Effects of Risk Analysis and Evaluation management Strategy on Organization's Supply Chain Performance.

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Introduction

Today's market place is characterized by turbulence and uncertainty. Market turbulence has tended to increase in recent years for several reasons along the supply chain. Demand in almost every industry sector seems to be more volatile. Product and technology life-cycles have shortened significantly and competitive product introduction make life cycle demand difficult to predict (WB, 2012). Considerable 'chaos' exists in supply chains through the effect of such actions as sales promotion, quarterly sales incentives or decision rules such as quantities which results into continuous disruptions along the supply chain (Singhal & Hendricks, 2005).

Today, vulnerability of Supply chains to disturbances or disruptions has increased and has received considerable attention by practitioners as well as academics (Skipper & Hanna, 2009). It's not only the effect of external events such as natural disasters but also the impacts of changes in business strategy, the impact of one entity in the supply chain failing can as well lead to a number of entities closing down and in some instances the whole supply chain shuts down. The risk implications of the entwined global marketplace that characterize today's supply chains have also been evidenced vividly in the recent global financial crisis. Many companies have experienced a change in their supply chain risk profile as a result of changes in their supply chain profile and changes in their business models. The adoption of 'lean' practices, the move to

outsourcing and a general tendency to reduce the size of the supplier base potentially increase supply chain vulnerability (Richard, 2008).

The level of decision making along supply chain in manufacturing companies, quality of service and the type of relationship with other organizations generally influences the level of outputs expected from the functional and tertiary groups (Cooper & Ellram, 2003). The diversity and complexity of organizations, growth, strategic conceptualization & pursuit of adaptive mechanisms coupled with adverse changes in technology, and the global competitiveness of different markets, is beyond the efforts of an organization alone but between the supply chains (Cox & Watson, 2001). Most literature reveal that supply chain performance in manufacturing companies is more appropriate as units of analysis than the entire organization management with the realization of the fact that those involved in the chain are in a position to lead in a number of possible directions (Miller & Ross, 2003).

Risk Analysis and Evaluation Strategy in Supply Chain

Today's marketplace is shifting from individual company performance to supply chain performance: the entire chain's ability to meet end-customer needs through product availability and responsive, on-time delivery (Chen & Labadi, 2005). Supply chain performance crosses both functional lines and company boundaries. Functional groups (engineering/R&D, manufacturing, and sales/marketing) are all instrumental in designing, building, and selling products most efficiently for the supply chain, and traditional company boundaries are changing as companies discover new ways of working together to achieve the ultimate supply chain goal: the ability to fill customer orders faster and more efficiently than the competition (Abdullah & Abdel, 2004). The process of choosing appropriate supply chain performance measures is difficult due to the complexity of these systems in manufacturing companies. The performance of a supply chain in

manufacturing companies is characterized by its ability to remain market-sensitive without losing the integration through the chain. One of the difficulties in designing and analyzing a supply chain in these companies is that its processes are governed by the strategic attributes of the supply chain (Lysons, 2006). In today's world, supply chain management (SCM) is a key strategic factor for increasing organizational effectiveness and for better realization of organizational goals such as enhanced competitiveness, better customer care and increased profitability (Bosman, 2006).

The era of both globalization of markets and outsourcing has begun, and many manufacturing companies select supply chain and logistics to manage their operations. Most of these companies realize that, in order to evolve an efficient and effective supply chain, SCM needs to be assessed for its performance to reduce risk of disruptions (Van & Beulens, 2002). Supply chain management (SCM) has been a major component of competitive strategy to enhance organizational productivity and profitability as well as metric measure, however performance pertaining to Supply chain and risks pertaining to disruptions among manufacturing companies has not received adequate attention from researchers or practitioners today (Wegner & Bode, 2006).

Conclusion

Cooper, (2001) identifies that risk management entails having in place a corporate and systematic process for evaluating and addressing the impact of risks in a cost effective way and having staff with the appropriate skills to identify and asses potential for a risk to arise.

According to Fone and Young (2000) the identification, analysis and control of those risks which can threaten the assets or earning capacity of an enterprise is seen as a general management function that seeks to assess and address risks in the context of the overall aims of the organisation. Risk management should be a continuous and developing process which runs throughout the organization's strategy and the implementation of that strategy. It should address methodically all the risks surrounding the organization's activities past, present and in particular, future. It must be integrated into the culture of the organisation with an effective policy and a program led by the most senior management. It must translate the strategy into tactical and operational objectives, assigning responsibility throughout the organisation with each manager and employee responsible for the management of risk as part of their job description. Risk management has become a main part of the organization's activities and its main aim is to help all other management activities to achieve the organization's aims directly and efficiently". Hood and Young (2005) support this view, pointing to the UK public sector where, over the last decade, great emphasis has been placed on integrating risk management into the day-to-day management of national and local government bodies. According to Allen (2004), the actual process of risk management normally begins by assessing two factors: firstly, the likelihood of specific events occurring; and secondly, the consequences should the events actually occur.

REFERENCE

- Abdullah S., Al-Mudimigh[•] Mohamed Z., Abdel M., Ahmed M., (2004) 'Extending the concept of supply chain: The effective management of value chains' *International journal of Production Economics*, Volume 87, Issue 3,
- Allayannis, G., G. W. Brown, and L. F. Klapper, 2001, Exchange Rate Risk Management: Evidence from East Asia. University of Virginia Working Paper.
- Allen, Norman, & Robert L. 2004. *Categorization of Supply Chain Risk and Risk Management, in Supply Chain Risk.* Edited by C. Brindley. London: Ashgate Publishers.

- Ambira, C.M. & Kemoni, H., 2011, 'Records management and risk management at Kenya Commercial Bank Limited, Nairobi', SA Journal of Information Management 13(1),
- Awino, Z.B & Gituro Wainaina. "An Empirical Investigation of Supply Chain Management
 Best Practices in Large Private Manufacturing Firms in Kenya." *Prime Journal of Business Administration and Management (BAM)*. 2011;Volume 1(12):26-31.
- Blos, M., Quaddus, M., Wee, H. & Watanabe, K. (2009), "Supply chain risk management: a case study of automotive and electronic industries in Brazil", Supply Chain Management: An International Journal, Vol. 14 No. 4,
- Bosman, R. (2006), "The new supply chain challenge: risk management in a global economy", available at: www.fmglobal.com/pdfs/chainsupply.
- Bourne, M., Neely, A., Platts, K. & Mills, J. (2002), "The success and failure of performance measurement initiatives: perceptions of participating managers", *International Journal of Operations & Production Management*, Vol. 22 No. 11.
- Bransford, J. D., Brown, A. L., Cocking, & R. R., (Eds.). (2000). *How people learn: Brain, mind, experience, and school.* Washington DC: National Academy Press. (also available online at www.nap.edu).
- Brau J.C., Fawcett S.E., Magnan G.M. & McCarter M.W. (2005). *Information sharing in supply chain management*: A two-dimensional perspective, Working paper, University of Illinois, Urbana-Champaign
- Burke, M.E. (2007), Making Choices: Research Paradigms and Information Management, Library Review, Vol. 56, No. 6,

- Kothari C.R. (2004), Research Methodology: methods and Techniques, 2nd ed, causal model", *International Journal of Operations & Production Management*, Vol. 21 Nos12.
- Caine, R. N., Caine, G., McClintic, C., & Klimek, K. (2005). *12 Brain/mind learning principles in action*. Thousand Oaks, CA: Corwin Press.
- Chan, F.T.S. & Qi, H.J. (2003), "An innovative performance measurement method for supply chain management", Supply Chain Management: *An International Journal*, Vol. 8
- Chan, H., Wang, W., Luong, L.& Chan, F. (2009), "Flexibility and adaptability in supply chains: a lesson learned from practitioners", Supply Chain Management: *An International Journal*, Vol. 14 No. 6,

changing role of internal audit", Accounting, Auditing & Accountability Journal, Vol. 16

- Chen, H.X., Amodeo, L., Chu, F. & Labadi, K. (2005), "Modelling the performance evaluation of supply chains using batch deterministic and stochastic Petri nets", *IEEE Transactions on Automated Science and Engineering*, Vol. 2 No. 2.
- Chopra, S.& Sodhi, M. (2004), "Managing risk to avoid supply chain breakdown", MIT Sloan Management Review, Vol. 46 No. 1,
- Christopher, M. (2005), "Managing risk in the supply chain", Logistics and Supply Chain Management: Creating Value- Adding Networks, 3rd ed., FT Prentice-Hall, Harlow.
- Cigolini, R., Cozzi, M., & Merona, M. (2004), "A new framework for supply chain management: conceptual mode and empirical test", *International Journal of Operations & Production Management*, Vol. 24 No.1,

- Cooper, D. R. & Schindler, P. S. (2008). Business research methods. Maidenhead: McGraw-Hill.
- Cooper, M.C., & Ellram, L.M. (2003), "Supply chain management, partnerships, and the shipper-third party relationship", *International Journal of Logistics Management*, Vol. 1 No.2,
- Council of supply chain management professional (CSCMP), (2011): supply chain dynamics and complexity-*The high price of supply chain disruptions*.
- Cox, A., Sanderson, J. and Watson, G. (2001), "Supply chains and power regimes: toward an analytic framework for managing extended networks of buyer and supplier relationships", *Journal of Supply Chain Management*, Vol. 37 No. 2.
- Daft, R.L and A.Armstrong. (2009). Organization Theory and Design. Toronto: Nelson.
- Eliyahu M. Goldratt. 2004. _The Goal: A Process of Ongoing Improvement, ISBN 978-0-88427-178-9.
- El-Kot, G. (2004), "Determinants of managerial performance among middle-level managers: a preliminary investigation in an Egyptian context", *Journal of the Faculty of Commerce for Scientific Research*, Vol. 41 No.2.
- Faisal, N., Banwet, D.K. & Shankar, R. (2006), "Supply chain risk mitigation: modeling the enablers", *Business Process Management Journal*, Vol. 12 No. 4,

- Fantazy, K., Kumar, V. & Kumar, U. (2009), "An empirical study of the relationships among strategy, flexibility, and performance in a supply chain context", Supply Chain Management: An International Journal, Vol. 14 No. 3,
- Francis, V. (2008), "Supply chain visibility: lost in translation?", Supply Chain Management: An International Journal, Vol. 13 No. 3,
- Frank F., & Sergey T., (2003) Dynamic Risk Management: Theory and Evidence, Journal of Finance 39, 351-376.
- Gaudenzi, Barbara, and Antonio Borghesi. 2006."Managing risks in the supply chain using the AHP method", *The International Journal of Logistics Management* Vol. 17 Iss: 1:
- Githui, M. (2012). Responsible Purchasing and Supply Chain Management in Kenya: A Critical Analysis of the Ethical Considerations in Procurement Management. *European Journal*
- of Business and Management. Vol 4, No.3, 2012
- GOK (2006). Public Procurement and Disposal Regulations, *Government press Gray et al* (1997). "Corporate and public responsibility, stakeholder theory and the developing line", Management Decision (UK), Vol. 28 No.6, pp.29-33.
- Gunasekaran, A., Patel, C. & Tirtiroglu, E. (2001), "Performance measures and metrics in a supply chain environment", *International Journal of Operations & Production Management*, Vol. 21 Nos 1-2,
- Hallikas, J., Virolainen, Ojala V-M. & Tuominen, M. (2002), "Risk analysis and assessment in network environments: a dyadic case study", *International Journal of Production Economics*, Vol. 78 No. 1,

- Handfield, R.B., & Nichols, E.L. (2002), Supply Chain Redesign: *Transforming Supply Chains into Integrated Value Systems*, Financial Times Prentice-Hall, Englewood Cliffs, NJ
- Hendricks, K.B., & Singhal, V.R. (2005), "An empirical analysis of the effect of supply chain disruptions on long-run stock price performance and equity risk of the firm", *Production and Operations Management*, Vol. 14 No.1,
- Henock K., (2012) ; The Manager for Policy and Research at PPOA; 'Public procurement entities spend over 60 per cent of their time analyzing tender quotations, instead of using more transparent way.'
- Hood, J. and Young, P. (2005), "Risk financing in UK local authorities: is there a case for risk
- Huang, S.H., Sheoran, S.K. & Wang, G. (2004), "A review and analysis of supply chain operations reference (SCOR) model", Supply Chain Management: An International Journal, Vol. 9 No. 1.
- Jia, F, & Rutherford C., (2010). "Mitigation of supply chain relational risk caused by cultural differences between China and the West." *The International Journal of Logistics Management* 21 (2):
- Johnson B., & Christensen, L., (2010), Educational research; *Quantitative, Qualitative and Mixed Approaches*, UK: SAGE.
- Johnson, M. E., & Anderson, E. 2001. "Learning From Toys: Lessons in Managing Supply Chain Risk from the Toy Industry." *California Management Review* 43 (3)
- Juttner, U. (2005), "Supply chain risk management understanding the business requirements from a practitioner perspective", *International Journal of Logistics Management*, Vol. 16

Kapila, P. (2008). Business Ethics. Journal of Management. vol. 12, no. 1, pp. 224-237

- Kennerley, M. & Neely, A. (2003), "Measuring performance in a changing business environment", *International Journal of Operations & Production Management*, Vol. 23 No. 2
- Kenya Economic Update: Kenya at work: *Energizing the economy and creating jobs*. Bank. December 2012.
- Ketchen Jr., G., & Hult, T.M. (2006). Bridging organization theory and supply chain management: The case of best value supply chains. *Journal of Operations Management*, Vol. 38 No. 5.
- Khan, O., Christopher, M. & Burnes, B. (2008), "The impact of product design on supply chain risk: a case study", *International Journal of Physical Distribution & Logistics Management*, Vol. 38 No. 5,
- Kilgore, M. (2003), "Mitigating Supply Chain Risks" White Paper, Chainalytics LLC, Atlanta, GA.
- Kimalu P (2009). The status of business ethics: past and future", Journal of Business Ethics,
- Kinoti, J. B., Arasa, R., Waititu, G. A. & Guyo, W. (2013). Influence of the procurement regulatory framework on the implementation of Supply Chain Management ethics in Government Ministries in Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1 (5), 185-193.
- KISM (2009). Procurement Practices in Kenya. KISM review
- *Kwabena N. S., (2011), Entrepreneurship theories and Empirical research:* A Summary Review of the Literature, Vol 3,

- Lambert, D.M. (Eds) (2008); Supply Chain Management: Processes, Partnerships, Performance, 3rd ed., Supply Chain Management Institute, Sarasota, FL, .
- Leo O. O., (2009) 'Kenya is likely to lose billions in erratic tendering system' African Press International
- Li, G., Yan, H., Wang, S.Y. & Xia, Y.S. (2005), "Comparative analysis on value of information sharing in supply chains", Supply Chain Management: An International Journal, Vol. 10 No. 1,
- Linhares, A., (2009). "Theory of constraints and the combinatorial complexity of the product- mix decision". *International Journal of Production Economics* 121 (1): 121–129. doi:10.1016/j.ijpe.2009.04.023.
- Lowe, A. & Jones, A. (2004), "Emergent strategy and the measurement of performance: the formulation of performance indicators at the microlevel", Organization Studies, Vol. 25 No. 8.
- Lysons, K., Farrington, B. (2006), *Purchasing and Supply Chain Management*, 7th ed., FT, Prentice-Hall, Pearson Education Ltd, Upper Saddle River, NJ, .
- Matook, S., Lasch, R. & Tamaschke, R. (2009), "Supplier development with benchmarking as part of a comprehensive supplier risk management framework", *International Journal of Operations & Production Management*, Vol. 29 No. 3,
- Mentzer, J.T. (2004), "Developing and measuring supply chain concepts", *Journal of Business Logistics*, Vol. 25 No.1.

- Michael C., (2008) "Codes of ethics in corporate Sweden", Corporate Governance, Vol. 6 Iss: 5,
 Moral support structures in private industry the Swedish case", *Journal of Business Ethics*, Vol. 16 pp.663-97
- Miles C., (2009), "Why companies flunk supply-chain" Co-director of Bain & Company's Supply Chain Management practice, Atlanta,
- Miller, S.R., & Ross, A.D. (2003), "An exploratory analysis of resource utilization across organizational units: understanding the resource-based view", *International Journal of Operations & Production Management*, Vol. 23 No.9,
- Ministry of State for Planning, National Development and Vision 2030, (2008). "Launching Of Kenya Vision 2030 Speech by His Excellency Hon. Mwai Kibaki, CGH, MP"
- Morgan, C. (2004), "Structure, speed and salience: performance measurement in the supply chain", *Business Process Management Journal*, Vol. 10 No. 5,
- Mugenda & Mugenda (2003), Research methods: qualitative and quantitative approaches.
 - N.J.: Lawrence Erlbaum Associates.

Nairobi Securities Exchange (NSE) (2013), website; www.nse.co.ke.

- Natarajarathinam, M., Capar, I. & Narayanan, A. (2009), "Managing supply chains in times of crisis: a review of literature and insights", *International Journal of Physical Distribution*& Logistics Management, Vol. 39 No. 7,
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M. & Kennerley, M. (2000), "Performance measurement system design: developing and testing a process-based

approach", *International Journal of Operations & Production Management*, Vol. 20, No. 4, pp. 640-61.

- Norrman, A. & Jansson, U. (2004), "Ericsson's proactive supply chain risk management approach after a serious subsupplier accident", *International Journal of Physical Distribution & Logistics Management*, Vol. 34 No. 5,
- Odhiambo, W., and Kamau, P. (2003), "Public procurement: Lessons from Kenya, Tanzania and Uganda", (Working Paper No. 208). Paris, France: OECD development center.
- OECD (2007), Integrity In Public Procurement: Good Practice From A To Z by Oecd Publishing
- Orodho & Kombo (2004), Techniques of writing research proposal and reports in education. Masda Publisher
- Patrick A. (2009). Procurement challenges in public sector organizations. Journal of management Vol.11,No.2,pp.157-66.
- Peck, H. (2005), "Drivers of supply chain vulnerability: an integrated framework", *International Journal of Physical Distribution & Logistics Management*, Vol. 35 No. 4,
- Pellegrino, J., Chudowsky, N., & Glaser, R. (Eds.). (2001). *Knowing what students know: The science and design of educational assessment*. Washington DC: National Academy Press.
- Ponomarov, S. & Holcomb, M. (2009), "Understanding the concept of supply chain resilience", *The International Journal of Logistics Management*, Vol. 20 No. 1,

pooling?", International Journal of Public Sector Management, Vol. 18 No. 6, pp. 563-78.

- Qui, Mabel; Fredendall, Lawrence; Zhu, Zhiwei (2002). "TOC or LP? [production control]". Manufacturing Engineer 81 (4): 190–195. doi:10.1049/me:20020411.
- Rice, J. & Canioato, F. (2003), "Building a secure and resilient supply network", Supply Chain Management Review, September/October,
- Richard H., John F., (2012) "Sustainable SME practice: A reflection on supply- chain environmental management intervention", Management of Environmental Quality: *An International Journal, Vol. 23*

Richard L. Draft, Martyn K., & Natalia V., (2008); *Management:* International Edition, 8th Edn,

- Ritchie, B. & Brindley, C. (2007), "Supply chain risk management and performance", International Journal of Operations & Production Management, Vol. 17 No. 3,
- Rudberg, M., & Olhager, J. (2003), "Manufacturing networks and supply chains: an operations strategy perspective", *Omega*, Vol. 31 No.1,
- Sapru, R.K. (2008). *Administrative Theories and Management Thought*. New Delhi: Prentice-Hall of India Private Limited, p 276.

Saunders, M., (2003), Research Methods for Business; South Africa, Pearson education

- SCOR 80, (2007), *SCOR 80 Overview Booklet*, Supply Chain Council editions. 2000. Organization available on http://www.supply-chain.org/cs/root/home
- Sean K., (2013) "Third-Party Logistics Study: The State of Logistics Outsourcing ", Supply chain disruptions growing more serious," *FleetOwner*, 26 November 2012. selecting and

benchmarking suppliers", International Journal of Technology Management, Vol. 26 No.7.

- Sekaran, U., (2006), *Research Methods for Business*; A skill Building Approach, 4th edn. UK; John Wiley & Sons.
- Sheffi, Y. (2005), 'The Resilient Enterprise' Overcoming Vulnerability for Competitive Advantage, The MIT Press, Cambridge.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods*, *7*, 422-445.
- Sinha, P.R., Whitman, L.E. & Malzahn, D. (2004), "Methodology to mitigate risk in an aerospace supply chain", Supply Chain Management: An International Journal, Vol. 9 No. 2,
- Skipper, J. & Hanna, J. (2009), "Minimizing supply chain disruption risk through enhanced flexibility", *International Journal of Physical Distribution & Logistics Management*, Vol. 39 No. 5,

Slack, N, & Lewis, M, (2011), Operations Strategy, 3rd edn, Pearson Education Limited, Harlow

Spira, L.F. and Page, M. (2002), "Risk management: the reinvention of internal control and the

Stephens, S. (2001), "Supply chain operations reference model version 5.0: a new tool to improve supply chain efficiency and achieve best practice", *Information Systems Frontiers*, Vol. 3 No. 4,

Stevens J. (2002) Applied multivariate statistics for the social sciences. 4th ed. edn. Mahwah,Stulz, R. M., 2002, Derivatives, Financial Engineering & Risk Management (South-Western

- Suhong L., Bhanu R.N., & Subba R., (2006) 'The impact of supply chain management practices on competitive advantage and organizational performance' Omega, Volume 34, Issue 2,
- Supply Chain Council, Inc (2010). 12320 Barker Cypress Rd.Suite 600, PMB 321;Cypress, TX 774298329 USA supply chain performance of produce-to-stock firms", *Industrial Marketing Management*,
- Tomlinson, C.A., Kaplan, S. N., Renzulli, J. S., Purcell, J., Leppien, J., & Burns, D. (2002). The parallel curriculum: A design to develop high potential and challenge high-ability learners. Thousand Oaks, CA: Corwin Press.
- Toni, A.D., Nissimbeni, G. & Tonchia, S. (2001), "New trends in supply environment", Logistics Information Management, Vol. 7 No. 4.

US Logistics Infrastructure; 2008 US Government Bureau of Transportation Statistics, (RITA)

- Van der Vorst, J., & Beulens, A. (2002), "Identifying sources of uncertainty to generate supply chain redesign and strategies", *International Journal of Physical Distribution & Logistics Management*, Vol. 32 No. 6,
- Van Veen-Dirks, D. (2005), "Management control and production environment", *International Journal of Production Economics*, Vol. 93 No. 4,
- Wagner, S. & Bode, C. (2006), "An empirical investigation into supply chain vulnerability", Journal of Purchasing & Supply Management, Vol. 12 No. 6,
- World Bank (2012), *Connecting to Compete 2012:* Trade Logistics in the Global Economy, Washington DC, World Bank.

World Bank, May 2013."Doing Business in Kenya 2013".

- World Economic Forum, 2012, "New Models for Addressing Supply Chain and Transport Risk".
 www.weforum.org/docs/WEF SCT RRN New Models Addressing Supply Chain Transport Risk Industry Agenda 2012
- World Economic Forum, Bain & Co. and World Bank (2013), *Enabling Trade: Valuing Growth Opportunities*; African Press International (API).
- Zacharia, Z., Nix, N. & Lusch, R. (2009), "An analysis of supply chain collaborations and their effect on performance outcomes", *Journal of Business Logistics*, Vol. 30 No. 2,
- Zhu, K. and Kraemer, K.L. (2005). Post-Adoption Variations in Usage and Value of E-Business by Organizations: Cross-Country Evidence from the Retail Industry. *Information Systems Research 16*(1), 61-84.
- Zsidisin, G.A.& Smith, M. (2005), "Managing supply risk with early supplier involvement a case study and research propositions", *The Journal of Supply Chain Management*, Vol.
 No. 4,
- Zsidisin, G.A., Ellram, L.M., Carter, J.R. & Cavinato, J.L. (2004), "An analysis of supply risk management in a global economy", available at: www.fmglobal.com/pdfs/chainsupply.