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## **Effect of Information Systems on Transaction Cost, Agency Theories and Sustainability of the Competitive Advantage: Perspective from the U.S**

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# Effect of Information Systems on Transaction Cost, Agency Theories and Sustainability of the Competitive Advantage: Perspective from the U.S

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## Abstract

The main goal of this research study was to analyze the impact of information systems on transaction cost, agency theories and sustainability of the competitive advantage in the U.S. Too commonly, regrettably, supervisors have little claim in the growth of these decision support systems; at the same time, non-managers that do develop them have a minimal view of how they can be made use of. In spite of these disadvantages, the writer found that a variety of the 56 systems he researched are successful. As the difference between success and failure is the level to which managers can use the system to boost their effectiveness within their companies. Transaction cost theory forecasts on the administration types of hierarchies, markets, or crossbreeds will be made use of. Williamson that was acknowledged with a Nobel Prize for his work with transaction costs supposed that whether activities would be internalized within a company relied on their transaction costs. He saw deals generally as transfers of goods or services throughout interfaces, and argued that when transaction costs were high; internalizing the transaction within a pecking order was the suitable decision. Electronic markets and power structures have actually consistently been described as options to inefficiencies in the company of deals in facility and unsure settings. Information systems assist firms' agreement in size since it can minimize purchase costs sustained when a company gets on the marketplace what it cannot make itself. Information system is grounded in the assumption that the partnership between human and ecological variables is the reason transaction costs increase in the economic system. This is, nonetheless, not the only reason these costs exist. The connection of factors adding to transaction costs can contribute to their boost.

**Key Words:** *Information, Systems, Transaction cost, Agency, theory, Sustainability, Competitive, Advantage, U.S*

### 1.1 Background of the Study

An information system is defined as the software applications that organizes and analyze information. So, the purpose of information system is to change raw information into beneficial details that can be made use of for decision making in a company. Information systems are

official, sociotechnical, business systems made to gather, treatment, store, as well as likewise distribute info. In a sociotechnical point of view, details systems are composed by 4 components: job, people, structure, and modern innovation. Details systems (IS) are official, sociotechnical, business systems made to collect, treatment, shop, as well as additionally disperse information (Pearlson, Saunders & Galletta, 2019). In a sociotechnical perspective, info systems are composed by 4 parts: work, people, structure (or duties), as well as modern technology. In the late 1960s, the Manufacturing Resources Planning (MRP) systems were presented. This software program, operating on an information CPU computer system, offered firms the capability to care for the production procedure, making it added reliable. From tracking supply to creating costs of products to organizing manufacturing, the MRP systems (in addition to later the MRP II systems) supplied a lot more companies a variable to desire to incorporate computing right into their procedures. IBM happened the leading mainframe company. Nicknamed Big Blue, the business came to be identified with solution computer system (DeLone & McLean, 2016). Continued improvement in software and also the schedule of less costly equipment eventually brought data processor computer systems (and their little brother or sister, the minicomputer) into a great deal of large services.

According to Kavanagh and Johnson (2017) Advances in computer-based information technology just recently have in fact triggered a broad selection of systems that managers are presently utilizing to make and also use selections. By and large, these systems have actually been developed from scratch for details objectives and differ dramatically from fundamental digital information taking care of systems. Often, however, managers have little say in the development of these option support systems; at the same time, non-managers that do create them have a restricted sight of how they can be utilized. In spite of these drawbacks, the author situated that a selection of the 56 systems he looked into achieve success. In addition to the distinction between success as well as additionally failing is the level to which managers can utilize the system to improve their performance within their companies. The author recommends that this is the need designers and additionally supervisors should jointly debt in making usage of the abilities these days' contemporary technologies (Abbasi, Sarker & Chiang, 2016).

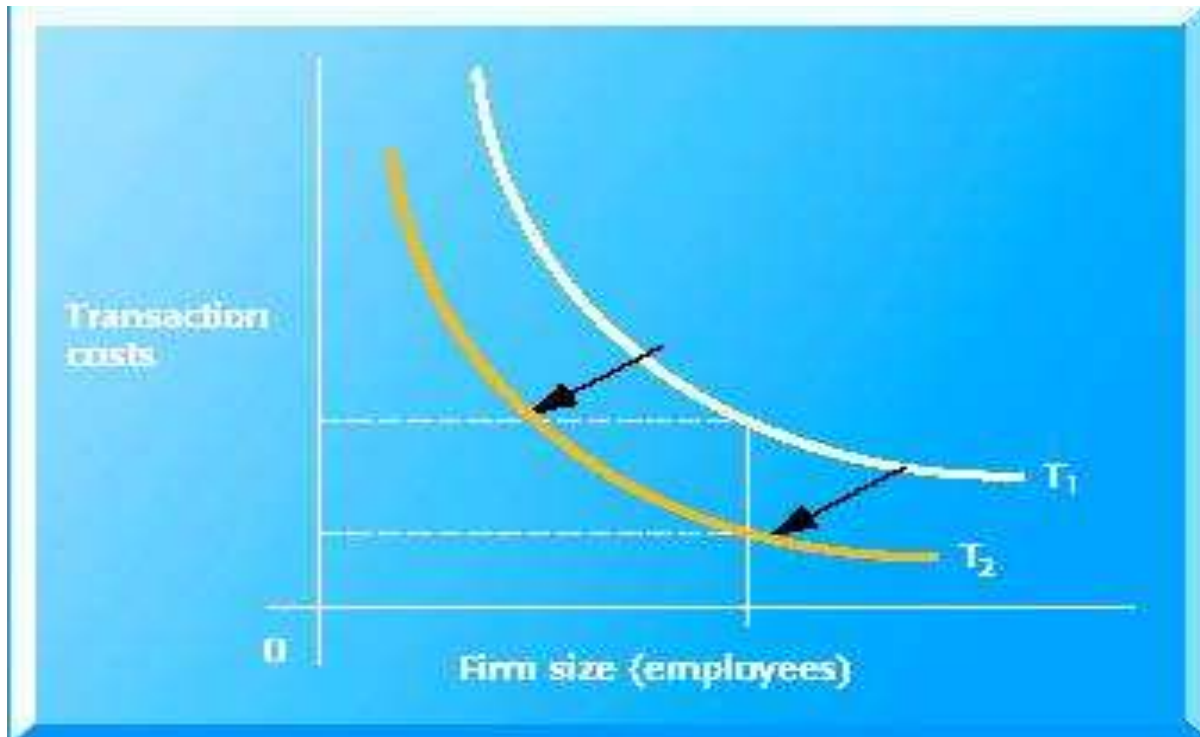
Transaction cost theory is part of company governance as well as additionally firm theory; it is based upon the idea that sets you back will certainly happen when you get somebody else to do something for you. Concentrating on firm limits, deal cost idea intends to respond to the inquiry of when tasks would definitely occur within the industry as well as when they would happen within the firm (Memili, Misra, Chrisman, & Welsh, 2017). Far more specifically, transaction cost principle anticipates when the administration kinds of pecking orders, markets, or crossbreeds (e.g., partnerships) will be used. Williamson that was identified with a Nobel Prize for his work with bargain prices theorized that whether jobs would be internalized within a company counted on their bargain costs. He saw acquisitions broadly as transfers of services or products throughout interface, and also stated that when offer prices were high; internalizing the bargain within a power structure was the appropriate choice.

On the other hand, when bargain prices were low, buying the exceptional or option on the marketplace was the favored option. Three dimensions were developed for recognizing transactions: changeability, frequency, as well as also property uniqueness, or the level to which transaction-specific expenditures were incurred (Rindfleisch, 2019). Purchase cost theory is

improved assumptions of bounded rationality in addition to opportunism, defined as self-involvement with guile. A conversation has actually raged recently regarding whether acquisition prices or service capabilities are among the most necessary variables of company limits. Highlighting the relevance of capabilities, scientists have in fact stated that firms internalize jobs that they perform with greater capacity than exterior firms (Jacobides & Winter, 2015). This debate attaches transaction cost theory to the BTOF as well as transformative theory since business uncovering, which figures prominently in those ideas, adds to the improvement of regimens and likewise service capabilities.

### ***Information Systems on Transaction Cost Theory***

Transaction cost theory has frequently been utilized to sustain to support the theory that details and interaction innovation (ICT) can decrease flaw in the economic system. Digital markets and also pecking orders have continuously been referred to as solutions to inadequacies in the organization of purchases in complex and also unpredictable settings (Wang, 2012). Info systems aid companies' agreement in dimension since it can minimize deal prices the costs incurred when a firm purchases on the marketplace what it cannot make itself. According to deal cost theory, firms and also people seek to economize on transaction prices, much as they do on production costs. This can be shown as displayed in Figure 1.



**Figure 1: Information Systems on Transaction Cost Theory**

ICT has actually ended up being the considerable enabler of the effective exchange as well as also access of details in companies. Clashing approaches reveal that ICT is either an effective tool to suffer the financial system managing details or, conversely, one that creates an added challenging atmosphere that is tough to take treatment of. A clear sign of the first point of view is uncovered in ICT researches based upon the deal cost method (John, Viswanathan & Ghosh, 2019). Such research study studies say that ICT sustains the monetary system, providing a more reliable info flow that helps with the communication among economic representatives under complicated as well as likewise uncertain conditions, and also minimizing bargain costs. On the other hand, the literature addressing the difficulty of 'info overload' highlights the adverse results of ICT as a result of a far better degree of intricacy being encountered as a result of the improved amount of info provided by the technology (Schultze & Vandenbosch, 2011).

The requirement for a far better understanding of the impact of ICT on organization structures, such as markets and also power structures, has in fact increased the rate of interest received by purchase costs principle in the research study of info systems. Purchase expenditures idea represents one of the initial efforts to create a comprehensive theory that thinks about the framework of the firm as a source of summary for outcomes, as opposed to seeing the firm as a 'black box' that has little influence in making clear such end results. Supplying a very little variation of the principle Benitez, Ray and also Henseler (2018) considered the cost of arranging as well as managing the company as equivalent to the cost of building in addition to operating in a perfect service structure. On the other hand, deal costs were shown as analogous to the costs



associated with the management of the flaws of this structure. In financial terms, the optimal structure (i.e. the one without imperfections), would certainly be a perfectly informed as well as reliable market where rates sufficed to engage to dispersed consumers all the expertise required to make a purchase decision (Hayek, 2010). Via the cost tool, the marketplace efficiently accumulates and additionally relocates a huge amount of information in between financial representatives; information that would be exceedingly expensive to capture as well as disperse by different other means.

As indicated by Chedrawi, Atallah & Osta (2020), initial proposition that acquisition cost principle is a prospective framework for undertaking research in the layout and likewise influence of ICT, this design has in fact been used thoroughly in the field. Frequently, study studies in info systems based upon the deal costs strategy represent ICT as a tool that maintains information requirements, providing included information and also details monitoring power. ICT is considered as an efficient tool to promote the effectiveness of the transactional procedure within which financial exchanges occur. There is little dispute that the effects of ICT on the economic company of exchanges continue to declare.

Details system is based in the assumption that the link between human as well as environmental elements is the element purchase boost in the economic system (Mustafid, Karimariza & Jie, 2018). This is, however, not the only reason these prices exist. The connection of facets adding to purchase costs can add to their boost. Initiatives to lessen bargain expenditures should certainly not intend to lower the impact of a singular element, yet the effects of the interdependencies in between elements. Offers costs are not just the amount of the rates developed by the different elements, nonetheless are influenced by the imbricate, interdependent link in between them. The impact of ICT on purchase costs require to be investigated by analyzing this imbrication. Research in information systems has in fact primarily concentrated on the first method. Pictures of the secondly can be situated in major representative idea (Grossman and Hart, 2011; Laffont, 2012).

### ***Information Systems on Agency Theory***

Agency theory is a theory that is utilized to call well as solution problems in the relationship in between organization principals and also their agents (Mahaney & Lederer, 2013). Many frequently, that collaboration is the one in between investors, as principals, and likewise business executives as agents. The principal-agent problem takes place when the interest rate of a principal as well as agent conflict. Firms ought to look for to minimize these circumstances with strong service plan. These issues existing normally truthful individuals with opportunities for moral hazard. Rewards may be used to reroute the actions of the agent to straighten these passions with the principal's issues.

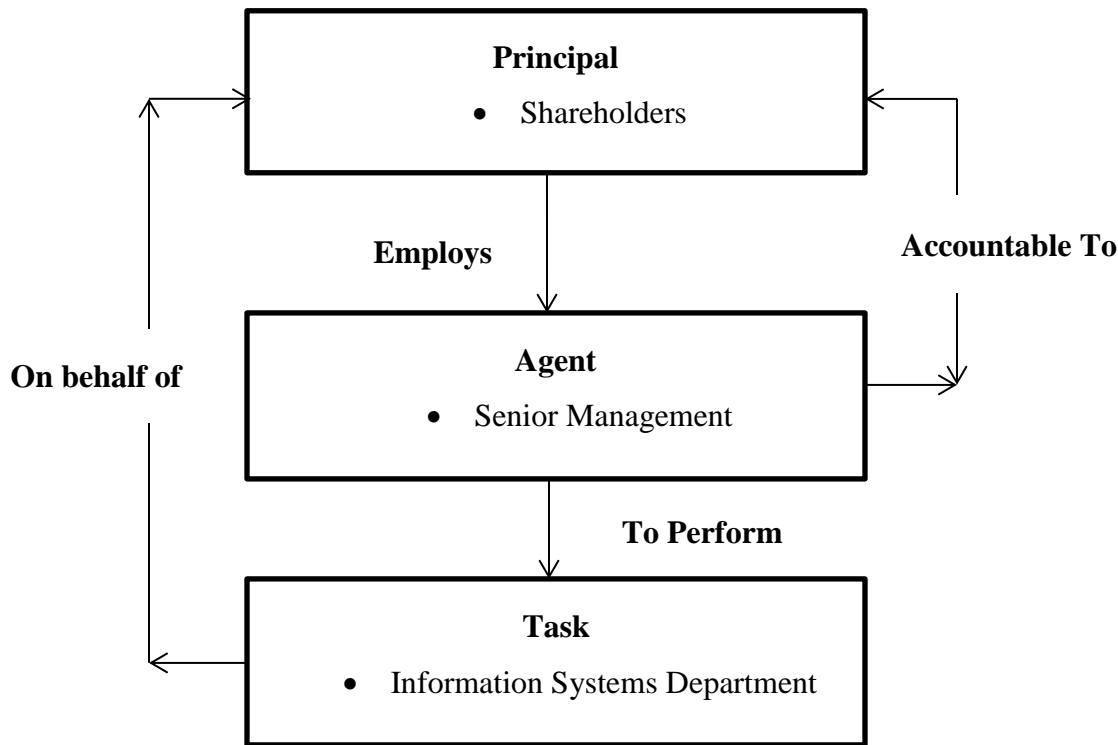
According to Nevo, Nevo and Pinsonneault (2016), business administration can be made use of to transform the regulations under which the depictive runs in addition to bring back the principal's rate of interests. The principal, by making use of the representative to stand for the principal's rate of interests, ought to overcome an absence of details pertaining to the agent's performance of the job. Agents require having rewards motivating them to act along with the principal's rate of interests. Firm idea might be used to make these incentives appropriately by considering what rate of interests inspires the representative to act. Rewards advising the

inaccurate habits must be gotten rid of, as well as regulations hindering moral hazard needs to be in area. Understanding the mechanisms that develop troubles aids companies produce far better service plan.

Firm principle supplies a possible description for the minimized success cost of InfoTech (IT) work. The theory advises that suitable tracking as well as taking advantage of incentives as well as advantages elevates the probability of task success. Company theory takes care of the work connection that happens when one celebration (the principal) employs an additional party (the agent) to carry out some service the precious's part (Baiman, 2012). The theory advises that the sort of contract (i.e., behavior-based or outcome-based) in between a principal along with an agent may affect the high quality of the work (Eisenhardt, 2013). It further suggests that monitoring, objective problem; shirking, in addition to privately-held details might impact the success of the work. Previous research study suggests the a great deal much more outcome-based the agreement of the designers, the even more monitoring by the task manager, the much less shirking by the programmers, and also the less privately-held information by developers, the extra effective the job should be (Kirsch 2017; Keil, Mann & Rai, 2010).

According to agency idea, the firm is taken into consideration as a nexus of contracts among self-centered people as opposed to as a connected, profit-maximizing entity (Shogren, Wehmeyer & Palmer, 2017). A principal (proprietor) utilizes agents (workers) to perform solution his/her part. Agents need continuous guidance along with administration; or else, they will definitely commonly tend to seek their very own passions as opposed to those of the owners. As firms expand in dimension and likewise range, firm prices or synchronization boost due to the fact that owners should expend more and more effort supervising as well as looking after employee. Infotech, by lowering the costs of obtaining as well as analyzing details, allows business to decrease company costs because of the reality that it comes to be easier for managers to supervise a bulk of staff members. By decreasing total tracking costs, information technology enables business to improve revenues while lessening the variety of facility managers along with clerical workers (Shi, Connelly & Hoskisson, 2017).

Company theory recommends that the kind of contract between the principal as well as additionally depictive influences the top quality of the job (Eisenhardt, 2011). A behavior-based agreement compensates representatives for acting in a certain method no matter completion result from those actions. An outcome-based contract compensates agents for completing details objectives as well as might take the type of a commission. The advantages of an outcome-based contract can take various other kinds, including recognition from superiors as well as co-workers, future promo chances, sensations of self-respect, public recognition, chooses, as well as also financial benefits (Baker, Jensen & Murphy 2015). Second demonstrate how the introduction of info system in the company will certainly affect firm theory.



**Figure 2: Effect on the Agency Theory of the Firm**

Not all advanced uses of information technology are similarly successful in producing actual, sustainable competitive advantage for their designers (Narayana & Bhusal, 2020). Some, like Merrill Lynch's Cash Management Accounts or both substantial airline scheduling systems, are extensively duplicated but have really effectively secured market share versus rivals. Others, like Automatic Teller Machines in monetary, are virtually worldwide supplied and have really developed no measurable advantages for the majority of early business. For the instance of the company in this research study, the worth included by an externally concentrated details system can be of several kinds. When it comes to most of customer support system, and in mainly all systems concentrated on enduring marketing in addition to distribution, a principal element are minimized client deal costs. Those costs connected with carrying out the purchase itself, as well as not with the goods or solutions being obtained. These rates might be managerial time, delivery costs, or costs as a result of unpredictability in delivery time or product excellent quality. When it involves the medicine representative, reducing purchase rates consists of simplicity of placing the order, ease along with speed in replenishing the racks, in addition to lowered changeability to prepare and likewise therefore stock holding costs (Pomffyová & Bartková, 2016). In various other conditions, minimized or removed security stocks make use of all the benefits promised by just-in-time shipment. When it comes to traveling representatives making use of electronic reservation sys- terns, reduced deal costs included rate of reaching the airline; the capability to



get to all airlines' visit systems with a solitary user interface; and also decreased unpredictability because of real time appointment of journeys. Different various other benefits typically consist of elevated consumer control, much better and also quicker details essential for customers' planning, increased customer contentment, as well as the intangible benefits from a constant, calming, digital existence. Worth added for the consumer is essential: it generates the client.

With the introduction of details systems, there are two sources of benefits to the business: increased earnings margins and improved market share. Margin advantages originate from reduced internal costs, or from raised client rates validated by higher worth consisted of. Not remarkably, to be reliable the system's advantages must follow the company's method. If the business's inexpensive technique is based upon cost management, along with procedures, tracking, along with R&D is based on this approach; it makes little or no feeling to establish an application whose benefits are based upon boosting prices (Theorin, Bengtsson, Provost, Lieder, Johnsson, Lundholm & Lennartson, 2017).

### **Purpose of the Study**

The main objective of this study was to assess the effect of information systems on transaction cost, agency theories and sustainability of the competitive advantage in the U.S

### **Literature Review**

On a micro-level, such as when thinking about the costs are being created in a business, we have really identified 2 numerous primary categories job price as well as deal cost. Task cost consists of manufacturing cost and likewise opportunity price (Shahab & Viallon, 2019). Production price includes the expected expenditure for material, labor and also looming i.e. the physical or various other primary procedures needed to create and spread the goods or services being created. Opportunity prices are specified as the best alternating foregone (Parkin 2013). Purchase expenditure consists of framework price and control cost, i.e. costs as a result of unpredictability. Facilities price shows the expenditure for creating the physical/communicational contact in between individuals of the firm dedicated to do the primary procedures (Bressand & Distler 2015). Synchronization rate includes expenditure due to insufficient information in addition to opportunistic habits of organizational actors (Milgrom & Roberts 2012), i.e. the variables contributing to unpredictability in the company. Thinking of Gezhi, Jingyan along with Xiang (2019) we can make an extra distinction in synchronization cost in between internal as well as outside coordination costs: The former is produced by the demand to support ordered structure (administration, control system, regulation facility as well as likewise maintaining, and so on). The latter is the cost due to discussion (Williamson 2010) and also center of a contingent cases agreement.

Making use of a bargain cost technique is an effective method of discussing the potential of InfoTech for improving the organizational details flow and minimizing cost, consequently enhancing the organization's capacity for looking after details. A case in point is making use of Electronic Data Interchange (EDI) in supplier-retailer partnership arrangements (Simon 20166). This does not always recommend a decrease of the number of offers. On the other hand, the variety of purchases frequently enhances, while the quantity of the private bargain is decreased.

However, a decline of purchase cost can be obtained, considered that the decreasing cost per purchase surpasses the price associated with the boosting selection of deals.

New development as well as means of employing it, such as representatives and different kinds of group assistance, may assist to acquire these goals, marking details where required, filtering it and reducing the information's browse as well as overloading in the organization, as a result offering an "info just-in-time" theory. A representative may be taken into consideration as a personal assistant that is working together with the client in the very same workplace (Maes, 2014). It is an idea that offers brand-new approach of human-computer interaction. The customer is involved in a participating process where different jobs are carried out by individuals or representatives, without a clear distinction between those groups. It abides by that consequently of an interactive treatment both (human and additionally agent) use new methods to boost communication, to gather, check, filter and spread information, according to the requirement demands of the customer. Via different solutions, the rep is able to learn as well as raise its performance over time. As necessary, depictive modern technology opens up brand-new possibilities for utilizing IT to attain a considerable result on business framework. Modern technology is not simply assumed about a tool increasing everyday job. It becomes part of the organization job, functioning autonomously as various other solitary or gathered organizational actors.

The bargain cost theory has been the leading standard in the assessment of the multinational company, especially, to deal with the concern of whether to tackle a job within a company's very own limits (Schmidt & Wagner, 2019; Dunning, 2010; Hennart, 2012, 2014; Teece, 2015). Under this theoryual framework firms select over alternate management frameworks in order to reduce deal costs. By making use of ICT, MNEs have the capacity to reduce offer costs that may change the decision between inner manufacturing versus arm's length exchange. Forman and likewise McElheran (2012) research study the impact of ICT fostering on the residential limitation options of firms by taking a look at adjustments in the share of total distributions that are moved inside within household firms in the United States. On the other hand, Fort (2013) mostly focuses on the influence of ICT on domestic versus international sourcing choices, hence, highlighting the spatial place selection of the business. Our research study matches these existing research studies by analyzing the role of ICT adoption in shaping the decision in between simply how much is generated within in addition to outside the limits of the business throughout nationwide boundaries, henceforth described as a company's worldwide boundary choice.

Most of existing research studies with the exception of Feinberg as well as Keane (2016) as well as Keane and additionally Feinberg (2017) in the place of ICT and also company have really usually focused on the web result of the effects of ICT adoption on company boundary selection, i.e., either boosted inner manufacturing or boosted arms-length manufacturing. De la Torre & Moxon (2011) supply an extraordinary recap of the literary works concerning the precise same quantity of time, the very early nineties, as the emphasis in our research study. Rangan as well as Sengul (2010) uncover that MNEs in industries with better ICT financial investment strength display decreased tendency for international combination. Dosi, Gambardella, Grazi, and Orsenigo (2008) use proof in fact to suggest that, on equilibrium, enhanced ICT monetary investments are positively associated with intra-organizational communications. Both these looks into catch the web impact of ICT economic investments on international limit selections, with

the underlying center that contracting out in addition to internal production are replacements for each other.

Blossom, Garicano, Sadun, as well as Van Reenen (2014) find that fostering of ICT within the very same company can minimize interaction costs in addition to know-how purchase rates. Moreover, Dosi et al. (2008) discover that the size-distribution of companies as well as commercial emphasis in the innovative financial situations over the past few years have in fact not altered in spite of the elevating feature of ICT. They reason that intra-organizational communications still dominate over market communications, contradicting the theory that there has actually been a significant activity toward market synchronization as a result of ICT. Along the specific very same lines, other study studies have actually likewise located much better internalization results of ICT (Brynjolfsson, 2014). Thus, ICT fostering can reduce interior synchronization rates and deal monitoring with the ability to deal with a company better and help in enhanced adaptation.

In 1980s, firm theory was furthermore shown up thoroughly in the managerial accounting globes to determine the optimal-incentive having amongst various individuals and establishing ideal audit control devices to check their habits as well as tasks (Demski, 2010; Biaman, 2012; Namazi, 2015). It is this last function of the company theory that will certainly be highlighted in this research study. In its primitive kind, firm theory connects with situations in which someone (called the rep) is engaged by another person (called the principal) to act on his/her component based upon a marked cost timetable. Because both people are assumed to be energy maximizer, as well as encouraged by pecuniary and also non-pecuniary items, reward issues might take place, particularly under the problem of uncertainty in addition to academic asymmetry. That is, the unbiased feature of the principal as well as the representative may be inappropriate; in addition to a result, the representative might throw down the gauntlet which will certainly endanger the principal's advantages. In addition to that, a firm runs under the issue of threat along with changeability. Essentially, the fundamental firm theory usually presumes that both individuals are risk averse. Under these situations, the quantity as well as internet material of the created audit details and additionally other information resources would certainly end up being a considerable problem in threat sharing and likewise taking care of the agent's activities (Namazi, 2013).

## **Discussion**

Framework cost indicates the cost for establishing the physical/communicational get in touch with in between participants of the company committed to do the crucial processes. Control cost consists of rate as a result of incomplete info and also opportunistic actions of organization actors i.e. the elements adding to unpredictability in the firm. Adhering to Bloom, Garicano, Sadun, and Van Reenen (2014), added distinction can be made in control rate in between interior and likewise outside synchronization price: The former is generated by the requirement to sustain ordered structure (tracking, control system, law facility in addition to preserving, etc.). The latter is the price do to conversation (Williamson 2016) along with establishment of a contingent insurance asserts agreement.

By using ICT, MNEs have the ability to minimize bargain prices that may modify the choice in between in-house productions versus arm's dimension exchange. Forman along with McElheran

(2012) research study the impact of ICT fostering on the residential boundary choices of firms by examining alterations in the share of total shipments that are moved inside within household companies in the United States. In contrast, Fort (2013) mainly focuses on the influence of ICT on residential versus international sourcing choices, thus, highlighting the spatial location option of the company.

Offered the firm principle paradigm, along with adhering to Alchian and also Demsetz (1972), Jensen and also Meckling (1972), along with Kaplan (1984), among others, a firm can be specified as a nexuses of legal setups among different people. In this view, contracts are considered as suitable approaches for resource allocation as well as likewise revealing the extent of the business's tasks. On top of that, they can be used up as an effective structure for reliable monitoring book-keeping control gadgets. In this context, performance treatments, suitable control variables, and exogenous as well as endogenous criteria affecting the control process, can be caught as well as also specified quantitatively by adapting the "firm idea" framework.

A great deal of details systems application jobs consider a number of vital elements of danger, so its possibility that progression can deviate from the strategy at some times of looking after jobs in the life process occur. IS application hazards are reviewed as job problems legal obligations or powerlessness that can trigger ARE job failures as they do not comply with the defined plan. Danger management has the capability to care for unpredicted inconsistency from the job (Slevin and also Pinto, 2016). IS execution work is referred to as a difficult task and also thinks various risks of unexpected celebrations. This is to say that, although companies embrace info system that is needed to achieve competitive advantage (Laudon as well as Laudon, 2012), threats connected to systems modifications take place. Among one of one of the most crucial risks that can influence information system application is the technological failings (EwusiMensah as well as Przanyski, 1991; Somers as well as Nelson, 2011; Shang and also Seddon, 2012; Al-Fawaz, 2008). Some IT departments have difficulties in sustaining the information system as a result of troubles with the assistance offered from remedy business of information system. This is to declare supplier aids are an important variable with packaged software program to take care of the dangers gotten in touch with carrying out the required system, besides offering as well as running ideal IT centers. Furthermore, some professionals do not have a great expertise and also experience to aid using ERP application (Somers and likewise Nelson, 2001; Nah in addition to Zuckweiler, 2013); whereas some task managers do not have the abilities in performing ERP systems which requires important decisions regarding budget plan plans, deadlines, goals and likewise end results (Loh and Koh, 2014; Somers and also Nelson, 2004; Al-Fawaz, 2008).

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