

CHAPTER FIVE: DISCUSSION

Across the four cases, we observe different levels of uncertainty existed. In this chapter, we first examine the case findings against the initial theoretical propositions about business-IT fit. Then we discuss the managerial implications of these propositions by applying descriptive data.

5.1 Cross-Case Analysis Results

A simple bar chart shown as following figure 5-1 summarizes the case analysis presented in the last chapter. As the diagram indicates, firm 1 and firm 2 belong to a low level of environmental uncertainty, while firm 3 and firm 4 belong to a high level of environment uncertainty. It was observed in the preceding chapter that firms need more information under higher environment uncertainty. For example, the need of accurate and timely forecasts and shortage information are emphasized in the cases of firm 3 and firm 4 since they have to deal with greater dynamics of demand and supply. However, the forecasts may come from various sources, such as module forecasts from customers of the focal firm (ex. Dell, HP, and so forth) and same does the actual shortage that may come from focal firm's factories and Hub. EP systems which can help integrate such information from different sources should be especially beneficial to suppliers like firm 3 and firm 4.

Given a large number of product customization in terms of PN and frequent updates, system to system integration may live up expected benefits than manual or low-integrated systems. Evidence in favor of this statement was found in both cases of firm 3 and firm 4. According to the previous chapter, firm 3 and firm 4 provide more customized products. They complain that, the current EP system only allows at most 10 items to be processed in a web-page, but for them there are usually more than hundreds of items in a PO. The system also doesn't support the redo function. That means once you check a wrong box, you have to go through from beginning. What's worst is that when the focal firm updates its forecasts, the changed parts are not highlighted. Suppliers need to compare what's being changed themselves. All these show that a lack of system-to-system integration makes the order processing a time consuming job.

Thus, although we cannot prove that highly-integrated EP system can lead to greater performance under higher environment uncertainty, the data shows that EP usage in the form of low-integrated system cannot fulfill the need of firms who

dealing with higher environment uncertainty. Therefore, highly-integrated EP may be more fit for them and live up to more expected benefits in such situation.

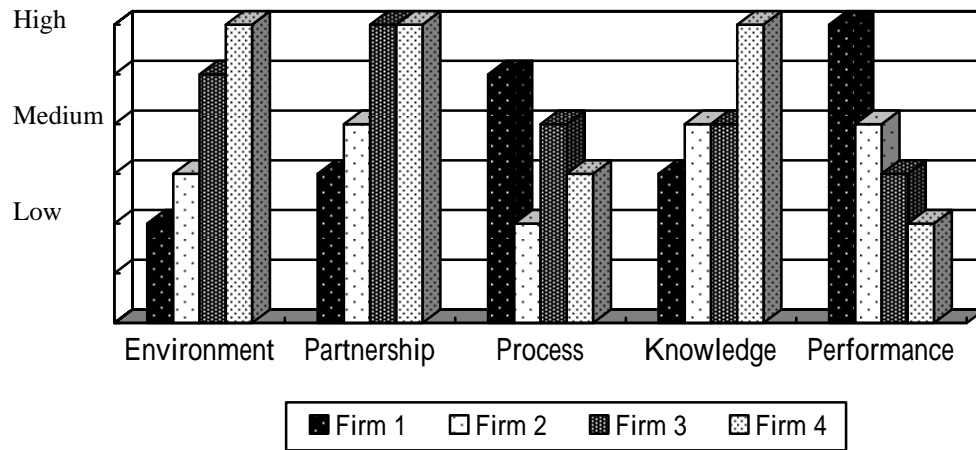


Figure 5-1. Case results of the four dimensions and performance

Let's now look at partnership uncertainty in detail. Figure 5-1 shows that partnership uncertainty increases progressively from firm 1 to firm 4. It seems that the reciprocal investment does not impact the performance much in our cases since the level of reciprocal investment is quite indiscriminate in all cases, except for firm 1 which replied that it has close cooperative interaction in R&D with the focal firm. In contrast, trust has much stronger impact on performance. We find that firm 2, firm 3, and firm 4 suspected that the focal firm doesn't conform to its pre-determined order allocation. These suspicion lead to low perceived benefits of the current EP system and give rise to more information needs to handle the perception of risk associated with partners' opportunistic behavior.

For example, we may recall that firm 2 has a persecution about losses in account receivable. Therefore, not surprisingly, it is eager for firm 2 to have a more powerful EP system which can provide real-time in-warehouse receiving message. Firm 3 and firm 4 distrust the information of the focal firm's forecasts. They have to depend on their own experiences to determine the production volume. Firm 3 sent an assistant to the focal firm's factory to get direct communication with its production management department and shipment receiving department. Firm 4 adopts a direct shipping approach for some specific parts which are customized for customers, so they can trace and track these items more easily. Even though the focal firm does ask firm 4 to deliver those parts via Hub, they refused doing so, which highlights the distrust toward the focal firm.

It is clear that the partnership uncertainty does constrain the performance of EP.

However, there is no direct proof that highly-integrated EP system can lead to greater performance under higher partnership uncertainty. We can only derive from above discussion that EP usage in the form of low-integrated system cannot fit the procurement process of those firms who has higher partnership uncertainty. All the discussion shows the evidence that firms may need more integrated information to reduce uncertainty.

The situation of process uncertainty is more complicated. In previous literature, as we have seen, the procurement process is highly related to the products upon them. However, we found that they are negatively related in these four cases. Specifically, the less specific and dynamic the materials are, the more suppliers competed in the market. Therefore, each supplier has smaller power and is asked to follow the rule made by the buyer. Supplier in such circumstance needs to pay additional efforts to process the transaction successfully. When we focus on dynamics of process, the level of process uncertainty from high to low would be firm 4, firm 3, firm 1 and firm 2. In fact, the former three companies does express that the current EP system can't support them to process order fulfillments successfully.

Firm 1, as we noted, have to manage the return of defective items. Goods return is a complex process. Usually the focal firm informs firm 1 of defective items at the end of a month or in an emergent circumstance. It is impossible for firm 1 to return that items immediately. Firm 1 has to dispatch its own quality management people to check problems, prepare documents such as customs debenture, and arrange the shipment. Therefore, firm 1 requires an EP that can provide quality information in real time, so they can arrange the return in advance. The same situation applies to firm 3.

As for firm 4, a third-party hub mediates between the focal firm and itself. An integrated EP that connects hub and focal firm then becomes significant, or otherwise the hub becomes a place under trusteeship which increases no benefits but costs to both buyer and seller.

Simply put, suppliers who provide standard products are more likely to be asked to customize their processes in order to match buyer's needs. Therefore, it is interesting to find that the more standard the product is, the higher level of process uncertainty. In such situation, suppliers may need more qualified and integrated information to deliver expected performance. Therefore, even the case can not directly prove that highly-integrated EP system can lead to greater performance under higher process uncertainty, it is clear that EP usage in the form of low-integrated system cannot fulfill the need of firms who dealing with higher process uncertainty. In such situation, highly-integrated EP may be more preferred and fit those firms' requirement.

Finally, in contrast to the beginning two uncertainties, the level of knowledge

skills is lower in firm 3 and firm 4. Firm 4 who shows the most mature capability in both IT and managerial skills has better know-how in technology. But for other suppliers, they do not have such strong knowledge bases as firm 4. Considering the limited support from the focal firm simultaneously, they have weak level of knowledge. In our cases, the focal firm spent few efforts training the suppliers using the EP systems. In fact, only one-day training course for each supplier and two weeks of orientation for parallel using the new and old procurement operations before the web-based EP system went live officially. Most of the suppliers admitted that they groped for the system's function on their own.

Here we found even with lower knowledge skills, firm 1 and firm 2 still view the current web-based EP system simple enough for them to get familiar in the short run. From this viewpoint one may say that EP usage in the form of low-integrated system can lead to greater performance under lower knowledge skills which support our proposition 4.

5.2 Managerial Implications

According to figure 5-1, we find that these four suppliers can be roughly divided into two groups. Firm 1 and firm 2 have relatively lower external uncertainty and higher internal uncertainty. Firm 3 and firm 4 are in the contrary. Table 4-1 gives evidence for such opposing extremes too: firm 3 and firm 4 are much bigger than firm 1 and firm 2. Our case study shows that the low integrated web-based EP system drives better performance in suppliers like firm 1 and firm 2. Nevertheless, firm 3 and firm 4 show sufficient capability and willingness to reduce their uncertainties and improve performance eventually.

Though a simple basic EP system can not live up to expected benefits in complex and dynamic environment, a powerful highly integrated EP system can not fit all suppliers neither. Firms may prefer to maintain a unique EP system due to cost consideration and other concerns. However, we argue that companies should align their EP with different suppliers just like they provide several versions of their products for different customers to get maximum profits. Improper alignment makes suppliers fail to cooperate and harms the focal firms eventually. Therefore, fit between business environment and technology can produce win-win situation and best profits to both buyer and sellers.