Abstract Format

Technologies reshaping the electricity supply industry
2017 IERE-TNB Putrajaya Workshop
November 20-23, 2017

Technology Adoption Strategy for improving Electricity Utility Company's performance

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Keywords: *Technology management, Utility Company, Firm performance, Technology adoption*

Abstract

Many studies argued that technology adoption significantly affected the firm's performance include the electricity utility company. Technology development has led to many innovations offering competitive advantages and better efficiency than the conventional technology such as Ultra super critical (USC) boiler, Smart grid, Advanced metering infrastructure (AMI), Renewable energy, Micro turbine etc. However the impact of technology adoption remains un-conclusion. Some recent empirical studies did not find relevant firm's performance improvements associated with technology investments.

This study has examined nine hypotheses and proposed technology adoption as a functional competence which mediates relationship between dynamic capabilities with firm's performance. The context of study is electricity utility firm in Indonesia which has an integrated supply chain industry and mostly relevant to the research issues; (1) Resource based view style (2) Technology-intensive firm where 87% of assets is technological things (3) Technology adoption flow which cover both "Top-down" and "Bottom-up" process (4) National company within 50,000s employees spread out among all the areas of nation.

The four determinant factors has been identified are externalities, entrepreneurial leadership, resources readiness, and absorptive capability. Overall, 62 items using 6 Likert-type scale are used to measure six latent variables. The collected data is analyzed statistically using Structural equation modeling. Using 518 respondents representing 222 business unit of Indonesia Electricity Company (PLN), the empirical model shows the three basic strategies of technology adoption for improving firm's performance. However all strategy put absorptive capability as the most significant determinant to technology adoption.

Practically the study emphasize that the successful technology adoption in firm can be only achieved by excellent absorptive capability with supporting from other three determinant factors. Without such dynamic capability the core competence of firm will not occur and the adoption of technology will be less effective and not significant to enhance firm's performance. The study empirically found that technology adoption is a functional competence which mediates dynamic capabilities to firm's performance. Other finding is the eight technology adoption status in organization based on the level of three determinant factors; externalities, entrepreneurial leadership and resources readiness. This study suggests that the most effective technology strategy should be based on that technology adoption condition. The different strategy is needed to achieve the optimum objective from each

adoption status. Based on the organization typology this study found that most of PLN business unit is at “innovative” technology adoption status. It is highly recommended that PLN should do technology strategy for improving primarily its resource readiness.

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