Ajayi and Morton/ Elixir Inter. Busi. Mgmt. 65 (2013) 19596-19600

Available online at www.elixirpublishers.com (Elixir International Journal)



International Business Management



Elixir Inter. Busi. Mgmt. 65 (2013) 19596-19600

Soft Innovations and Organisational Ambidexterity: Required Platforms for SMEs Survival

Ajayi, Oluseyi Moses* and Morton, Susan C

Wolfson School of Mechanical & Manufacturing Engineering, Loughborough University, Loughborough, Leicestershire, LE11 3TU, United Kingdom.

ARTICLE INFO

Article history: Received: 15 October 2013; Received in revised form: 25 November 2013; Accepted: 2 December 2013;

Keywords

Contextual Individual Ambidexterity, Organisational Ambidexterity, Organisational and Marketing Innovations.

ABSTRACT

Many of the previous research studies on innovation tend to focus on process and product (technological) innovations. It is, however, interesting to note that Organisational and Marketing Innovations (OMIs) could be the necessary prerequisites to optimally utilise and deploy such technological innovations. This study proposes Organisational Ambidexterity as a necessary antecedent to develop the firm's OMI capabilities. For firms to remain competitive and adaptive to a continuous change in the business environment, Organisational Ambidexterity has been noted to be a necessary attribute, but research on ambidexterity at individual level of analysis is limited. The study intends to develop a framework that promotes effective innovation through shop floor employees' contributions to Organisational Ambidexterity, OMIs capabilities of Small and Medium-sized Enterprises.

© 2013 Elixir All rights reserved.

Introduction

Governments in countries across the world provide support services for their small and medium sized enterprises (SMEs) in order to enhance their performance (DTI, 2005; DTI, 2006; Cravo et al., 2010; Subair, 2011; Omankhanlen, 2011a; Omankhanlen, 2011b; Ajayi and Adesina, 2011). However, in this era of global economic recession, coupled with very slow economic recovery in many parts of the world, SMEs are unlikely to be spared in the austerity measures that are being put in place to ensure the much needed economic recovery. SMEs are internally characterised by their limited resources (Salavou et al., 2004), and this often limits their ability to develop innovative approaches to their business activities and embark on innovative projects, which are crucial to their continuous survival (Goedhuys and Veugelers, 2011). Large firms, on the other hand, embark on these innovative projects both internally and externally in collaboration with various research institutions from time to time and this has, in no small measure, contributed to their growth and survival even in the difficult times (Kanter, 2010).

In many developing nations, several aids have been put in place to facilitate technological growth (DTI, 2005; Omankhanlen, 2011a; Omankhanlen, 2011b), but it is sad to reflect that the business environment in many developing nations both inhibits and constrains the firms' absorptive capacity for new technologies (Goedhuys and Veugelers, 2011). Hence, in many developing nations, the realised innovative outputs often discourage further investment and support in the innovation process. This study intends to produce an innovation framework for SMEs in developing nations in order to increase their potential for the effective innovation process.

Literature Review and Identified Research Gaps Effective Innovations in SMEs

Innovation activities are said to be effective if they have positive impact on business returns and organisational growth. Small firms have a strong ability to invent because they are very close to the customers, but their main problem is in the commercialisation of their inventions, that is, achieving effective innovation (O'Regan et al., 2006; Van de Vrande et al., 2009; Gans and Stern, 2003). According to Cosh et al. (2005), limited research has been carried out on the productivity of innovation within the context of SMEs. A recent study by Park and Ghauri (2011) reveals that SMEs in developing economies search for complementary knowledge and learning opportunities, and this never guarantees possession of sufficient capacity to absorb these technological innovations when compared with small firms in developed economies. Limiting factor to the growth of SMEs in developing nations is that little information exists about their operating procedures; their management styles; their success factors; and the theories explaining the success (Lee et al., 2010; Jackson et al. 2008). Beyond SMEs in the developing nations, Lam (2011) calls for the investigation of the roles of endogenous organisational forces, for instance: capacity for learning; values; and interests and culture in organisational change and innovation.

Organisational and Marketing Innovations (OMIs)

Organisational innovations are results of management's strategic decisions emerging from the implementation of organisational methods that have never been used before in the firm (OECD/Eurostat, 2005). Marketing Innovations involve the implementation of new marketing methods to address the customer needs or opening up new markets (OECD/Eurostat, 2005). Many of the previous studies on innovation tend to focus more on process and product innovations (Edquist 2005; Conway and Steward, 2009). It is, however, interesting to note that OMIs could be the necessary prerequisites to optimally utilise and deploy such technological process and product innovations (Lam, 2005). The lack of prior research on nontechnological innovations has been attributed to poor data availability (Battisti and Stoneman, 2010; Schubert, 2009). According to Nguyen and Mothe (2008), many empirical studies on firms' innovative capacity, innovation inputs and other support instruments do not take into account the complementary innovation strategies of marketing and/or organisational innovations. The study of Battisti and Stoneman (2010) reveals that adoption of technological innovations by firms is not enough to gain competitive advantage; the far-reaching benefits of technological innovations can only be achievable if they are accompanied by non-technological innovations. While most studies on innovation have focussed only on one innovation type at a time, findings reveal that both OMIs have been underresearched as a joint entity (Battisti and Stoneman, 2010).

The significance of OMIs can be revealed through the innovation value chain proposed by Hasen and Birkinshaw (2007). The four types of innovation identified by the OECD/Eurostat (2005) can be linked to this innovation value chain, as shown in Figure 1. While the idea conversion phase requires more of the application of process and product innovations (the hard components), this research suggests that all three phases require the application of OMIs (the soft components).

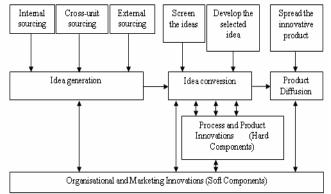


Figure 1: Relating Hansen & Birkinshaw's Innovation Value Chain to Innovation Types (Adapted from Hasen and Birkinshaw, 2007)

Contextual Individual Ambidexterity

To survive, firms must exploit current competitive advantage and competencies and also explore new domains with equal dexterity (Lubatkin et al., 2006). For firms to remain competitive and adaptive to continuous change in the business environment, they must exploit existing competencies and explore new ones (Lubatkin et al., 2006; Floyd and Lane, 2000). Organisations must be able to operate successfully in both mature markets and emerging markets. In mature markets, cost efficiency is critical; while experimentation, speed, and flexibility are critical features of the emerging markets (Simsek, 2009; He and Wong, 2004).

Ambidextrous firms excel at exploiting existing opportunities, and also at exploring new opportunities (Andriopoulos and Lewis, 2009). The ability of an organisation to pursue exploration of new product markets while exploiting current product markets is crucial to its long term survival (Venkatraman et al., 2007). Exploitative activities transform knowledge into commercial ends; without exploitative efforts, knowledge may not be fully utilised (Andriopoulos and Lewis, 2009). On the other hand, explorative activities aim at continuously renewing and expanding an organisation's knowledge base; without explorative efforts, a firm's stock of knowledge will wane (Andriopoulos and Lewis, 2009). When firms focus exclusively on exploration, they tend to suffer by not gaining the business and financial returns from their knowledge (Levinthal and March, 1993). At every point in time, meeting the present needs of the existing customers of any firm requires more of the exploitative than the explorative activities from the firm. However, meeting the future needs of the customers (both the current and the future customers), requires more of the explorative than the exploitative activities.

Gibson and Birkinshaw (2004) argue that ambidexterity promotes sustainable performance. According to them, alignment activities are tailored toward improving business performance in the short term, while adaptability activities are geared toward improving business performance in the long term. Raisch et al. (2009) suggest that ambidexterity is likely to relate positively to organisation survival, firm resistance to organisational crises and decline, employee satisfaction and motivation, and corporate reputation.

Previous studies on the antecedents of organisational ambidexterity focus on the composition of the firm's leadership and on the organisational context. There has been a call for research into ambidexterity at an individual level of analysis (Raisch and Birkinshaw, 2008), though few studies have reacted thus far. O'Reilly and Tushman (2011), Lin and McDonough (2011) and Mom et al. (2009) focus on firm leadership and top management team composition.

Gibson and Birkinshaw (2004) argue that every individual in a unit can concurrently deliver value to existing markets in his or her functional area, and can also react appropriately to the changes in the task environment. Thus, theoretical and empirical investigation on organisational ambidexterity with respect to the composition of the shop floor employees is yet to receive the needed attention. Figure 2 shows the focus of the previous research on the antecedents of organisational ambidexterity, and identifies where research is currently scarce. Research on contextual individual ambidexterity of shop floor employees alongside the organisational context is likely to give a better understanding of how employees' individual ambidexterity.

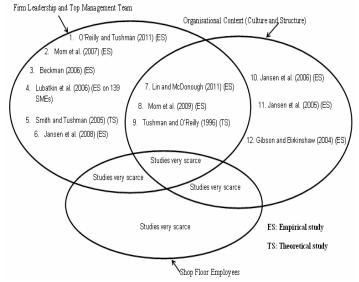
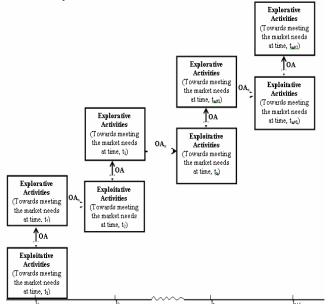


Figure 2: Examples of Previous Research Studies on the Antecedents of Organisational Ambidexterity

According to Raisch et al. (2009), the ability of the individuals employed by an organisation will have an aggregate effect on the organisation's ambidexterity. However, they posit further that, in most cases, an organisation's ambidexterity is more likely to be a function of interrelated individual and organisational factors than the summation of the individual's activities and ambidexterity. It is important to investigate contextual individual ambidexterity of the shop floor employees at the individual level of analysis, but it is much more beneficial to the body of knowledge on organisational ambidexterity when carried out alongside the organisational context, rather than without it.

Another important concept of the organisational ambidexterity construct is the timing of the benefits (financial business returns to the organisation) of each of the activities associated with the construct. As shown in Figure 3, this research suggests two components of ambidexterity; x and y. The y component (OA_y) can be said to focus on the individual ambidexterity, while the x component (OA_x) describes the organisational ambidexterity. The x component (OA_x) focuses on how to transform the present explorative activities. Thus, the intention of the current research is to identify how individual ambidexterity of the employees contributes to organisational ambidexterity.



t1 Change in time: A function of a change in the market needs (in customers' needs and/or in business environment)

Figure 3: Pictorial View of Organisational Ambidexterity and its x and y Components

Research Framework, Aims and Objectives

The aim of the current study, therefore, is to develop a framework that promotes effective innovation through shop floor employees' contributions to organisational ambidexterity, organisational innovation capability and the firm's marketing innovation capability. The objectives of this research work can be articulated, as follows:

>To identify the organisational context for Contextual Individual Ambidexterity (CIA) of the shop floor employees in SMEs,

> To identify the impact of CIA on Organisational Ambidexterity (OA),

> To identify how OA relates to OMIs capabilities, and

>To determine how CIA, OA and OMIs capabilities can contribute to effective innovation in SMEs.

Figure 4 shows the research framework for this study. Based on the definitions of OMIs and Organisational Ambidexterity, OMIs can be linked to Organisational Ambidexterity, as shown in Figure 4. This suggests that Organisational Ambidexterity may be a necessary antecedent to develop the firm's OMIs capabilities.

Conclusions and Research Implications

This research study has identified four types of innovation in the literature: Product; Process; Organisational; and Marketing Innovations. While many of the previous studies on innovation have focused on Process and Product Innovations, OMIs have received limited attention in the literature. Organisational Ambidexterity (OA) has been noted to promote sustainable organisational growth. However, existing studies on organisational context for ambidextrous employees are scarce.



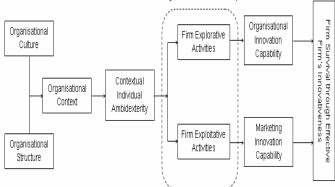
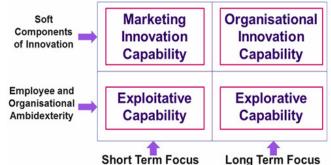
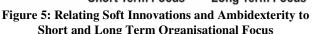


Figure 4: Research Framework

Most of the existing studies on Ambidexterity at the individual level of analysis have focused on the organisational leadership. Theoretical and empirical investigation on OA with respect to the composition of the shop floor employees remains unexplored. Thus, this research advances the literature on OA by introducing the notion of multiple levels of analysis in one study: Nano level analysis (CIA of the shop-floor employees); Micro level analysis (CIA of the managerial employees); and Macro level analysis (Ambidexterity at organisational level). The first two levels focus on the individual's ability to pursue exploratory and exploitative opportunities simultaneously, while the third level focuses on the overall capability of the organisations to be ambidextrous. This study opens up a new line of enquiry into the theory of OA and the soft components of innovations through exploration of OA and its relationships with OMIs. As shown in Figure 5, sustainable organisational performance requires both short and long term focus.





While Marketing Innovation capability and Exploitative orientation of ambidexterity of the organisations focus on the current competitive advantage, Organisational Innovation capability and Explorative orientation focus on the future competitive advantage.

Current and extant investigations have shown that SMEs have limited resources. As a result of such limitations, it is often difficult for SMEs to have two different structural separations for explorative and exploitative pursuits. This implies that ambidexterity in SMEs at both individual and organisational levels will be contextual. This research study will also address "the neglected members" of the organisations in the study of OA; these are field and assembly-line employees occupying non-managerial role. Identification of the organisational context for the CIA of the shop-floor employees and managerial staff in SMEs will aid the development of the theory of ambidexterity.

Various austerity measures in various countries across the globe are indications that Governments in these countries do not have enough resources to meet their own obligations. It is therefore important for small organisations to start looking inward and focussing on maximising their internal capabilities towards their continuous survival. The ability of an organisation to exploit its current opportunities by focusing on current competitive advantage and to explore new opportunities for future competitive advantage (OA), has been noted as the necessary attribute for firms to remain competitive and adaptive to continuous change in the business environment (O'Reilly and Tushman, 2011). The ambidextrous orientations of individual employees have been shown to have an aggregate effect on the organisational ambidexterity (Raisch et al., 2009). The research findings will provide support for the required organisational context that favours individual ambidexterity and identify necessary prerequisites to optimally utilise and deploy process and product innovations. The current study will also assist in promoting viable manufacturing and services that SMEs need to offset current job losses in the public sector. The theoretical and industrial implications are summarised as follows:

♦ Optimising the internal capabilities of SMEs towards their sustainable growth and survival.

◆Research will promote viable SMEs needed to offset the prevalent public sector job losses.

♦ This study will provide empirical evidence on how SMEs could simultaneously exploit their current opportunities and also explore new ones with equal dexterity.

◆Implementing the research findings will promote long term organisational performance needed in SMEs in developing economies.

Future Plans

In this study, a two-phase sequential mixed methods design has been proposed. The first phase will involve an exploratory study through a pilot interview to understand relevant themes and constructs of OMIs. This phase is geared toward providing a clear view of the OMIs and CIA within the confine of SMEs, and to understand how the SMEs' owners and managers develop and deploy OMIs in relation to their employees' competencies and ambidexterity. The second phase will involve a confirmatory study of the first phase. The aim is to verify the findings from the first stage through descriptive and inferential statistics.

References

AJAYI, J. and ADESINA, S., 2011. Experts Highlight Problems Militating Against SMEs in Nigeria. Lagos: Nigerian Tribune 16 February 2011.

ANDRIOPOULOS, C. and LEWIS, M.W., 2009. Exploitation-Exploration Tensions and Organizational Ambidexterity: Managing Paradoxes of Innovation. Organization Science, JUL-AUG, vol. 20, no. 4, pp. 696-717 ISSN 1047-7039. DOI 10.1287/orsc.1080.0406.

BATTISTI, G. and STONEMAN, P., 2010. How Innovative are UK Firms? Evidence from the Fourth UK Community Innovation Survey on Synergies between Technological and

Organizational Innovations. British Journal of Management, vol. 21, no. 1, pp. 187-206 ISSN 1467-8551. DOI 10.1111/j.1467-8551.2009.00629.x.

BECKMAN, C.M., 2006. The Influence of Founding Team Company Affiliations on Firm Behaviour, Academy of Management Journal, vol. 49, no. 4, pp. 741-758.

CONWAY, S. and STEWARD, F., 2009. Managing and Shaping Innovation. Oxford: Oxford University Press.

COSH, A., FU, X. and HUGHES, A., 2005. Management Characteristics, Collaboration and Innovative Efficiency: Evidence from UK Survey Data. Working Paper ed. Cambridge: Centre for Business Research, University of Cambridge.

CRAVO, T.A., GOURLAY, A. and BECKER, B., 2010. SMEs and Regional Economic Growth in Brazil. Working Paper ed. Loughborough University, Loughborough: .

DTI., 2006. Department of Trade and Industry Occasional Paper NO. 6, Innovation in the UK: Indicators and Insights. England: Department of Trade and Industry.

DTI., 2005. Integrated Strategy on the Promotion of Entrepreneurship and Small Enterprises, 2005 Cabinet Approval, the Department of Trade and Industry, Republic of South Africa. Pretoria: the Department of Trade and Industry.

EDQUIST, C., 2005. Systems of Innovation: Perspectives and Challenges. In: J. FAGERBERG, D.C. MOWERY and R.R. NELSON eds., The Oxford Handbook of Innovation, New York: Oxford University Press Inc. Systems of Innovation: Perspectives and Challenges, pp. 181-208.

FLOYD, S.W. and LANE, P.J., 2000. Strategizing Throughout the Organization: Managing Role Conflict in Strategic Renewal. Academy of Management Review, vol. 25, no. 1, pp. 154-177.

GANS, J.S. and STERN, S., 2003. The Product Market and the Market for "Ideas": Commercialization Strategies for Technology Entrepreneurs. Research Policy, vol. 32, no. 2 SPEC., pp. 333-350 SCOPUS.

GIBSON, C.B. and BIRKINSHAW, J., 2004. The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity. The Academy of Management Journal, Apr., vol. 47, no. 2, pp. pp. 209-226 ISSN 00014273.

GOEDHUYS, M. and VEUGELERS, R., 2011. Innovation Strategies, Process and Product Innovations and Growth: Firm-Level Evidence from Brazil. Structural Change and Economic Dynamics, vol. In Press, Accepted Manuscript ISSN 0954-349X. DOI 10.1016/j.strueco.2011.01.004.

HANSEN, M.T. and BIRKINSHAW, J., 2007. The Innovation Value Chain. Harvard Business Review, June 2007, pp. 121-130.

HE, Z. and WONG, P., 2004. Exploration Vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. Organization Science, Jul, vol. 15, no. 4, pp. 481-494 ISSN 10477039. DOI 10.1287/orsc.1040.0078.

JACKSON, T., AMAESHI, K. and YAVUZ, S., 2008. Untangling African Indigenous Management: Multiple Influences on the Success of SMEs in Kenya. Journal of World Business, 10, vol. 43, no. 4, pp. 400-416 ISSN 1090-9516. DOI 10.1016/j.jwb.2008.03.002.

JANSEN, J.J.P., van den Bosch, F. A. J. and VOLBERDA, H.W., 2006. Exploratory Innovation, Exploitative Innovation, and Performance: Effects of Organizational Antecedents and Environmental Moderators. Management Science, vol. 52, no. 11, pp. 1661-1674.

JANSEN, J.J.P., van den Bosch, F. A. J. and VOLBERDA, H.W., 2005. Exploratory Innovation, Exploitative Innovation, and Ambidexterity: The Impact of Environmental and Organisational Antecedents. Schmalenbach Business Review, vol. 57, no. 4, pp. 351-363.

JANSEN, J.J.P., GEORGE, G., VAN DEN BOSCH, F.A.J. and VOLBERDA, H.W., 2008. Senior Team Attributes and Organizational Ambidexterity: The Moderating Role of Transformational Leadership. Journal of Management Studies, vol. 45, no. 5, pp. 982-1007 ISSN 1467-6486. DOI 10.1111/j.1467-6486.2008.00775.x.

KANTER, R.M., 2010. Think Outside the Building. Harvard Business Review.

LAM, A., 2011. Innovative Organisations: Structure, Learning, and Adaptation. Paper presented at the DIME Final Conference, 6-8 April 2011, Maastricht

LAM, A., 2005. Organizational Innovation. In: J. FAGERBERG, D.C. MOWERY and R.R. NELSON eds., The Oxford Handbook of Innovation, New York: Oxford University Press Inc., Organizational Innovation, pp. 115-147.

LEE, S., PARK, G., YOON, B. and PARK, J., 2010. Open Innovation in SMEs—An Intermediated Network Model. Research Policy, 3, vol. 39, no. 2, pp. 290-300 ISSN 0048-7333. DOI 10.1016/j.respol.2009.12.009.

LEVINTHAL, D.A. and MARCH, J.G., 1993. The Myopia of Learning. Strategic Management Journal, vol. 14, no. S2, pp. 445-458.

LIN, H. and McDonough, Edward F. III, 2011. Investigating the Role of Leadership and Organizational Culture in Fostering Innovation Ambidexterity. IEEE Transactions on Engineering Management, AUG, vol. 58, no. 3, pp. 497-509 ISSN 0018-9391. DOI 10.1109/TEM.2010.2092781.

LUBATKIN, M.H., SIMSEK, Z., LING, Y. and VEIGA, J.F., 2006. Ambidexterity and Performance in Small-to Medium-Sized Firms: The Pivotal Role of Top Management Team Behavioral Integration. Journal of Management, Southern Management Association, vol. 32, no. 5, pp. 646-672.

MOM, T.J.M., Van Den Bosch, F. A. J. and VOLBERDA, H.W., 2009. Understanding Variation in Managers' Ambidexterity: Investigating Direct and Interaction Effects of Formal Structural and Personal Coordination Mechanisms, Organization Science, vol. 20, no. 4, pp. 812-828 DOI 10.1287/ORSC.1090.0427.

MOM, T.J.M., Van Den Bosch, F. A. J. and VOLBERDA, H.W., 2009. Understanding Variation in Managers' Ambidexterity: Investigating Direct and Interaction Effects of Formal Structural and Personal Coordination Mechanisms. Organization Science, vol. 20, no. 4, pp. 812-828 DOI 10.1287/ORSC.1090.0427.

MOM, T.J.M., Van Den Bosch, F. A. J. and VOLBERDA, H.W., 2007. Investigating Managers' Exploration and Exploitation Activities: The Influence of Top-Down, Bottom-Up, and Horizontal Knowledge Inflows*. Journal of Management Studies, vol. 44, no. 6, pp. 910-931 ISSN 1467-6486. DOI 10.1111/j.1467-6486.2007.00697.x.

NGUYEN, T. T. U. and MOTHE. C., 2008. Assessing the impact of Marketing and Organisational Innovations on Firm Performance, 3rd European Conference on Entrepreneurship and Innovation, MARRIOT, N., ed. 3rd European Conference on Entrepreneurship and Innovation. The University of Winchester, UK, 15-16 September 2008.

OECD/Eurostat., 2005. Guidelines for Collecting and Interpreting Innovation Data, Oslo Manual by Organisation for Economic Co-Operation and Development and Statistical Office of the European Communities. 3rd ed. Paris: OECD Publishing. OMANKHANLEN, O., 2011a. CBN Unfolds 6-Point Agenda. Lagos: Nigerian Tribune 09 March 2011.

OMANKHANLEN, O., 2011b. Diamond Bank Partners USAID on Credits to Entrepreneurs. Lagos: Nigerian Tribune 08 February 2011.

O'REGAN, N., GHOBADIAN, A. and GALLEAR, D., 2006. In Search of the Drivers of High Growth in Manufacturing SMEs. Technovation, 1, vol. 26, no. 1, pp. 30-41 ISSN 0166-4972. DOI 10.1016/j.technovation.2005.05.004.

O'REILLY, C. A. III and TUSHMAN, M.L., 2011. Organizational Ambidexterity in Action: How MANAGERS EXPLORE AND EXPLOIT. California Management Review, SUM, vol. 53, no. 4, pp. 5-22 ISSN 0008-1256.

PARK, B.I. and GHAURI, P.N., 2011. Key Factors Affecting Acquisition of Technological Capabilities from Foreign Acquiring Firms by Small and Medium Sized Local Firms. Journal of World Business, 1, vol. 46, no. 1, pp. 116-125 ISSN 1090-9516. DOI 10.1016/j.jwb.2010.05.023.

RAISCH, S. and BIRKINSHAW, J., 2008. Organizational Ambidexterity: Antecedents, Outcomes, and Moderators. Journal of Management, JUN, vol. 34, no. 3, pp. 375-409 ISSN 0149-2063. DOI 10.1177/0149206308316058.

RAISCH, S., BIRKINSHAW, J., PROBST, G. and TUSHMAN, M.L., 2009. Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. Organization Science, JUL-AUG, vol. 20, no. 4, pp. 685-695 ISSN 1047-7039. DOI 10.1287/orsc.1090.0428.

SALAVOU, H., BALTAS, G. and LIOUKAS, S., 2004. Organisational Innovation in SMEs: The Importance of Strategic Orientation and Competitive Structure. European Journal of Marketing, vol. 38, no. 9/10, pp. 1091-1112.

SCHUBERT, T., 2009. Marketing and Organisational Innovations in Entrepreneurial Innovation Processes and their Relation to Market Structure and Firm Characteristics, The DRUID Society Summer Conference, June 17-19, 2009. CBS, Copenhagen, Denmark, 2009.

SIMSEK, Z., 2009. Organizational Ambidexterity: Towards a Multilevel Understanding. Journal of Management Studies, JUN, vol. 46, no. 4, pp. 597-624 ISSN 0022-2380. DOI 10.1111/j.1467-6486.2009.00828.x.

SMITH, W.K. and TUSHMAN, M.L., 2005. Managing Strategic Contradictions: A Top Management Model for Managing Innovation Streams. Organisation Science, vol. 16, no. 5, pp. 522-536.

SUBAIR, G., 2011. States Urged to Support SMEDAN to Reposition IDCs, Nigerian Tribune. Abuja: [viewed 30 March 2011]. Available from: http://tribune.com.ng/index.php/tribunebusiness/19300-states-urged-to-support-smedan-to-repositionidcs.

TUSHMAN, M.L. and O'REILLY, C.A., 1996. Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. California Management Review, vol. 38, no. 4, pp. 8-30.

VAN DE VRANDE, V., DE JONG, J.P.J., VANHAVERBEKE, W. and DE ROCHEMONT, M., 2009. Open Innovation in SMEs: Trends, Motives and Management Challenges. Technovation, 7, vol. 29, no. 6-7, pp. 423-437 ISSN 0166-4972. DOI 10.1016/j.technovation.2008.10.001.

VENKATRAMAN, N., LEE, C. and IYER, B., 2007. Strategic Ambidexterity and Sales Growth: A Longitudinal Test in the Software Sector Boston: Boston University School of Management.