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NON-OVERLAPPING PARTNER CAPABILITIES AND ALLIANCE PERFORMANCE: EVIDENCE FROM US FILM INDUSTRY

Ramin Vandaie

Abstract

This paper builds on the theory of strategic alliances that focuses on their role, not in acquiring, but in accessing partners' capabilities. Hypotheses are developed and tested regarding the effects on alliance performance of less overlap in partner firms' capabilities in joint development alliances. The extent to which the capabilities of alliance partners are non-overlapping was found to have a positive and significant influence on alliance performance. This effect becomes more pronounced as the pool of the capabilities contributed by alliance partners falls short of the capability requirements of the alliance product. Discussion of findings and implications for the alliance research conclude the paper.

INTRODUCTION

Research has found that alliance partners either become similar in knowledge and capabilities and end their partnership or stay specialized and continue with the alliance (Mowery et al., 1996; Nakamura et al., 1996). The dominant learning view of alliances provides an explanation for the finding about the former group of alliances but not the latter. According to this view the convergence of partner capabilities and the subsequent dissolution of the alliance is a consequence of the process of learning and knowledge transfer between partners. Alliances, in this line of thinking, are vehicles for learning and transfer of knowledge (Hamel, 1991; Khanna et al., 1998; Kale et al., 2000) and lose their *raison d'être* once the knowledge transfer is complete and the partners have become similar. As a result, partners see no further utility for their partnership and hence, disband.

The learning view, however, is silent about the finding that in a significant subset of alliances, partners maintain and even enhance their differences in specialized knowledge

and capabilities (Nakamura et al., 1996). Mowery et al. (1996) explicitly point to the limits of the dominant learning view of alliances in this regard:

“...the empirical analysis also suggests that there are limits to the ‘capabilities acquisition’ view of alliances. Consistent with the view that alliance activity can lead to increased specialization, as firms access others’ capabilities (rather than acquiring them or developing them internally), we find that capabilities of partner firms become more divergent in a substantial subset of alliances.”
(1996: 78)

The access view of alliances alluded to by Mowery et al. (1996) is spelled out in Grant and Baden-Fuller (2004), where they criticize the learning view for limiting our understanding of alliances by ignoring their central attribute as an organizational mode that can reconcile the benefits of knowledge specialization with those of flexible integration.

We argue here that the access view offers a fuller, more plausible explanation for the findings regarding both groups of alliances, i.e. the group with converging partner capabilities and the one with divergent partner capabilities. This explanation is also consistent with the recent corporate strategy trends towards refocusing on a number of core competitive capabilities and outsourcing the non-core ones (Grant & Baden-Fuller, 2004). In this view, alliances dissolve when partners become similar not because they have no more incentives to learn from one another, but because the alliance loses its inherent advantage leading to performance decline. When partners possess less overlapping capabilities, however, they realize performance advantages that motivate them to continue with the alliance. Our contribution in this paper is to theoretically elaborate and empirically test the link between non-overlapping partner capabilities and alliance performance.

The issue of overlap (or lack thereof) in partner characteristics has been the subject of inquiry in alliance research. In particular, existing research has addressed the role of complementarity of alliance partners in motivating alliance formation. We know from this research that complementary partners are more likely to form alliances together (Chung et al., 2000; Rothaermel & Boecker, 2008; Mitsuhashi & Greve, 2009). But the link between such complementarities and alliance performance has not been explored in this literature. We argue that besides revealing a gap in our understanding of alliances, this missing link points to a fundamental problem of the dominant conceptualization of alliances as inter-organizational learning mechanisms.

In this paper we build on the access view of alliances to develop and test a theory of the performance consequences when alliance partners have low overlapping capabilities in joint development alliances. In essence the crux of our argument is that the lower the



overlap in partner capabilities that go into the production of the alliance product, the higher the alliance performance. The paper is organized as follows: theory and hypotheses development is followed by a description of the empirical context of the study. We conclude by presenting the results, the discussion, and the implications for future research.

THEORY AND HYPOTHESES

Low overlap and Complementarity in Alliances

While in this paper we are not specifically talking about the mechanisms of complementarity among alliance partners, we believe that having low overlap in capabilities conceptually encompasses the idea of complementarity. Low overlap in partner capabilities could be thought of as a more relaxed constraint on an alliance than complementarity. In essence, if combined with extra assumptions, low overlap in capabilities leads to complementarity among partners. Existing research in alliance literature has addressed the issue of complementarity. Mainly, this research has pointed to the pooling of complementary skills and resources to create added value as a main incentive for firms to engage in strategic alliances (Stuart, 2000; Chung et al., 2000; Rothaermel, 2001). Strategic alliances have been promoted as an opportunity for partner firms to combine their skills and resources to realize synergies that are impossible by relying on internal resources (Nohria & Garcia-Pont, 1991; Dyer & Singh, 1998; Rothaermel & Boeker, 2008). We see the conceptual proximity of the two concepts-i.e. low overlap in capabilities and complementarity- as a potential area of contribution to the complementarity literature.

In general, the complementarity literature has found that firms that occupy complementary niches or complement each other along the industry value chain are more likely to form alliances (Gulati, 1995; Mowery et al., 1998; Chung et al., 2000; Mitsuhashi & Greve, 2009). For instance, alliance formations between small, innovative firms and large, established firms with access to capital, marketing, and distribution channels have been shown to be motivated primarily by such complementarities (Rothaermel, 2001; Rothaermel & Boeker, 2008). Rothaermel (2001) found that incumbents that focus on exploiting complementarities with new entrants do better than those focusing on exploring the new entrant's new technologies. Rothaermel & Boeker (2008) also found that complementarities in skills and capabilities create opportunities for young biotechnology firms and large established pharmaceutical companies to form alliances to complement their internal resources and capabilities.

Despite its attention to the role of complementarity in motivating alliance formation, this research has not established a link between complementarity and alliance performance. As mentioned earlier, we believe this gap is attributable to the dominant conceptualization of alliances as inter-organizational learning mechanisms. In fact, any expectation of performance benefits from complementarity falls outside the framework of the learning view. More specifically, the learning theory of alliances entails the inherent assumption that once knowledge transfer is complete and the partners have converged in their capabilities, the partnership is dissolved. In other words, the degree to which the main task of learning and inter-organizational knowledge transfer has been accomplished will define the performance of the alliance in the eyes of partners, and no other attributes of the alliance (e.g. the financial performance of alliance product in joint development alliances). It would even be plausible under this view, to think of situations where partners tolerate poor financial performance of an alliance to ensure that the learning and transfer process is completed.

The alternative access view of alliances, which we adopt here, offers a fundamentally different view that, among other advantages, leaves room for theorizing about the effects of non-overlapping partner capabilities on alliance performance. In this view, firms benefit from alliances to the extent that they provide non-overlapping capabilities required by the alliance product and maximizing the utilization of their otherwise underutilized capabilities.

Knowledge-Based Nature of Capabilities

Competitive capabilities are primarily comprised of tacit knowledge and know-how (Teece et al., 1997). The knowledge-based view of the firm and the organizational learning literature identify two distinct classes of activities that correspond to the ways in which knowledge is acquired and applied by firms (March, 1991; Spender, 1996): exploration (knowledge generation), and exploitation (knowledge application). In the context of alliances, knowledge generation refers to alliances as vehicles of learning by acquiring partners' knowledge, while knowledge application refers to a form of knowledge sharing where partners access each other's stock of knowledge to exploit complementarities.

With a couple of exceptions (e.g. Lavie & Rosenkopf, 2006), the alliance literature has primarily focused on knowledge generation by assuming that firms enter alliances with the primary goal of increasing their stock of knowledge by acquiring the specialized knowledge of their partners. However, the organizational learning literature has shown that firms often engage in both activities and tend to maintain a balance of the two across their lines of business and over time (March, 1991; Lavie & Rosenkopf, 2006). Therefore the alliance literature has provided a lopsided view of alliances by focusing exclusively



on knowledge transfer, and a theory of alliances that incorporates knowledge access is necessary.

In their theoretical arguments for a knowledge-accessing view of alliances, Grant and Baden-Fuller (2004) discuss the key knowledge characteristics that make the access view of alliances a better representation of reality in many, if not all, alliances. Knowledge is created by individuals and embedded in organizational processes and routines (Nelson & Winter, 1982) which makes it indivisible and subject to economies of scale and scope (Grant & Baden-Fuller, 2004). In other words, the development of tacit, specialized knowledge becomes more reasonable as more units of the same product that requires that knowledge type is produced (economies of scale). Also, most types of specialized knowledge are applicable to more than one product and to the extent that they are applied to products other than the ones they were originally intended for they become more profitable (economies of scope).

Such scale and scope economies present a challenge for firms over which type of knowledge to invest in and which products to produce. As a result, often firms are faced with the issue of mismatch between the requirements of an envisioned product and capabilities available to the firm (Garrette et al., 2009). The access view of alliances posits that a better utilization of underutilized capabilities is possible through an alliance (Grant & Baden-Fuller, 2004). In this view, the core advantage of alliances as a form of production organization lies in facilitating capability development within firms (by reducing concerns over their potential underutilization), and capability application within the alliance (by matching the otherwise underutilized capabilities in the form of a jointly-developed product).

Following this line of reasoning, our first hypothesis concerns the effect of overlap in partner firm capabilities on alliance performance. We argue that such overlap hurts alliance performance and to the extent that partner capabilities are non-overlapping the alliance will yield a better outcome. Firstly, less overlap in partner capabilities reduces opportunistic behavior in a cooperative relationship by creating more interdependence among partners which is also known as a mutual hostage position (Kogut, 1988). Overlap indicates direct competition between partners outside the alliance, which could increase tendencies to divert inevitable spillovers into own business outside the alliance and hence, start the vicious cycle of the learning race. Second, less overlap makes it easier to identify contributions by partners and in turn, facilitates the appropriation of outcomes. Reduced appropriation concerns lead to higher commitment from partners and improves performance. Finally, less overlap reduces confusion as to who is providing a certain

capability, and who is accessing it. Less confusion over the roles assumed by each partner regarding any specific dimension of the product's capability requirements leads to more effective utilization of capabilities and better performance. Hence,

H1: The lower the overlap in alliance partner capabilities the higher the alliance performance.

At the same time the lack of overlap does not mean that all the capability requirements of the alliance product are fully met by the capability pool of alliance partners. Our second hypothesis concerns the positive and moderating effect of the shortcomings that most alliances face when the pool of capabilities available from alliance partners fails to meet all the capability requirements of the alliance product. Such shortcomings are the product of the practical limits to partner choices that firms face in reality and reflect the fact that firms often choose partners that increase but not maximize the utilization of their underutilized capabilities.

Coping with the adverse effect of capability shortcomings presents challenges for alliance partners as it requires extra attention and remedial action to offset its negative consequences. Less overlap in alliance partner capabilities reduces motivations to engage in overlapping efforts and contributions to the alliance product by each partner and frees up slack time and resources that could be devoted to remedy or mitigate the adverse effects of capability shortcomings. Moreover, when partners have less overlapping capabilities, they tend to be less consumed with the specifics of the activities performed by the other partners in which they (i.e. the partner not performing the activity) are also capable. When less consumed, the partners tend to be less ignorant towards the shortcomings and be more likely to take actions to mitigate them.

Finally, research has shown that when partners in a joint effort possess diverse capabilities, they tend to be more creative (Milliken & Martins, 1996). Low overlap increases the chances of alliance partners having more diverse capabilities and hence, being more creative in their search for solutions to remedy the consequences of capability shortcomings. In other words, when alliances face higher capability shortcomings, the positive effect of non-overlapping partner capabilities is even more pronounced. Hence,

H2: The extent of capability shortcomings in an alliance will positively moderate the effect of less overlap in partner capabilities on alliance performance.

METHODS

Data and Sample

The empirical context of this study is the US film industry in the period 1995-2009. The major players in the US film production are the six major studios-Twentieth Century Fox,



Warner Brothers, Paramount, Sony-Columbia, Disney, and Universal. Since 1940s and the demise of the era dominated by vertically integrated studios, co-production of films has become a common practice in Hollywood. Although sometimes two or even three major studios cooperate on a production project, the majority of co-productions involve one of the majors and one or two of the smaller, mostly independent studios. There are over 30 such studios in US that team up (almost exclusively) with the majors to produce feature films.

The contemporary film industry is a suitable context for testing the proposed theory in this paper since film genres, as an established framework for distinguishing films based on their required resources and skills (Shamsie et al., 2009), provide a way to measure partner capabilities as well as capability requirements of film projects. The capabilities literature has suffered from eclectic and arbitrary definitions of firm capabilities which have limited the generalizability of the findings (Ethiraj et al., 2005). By relying on film genres to identify capability requirements, this study draws on prior research that has demonstrated a close association between genres and distinct capabilities in film production (Miller & Shamsie, 2001).

Information was collected and organized for a sample of 325 films from various specialty film databases including *www.imdb.com*, the premier online source for film credits and reviews, and *www.boxofficemojo.com*, the prominent source for current and archival box office information.

Dependent variable

The context of film industry is very relevant for this study due to the availability and reliability of a clear measure of alliance performance, i.e. box office receipts. The difficulty of determining alliance performance has been pointed out by prior research as a main issue in most alliance studies. Measures such as alliance longevity and partner firms' performance have been frequently used in literature, drawing criticism as to whether these measures actually get at alliance performance. The context of the film industry lends itself conveniently to the testing of the proposed theory particularly because concrete measures of the performance of the alliance product exist.

The commercial success of the film, also referred to as box office receipts, is the most widely used measure of film success in business literature (Hsu, 2005). We follow this literature and operationalize alliance performance as the total US box office for the period that a film was screened in theaters. We focus on US market to be consistent across the sample since not all films are exhibited in theaters outside US. The box office measure

tends to be left skewed, for which a Box-Cox transformation is employed to generate a more favorable distribution of the dependent variable.

Although data on awards and nominations was also collected, we decided to use box office as the measure of success for a couple of reasons. First, as for-profit organizations, the commercial success of a film tends to be the foremost priority of studios to ensure survival and success in the highly competitive film industry. Second, in our preliminary analysis, we found a high correlation between box office and the total number of awards and nomination (correlation of 0.5) which indicates that the findings would be reasonably consistent even if a composite measure of performance (composed of box office and awards) was used.

Independent variables

Film study literature in general and strategy research in particular, have shown that film genres are closely associated to the types of capabilities needed to produce a film (Hsu 2006; Shamsie et al., 2009). Each genre represents a distinct product in terms of plot, character, setting, thematic, and style, determining the kinds of resources and skills needed to produce, target, and promote a movie in that genre. We collected information about film genres from *www.imdb.com* which categorizes motion pictures across 26 genres. Five of these 26 genres correspond to TV shows (e.g. Talk Show, Reality TV) and hence were not applicable for our sample of feature films. We constructed a vector of the size 21 for each film, with each element corresponding to one genre. For each film, the elements of this vector were set to one if the film was classified in that genre and zero otherwise. This vector represents the capability requirements of the alliance product.

It is worth noticing that many films are categorized along more than one genre (the average film in our sample has three or more genres). For instance, the highest grossing film of 2009, *Avatar*, is classified as Action, Adventure, Fantasy, and Sci-Fi. In our operationalization of capability requirements, we treat this multi-genre classification as an indicator of multiple capability requirements. So in the case of *Avatar*, the classes of required capabilities include Action, Adventure, Fantasy, and Sci-Fi.

The main hypothesized effect in this study is the non-overlapping capabilities of alliance partners. Conceptually, non-overlapping capabilities refer to the extent to which partners possess and contribute different classes of required capabilities to the alliance product. Going back to the example of *Avatar*, consider two different scenarios for the ways in which the production studios (i.e. Fox and Lightstorm Entertainment) contributed in terms of the film's capability requirements (depicted in Figure 1). In scenario 1, fox has strong capabilities in Action and Sci-Fi and Lightstorm is very capable in Adventure and Fantasy. In scenario 2, Fox has strong capabilities in Action, Adventure, and Sci-Fi and

Lightstorm is very capable in Adventure, Fantasy, and Sci-Fi. There is less overlap in capabilities of alliance partners in scenario 1 than in scenario 2, due to the overlap associated with Adventure and Sci-Fi in scenario 2.

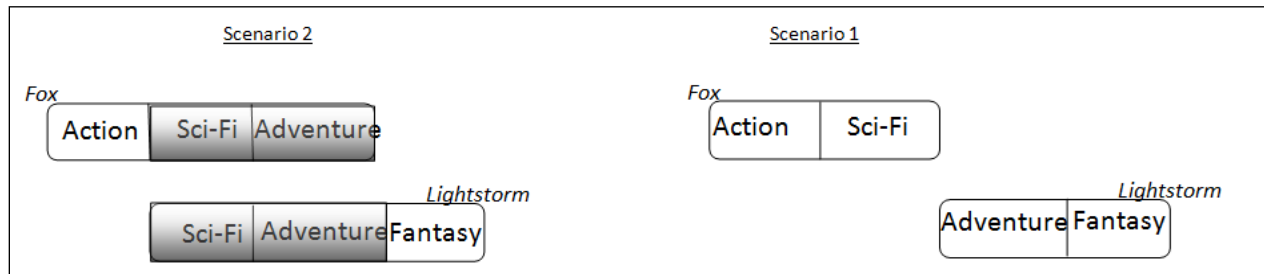


FIG 1. SCHEMATIC DEPICTION OF THE CONCEPT OF NON-OVERLAPPING CAPABILITIES OF ALLIANCE PARTNERS

We define the variable SPECIALIZE as the angle between the capability vectors of alliance partners. SPECIALIZE in this sense is the reverse of overlap and was chosen because it corresponded more directly to the parameters of the vector operations in our empirical setting and allows a more direct test of our hypotheses. We constructed vectors of partner capabilities along the 21 dimensions of film genres discussed before. Capability vector is constructed for each partner studio by counting the number of top grossing films (ranked among top three highest grossing of the year) by that studio in any of the focal film's genres over the three year period immediately before the focal film's year of release. Given the fast pace of change in audiences' commercial and artistic taste, the three year period is a reasonably long period of time to measure accumulated, relevant capabilities for current market needs as shown in other film studies in management research (e.g. Sorenson & Waguespack, 2006).

To illustrate, consider the hypothetical situation depicted in Figure 2. Studios A and B co-produced film F in 2004 with Drama, Biography, and War as the associated genres. The capability vector of Studio A at the time of producing film F (i.e. C_a), for instance, is measured as the count of top grossing Drama, Biography, and War films studio A produced during 2001, 2002, and 2003. And the elements of C_a corresponding to Drama, Biography, and War are set to these count numbers. To maintain consistency, all vectors are defined to have the size of 21 with elements not associated with the focal film's genres or the ones in which a given partner has no capabilities, set to zero. SPECIALIZE is measured as the angle between C_a and C_b .

The gap between the capability requirements of the product and the total pool of capabilities contributed by all partners (i.e. capability shortcomings) is measured by a

similar vector operation. As mentioned before, we constructed a vector of capability requirements for each film in the sample with elements equal to one for the genres associated with the film and zero for the rest of the elements (C_i in Figure 2). The capability shortcomings variable, CAPGAP, is measured as the angle between the capability requirement vector, i.e. C_i , and the sum vector of partner studios' capabilities, i.e. C .

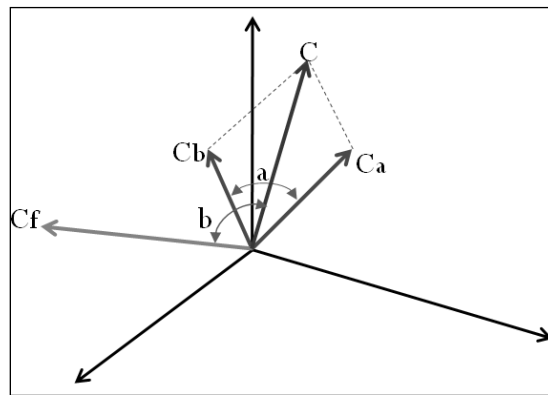


FIG 2. VECTOR OPERATIONS TO GENERATE MEASURES OF NON-OVERLAPPING CAPABILITIES AND CAPABILITY SHORTCOMINGS

We also included a measure of the number of prior co-productions (in past three years) that the alliance partners were jointly involved in, as a measure of repeated interaction. Therefore, following the example in Figure 2, PRIOR is the count of films co-produced by Studios A and B in the three year period before film F's year of release. This variable helps us detect and control for any learning effects that might be present in our sample.

Controls

Following the film studies literature, we control for budget as a major determinant of a film's commercial success. We also control for MPAA (Motion Picture Association of America) ratings since generally, films that get less restrictive ratings from MPAA are received more favorably at the box office. Film industry also demonstrates significant seasonality as people tend to go to movies more often in high seasons (summer, Christmas, etc.). We control for a film's release during the high season.

As alluded to earlier, to avoid the problem of endogeneity that arises from firm-specific effects regarding partner choice and focal firm performance, we include firm dummies associated with the six major studios (e.g. FOX, WAR, PAR, COL, DIS, UNI). The logic behind including dummies only for the majors is that anecdotal evidence shows that they (and not the small studios) have the biggest say in partnering decisions and any significant firm-specific performance effects will be reasonably captured through these dummies removing endogenous selection bias from the estimation process. Since, as the



dominant partners, the major studios are more likely to affect alliance performance through their firm-specific performance advantages, the dummies also partially mitigate the potential bias resulting from firm-level performance effects and help isolate the effects of hypothesized independent variables. Excluding films that do not involve a major studio in our sample ensures the reasonable effectiveness of this technique.

RESULTS

Tables 1 and 2 present the descriptive statistics and the pair-wise correlations for all variables.

TABLE 1. DESCRIPTIVE STATISTICS

	Mean	Std. Dev.	Min	Max
BOXOFFIC	71.53	75.00	0.2	600
SPECIALIZE	1.57	0.81	1	3
CAPGAP	1.20	0.19	0.68	1.57
SEASON	0.45	0.49	0	1
MPAA	3.14	0.77	1	6
BUDGET	55.53	40.54	0.1	225
COL	0.12	0.33	0	1
FOX	0.11	0.31	0	1
WAR	0.21	0.41	0	1
PAR	0.12	0.33	0	1
DIS	0.08	0.28	0	1
UNI	0.27	0.44	0	1
PRIOR	1.84	2.18	0	9

TABLE 2. CORRELATION MATRIX

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. BOX	1.00												
2. SPECIALIZE	0.10	1.00											
3. CAPGAP	-0.02	-0.25	1.00										
4. SEASON	0.21	-0.02	0.08	1.00									
5. MPAA	-0.04	-0.02	-0.07	-0.11	1.00								
6. BUDGET	0.66	0.05	-0.13	0.17	-0.11	1.00							
7. COL	-0.03	-0.05	0.01	0.00	-0.03	0.02	1.00						
8. FOX	-0.06	0.09	0.03	0.06	-0.14	-0.04	-0.13	1.00					
9. WAR	-0.00	-0.03	-0.09	0.02	0.12	0.05	-0.19	-0.18	1.00				
10. PAR	0.09	-0.07	0.12	0.06	0.03	0.05	-0.14	-0.13	-0.19	1.00			
11. DIS	0.00	0.11	0.06	-0.05	-0.18	0.01	-0.11	-0.11	-0.16	-0.11	1.00		
12. UNI	-0.02	-0.00	-0.07	-0.08	0.06	-0.09	-0.23	-0.21	-0.31	-0.23	-0.18	1.00	
13. PRIOR	-0.01	-0.02	-0.04	0.07	0.00	-0.03	-0.02	-0.05	0.27	-0.19	-0.03	-0.00	1.00

The estimation results are presented in Table 3. Four models were tested. Model 1 only includes the controls and captures their predictive power over film performance. Model 2 captures the sole effect of SPECIALIZE after including all the controls in the model. We found moderately significant support ($p < 0.1$) for a positive effect of SPECIALIZE on the box office performance, as predicted in H1. Model 3 introduces the main and the interaction effects of CAPGAP. We found significant support ($p < 0.05$) for a positive moderating effect of CAPGAP on the main effect of SPECIALIZE on box office performance, in line with H2.

Finally, Model 4 introduces the main and interaction effects of PRIOR. No significant effect was found for prior experience of alliance partners together, on alliance performance. The non-significant effect for PRIOR is in line with our arguments regarding the major role of capability access and specialization (as opposed to learning and transfer) within the context of joint development alliances.

TABLE 3. ESTIMATED EFFECTS, ROBUST STANDARD ERRORS, AND CORRESPONDING LEVELS OF SIGNIFICANCE (** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$)

VARIABLES	Model 1	Model 2	Model 3	Model 4
SPECIALIZE		0.24* (0.14)	-2.36** (1.02)	-2.52** (1.02)
CAPGAP			-3.13** (1.41)	-3.19** (1.41)
SPECIALIZE_CAPGAP			2.22** (0.87)	2.25** (0.87)
PRIOR				-0.16 (0.12)
SPECIALIZE_PRIOR				0.08 (0.06)
BUDGET	0.042*** (0.00)	0.048*** (0.00)	0.041*** (0.00)	0.04*** (0.00)
SEASON	0.61*** (0.22)	0.63*** (0.22)	0.62*** (0.22)	0.66*** (0.22)
MPAA	0.09 (0.15)	0.09 (0.15)	0.10 (0.14)	0.11 (0.14)
FOX	-0.32 (0.52)	-0.40 (0.53)	-0.24 (0.55)	-0.28 (0.56)
WAR	-0.35 (0.50)	-0.36 (0.51)	-0.39 (0.50)	-0.33 (0.50)
PAR	-0.36 (0.54)	-0.34 (0.54)	-0.32 (0.53)	-0.39 (0.54)
COL	-0.73 (0.54)	-0.72 (0.53)	-0.63 (0.53)	-0.59 (0.53)
DIS	-0.13 (0.61)	-0.23 (0.60)	-0.29 (0.59)	-0.33 (0.60)
Constant	3.83*** (0.64)	3.49*** (0.67)	7.17*** (1.89)	7.46*** (1.92)
Observations	325	325	325	325
R-squared	0.46	0.46	0.48	0.48



DISCUSSION AND CONCLUSION

Alliance research has come a long way over the past decades to reveal many aspects of strategic behavior within the contexts of alliances. However, a knowledge-based (and equivalently, a capability-based) view of alliances has been developed only limitedly due to a dominant view that has favored a learning and knowledge transfer perspective. The arguments and the findings in this paper point out to the need to reconsider alliances from a knowledge and capability access view and to examine the various potential implications that such a view could have for the alliance activity and its outcome.

By contrasting the learning and the access view of alliances, this paper presented a theoretical and empirical framework for assessing the effect of less overlap in alliance partner capabilities on alliance performance. The apparent concentration of alliance activities in high-tech industries (Stuart, 2000), has allegedly led the alliance literature to conceive of alliances mainly as vehicles for inter-organizational learning and transfer of specialized knowledge and capabilities. However, building on the access view of alliances suggested by Grant and Baden-Fuller (2004), we argued that at least for joint development alliances, a capability access view provides a more accurate theoretical lens. In particular, due to their unique facility to allow partners to integrate their specialized knowledge at the component level within the firm with the overall integration happening at the alliance level, alliances could offer capability utilization advantages over firms under certain circumstances. Alliances allow firms to offer their underutilized capabilities to alliance partners and overcome the inherent underutilization that arise from developing and maintaining a wide scope of specialized knowledge in-house.

If alliances are best suited to allow a better utilization of otherwise underutilized capabilities, the best fit between their optimal and actual functions will be achieved when complementarities are maximized and overlap is minimized. By showing that specialization of partner capabilities leads to higher alliance performance, this paper has empirically shown that a specialized matching of partner capabilities towards the capability requirements of the alliance product, in effect, increases the fit between the optimal and the actual use of alliances as a form of production organization, which in turn leads to performance benefits.

An interesting practical implication of our findings is that firms need to design and structure alliances in ways that minimize incentives for opportunistic behavior that could trigger a vicious learning race and undermine the benefits of specialization and access. Specialized cooperation can only work if partners accept to open their capabilities for

access and to become dependent on each other. This exposes them to risks of spillovers and hold-ups which if left uncontrolled, will trigger a learning race and a premature demise of the alliance. These risks could be controlled by appropriate alliance design and management.

Future research could follow up by examining other novel issues that arise and gain legitimacy by adopting a capability access lens to the study of alliances. For instance, future research could expand the arguments made in this paper for alliances compared to other forms of organizations, by studying a comparable sample of products that were solely produced to those that were co-produced. This way, the actual utility of the alliances could be measured in a comparative sense to bolster the arguments regarding the relative advantages of alliances under the stipulated conditions in this paper.

A number of other contingencies on the effect of capabilities specialization on performance warrant further investigation. For instance, does repeated interaction enhance or suppress the effect of specialization. However, previous research (Nakamura et al., 1996) and preliminary findings of this paper tend to support the former rather than the latter. Future research could also analyze more closely the situations that trigger the learning races that could undermine the benefits of access and specialization. An examination of the hypotheses at the level of portfolios of alliances could also establish more validity to the arguments made in this paper.

Overall, alliance literature could take significant steps towards explaining the real world trends in corporate strategy by taking a capability access view and testing hypotheses such as the ones developed and tested in this paper. By focusing on the specialization of contributed capabilities to alliances, at least in joint development alliances, scholars could be better equipped to explain recent trends among corporations towards refocusing on core competencies and outsourcing the non-core ones.

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ANALYSIS OF RICE GRAIN PURCHASING ACCOUNTING SYSTEM ON MICRO BUSINESS UD SANTOSO RICE MILLING

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Abstract

The development of rice milling technology had moved rapidly fast which is supported by modern technology. Common problems mostly faced by milling company is difficulties in controlling grain stock and grain purchasing process which is still using blind purchase without further information about future stock of the grain which will result in sale lost. Type of this study is case study which applies qualitative method and it uses primary data. Sample used in this study is UD Santoso, state-village owned which takes place in Ploso sub-district of Jombang region, east java. Result of study shows that function and procedure affect accounting system in grain purchasing process, chief of warehouse must play its role and function. All documents which are related to grain purchasing accounting system must be complete in order to avoid miss-order determination. There are several notes in grain purchasing accounting system such as grain stock card and warehouse card which must be synchronized between warehouse stock and purchasing staff about the recent stock of the grain..

Keywords: Accounting system; Rice milling; UD Santoso; Purchasing system.

INTRODUCTION

Agriculture sector is one of important sector in developing economical status of Indonesia. Indonesia is widely known as agrarian country which most of its people are farmer. One of best crop produced by Indonesia is paddy. Paddy will turn into rice after removing its hull. Rice is main food consumption of Indonesian people. Indonesia also export this product to some of its neighbouring country such as Vietnam, Thailand, and China.

A surplus crop is a chance for businessman to commerce a trade. One of them decides to open paddy mill in ploso sub-district of jombang region, east java. Development of paddy mill has promising prospect. In old time, farmer must bring all of their crops

to warehouse in order to store and mill the grain. But nowadays, technology had been advanced, farmer does not bring their crops to mill anymore, they just wait in front of their house for mobile paddy mill. Commencing mobile paddy milling is one of promising business in village whose people are mostly farmer.

This new technology advancement pushed old fashioned milling company to compete with new technology by fixing and increasing quality of rice cereal produced by them and they also offer good system. Common problems mostly faced by milling company is difficulties in controlling grain stock and grain purchasing process which is still using blind purchase without further information about future stock of the grain which will result in sale lost. Grain purchasing is one of most important process, grain demand and supplier determination, grain receiving, new stock grain checking and debt checking to supplier. An effective grain purchasing process must be supported by good accounting system.

Purchasing accounting program which is applied on paddy milling company could be used by company to commence procurement of paddy. Purchasing accounting system could be also used to ease purchasing process in procurement of grain stock which later will be sold. Wrong information of purchasing traffic will result in different stock information of the grain which will lead to grain minus stock condition and sale lost. Another effect of such situation is surplus stock of grain and it will cost more for its warehouse space.

Terrible purchasing accounting system must be fixed in no time and it must be supported with good internal control. Such excellent internal control of warehouse staff will minimise any fraud in grain purchasing process. One common fraud in paddy warehouse is executed by its own staff who stole some amounts of grain, it is the product of terrible internal control. Good internal control system is filled with organisation, one command action, note taking and healthy practice (Mulyadi, 2016: 312). The better grain purchasing accounting, the better information displayed. Such information can be used by company or buyer.

According to background of study above, research problems of this study are is grain purchasing accounting system of UD Penggilingan Padi located in Ploso sub-district of Jombang region, east java already applies elements of purchasing accounting system? The study aims to reveal elements of purchasing accounting system which is applied on subject of study. Limitation of study is limited to elements of purchasing accounting system only which is applied on grain mill located in Ploso sub-district of Jombang region, east java..

LITERATURE REVIEW

System

System is a network that consist of procedure, document, notes, tools, and human



resources in producing information that later will be used by company for supervising, operation, or decision making process (Narko, 2007:3). System could also be defined as series of events which is used to receive and manage input, and to create an output. System is created to achieve vision of company. Phases faced by company in order to achieve the target, company must first identify the character of target and reveal obstacles that will prevent company to reach the target.

Phases in system analysis

There are four phases in system analysis process, according to TMBooks (2014: 167), which are:

1. Survey of current system. The survey is meant to collect sufficient data in order to make a design for system, identification of company problems which need to be focused into system design. The successful design of a system depends on quality of relation between developer and company.
2. Identification of suffice information. It aims to identify such important data of company, and to study information input which is suffice for a manager in decision making process.
3. System requirements identification. This phase identifies the characteristics of input and output of a company. Input requirement system can determine data which need to be fulfilled in order for sub system to achieve the goal.
4. Arrange system analysis report. The output of a system is a report. The report could be used by management or president of company as basic information in decision making process.

Accounting definition

Accounting could be defined as note taking, management, report, and analysis process of financial data of a company (Irfani dan Dahria, 2009). Stakeholders that are going to use this documents are management, owner of company, investors and stakeholders, creditor, government, and staff.

Accounting system

Accounting system consist of documents of receipt, tool of notes, report, and procedure which is used by company in order to take notes for every transaction traffic for company such as form, great book, support book, and financial report (Jusup, 2005: 395).

Accounting system objective

According to Mulyadi (2016: 9), the objective of accounting system is, as follow:

1. To provide information for ne developing business management.
2. To manage current troubled system.

3. To increase efficiency of accounting information.
4. To provide complete documents about responsibility and company financial protection.
5. To minimise clerical cost in commencing accounting.

Purchasing accounting system

Purchasing accounting system is a group of company events which is related to procurement which is demanded by company (Sujarweni, 2015: 16). Purchasing system is divided into two, which are:

1. Cash. Payment for cash purchase is commenced with physical cash when the goods are received.
2. Credit. Payment for credit purchase is commenced based on deadline which is agreed earlier.

According to Mulayadi (2016: 244), function which is related to purchase system are:

1. Warehouse function. As warehouse function, it is responsible to store goods which is already received by input function and offer sale based on recent stock of warehouse.
2. Purchase function. This function is responsible to look for information about market price, choose reliable supplier in procurement and responsible in good output for sale stock form warehouse.
3. Input function. This part is responsible in quality control and sorting the goods based on type, quality, and quantity which is received from supplier.
4. Accounting function. Accounting function in purchasing department is responsible take note for every transaction traffic for both credit and cash purchase. Function of accounting in purchasing department is also to take note of good stock.

Purchasing procedure according to Surjaweni (2015: 101-102) are, as follow:

- Warehouse demand procedure
- Leader approval procedure
- Purchasing procedure
- Documentation cash purchase procedure.

According to Mulyadi (2016: 246), important documents that must be included in purchasing system are, as follow:

- 1) Purchasing letter of demand. It is a form filled by warehouse department in order to ask for a purchase. The form must consist of type, amount, quality of wanted goods.
- 2) Price negotiation letter of demand. It is a document of general information about wanted goods by buyer. The information consists of price, discount, and payment method.



- 3) Letter of purchasing. It is a letter used to make an order toward supplier.
- 4) Letter of receipt. It is document made by reception department which is responsible that the ordered goods are already received and meet the requirements of company.
- 5) Letter of Cash outflow. It is a document commenced by accounting department in order to make record for every transaction traffic during purchasing process.

Accounting documentation which is used, based on Surjaweni (2015:105), are as follow:

- Cash purchase journal
- Cash outflow journal
- General journal
- Good stock card
- Warehouse card.

PREVIOUS STUDY

Sari dan Sukirno (2005) who analyze purchasing accounting system of Quality Hotel revealed that purchasing accounting system procurement is already applied in well management, moreover, technology and information had been used efficiently, the use of accounting documentation is normal.

Permata et al., (2017) who conduct research of information system at Hasjarat Abadi Sudirman Manado Ltd, the result of study revealed that the events of activity of company had been aligned with the regulation of the company. In purchasing department, there is still one problem that can prevent data input process of information system of purchasing process that ill later affect the development of company.

Supriono (2016) ho conduct a research on purchasing accounting system application of KOPMA Kanjuruhan Malang revealed that purchasing accounting system is not effective which also triggered double function in one department such as warehouse department that had function as reception and purchasing function, there must be system control management to stabilize the system run within the company.

RESEARCH METHOD

Research Design

The type of this research is study case that uses qualitative method, whereas the data is in the form of words and figures and not numbers. Study approach used in this study is descriptive approach, this approach applies phenomenon which is actually occurred on the field during data collection. The phenomenon will be described in crystal clear and displayed as what it is. Data research used in this paper is primary

data, the data is transcribed directly from grain mill of UD Penggilingan Padi.

Population and research sample

Research population used in this study is UD Penggilingan Padi located in Ploso sub-district of Jombang region, east java. Sample research used in this study is UD Penggilingan Padi located in Ploso sub-district of Jombang region, east java which is active data during producing process. Sample used in this study is UD Penggilingan Padi.

Research setting

The study takes place in Ploso sub-district of Jombang region, east java. The research was started from February - October 2020.

Data collection technique

Data collection technique used in this study is, as follow:

- 1) Interview, it is question and answer dialogu with finance department or with owner of the mill to retrieve the data.
- 2) Documentation study, it is a group of data and data that support the research which later will be studied.
- 3) Observation, it is direct analysis toward the object of study.

Data analysis technique

- 1) Rice grain purchasing process survey of UD Penggilingan Padi.
- 2) Identification of important information, such as:
 - o Identification of main responsibility from purchasing department.
 - o Problem identification which is commonly faced by purchasing department.
 - o Identification of tools used by purchasing department in order to evaluate personal output.
- 3) Identification of system requirement could be displayed in form of proposal design, that contains every information needed in order to implement design project.
- 4) Arrange system analysis report which will be in form of report. The arranged report should be focused on problems of purchasing process, that way, the problem commonly faced by purchasing department will be overcome in future. Later, the report could also be used by leader for basic information in decision making process.

DISCUSSION

General Company Profile

UD santoso is business that run a grain mill since 1970's. The business was run by same family for three generation. The location of UD santoso is located in Losari village, Ploso sub-district of Jombang region, east java.

Organizational structure of UD santoso, as follow (Figure 1):

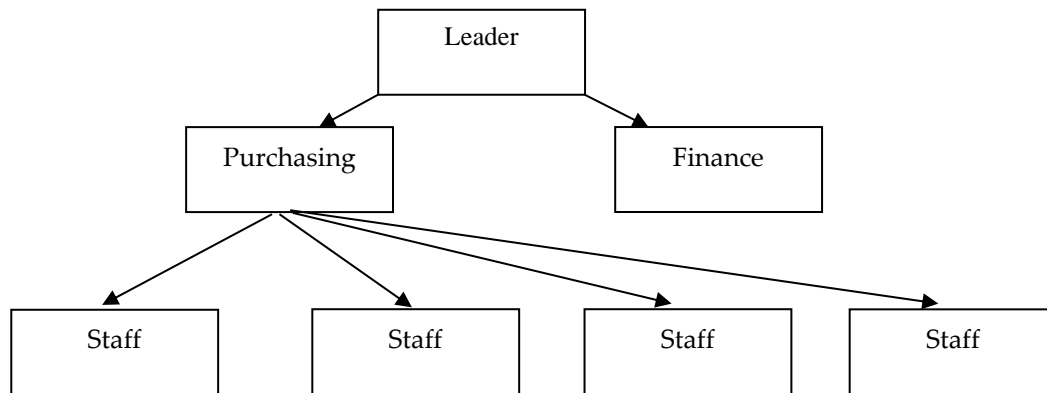


FIG 1. ORGANIZATIONAL STRUCTURE OF UD SANTOSO

Duty, authority, and responsibility of each department of UD Santoso are, as follow:

1. Leader
 - Responsible for every events occurred in UD Santoso.
 - Responsible to supervise executor occurred in UD Santoso.
 - Commit decision related to any events in UD S antoso.
2. Purchasing and sale department
 - Look for information about grain to supplier or service provider.
 - Conduct grain purchase demand letter.
 - Make a contract with supplier.
 - Receive grain from supplier.
 - Checking input and receipt received from supplier.
 - Make on due payment.
 - Provide grain demand from customer.
 - Helping customer in looking for information about grain type.
 - Quality control toward decayed grain.
 - Make report to purchasing department if the grain is out of stock.
3. Finance. Responsible for in-cash flow and out-cash flow transaction traffic occurred in UD Santoso.
4. Staff. They responsible to make dry the grain and store dry grain into silo and make safe space of the grain into warehouse.

DATA ANALYSIS

Purchasing and reception function at UD Santoso is run by single person. Purchasing and reception function is responsible to commence grain demand to supplier, receive the grain, run quality and quantity control within its type by using note receipt taken from the supplier. Quality control process must be executed within supplier existence

by supervising the grain weighing process together.

Finance function of UD Santoso, Finance function of UD Santoso is run by another single man which is responsible to receive financial inflow from grain sale, and taking documentation of cash outflow from grain purchasing, and he/she also responsible for cash outflow burden during grain purchase process occurred at UD Santoso.

Procedure that commence grain purchasing accounting system of UD Santoso:

1. Owner agreement procedure. Owner uses agreement authority to purchase grain.
2. Grain purchase order procedure. Grain order purchase at UD Santoso procedure is implemented whereas the supplier comes to the mill itself. The first step that need to be implemented after the order came is, purchasing department must commence quality control function of, type, quantity and quality of the grain. The specification of the grain later must be synchronized with the requirement of UD Santoso. Later, the agreement will be commenced and transaction of the grain is acquired. If the quality control does not meet the requirement of the mill, the grain will be returned.
3. Grain reception procedure. Grain reception process is supervised by single person from purchasing department. Whereas the specification of the grain had met the requirement of UD Santoso. Quantity control must be committed together within the supplier. The documents used for grain receipt is purchase order note from UD Santoso. The receipt will be authorized by finance department from UD Santoso.

Documents used in grain purchasing accounting system at UD Santoso:

1. Grain stock list.
2. Grain stock document.
3. Purchase invoice.

Accounting note used at UD Santoso:

1. Cash purchase journal
 - a. Outflow cash journal
 - b. General journal

Flowchart procedure of grain purchasing accounting system at UD Santoso (Figure 2).

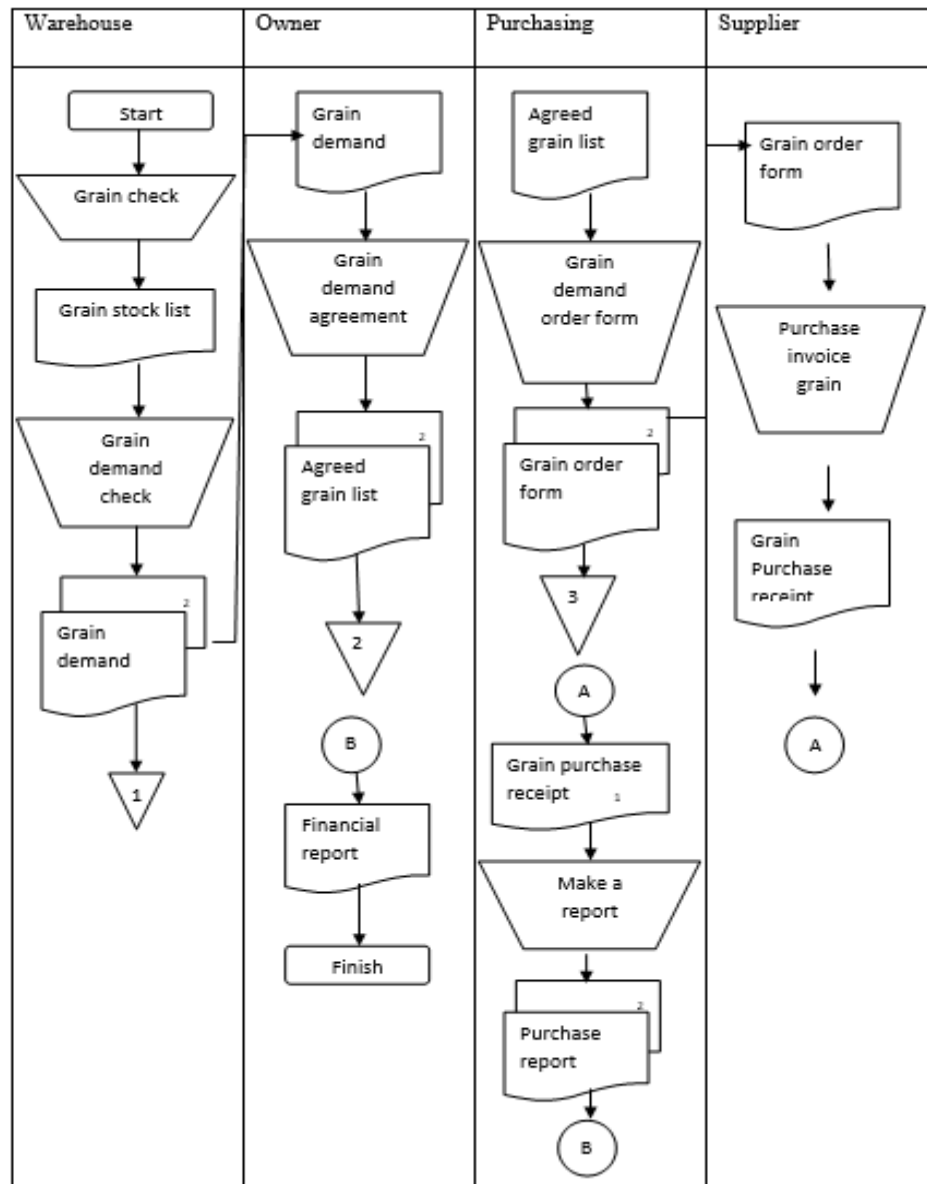


FIG 2. GRAIN PURCHASE ORDER PROCEDURE WITH CASH METHOD AT UD SANTOSO

Figure 2 notes:

1. Warehouse department.
 - a. Regular check for grain stock.
 - b. Conduct grain stock list notes.
 - c. There are two copies of the documents. First copy must be stored and second copy is handed toward owner.
2. Owner department.
 - a. Receive second copy of grain stock documents from warehouse department.
 - b. Approving grain stock demand to be bought by purchasing department.

- c. Make two copies of approved grain stock documents. First copy is kept and second copy is given to purchasing department.
 - d. Owner receives report of grain purchase from purchasing department.
3. Purchasing department
 - a. Receive two copies of grain stock documents from owner.
 - b. Conduct two copies of order form, first copy is kept and second one is given to supplier.
 - c. Conduct grain order purchase letter from supplier and conduct two copies of orser report. First copy is given to owner.
 4. Supplier department
 - a. Receive second copy of grain order form from purchasing department.
 - b. Make two copies of purchase receipt. First copy is given to purchasing department.

TABLE 1. RESULT OF DEPARTMENTS FUNCTION COMPARISON TOWARD GRAIN PURCHASING ACCOUNTING SYSTEM AT UD SANTOSO

Function related to grain purchasing accounting system (Mulyadi, 2016)	Actual condition at UD Santoso	Notes
Warehouse function	There is no a single person at warehouse department who is responsible in order to control and check grain stock of the warehouse.	Discordance
Purchasing function	Purchasing department of UD Santoso is responsible gain information about price, type, quality, and quantity of grain which will be bought from supplier.	Accordance
Reception function	Reception function at UD Santoso is run by same person with purchasing department.	Accordance
Accounting function	Accounting function at UD Santoso is called financial department who is responsible for documenting every transaction traffics which is related to cash flow at UD Santoso.	Accordance

Discordance of warehouse function occurred at UD Santoso must be fixed immediately. Warehouse function must be managed in accordance with recent SOP. The warehouse was just used to store grain bought from the supplier, dried rice kernel, and the grain will be milled, and it is also functioned to store rice kernel. Discordance of warehouse function department will prevent crosscheck action if there is any miscalculation in future. This result is supported by previous study conducted by Supriono (2016), in which dual function is occurred between warehouse and purchasing function, and reception function.



TABLE 2. COMPARISON RESULT OF PROCEDURES RELATED TO GRAIN PURCHASE SYSTEM AT UD SANTOSO

Procedure related to grain purchasing accounting system (Sujarweni, 2015)	Actual condition of UD Santoso	Note
Purchase demand procedure of warehouse	There is no warehouse function of UD Santoso who is responsible for grain stock check.	Discordance
Approval procedure of owner	UD Santoso owner always give authority of approval to all problems related to grain purchase.	Accordance
Purchasing procedure	Purchasing department conduct grain purchase invoice.	Accordance
Cash purchase documentation procedure	Finance department conduct documentation for every transaction traffic related to grain purchase.	Accordance

The discordance of purchase demand procedure may lead into fatal mistake, it is the shrinking amount of total grain which will result in sale lost and shrink of transaction traffic. Hall (2009: 192-194) stated that transaction authorization aim to manage transactions processed by information system into valid and solid data and in accordance with objective of management vision.

TABLE 3. COMPARISON RESULT OF DOCUMENTS RELATED TO GRAIN PURCHASE SYSTEM AT UD SANTOSO

Documents related to grain purchase system (Mulyadi, 2016)	Actual condition of UD Santoso
Purchase demand letter	Not conducted
Purchase order letter	Not conducted
Receipt report	Conducted
Order change letter	Not conducted
Outflow cash report	conducted

TABLE 4. COMPARISON RESULT OF ACCOUNTING DOCUMENTS RELATED TO GRAIN PURCHASE SYSTEM AT UD SANTOSO

Accounting documents related to grain purchase system (Surjaweni, 2015)	Actual condition of UD Santoso
Cash purchase journal	Conducted
Outflow cash journal	Conducted
General journal	Conducted
Grain stock card	Not conducted
Warehouse card	Not conducted

Two last tables, from documents and accounting notes perspective related to grain purchase system at UD Santoso is not in accordance with elements of purchasing system. Such result is supported by previous studies conducted by Permata et al. (2017).

CONCLUSION

- Function perspective related to grain purchasing accounting system, it is concluded that warehouse department has no supervising function, it makes warehouse department could not meet elements of purchasing system.
- Procedure perspective related to grain purchasing accounting system, it is concluded that warehouse department does not meet elements of purchasing system.
- Documents perspective related to grain purchasing accounting system, it is not in accordance with elements of purchasing system.
- Perspective of accounting notes related to grain purchasing accounting system, there are several notes such as grain stock card and warehouse card which is not in accordance with elements of purchasing system.

SUGGESTIONS

- Function and procedure perspective related to grain purchasing accounting system, warehouse function must follow and run its function.
- Documents perspective related to grain purchasing accounting system, the documents must be complete in order to avoid disorder and mistake in determining grain order purchase.
- Accounting notes perspective related to grain purchasing accounting system, there are several notes such as grain stock card and warehouse card that must be conducted in order for warehouse and purchasing department make sure current grain stock inside the warehouse related to grain sale.
- Documenting files support must be implemented by every departments in order to make ease of crosscheck action if there is any error in future.

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THE IMPORTANCE OF ENTERPRISE COLLABORATION SYSTEMS DURING A PANDEMIC

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Abstract

The coronavirus hasn't just changed where people work, it's also had a significant impact on how they work. Companies and individuals used (and are still using) various Enterprise Collaboration Systems (ECS) to facilitate online communication and productivity. This allowed organisations to expand and source experts and professionals from anywhere around the world. They were no longer limited by physical boundaries and could keep projects going. Some useful features of ECS include document management, task management, project management, team communications, workflows etc. The primary benefit of these applications is that they provide real-time, transparent access to an organization's workflow, allowing users to set, follow up on and complete projects and tasks from any online device.

Although a significant contribution has been made towards raising corporate awareness of ECS use, an overview of the challenges and benefits of ECS, such as this one, is always welcome.

INTRODUCTION

To fight the threat of Coronavirus, a number of companies have rolled out work-from-home policies for their employees. Business trips were cancelled, and corporations were forced to take a critical look at their business continuity plans, making difficult, fast-paced decisions in order to support their workforce while also satisfying their customers. New collaboration technologies were needed in order to help organizations to solve these problems, boosts productivity, improves communication, and promotes collaboration.

Enterprise collaboration systems (ECS) are cross-functional informational systems that enhance communication, coordination and collaboration among the members of teams and workgroups to achieve common objective. ECS provide tools that help every individual in an organization to manage the documents, to share information and knowledge with each other, and to work together cooperatively on joint projects and assignments. They combine the Enterprise Social Systems components with traditional

groupware components (Schubert and Williams, 2013; Leonardi, Huysman and Steinfield, 2013; McAfee, 2006) in order to support business and communication, collaboration, content and knowledge sharing within organizations.

ECS includes hardware, software, and internal and external networks, as well as people, processes, and organizational aspects. They help people to work more efficiently (Joseph Katie, 2013), working together, in real time, using the Internet network. Various enterprise collaboration systems exist on the market today. However, a good ECS should have three basic concepts: communication, coordination, and collaboration (Ellis et al. 1991; O'Brien and Marakas, 2005; Fuks, Raposo and Gerosa, 2008).

The objective of this paper is to show the importance of ECS, identifying the benefits as well as challenges, of using these systems.

Enterprise collaboration systems (ECS) - challenges

As COVID-19 forced entire companies to operate from home, it was essential for employees to adapt to new challenges and embrace the new way of working from home. If previously employees could choose whether and how to use the technology, now its use has become mandatory. This particularly affected employees with less IT background, who stick to traditions and old work practices. They needed to adapt quickly to non-conducive working spaces and unfamiliar digital systems. This created additional pressure on the employees, who already had difficulties dealing with the new pandemic situation, that negatively affect their wellbeing. The enforced working from home creates various challenges for employees since they have to combine home and work demands in order to achieve a work-life fusion (Haeger & Lingham, 2014). The employees often share their new work-home space with other members of their household that leads to various distractions. The blurred boundary between home and work causes additional pressure for employees regarding constant connectivity and responsiveness, which leads to fatigue and negative emotions. Some find that virtual meetings and check-ins are too frequent and unnecessary, affecting their productivity. They suggest new patterns of communications in terms of frequency and length (Waizenegger et al. 2020). The hybridity of work and home activities affect the wellbeing of employees and indirectly affect the effectiveness and efficiency of teamwork.

But not only employees, the companies also faced new challenges related to the changed work environment, while trying to maintain business activities as usual. Companies' main challenges were not only to implement new solutions, but also to choose from a wide range of existing digital systems on the market. Literally thousands of collaboration tools are available on the market, some designed for specific use cases, but many of which

partially overlap each other in terms of the functionality they offer and use cases they can be applied to. To provide you with some options, we've put together a short overview of the different types of collaboration tools, as well as popular choices within each tool category.

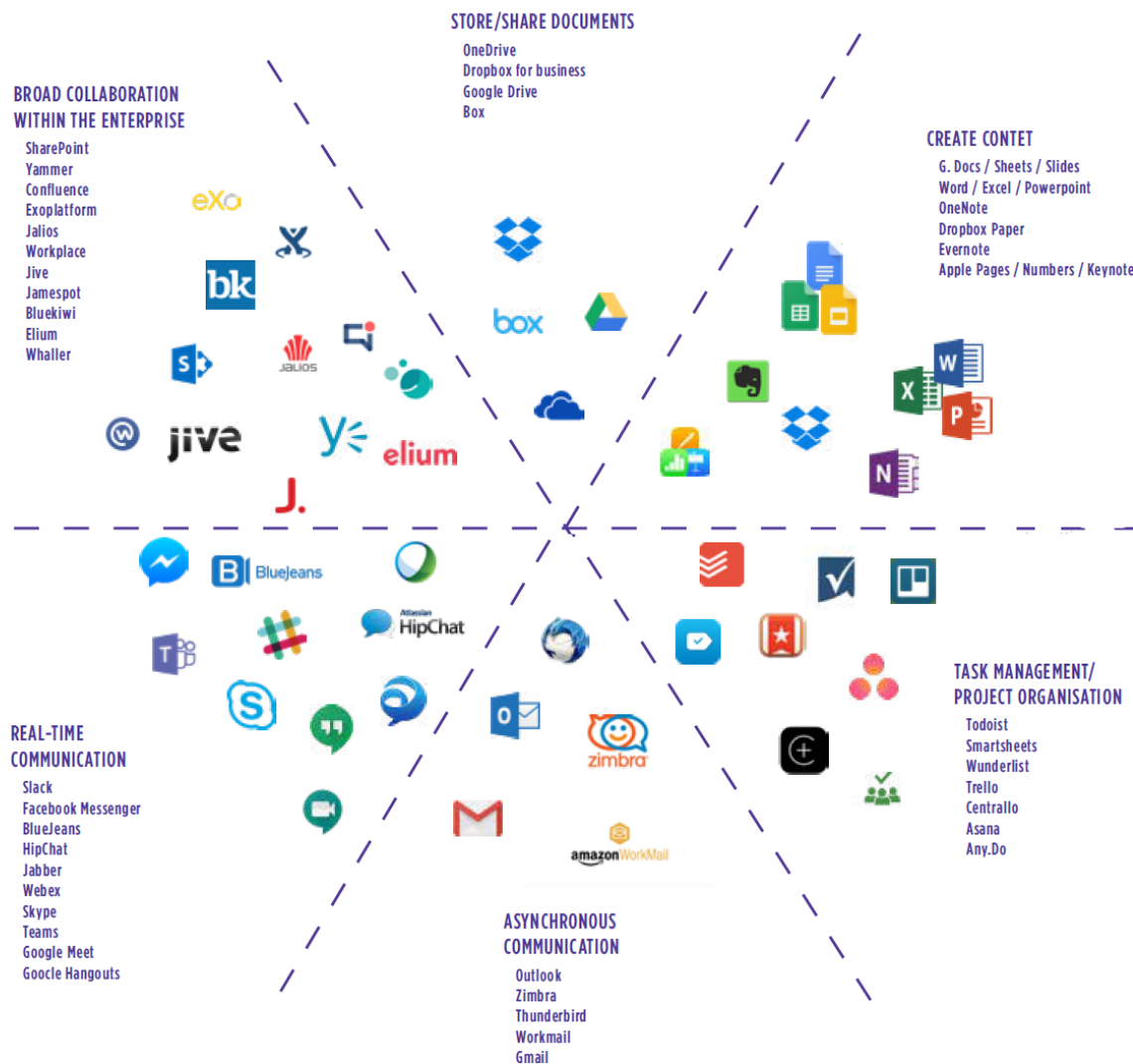


Fig.1. Different types of collaboration tools (Cascarino et al. 2018)

Communication tools

These include video conferencing, email, voice mail, instant messaging etc. Among these, the real-time audio and video conferencing systems are most popular nowadays (Zoom,

Teams, Google Meet, Skype etc). They contain features that allow rich collaboration experience within the project members, clients, business partners and other stakeholders. By using the webcams, the meeting participants create human connections without exposing themselves to any health risk. Video conferencing software enables participants to share screens, stream presentations, send files from a meeting library, and record real-time conversations for future reference. Due to the social affordances offered by video conferencing software, team leaders could better allocate work tasks to their team members without overloading.

Project/Task management tools

Collaborative project/task management software (Asana, Smartsheets, Trello etc.) makes it possible to plan, coordinate, monitor and manage complex projects carried out by teams. It allows users to create projects (and tasks within that projects), set project permissions, add users' teammates to tasks and projects, share projects or tasks with other team members, get reminders and notification, set due etc. These tools accelerate business execution and address the volume and velocity of today's collaborative work.

Tools for sharing resources

These enterprise tools offer the ability to manipulate documents online so that all employees have access to information. Team members can work on the same document, remotely and online or even on the same system. It's possible to modify documents at any time and for several collaborators to update a file simultaneously. Some examples of these tools are OneDrive, Google Drive, Box etc.

Document management tools

Document management is about effective control of documents, from their conception to their destruction. To this end, document management includes document indexing, document revision tracking, document security, workflow management etc. These features are important for the companies because sometimes critical information within the documents should be indexed and saved, so that, it can be searched and retrieved, if necessary. Security is another important factor while using collaboration and sharing systems. The document management system can encrypt the documents while they are being stored and transmitted via the web, which significantly reduces the chances of someone to steal the data. In addition to protecting the data, a good document management system will also expand its accessibility for authorized personnel. Some of



the most used document management systems are: Microsoft SharePoint, M-Files, DocuWare, Templafy etc.

Enterprise collaboration systems (ECS) - benefits

Collaboration is essential for successful business. Internal collaboration increase productivity, while external collaboration with customers, partners, and vendors, provides important feedback that increases innovation, profitability and trust in the company. We can say that cross-functional team collaboration as well as external collaboration with stakeholders improves efficiency and effectiveness. When communication channels are open, it's easier to find the information you need or turn to colleagues and customers for feedback and assistance.

But collaborating is far easier said than done. Fortunately, ECS can help facilitate enterprise collaboration. There are many reasons for using ECS. The most compelling ones are:

- **to remove physical barriers** – since many enterprise collaboration tools are cloud-based, they can be used from anywhere (the users only need an Internet connection), thus providing a way for team members to regularly interact despite geographical distance. In this way the companies reduce travel costs and minimize expenses, while workers save travel time.
- **to keep everyone in the know** - ECS can be used to ensures more people know about important happenings, keep everyone informed and record the team's progress.
- **to improve team agility** - ECS provides more flexibility in how members work together to achieve business goals. This is especially true for smaller teams that are accustomed to adaptability and aren't bogged down by organizational bureaucracy.
- **to attract and retain talent** - employees value flexible workplaces that encourage the sharing and development of skills and teamwork. By using effective communication systems, companies can better retain their employees with the best skills and talents. Satisfied and motivated employees are the best company's advocates and help in attracting more top talent.
- **to make better decisions** - ECS keeps all documents and pertinent information in a centralized location, making it easier for decision makers to inform themselves. In addition, collaboration tools make updating documents easy, and typically

have notification features a decision maker can use to always have the latest knowledge about organizational activities.

- **to drive innovation** - with easier access to additional know-how and resources, companies will have the foundation to develop innovative products, processes or services. Collaborative research is naturally fostered and developed faster and cost-effectively.
- **to increase competitive advantage** - co-operative intelligence in all business departments, will increase competitive advantage of the company, by imbuing complementary strengths, capabilities and best practices in company's offer. Enhanced collaboration enables companies who complement each other to work on joint projects and compete in markets usually beyond their individual reach, be it through geographic, scale or expertise.

With these benefits, ECS are becoming a norm. Businesses that proactively invest in enterprise collaboration tools can now future-proof their operations and increase their revenue and investments.

CONCLUSION

The COVID-19 pandemic has compelled businesses to embrace new ways of communication and collaboration, and to accelerate their shift towards remote work. This has led to an increase in the adoption of ECS across enterprises. The advantages that ECS offers to companies are huge: ECS facilitates seamless connectivity between their workforce, increases productivity, fosters creativity, and at the same time gives companies a competitive edge over their peers.

The increased demand of ECS had led to significant growth in the collaborative software market. While the ECS market was valued at USD 9.5 billion in 2019, in 2020 it grew to USD 10, 5 billion. Between 2020 and 2025 it is expected to grow at a compound annual growth rate (CAGR) of 12.7%, reaching USD 45 billion in 2025.

If anything, the COVID-19 pandemic has only expedited the adoption of new-age tools and will define how workplaces of the future will evolve.

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