

Strategic QCD Studies with Affiliated and Non-Affiliated Suppliers Utilizing New JIT

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INTRODUCTION

This paper proposes “*New JIT*”, a new principle of next generation management technology that contributes to corporate management. *New JIT* consists of a hardware system founded on three core elements (*TMS—Toyota Marketing System*, *TDS—Toyota Development System*, and *TPS—Toyota Production System*), and a software system (*TQM-S*) (total quality management utilizing scientific statistical quality control (SQC)) that enables the application of scientific TQM. In previous studies, the effectiveness of *New JIT* was successfully proven through its application in a leading Japanese company, Toyota Motor Corporation. In developing “global marketing” to win the global competition in quality and cost, the key for domestic and foreign companies is to successfully achieve “global production” that enables simultaneous production start-up (the same quality and production at optimal locations) all over the world.

Today’s management challenge is to provide high QCD products ahead of competitors through “market creating” activities, with priority given to customers. This is the mission of *New JIT*. In the implementation stage, strategic QCD studies are needed to strengthen core technologies and mutually link them as a whole. Above all, manufacturers endeavoring to become global companies are required to collaborate with not only affiliated companies, but also with non-affiliated companies to achieve harmonious co-existence among them based on cooperation and competition. In other words, a so-called “federation of companies” is needed.

This paper analyzes and proves the significance of strategically implementing *New JIT* at Toyota. To realize manufacturing of excellent quality for customer, this paper proposes a management technology strategy model consisting of three core models: “strategic task team model”, “global partnering model”, and “simultaneous fulfillment of QCD approach model”. Studies were conducted by developing *New JIT* not only at affiliated companies but also at non-affiliated companies,

with the aim of achieving harmonious co-existence between them. The studies successfully achieved “simultaneous QCD fulfillment” through the solution of the worldwide technological subject, which is a global management challenge for production.

TODAY’S MANAGEMENT TECHNOLOGY PROBLEM

Needs for the Reform of Japanese-Style Management Technology

The top priority issue of the industrial field today is the “new deployment of global marketing” for surviving the era of “global quality competition” (Amasaka, 2004b; Kotler, 1999). The pressing management issue particularly for Japanese manufacturers to survive in the global market is the “uniform quality worldwide and production at optimum locations” which is the prerequisite for successful global production. To realize manufacturing that places top priority on customers with a good QCD and in a rapidly changing technical environment, it is important to develop a new production technology principle and establish new process management principles to enable global production.

Furthermore, a new quality management technology principle linked with overall activities for higher work process quality in all divisions is necessary for an enterprise to survive (Amasaka, 2004b; Burke & Trahanant, 2000). The creation of attractive products requires each of the sales, engineering/design, and production departments to be able to carry out management that forms linkages throughout the whole organization (Amasaka, 2004a; Seuring, Muller, Goldbach, & Schneidewind, 2003). From this point of view, the reform of Japanese-style management technology is desired once again. In this need for improvements, Toyota is no exception (Amasaka, 2004b; Goto, 1999).

Importance of Strategic QCD Studies with Affiliated and Non-Affiliated Suppliers

IT development has led to a market environment where customers can promptly acquire the latest information from around the world with ease. In this age, customers select products that meet their lifestyle and have a sense of value on the basis of a value standard that justifies the cost. Thus the concept of “quality” has expanded from being product quality, which is oriented to business quality, to becoming corporate management quality-oriented. Customers are strict in demanding the reliability of enterprises through the utility values (quality, reliability) of their products (Amasaka, 2004a; Evans & Dean, 2003). Advanced companies in countries all over the world, including Japan, are shifting to global production. The purpose of global production is to realize “uniform quality worldwide and production at optimum locations” in order to ensure company’s survival amidst fierce competition (Amasaka, 2004b; Doz & Hamel, 1998).

For the manufacturing industry, the key to success in global production is systematizing its management methods when modeling strategic SCM (supply chain management) for its domestic and overseas suppliers. In-depth studies of the Toyota Production System called *JIT* (traditional just in time) and lean production system (Amasaka, 2002; Ohno, 1977), TQM (total quality management), partnering, and digital engineering will be needed when these methods are implemented in the future. Above all, manufacturers endeavoring to become global companies are required to collaborate not only with affiliated companies, but also with non-affiliated companies to achieve harmonious co-existence among them based on cooperation and competition. In other words, a so-called “federation of companies” is needed (Amasaka, 2004a, 2004b; Hamel & Prahalad, 1994).

FROM JIT TO NEW JIT STRATEGY

Traditional Japanese Production System and Quality Management: JIT

One of the greatest contributions that Japan made to the world is *JIT*. *JIT* is a production system that enables provision of what customers desire when they desire

it. *JIT* is also introduced in a number of enterprises in the United States and Europeans as a key management technology (Amasaka, 2002; Taylor & Brunt, 2001). The Japanese-style production system represented by the current Toyota Production System, called *JIT*, is a production system which has been developed by Toyota. Implementing TQM in the production process, this production system aims to achieve the simultaneous of quality and productivity in pursuit of maximum rationalization while recognizing the principle of cost reduction.

This is the essential concept of *JIT* and therefore, these have been positioned as a core part of Toyota’s management technology and often likened to the wheels on both sides of a vehicle. However, Toyota production system, which is representing the Japanese-style production system today, has already been developed as an internationally shared system, known as a *lean system* and is no longer an exclusive technology of Toyota in Japan. In the Western countries also, the importance of quality control has been recognized through the studies on the Japanese TQM. As a result, TQM activities have been increasingly popular. Therefore, the superiority in quality of Japanese products assured by the Japanese-style quality control has been gradually undermined in recent years (Amasaka, 2004a).

Significance of New JIT: A New Management Technology Principle

Having stated the earlier text in this article, it is the author’s conjecture that it is clearly impossible to lead the next generation by merely maintaining the two Toyota management technology principles: TPS and TQM. To overcome this issue, it is essential to renovate not only TPS, which is the core principle of the production process, but also to establish core principles for marketing, design and development, production, and other departments.

The next generation management technology model, *New JIT*, which the author (Amasaka, 2002) has proposed through theoretical and systematic analyses as shown in Figure 1, is the just in time system for not only manufacturing, but also for customer relations, sales and marketing, product planning, R&D, design, production engineering, logistics, procurement, administration and management, for enhancing business process innovation and introduction of new concepts and procedures.

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