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# Disruption innovation, electronic supply chain management in improving the competitive advantage and the company performance

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**Abstract.** This study attempts to know whether disruption innovation to exert an influence upon electronic supply chain management, competitive advantage and company performance. Disruption innovative measured by some indicators are : management and leading, technology, and organization culture. Variable electronic supply chain management measured by some indicators are: communication, collaboration, information sharing, trust, and trading partners power. Variable excellence compete measured by 5 indicators: the price, quality, delivery, product innovation, and time to market. While the company variable measured by 3 indicators: the financial performance, operational performance and performance based market. Data collection is carried out by means of a detailed questionnaire distributed. Methods of analysis used in this study is the Structural Equation Modelling (SEM) using Practical Least Square (PLS). This research result indicates that disruption innovation give impact on electronic supply chain management and competitive advantage.

## 1. Introduction

The challenge facing all the industrialized world now demanding the improvement and good performance that be continuously undertaken in order to continue to hold and won business competition. Modern business competition bring the effects on competition of the competitions among the focus company independently at the competitions among a business networking supply like a chain. Global market competition having an enormous impact on business activity, local as well as international, (Golden berg, 2002).

In the current globalization, information technology development faster support the companies to apply SCM electronically through the internet known electronic supply chain management. Using e-SCM this, the flow of information between the suppliers and distributors and the flow of information in more firm fast and easy. In the information era, innovation be important to developing organizations, among them is to establish model electronic management supply chain that is integration of ecommerce and SCM. Based on research H.Hua and P.Cong (2011). E-SCM can turn out the way decision making, the operation is fundamentally and improve the flow of information, an organization, efficiency organization and customer satisfaction.

Several manufacturing companies and services of the source of a chain delivery material supply chain consists of important to can reduce competitiveness of cost and get the power, Michael (2015). In the digital age , where the parties involved in sufficient supply chain have access to the internet network , thus, the implementation of e-SCM to be possible done in order to manage information that occurs. A lot of things can be found as an excuse an introduction of the concept e-SCM. The main factors that contribute to this transition: the needs of an organization to gain competitiveness as a



response from the markets demand to continue to increase competitiveness and the company performance.

hottenstein and dean (1995) to develop competitive advantage organization have to choose, design and implement technology. Boumont and schroeden (1997) suggested that the only and the quality of being competitive will not possible without proper technology. In a competition that had the characteristics of global special the high level of certainty in business environment that influences the level of the ability of innovation and performance companies in the level of dependence of consumers on company product, change the composition of consumers and suppliers, the intensity of competition and the relative size competitors, and automation technological change, need to the development of innovation latest. Innovation is a thing that is very important in achieving a competitive advantage. Company without innovation will die (Zangwice, 1993).

Technology has been growing. What we feel is good, there were far better, this context known as disruption. Disruption replace "the old market" industry, technology and produce self-more efficient and thorough he full of destructive and creative (Clayton Christensen, 1997) disruption replace old technology in physical with digital technology that results in something better and more efficient. Disruption not only happened in the aspect of business, investment and finance, but this has happened in hooks un-mount in many areas a good life the government, political, the entertainment and socially. The theory about disruption innovation posted by Clayton m.Cristensen in (1997) the result of declining the performance of some company is caused by the global changes who do not meticulously for business operators namely 3s (speed, surprise, shifting).

The shift of consumers and income to new entrants (shifting) is often not realized by the old company. Disruption is not only a theory but has evolved into a vital strategy and demands a new mindset. In its implementation disruption will fight against various interests, reasons, strengths and old ways of thinking in a company. Therefore the company leader must be able to read the change signal, face new players (competitive battle). To determine the choice to deal with disruption. As shown in the chart below.

## 2. Problem Formulation

Based on the background of problems that have shown above, competitive advantage is the company is the ultimate goal, but simply means to an end company, the performance was producing gain profit, (ferdinant, 2003). Company to compete and having of companies that he can be done by applying management supply chain. So the formulation a problem in research are:

1. Does Disruption Innovation have a direct effect on Electronic Supply Chain Management, and what is the competitive advantage and company performance.
2. Whether Electronic Supply Chain Management has a direct effect on competitive advantage and company performance.
3. Does competitive advantage directly affect the company performance.

## 3. Research Objectives

1. Develop a model of Disruption Innovation and electronic Supply chain Management Impact to Competitive advantage and company performance.
2. Test and Analyze effect of disruption Innovation and electronic supply chain Management to Competitive advantage and Company performance.

## 4. Literatur Review

### 4.1 Supply Chain Management

The term Supply Chain Management was originally a process of the activity of the relationship between purchasing and logistics, (Saeed, 2009). And actually the logistics and purchasing functions are a very critical part of supply chain management concepts, (Carr, Smeltzer 1999, Cooper Ellam, 1999, Monczka Morgan 1996). But in Chopra & Meindle's (2004) study the term supply chain management has expanded the meaning that supply chain management is very important in the

development of competitive advantage, Li et al, (2006), and also a core competency (Tummala, Philips and Johnson, 2006).

Supply chain management is an approach used to achieve the integration organisations more efficient supplier, manufacturing, distributor, retailing and customer services, (Li et al 2006, chen, 2009, jie 2007, nandra 2008). It means of goods produced in an exact number of at the right time and at the right places with the purpose of achieving at least cost of the system overall and reach the desired service (david simchi levi, 2001, chen, 2009, pricilia, 2011).

The concept of the supply chain has continuous development in various fields, namely: Logistics, marketing, purchasing, operations, planning, systems, organizations, and research on strategies (Otto and Kotzab, 2003), as in Figure 1.



**Figure 1.** The concept of the supply

#### chain 4.2 Definition of E-Supply Chain Management (E – SCM)

Currently, internet technology change the supply chain management and increase new dimension to electronic supply chain management. Electronic supply chain management defined a tactic and strategies applied in technology internet as channel system which connects all organizations involved in supply chain to improve the service or benefits to customers (Ross, 2003).

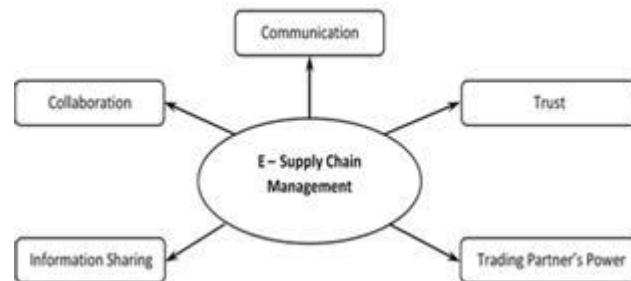
SCM transformation towards E-SCM can be seen in the picture below.

<b>Phase I</b> : warehousing and transportation – till 1960
<b>Phase II</b> : total cost management – till 1980
<b>Phase III</b> : integrated logistics management – till 1990
<b>Phase IV</b> : supply chain management – till 2000
<b>Phase V</b> : e-supply chain management – 2000 +

**Figure 2.** Evolution of E-SCM

#### 4.3. Dimensions of E-Supply Chain Management (E-SCM)

According to Chong et al (2009) there are 5 (five) dimensions that make up electronic supply chain management (ESCM), namely:



**Figure 3.** Five dimension that make up E – SCM

#### 4.4 Disruption innovation

The theory about disruption innovation published by the Clayton M. Christensen in 1993. The emergence of innovation was potentially ruinous the old-school method. Not only is this disruption in aspects of business, investment and financial. This has happened in interconnected in many areas the government a good life, political, the worlds of entertainment and socially. There is that is moving rapidly, but no evidence of a little in fetters in leadership in a thoughtless manner long. An indicator of innovation is: management and disruption of neighborhoods, technology and organization culture.

#### 4.5 Competitive advantage

Competitive advantage is capability company to create a superior position than rival and relies heavily on conformity in internal capabilities organizations and changes in external organization. Competitive advantage needed in to face global competition currently, (Agha, et al, 2012). There are some indicators that can be used for measuring excellence compete an enterprise. (Li, B. Ragu-nathan, and Rao, 2006). Measuring excellence compete company using indicators: prices, quality, delivery dependability, product innovation and time to market.

#### 4.6 Company performance

Performance is a description of the level of achievement of the implementation of tasks in an organization, in an effort to realize the goals, mission objectives and vision of the organization (Bastian, 2001). The experts revealed that the company's performance measures most often used in empirical research are financial performance, operational performance, and market-based performance (Jahanshahi, et al 2012).

### 5. Research Methods

The respondents of this research are company members covering general manager, head unit / section, owner and board of directors and administrative staff who work in plantation companies both state-owned and private, with experience of at least 1 year. Of the 250 questionnaires distributed, only 185 questionnaires were used while there were 43 non-return questionnaires and 22 incomplete questionnaires. The description of the questionnaire used can be seen in table 1.

**Table 1.** Details of the questionnaire

Questionnaire	The total number of
Questionnaire distributed	250
Questionnaire used for data input	185
unreturned questionnaire	43
Incomplete questionnaire	22

Sources: Author

Table 1 informs that the response rate reached 82.8 % which 74% of them were used in this research. The hypothesis in this research will be tested by using Partial Least Square Analysis (PLS). PLS analysis has two models, outer model and inner model. Outer model shows the specification of the relationship between variables and the indicator. While inner-model (inner relation/structural model) shows specification of relationship between latent variable, which is between exogenous/independent variable and endogen/dependent variable.

## 6. Data Analysis And Discussion

Based on PLS results, it is found that all the empirical indicators used have met the test of the outer model that includes convergent validity (loading factor), discriminant validity, and composite reliability.

### Composite Reliability

**Table 2.** Result of composite reliability

	Composite reliability	Average variance Extracted
DI	0,866	0,601
E-SCM	0,922	0,595
CA	0,943	0,674
PC	0,881	0,598

Based on table 3 above, all the construct have met the reliability criteria. It is shown by composite reliability score that above 0.7 and AVE above 0.5

**Table 3.** Result for Inner weight

	Original Sample	Mean of sub sample	Standard dev	T-stat
DI $\geq$ CA	0,543	0,550	0,199	5,263
CA $\geq$ CP	0,455	0,504	0,146	3,523
DI $\geq$ CP	0,314	0,301	0,138	4,748
E - CM $\geq$ CA	0,295	0,325	0,186	1,210
E - SCM $\geq$ PC	0,435	0,030	0,175	1,192

### Following is the estimation of path coefficient

- The effect of DI ( $X_1$ ) on competitive advantage ( $Y_1$ ) and company performance ( $Y_2$ ). The effect of DI on the t-stat's competitive advantage value is 5,263 where t Statistics > t- table with influence of DI on company performance coefficient is 0.324 with t-statistic 0.411. The DI variable contributes 0.543 to the competitive advantage ( $Y_1$ ), means that if DI ( $X_1$ ) increases by one unit, then the competitive advantage variable ( $Y_1$ ) will increase by 0.553. The DI ( $X_1$ ) variable has an effect at 0.324. Therefore, the effect of total DI variable on company performance ( $Y_2$ ) is:  $0.543 + 0.314 \times 0.455 = 0.389 = 38.9\%$

- b. The effect of e- SCM against competitive advantage ( $Y_1$ ) and company performance ( $Y_2$ ) The effect of e- SCM against competitive advantage with statistic T-statistic is 2,150, where  $t\text{-stat} > t\text{-table}$   $2,210 > 1,96$ . Therefore, the effect of e – SCM against the CA is significant with path coefficient 0,295 whereas the effect of e- SCM against CP is significant due to  $t\text{-stat}$   $2,320 > 1,96$  . e-SCM variables give contribution effect as 0,295 towards CA ( $Y_1$ ), means if variable e- SCM ( $X_2$ ) increase one unit the performance also increase 0,415 towards company performance ( $Y_2$ ). Hence, the effect of total variable e- SCM ( $X_2$ ) against company performance are:  $0,295 + 0,415 \times 0,455 = 0,323$  or 32,3%.
- c. The effect of Competitive advantage (CA) as the intervening variable against company performance ( $Y_2$ ) The effect of CA against CP is 3,523 where  $t\text{-statistic} > t\text{-table}$  where  $3,523 > 1,96$ . So the effect of competitive advantage against the company performance is Significant 0,455. This means CA as variable intervening against the company performance give significant impact.

## 7. Conclusion

1. Disruption Innovation has significant effect on company performance. The good implementation of Disruption Innovation can improve the performance of the company
2. Electronic Supply chain Management has significant effect on company performance. The good implementation of electronic Supply chain management will improve both financial and operational of the company performance
3. The competitive advantage  $R^2 = 0.448$  means that 44.8% competitive advantage variables are influenced by Distrupction innovation factors and the remaining electronic supply chain management is caused by other factors. While company performance  $R^2 = 0,591$  means 59, 1% variable of company performance influenced by competitive advantage as intervening variable, Disruption Innovation and electronic supply chain management.

## 8. Suggestion

1. The role of management is crucial for the success of DI and e- SCM in a company, so the company can conduct a continuous program on a regular basis with suppliers so that the quality and quality produced by the supplier does not decrease.
2. Future research is expected to expand this research by conducting research on manufacturing industries, services and various businesses both small and medium
3. Further research looks for other variables that may also have a relationship with the implementation DI and e- SCM.

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