of that, additional or other relevant sources for legal information need to be well-referred as to different legal constitution from civil law (codified law) or common law. Therefore, it is necessary for the top-management personnel or senior managers who should have a proper trained of legal background to manage/develop the information system. It could ensure the more reliable and appropriateness of legal information that being stored into the system.

In addition, the WBS method enables to convert a complex process of construction projects into an organized elementary process according to hierarchical decomposition. The process of breakdown needs to be carried out based on the usual working practices in the industry. The type of procurement systems plays a significant role. The template was designed to suit for the traditional procurement system, which usually involving design-bid-build processes in a lump sum/fixed price contract. Different procurement systems would have different project-delivery methods as to the contract strategies used for the acquisition of goods or services involving the employer and the contractor. As a result, the project characteristics need to be considered in order to plan and define the tasks and scope of the project, which the organized subdivision of framework would be designed and incorporated accordingly for the database system.

Besides, the aim of this information system is to ensure the accurate and useful legal information is always available at the right time in the right format to the right person. Data

warehousing is an appropriate method for developing the database system. The read-only analytical information could be referred by the right people who locate at site or office under the intranet mode. The better and more comprehensive features of development tool could be applied for the database system, such as Oracle, SQL Server and the like. Nevertheless, Microsoft Access is capable to perform and apply the principles of data warehousing into the database system for the proper use and retrieve of legal information in the organisation. The Boolean search tool that built-in from Microsoft Access could further assist the end-users in terms of information retrieval since the language structures are simplified and clearer. Apart from that, the template is developed from the contract documents, which after the project was awarded by the employer. This paper recommends that the future research could look at the perspective of having a full paper-less process of contract administration from the beginning until the end of the project in a greater database system such as under the internet web-based connection or decision support system [29]. Only some important agreements or documents are in the paper form. Then, the legal information would be organized and communicated easily for the contracting parties, especially for the changes on contract documents. As a result, all the contractual liabilities and obligations could be delivered effectively to the parties; thereby the database system helps in dispute prevention or even subsequent dispute resolution for any disagreements because all the records and information were stored and easily to be retrieved and referred accordingly.

Overall, the main concerns of the information system relate to the development of the database system such as, requirements on the legal and linguistic knowledge and legal implications or wrong organization toward the legal information. It could lead to incorrect retrieval of information in the database system and result into more differences and problems between the contracting parties. Thus, no matter how great is the set-up of information system, it is bound to fail its purpose once the contents of the system deliver the inaccurate or wrong information.

6. Conclusion

The paper has addressed the convention manner of contract administration by restructuring and reorganizing the legal information into a more understandable and accessible approach using Plain English approach and WBS. Subsequently, a template of information system has developed to incorporate the identified means of enhancing the understanding and appreciation of legal information. The information system integrates a database system for the template development using Microsoft Access due to its widespread availability and user-friendly tools. The template

was tested and evaluated by sixteen professionals from a consultant firm and received a positive feedback toward the overall performance of the system. In other words, the information system approach on legal information is well-accepted by the practitioners for their contract administration. However, the acceptance by the industry is merely based on the template, which the contents were clarified and organized from contract documents. The complete system is necessary and this serves as a limitation for future research and development. Nevertheless, the template of the database system has developed and discussed in a generic manner for all the related research on legal information. It renders a useful reference for future advanced project management, particularly for contract administration.

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