Effects of Merger and Acquisition on the Technological Performance of Nigerian Business Organizations

Owomoyela, S. K.
Derpartment of Business Administration
Osun State Polytechnic, Iree, Nigeria

ABSTRACT

This study focuses on the effects of merger and acquisition on the technological performance of business organizations in Nigeria. Descriptive survey research design was used. The population for the study consisted of two Public Liability Companies and two Multinational Companies based in Nigeria. Stratified Random sampling technique is adopted in selecting a total of 50 participants comprising 30 staff from Public Liability Companies and 20 staff from Multinational companies. A well structured questionnaire is used to collect data for the study with the aid of personal interview. Hypotheses were developed and tested using Chi-Square distribution at 0.05 level of significance. Results indicate among others that on the long-run expected synergistic characteristics of merger and acquisition contribute to technological performance through the invention of new process related technologies and new product-related techniques. It is therefore concluded that merger and acquisition (M & A) is contingent upon both a strategic fit and an organizational fit that enable its partners to collaborate in future activities. Hence, there should be product-market relatedness and technological relatedness between the companies involved in merger and acquisition.

Keywords: *Merger, acquisition, technological performance, organizations*

INTRODUCTION

The resurgence in merger, acquisition, and divestitures has focused greater attention on assessing the impact of these transactions on organizations and workers. Empirical studies of the effects of merger and acquisition typically examine a single unit of analysis: firms, plants, or workers. Firm-level analyses evaluate the impact of changes in corporate control on short-run stock prices, long-run stock prices, or accounting profits of companies whose shares are publicity traded (Hilt, HosKisson, Ireland and Harrison, 1991; Hilt, Hoskisson, Johnson and Moesel, 1996). Maximum studies were conducted related to merger and acquisition. But only a few studies have so far examined the long run performance of acquiring firms after the merger to determine technological performance and the performance of organizational employees. The focal point of this study concerns the possible effect that merger and acquisition (M & A) have on the technological performance of companies. In recent years, a small number of contributions to the management literature has put this topic on the research agenda, although the international contents remain limited. The terms, almagamation and take-over are often used synonymously in discussing merger and acquisition. In general use, a merger or an amalgamation is viewed as the situation where two or more companies of similar business activity and strength combine to form a new and stronger business organization. On the other hand, a takeover or an acquisition involves

the purchase of a controlling share in another company (Akinsulire, 2002) in Owomoyela (2011). A merger or acquisition is usually a scheme that is carefully planned to achieve a synergistic effect (Owomoyela, 2011). It is important to note that the technological performance of merger and acquisition reflect the long-term effects of merger and acquisition. Technology related incentives for merger and acquisition affect long-term strategic variables which tend to be underestimated in much of the current empirical researches that usually focus on the short-term, economic effects of merger and acquisition.

In these long term effects, the expected synergistic characteristics of merger and acquisition can contribute to technological performance through the invention of new process-related technologies and new product related technologies by the combined companies (Duysters and Hagedoorn, 2002). These new technologies (inventions) can eventually lead to improved profitability of companies if they are transformed into actual innovations, that is, new products and processes that are successfully introduced to the market. There can also be short-term effects of M & A when the acquiring company intends to only obtain access to Research and Development (R & D) and technological capabilities to simply produce an already existing, combined technological output. However, when these existing capabilities are used in the further development of new technological output, these short-term effects are expected to be limited in comparison to the long-term, synergistic technological effects of M & A. This effect of merging companies is a well-known classic issue in the innovation literature where increased size of companies and synergies, through internal growth or by means of Ms & As, are positively related to long-term technological performance (Baysinger and Hoskisson, 1989).

The technological effect of M & A is also discussed in some previous research on a related issue, that is, the motivation for M & A. Frequently mentioned motives for M & A are increased market share, improved efficiency, expanded R & D efforts, investment adjustment, firm growth, risk reduction, speedy market entry (Chakrabarti, Hauschildt and Sueverkruep, (1994). Increasing R & D activities and improving technological performance seem hardly relevant as motives for M & A in post-colonial times (Chakrabarti and Burton, 1983). Technological motives for M & A appear to be only moderately important across industries. However, other studies do suggest that M&As are an important element in the technology acquisition strategy of companies in particular in R & D intensive (high-tech) industries (Duysters and Hagedoorn, 2002). We continue along this line to study the effects of merger and acquisition on the technological performance of a business organization. Merger and acquisition is usually a scheme that is carefully planned to achieve a synergistic effect. A synergy is the generic term used in the field of business acquisition and merger to cover the economics which can result through integration (Akinsulire, 2002). It means the sum of the whole is more than the summation of the individual components parts that make up the whole. According to Akinsulire (2002), reasons for merger and acquisition are elimination of duplicating and competing facilities to secure scarce raw materials and obtain economics in buying, to safeguard a source of new materials, elimination of competition and protection of existing market, diversification into other product or markets or to complete a product range, to rationalize distribution, to obtain a new sales outlet. Merger and

acquisition might also be employed to buy up a company having aggressive and agile management. And to inject fresh ideas for better projects and enhancement of shareholders' wealth (Akinsulire, 2002). Lichtenberg and Siegel (1987) outline a "matching" theory of ownership change, in which the quality of the "fit" between heterogeneous plants and owners is reflected in the production of the organization. Sub-par plant productivity constitutes a signal of a bad match involving an owner and a plant, which will be the major determination of the firm level decision to maintain or relinquish ownership of a given plant. Home, Thomas, James and Schmitz (1990) modify this framework to include an additional human capital dimension that they call "business quality," which is directly related to the quality of the manager. In their model, high quality managers buy companies that implement high quality projects based on new ideas.

The variety of reasons for merger and acquisition and the diversity of their consequences have given rise to three theories. These are internalization theory, technological competence theory and transaction cost theory. The internalization theory suggests that corporations attempt to procure intangible assets that generally give them a competitive advantage. Another theory derived from the first, is the technological competence theory. According to this theory, corporations that engage in merger and acquisition are attempting to "internalize" technological advantages by acquiring the corporations that possess them. A third theory, that of transaction costs, applies to vertical merger and acquisition aimed at reducing uncertainty or the cost of procuring a particular factors of production. There are multiple reasons, motives, economic forces and institutional factor that can, taken together or in isolation, influence corporate decisions to engage in merger or acquisition. Over the last few years, the pressures emanating from international competition, financial innovation, economic growth and expansion, heightened political and economic integration, and technological change have all contributed to the increase pace of merger and acquisition.

Of course, merger and acquisition can still be motivated by such classic commercial and economic considerations as broadening the range of related products and the geographic market, diversification, and the risks and benefits of vertical integration. Finally, new or modified tax regimes, the cost of capital, and policy on such things as foreign property, the cost of capital, economic regulations and privatization also have an effect on the intersectoral/international variations in the number of merger and acquisition. The purpose of the study hence is to investigate whether merger and acquisition contribute to technological performance. The study will examine the relationship between merger and acquisition and technological performance of manufacturing organizations. It will also identify the conditions under which merger and acquisition might have a positive effect on the technological performance of business organisations in Nigeria. To achieve the above, the following issues were taken into consideration.

(i) Is there is no significant relationship between the degree of organisations involved in M & A and the technological performance of of the organisations in Nigeria.

(ii) Is there is no significant relationship between the technological relatedness of merger and the technological performance of the combined business organisations in Nigeria.

(iii) Is there is no significant difference between the level of R&D intensity of partner-companies in merger and acquisition and the technological performance of the combined business organisations in Nigeria.

The above being taken into consideration, the following research hypotheses were formulated.

$H_0$1 There is no significant relationship between the degree of organisations involved in M & A and the technological performance of of the organisations in Nigeria.

$H_0$2 There is no significant relationship between the technological relatedness of merger and the technological performance of the combined business organisations in Nigeria.

$H_0$3 There is no significant difference between the level of R&D intensity of partner-companies in merger and acquisition and the technological performance of the combined business organisations in Nigeria.

METHOD

This study used the descriptive survey research design. The population of the study consists of two Nigerian Public Liability Companies and two Multinational (Foreign) Companies that are in the high-tech industries based in Nigeria. Stratified Random Sampling was used to select these companies and was also used to select 50 subjects comprising 30 from Public Liability Companies and 20 from the multinational Companies. Primary data, which were gotten from structured questionnaire and interviews were used. The questionnaire contains two sections, A and B. Section A sought information on personal biodata of the respondents while section B contained 20 items on the effects of merger and acquisition on the technological performance of business organisations in Nigeria. The reliability co-efficient of the questionnaire (Karl Pearson Correlation Co-efficient, r, was used) is 0.86 and the data collected were analysed using frequency and percentages. Hypotheses were developed and tested using Chi-Square distribution at 0.05 level of significance. A sample of 20 workers were collected at every interval of five workers.

RESULTS AND DISCUSSION

Table 1 reveals that less than 50% of the respondents indicated that a strategic fit and organizational fit can always increase technological performance in public liability companies in most of the items listed on table 1, while only 40% indicated that acquisition of new innovation activities (item 2), one of the crucial elements of organizational and strategic fit, always increase technological performance in public liability companies. On the average, 51.85% of the respondents indicate that strategic and organizational fit will always increase technological performance in public liability companies. The results therefore show that strategic and organizational fit will always enable merger and acquisition to increase technological performance of public liability companies. Furthermore, fig. 1 shows how a strategic fit and organizational fit can increase technological performance in public liability companies. As contained on table 2, over 40% of the respondents indicate that 'New technologies' (item 1) can increase technological performance in Multinational Companies while over 50% of the respondents indicated that the crucial elements of the strategic fit

and organizational fit (items 2 - 3) that is 'Acquisition of new innovations' and 'integration of R and D activities'' always increase technological performance in multinational companies. The remaining (items 4 - 10) had below 40% of the respondents indicating that a strategic fit' and organizational fit' occasionally increase technological performance in multinational companies. On the average, 47.22% of the respondents indicated that a strategic and organizational fit always increase technological performance in multinational companies, 28.89% indicated that a strategic and organizational fit occasionally increase technological performance while 23.8% indicated that a strategic and organizational fit will never increase technological performance in multinational companies. The results therefore revealed that a strategic fit and organizational fit will enable Merger and Acquisition (M & A) increase technological performance in an industry. Fig. 2 also shows how a strategic fit and organizational fit will increase technological performance in multinational companies.

The analyses show that 90% of the respondents testify that there is significant relationship between merger and acquisition and technological performance. Hypothesis 1 which states that there is no significant relationship between the degree of organisations involved in M & A and the technological performance of the organisations in Nigeria was rejected. Therefore, it can be concluded that there is a significant relationship between merger and acquisition and technological performance of companies. Though 75% of the respondents also agreed that there is a significant relationship between the technological relatedness of merger and acquisition and the technological performance of the combined companies, yet 25% did not agree to the above statement. The null hypothesis that there is no significant relationship between the technological relatedness of merger and acquisition of companies and the technological Performance of the combined companies was the rejected. This implies that there is a significant relationship between the technological relatedness of merger and acquisition and the technological performance of the combined companies.The null hypothesis that there is no significant relationship between the level of R & D intensity of partner - companies in merger and acquisition and the technological performance of the combined companies was accepted as 95% of the respondents agreed that there is no significant relationship between the level of R & D intensity of partner-companies in merger and acquisition and the technological performance of the combined companies. It can be concluded that there is significant relationship between the level of R & D intensity of Partner companies in merger and acquisition and the technological performance of the combined business operation.

This study revealed that a strategic fit and organizational fit are vital components that will enable merger and acquisition increase technological performance in business organisations. These results are consistent with the findings of Duysters and Hagedoorn (2002) who also assert that in order to achieve synergistic effects through merger and acquisition, the strategic fit has to be supplemented by an organizational fit in which the merging companies appear to match, and the statement of Datta (1991) who also states that in order to be successful not only in establishing merger and acquisition but also to generate the expected results, merger and acquisition (M & A) are contingent upon both a strategic fit and organizational fit that enable its partners to collaborate in future activities.

The success of synergistic merger and acquisition are analyzed in terms of strategic fit related to the degree of the existing product-market relatedness of M & A, the technological relatedness of M & A and their organizational fit. It was discovered that the degree of relatedness of M & A of both a horizontal or a vertical nature affects the technological performance of companies. Related M & A profit from economies of scale and scope. Synergist should generate more synergistic benefits than in the case of unrelated M & As. Also, the more M & A are established with companies from similar, horizontally related fields of technology and with technologically, vertically related companies, the higher the technological performance of the combined companies. Effect of R & D intensity and the degree of similarity in terms of the size and structure of M & A partners also have effect on their combined technological output. A strategic and organizational fit, therefore, are the conditions under which merger and acquisition will have a positive effect on the technological performance of companies.

Table 1: Analysis of how a strategic fit and organizational fit can increase technological performance of companies.

	Always		Occasionally		Never	
Items	**N**	**%**	**N**	**%**	**N**	**%**
New technologies (inventions)	16	53.33	08	26.67	06	20.00
Acquisition of New innovation activities	12	40.00	09	30.00	09	30.00
Integration of R&D activities	17	56.67	06	20.00	07	23.33
Development of new technologies/output	16	53.33	09	30.00	05	16.67
Increased Control over current new environment	16	53.33	08	26.67	06	20.00
Product/technological complementarity	15	50.00	08	26.67	07	23.33
Comparable organization Size/Structure	18	60.00	07	23.33	05	16.67
Vertical Integration of Users & Suppliers	16	53.33	08	26.67	06	20.00
Technological Relatedness	14	46.67	09	30.00	07	23.33
		51.85		26.67		21.48

Source: Survey, 2012

Table 2: bAnalysis of how a strategic fit and organizational fit can increase technological performance in international companies

	Always		Occasionally		Never	
Items	**N**	**%**	**N**	**%**	**N**	**%**
New Technologies (inventions)	09	45.00	06	30.00	05	25.00
Acquisition of new innovations	10	50.00	07	35.00	03	15.00
Integration of R&D activities	11	55.00	05	25.00	04	20.00
Development of new technological output	07	35.00	08	40.00	05	25.00
Increased control over new environment	09	45.00	06	30.00	05	25.00
Product/Technological complimentarity	08	40.00	08	40.00	04	20.00
Comparable organisation structure	11	55.00	04	20.00	05	25.00
Vertical integration of Users/Suppliers	12	60.00	02	10.00	06	30.00
Technological Relatedness	08	40.00	06	30.00	06	30.00
		47.22		28.89		23.89

Source: Survey, 2012

CONCLUSION AND RECOMMENDATIONS

This research demonstrates that M & A can contribute to improving the technological performance of companies in a high-tech environment. However, it has to be stressed that both the organizational and the strategic fit of the companies involved in M & A are crucial for the technological success of M & A. Not only does our current research establish the important role that organizational and strategic fit seem to also have for the technological performance of M & A active companies, it particularly emphasizes the importance of

linking-up to other research-intensive companies. This suggests that the acquisition of these companies, through which the acquiring company can improve its technological skills and expected learning capabilities, has a positive effect on the technological performance of acquiring companies after M & A have taken place. The relevance of market relatedness of M & A stresses the importance of uncertainty reduction by means of integration of companies that are active in similar sectors and that have some similarity in terms of product-markets. The integration of R & D intensive companies, however, creates the necessary new skills and capabilities that enable the company to learn about new perspectives that can decrease its dependency on its existing environment and improve its performance. Therefore, the external acquisition of technological capabilities by means of M & A can, if proper attention is paid to the strategic and organizational fit of companies, prove to be an important strategic advantage for companies in high-tech sectors. It is therefore recommended that there should be product-market relatedness and technological relatedness between the companies involved in merger and acquisition. New product-related technologies and new process-related technologies (inventions) must be transformed into actual innovations: new products and processes must be introduced into the market in this way, merger and acquisition can contribute to technological performance and profitability of companies. Companies should look for M & A partners that have a similar or higher level of research activity (orientation) in order to reach synergies in future research and development activities. There should not be disparity between the sizes of merging companies so that organization integration aimed at technological performance might be relatively easy.

REFERENCES

Akinsulire, O. (2002) Financial Management. Lagos: Ceemol Publishers Ltd.

Baysinger, B. D. and **Hoskisson, R. E.** (1989). Diversification strategy and R&D intensity in multi-product firms. *Academy of Management Journal*, 34, 205-214.

Chakrabarti A. J., Hauschildt J. and **Sueverkruep C.** (1994). Does it pay to acquire technological firms? *R &D Management*, 24, 47-56.

Chakrabarti, A. and **Burton, J.** (1983). Technological characteristics of merger and acquisition in the 1970's in manufacturing industries in the US. *Quarterly Review of Economics and Business*, 23, 81-90.

Datta. D. K. (1991). Organization fit and acquisition performance: effects of post-acquisition integration," Strategic Management Journal, 12, pp. 281-297.

Duysters. G and **Hagedoorn.J.** (2002). The Effects of Merger and Acquisition on the Technological Performance of Companies in a High-Tech Environment. Journal of Technology Analysis and Strategic Management, Vol. 14, No. 1 pp 67-80.

Hitt M. A., Hoskison R. E., Ireland R. D. and **Harrison J. S.** (1991). Effect of Acquisitions on R & D Inputs and Outputs. *Academy of Management Journal*, 34, 693-706.

Hitt M. A., Hokisson R. E., Johnson R. A. and **Moesel D. D.** (1996). The Market for Corporate Control and Firm Innovation. *Academy of Management Journal*, 39, 1084-1119.

Homes T. J. , James, A. and **Schmitz Jr.** (1990). A Theory of Entrepreneurship and its Application to the Study of Business Transfer. *Journal of Political Economy*, 98 (2), 265-294.

Lichtenberg, F. and **Siegel, D.** (1987). Productivity and Changes in Ownership of Manufacturing Plants. *Brookings Papers on Economic Activity*, 3, 643-673.

Owomoyela, S. K. (2011). *Functional Policies in Business.* Osogbo: World Wad Publishers.