ANALYSIS OF SUCCESS FACTORS IN CONSTRUCTION IT CONVERGENCE

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ABSTRACT: Construction-IT convergence is necessary considering the challenges faced with the construction industry such as reduction of carbon bi-products and energy saving. To promote the convergence, having a proper business model for bringing the best services to its clients is very important. This study aims to present an Evaluation Index, as well as its process, for construction IT convergence projects, which can be achieved by analyzing past project cases to figure out key success factors, with weights of those factors determined with the case study. The research outcome will be used for evaluating construction IT business models, in order to predict their success.

Keywords: *Construction-IT, Convergence, Evaluation Model, Key Success Factors*

1. INTRODUCTION

The challenges facing the construction industry include the reduction of carbon bi-products and the implementation of energy saving application in governments and enterprises. For these challenges, a convergence of IT and construction is underway with the expectations of increasing new technology development within the construction industry. Construction is the single most important domestic industry, but its competitiveness is very low in the world market. Thus, the convergence of construction engineering technology and IT is required. Accordingly, a new paradigm is needed in the construction industry through a profitable business model to provide useful services for customers. As part of the new business development of the IT-construction convergence, this study suggests that certain standards can help in the strategic planning for investment, in order to increase the uses of IT in the construction industry.

2. Construction-IT Convergence Industry

There are two problems in Construction-IT convergence industries. The first is the low competitiveness and the lack of an existing convergence model. The second is lowest participation of construction firms and vulnerability of the convergence environment due to avoid investment. The clear evaluation is impossible about business model because current construction-IT convergence projects have not evaluation criteria. And it is difficult to provide common feedback due to difference opinions of success factors between construction and IT part's persons. So, this study suggests the standards what part of convergence project is need to invest for Firms and investors.

3. Success Factors of Construction-IT Convergence

3.1 Case study

Fig.1 The Method and Process for Study

The first phase is collecting of existing evaluation index in construction and IT. The significant Evaluation Factors chose from typical evaluation index of conventional construction and IT. In addition, the index presented by other cases is collected to reconstruct. Then, they were reconstruction occurs (Fig 1).

3.2 Derivation of Evaluation Index

The reconstructed evaluation Factors was reviewed by experts of enterprise, public and academy (1st survey). In the second survey, success factors, priority and weights were drawn. Through the 1st survey, evaluation items reconstructed are shown the following Table 1. In evaluation factors, the 8 factors which have frequency number about the collected cases were drawn.

Table.1 Evaluation Index From Cases of Construction-IT

	Construction			IT		Convergence		
Items / Projects	A	B	C	D	E	F	G	H
Economics								
Productivity								
Sociability								
Technology								
Marketability								
Policy								
Learning and Improvement								
Environment								

The Economics is determined benefits of the investment and corporate profits in terms of points. The Productivity is committed productive aspects of the business, such as work time vs. cost. The Sociability is improving the image of enterprises about community and customers. The Technical Considerations is technical achievement and status of business. Marketability is Market Potential and competitiveness by Promotion. Policy is national policy and corporate strategy and Learning and Growth is creation of technical manpower and other. Last, Environment explains energy savings and environmental improvements.

3.3 AHP (Analysis Hierarchy Process)

In the 2nd survey analysis, the result was drawn by applying the AHP method and combining elements of quantitative and qualitative factors. Table 2 presents the weight of each Factor.

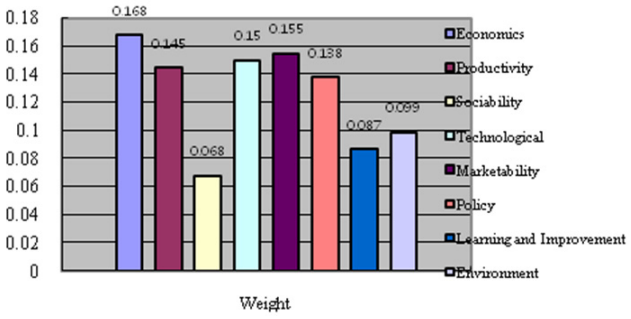

Fig.2 Weight of Evaluation Index

4. CONCLUSION

The research outcome will be used for evaluating construction IT business models, in order to predict their success; ultimately, it will help rejuvenation of the construction industry by introducing profitable IT convergence cases to the industry. And It can be help Construction firms and investors to invest well by set a standards; what important factor is, which Part of construction process needs IT convergence.

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