

An Account for Implementing Just-in-time: A Case Study of the Automotive Industry in China

Bo Hou¹, Hing Kai Chan^{1,*}, Xiaojun Wang²

¹Norwich Business School, University of East Anglia, Norwich, UK

²Department of Management, University of Bristol, Bristol, UK

Received 11 April 2013; received in revised form 05 May 2013; accepted 27 June 2013

Abstract

Just-in-time (JIT) has been a popular operation strategy partly because of its success in the Japanese automobile industry. Various benefits such as inventory reduction, improved operations efficiency, and faster response, have been studied widely in previous studies. Therefore, successful implementation of JIT is vital to many companies. This research makes use of a case study to explore five key research themes, which are information system, production planning, inventory management, quality management, and suppliers management, and the success factors surrounding implementation of JIT for an automotive company. This case study also provides evidences for supporting the benefits of employing JIT. Semi-structured interviews were conducted to collect relevant data. The research finding indicates that JIT system is crucial for the success of automobile companies, and operates JIT system can lead to many advantages to the case company. The major contribution of this paper lies in the discussions of the successful factors as a practical guide to implement JIT systems.

Keywords: Just-in-time, operations strategy, automotive, implementation, case study

References

- [1] H. K. Chan, S. Yin, and F. T. S. Chan, "Implementing just-in-time philosophy to reverse logistics systems: a review," *International Journal of Production Research*, vol. 48, pp. 6293-631, 2010.
- [2] Y. Monden, *Toyota Production System: An Integrated Approach to Just-In-Time*, 3rd ed. Japan: Engineering & Management Press, 1998.
- [3] R. Diaz, and A. Ardalan, "An analysis of dual-kanban just-in-time systems in a non-repetitive environment," *Production and Operations Management*, vol. 19, pp. 233-245, 2010.
- [4] J. A. Buzacott, and M. Mandelbaum, "Flexibility in manufacturing and services: achievements, insights and challenges," *Flexible Services and Manufacturing Journal*, vol. 20, pp. 13-58, 2008.
- [5] H. El Haouzi, J. F. Pétin, and A. Thomas, "Design and validation of a product-driven control system based on a six sigma methodology and discrete event simulation," *Production Planning and Control*, vol. 20, pp. 510-524, 2009.
- [6] C. Bozarth, and R. Handfield, *Introduction to Operations and Supply Chain Management*, 2nd ed. USA: Pearson Education, Inc., 2008.
- [7] E. Rhodes, J. P. Warren, and R. Carter, *Supply Chains and Total Product Systems: A Reader*, UK: The Open University and Blackwell Publishing, 2006.
- [8] C. Kumar, and R. Panneerselvam, "Literature review of JIT-KANBAN system," *International Journal of Advanced Manufacturing Technology*, vol. 32, pp. 393-408, 2007.
- [9] J. Jayaram, A. Das, and M. Nicolae, "Looking beyond the obvious: Unraveling the Toyota production system," *International Journal of Production Economics*, vol. 128, pp. 280-291, 2010.

* Corresponding author. E-mail address: h.chan@uea.ac.uk

Tel.: +44-(0)1603-591388; Fax: +44-(0)1603-593343

- [10] S. M. Aghazadeh, "JIT inventory and competition in the global environment: a comparative study of American and Japanese values in auto industry," *Cross Cultural Management*, vol. 10, pp. 29-42, 2003.
- [11] S. -H. Hum, and Y. -T. Ng, "A study on just-in-time practices in Singapore," *International Journal of Operation & Production Management*, vol. 15, pp. 5-24, 2003.
- [12] S. Dowlatshahi, and F. Taham, "The development of a conceptual framework for Just-In-Time implementation in SMEs," *Production Planning and Control*, vol. 20, pp. 611-621, 2009.
- [13] M. Z. Meybodi, "Benchmarking performance measures in traditional and just-in-time companies," *Benchmarking: An International Journal*, vol. 16, no. 1, pp. 88-102, 2009.
- [14] A. Furlan, G. Dal Pont, and A. Vinelli, "On the complementarity between internal and external just-in-time bundles to build and sustain high performance manufacturing," *International Journal of Production Economics*, vol. 133, pp. 489-495, 2011.
- [15] F. Rahimnia, and M. Moghadasian, "Supply chain leagility in professional services: how to apply decoupling point concept in healthcare delivery system," *Supply Chain Management: An International Journal*, vol.15, pp. 80-91, 2010.
- [16] M. Stevenson, L. C. Hendry, and B. G. Kingsman, "A review of production planning and control: the applicability of Key concepts to the make-to-order industry," *International Journal of Production Research*, vol. 43, pp. 869-898, 2005.
- [17] M. J. Junior, and M. G. Filho, "Variation of the kanban system: literature review and classification," *International Journal of Production Economics*, vol. 125, pp. 13-21, 2010.
- [18] K. Takahashi, N. Nakamura, and M. Izumi, "Concurrent ordering in JIT production system," *International Journal of Operation & Production Management*, vol. 17, pp. 267-290, 1997.
- [19] G. Q. Huang, Y. F. Zhang, and P. Y. Jiang, "RFID-based wireless manufacturing for real-time management of job shop WIP inventories," *The International Journal of Advanced Manufacturing Technology*, vol. 36, pp. 752-764, 2008.
- [20] G. A. Álvarez-Pérez, J. L. González-Velarde, and J. W. Fowler, "Crossdocking— Just in Time scheduling: an alternative solution approach," *Journal of the Operational Research Society*, vol. 60, pp. 554-564, 2009.
- [21] R. McLachlin, "Management initiatives and just-in-time manufacturing," *Journal of Operation Management*, vol. 15, pp. 271-292, 1997.
- [22] Z. Chen, and M. Zhou, "Supplier relationship management JIT production orientated in automobile manufacturing industry," *Group Technology & Production Modernization*, vol. 24, pp. 1-5, 2007.
- [23] C. Claycomb, R. Germain, and C. Droge, "Total system JIT outcomes: inventory, organization and financial effects," *International Journal of Physical Distribution & Logistics Management*, vol. 29, pp. 612-630, 1999.
- [24] C. Robson, *Real World Research*, 2nd ed. Oxford: Balckwell, 2002.
- [25] M. Saunders, P. Lewis, and A. Thornhill, *Research methods for business students*, New York: Prentice Hall, 2007.
- [26] H. K. Chan, W. Y. C. Wang, L. H. S. Luong, and F. T. S. Chan, "Flexibility and adaptability in supply chains: a lesson learnt from a practitioner," *Supply Chain Management: an International Journal*, vol. 14, pp. 407-410, 2009.
- [27] I. Seidman, *Interviewing as qualitative research: a guide for researchers in education and the social sciences*, London: Teachers College Press, 1998.
- [28] H. Maylor, and K. Blackmon, *Researching Business and Management*, New York: Palgrave Macmillian, 2005.
- [29] N. Reid, "Just-in-Time Inventory Control and the Economic Integration of Japanese-owned Manufacturing Plants with the County," *State and National Economies of the United States, Regional Studies*, vol. 29, pp. 345-355, 1995.