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# Increasing productivity in global firms: The CEO challenge

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**ABSTRACT**

In a highly competitive environment global firms face the challenge of increasing productivity to compete with firms sourcing production in low-wage developing countries. This paper presents a new paradigm of production which provides a solution to the productivity challenge. The new paradigm is both a philosophy of management and a set of methods that draw upon the experiences of firms employing quality management and lean production. This approach has proven to yield substantial gains in quality, productivity, and competitiveness. The methods and the requirements to successfully implement it are discussed. How to transplant these systems to developing countries is also considered. The role of the CEO in successful implementation of the New Productivity Paradigm is discussed in the final section.

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**1. Introduction**

CEO's of global firms face multiple challenges and one of the most daunting is keeping their firms competitive. They face pressure to lower costs and increase profitability while needing to innovate and improve product design and quality to compete in an increasingly global arena. A natural solution to the lower cost–higher profitability dilemma would be to increase productivity in their firms. Yet productivity growth, which picked up in the 1990s, has slowed in the last few years. From 2000 to 2006 U.S. labor productivity growth is estimated at 2.9% a year, exceeding the long-run average of 1.9% a year from 1970 to 2006 (Feldstein, 2008). However, recent data suggest that the rate has slowed to 1.5% from 2005 to 2007 (Blackstone, 2008) and a forecast for the next decade of 2.4% a year also predicts a slowdown (Jorgenson et al., 2008). These are aggregate data for the U.S. economy and reflect the secular pattern of other industrialized countries. Of course firms are concerned more with their own individual productivity growth than aggregate figures. This paper will focus on methods that have been successfully used at the firm level to increase labor productivity, and also improve quality and product design to foster global competitiveness.

The liberalization of trade and the rapid industrial development of countries like China and India have presented a challenge to global firms: how to compete with firms from emerging markets with much lower labor and other costs of production? The response of many firms in the developed world is to outsource production and business processes to these countries to capture their cost advantages (i.e. offshoring). However, this is not the only response, or even necessarily the best one, to the challenge of the newly emerging industrial countries. Some firms instead have refocused efforts on increasing the quality and productivity of production processes in their home countries, and they have managed to retain their competitiveness with the additional advantages of being more flexible and faster in response to customer demand. How they have achieved this is the subject of this paper. It will examine the modern theory of production which draws heavily on lean production and quality management principles and practices to create world class production systems. Of course, these same methods can be used in a production system anywhere in the world, but the economic necessity is less compelling in the low-wage countries. Therefore, the imperative to improve productivity may not be as strong in these countries, but for global firms with operations there, if they can do so, they

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will have the dual advantages of low wages and high productivity. This paper will examine methods of transferring best-practice methods to firms and subsidiaries in other countries, including developing countries, as well as improving it at home.

A recent McKinsey study found that a single point increase on a scale of management practice (rated from 1 to 5) was equivalent to a 25% increase in labor productivity or a 65% increase in invested capital in improving real business performance. (Bloom et al., 2007). This research looked at over 4000 mid-sized firms in 12 developing and developed countries (included were the U.S., eight European Union countries, Japan, and India and China. Multinational firms performed better than domestic firms regardless of the country in this study. The rating of management performance was based on three areas including shop floor operations (use of modern production approaches such as JIT, flexible manufacturing, continuous process improvement, and employee involvement), talent management, and performance management. The management practice rating was based on interviews with managers to ascertain firm practices in each area. Interestingly, although the U.S. was rated tops in overall management performance, it fell behind Germany, Sweden and Japan in shop floor operations management, exactly the place where most productivity improvements occur. This paper focuses on productivity improvement primarily at the operational level.

The next section briefly reviews the development of management thinking on productivity from the end of the 19th century until the present. The third section will develop the New Productivity Paradigm explaining its key precepts and tools, in particular the synergy between quality and productivity improvement. The fourth section discusses practical approaches for firms to increase productivity using methods such as lean and JIT methods, TQM and Six Sigma, supply chain collaboration, information technology, and selective outsourcing. The fifth section will consider barriers to implementation of these methods that are frequently encountered and ways to overcome them. The sixth section looks at the challenge of transplanting modern production theory to emerging markets and methods to achieve this. The final section will summarize and draw some implications for CEO's of global firms.

## 2. The evolution of management views on productivity improvement

By the end of the 19th century large scale industrial production was occurring in the U.K., Europe and the U.S. and beginning in Japan. The prevailing management philosophy at the time was that best way to increase productivity was to develop the skill level of workers and have them take on an ever-wider range of tasks to become highly-skilled craftsman. This craft model of production dominated manufacturing of most products until Henry Ford developed his concept of the moving assembly line. The mass production approach fundamentally changed the way in which managers viewed productivity leading to an emphasis on narrow, repetitive, and specialized jobs utilizing relatively unskilled labor. Frederick W. Taylor (1911) and Gilbreth Lillian and Frank (1911) contributed to the spread of mass production by their scientific methods of time-and-motion study and job standardization. The result was a much higher level of production at lower per unit costs and more consistent quality. Productivity in the industrial workplace took a big leap forward as the concepts of mass production spread throughout manufacturing. The mass production model also quickly spread to other industrialized countries and soon became the paradigm for volume production of any product.

There was little questioning by managers of the efficacy of the mass production model until the 1960s when Taiichi Ohno of the Toyota group of companies in Japan saw some flaws in the paradigm. He noted that the mass production system required huge quantities of materials to operate efficiently, tying up large amounts of capital and space, and also obscuring other problems in the process such as poor quality. Mass production also required long runs of parts and products to be efficient contributing to large inventories and a high number of defects. It also contributed to over-standardization of products and was inflexible and very resistant to change. In response to these deficiencies, Ohno developed over a period of years the Toyota Production System (TPS), first at the firm's weaving machine company and later at the Toyota Motor Corporation (Ohno, 1988). In implementing his new system of production, he developed many innovations including the concepts of muda (waste) reduction, jidoka (quality-at-the-source), and kaizen (continuous improvement) which underpin the TPS. The increasing competitiveness of Toyota and other Japanese firms also adopting the TPS approach soon presented a challenge to Western managers wedded to the mass production system. Market shares of Western firms were rapidly eroding in autos, consumer electronics, semiconductors, and other industries.

After a period of denial and recrimination and trade sanctions (threatened and actual), Western managers began to realize the inherent advantages of the Toyota approach, commonly called Just-in-Time (JIT) at that time. A few firms began trying to learn how JIT worked and see if they could implement it in a Western context. Examples are General Motors creating a joint venture called New United Motors Manufacturing Industries (NUMMI) in Fremont, California, in 1982 and Ford working with Mazda to establish an assembly facility in Hermosillo, Mexico, in 1983. Both of these ventures proved successful, although the transference of knowledge about JIT to GM and Ford has been limited (Inkpen, 2005; Haigh, 1992).

In *The Machine That Changed the World* Womack et al. (1990) reported the results of a study of the global auto industry which revealed the inherent productivity advantages of the JIT production system. The JIT plants not only had much higher productivity (measured as worker hours per car) but also had fewer defects as well. This result reinforced the emerging view of some managers that quality and productivity were not tradeoffs, but actually could be simultaneously increased by using the right methods. Womack, Roos, and Jones coined the term lean production, and this term is now widely used, and preferred, as it expands the concepts of JIT beyond manufacturing to services as well (Womack and Jones, 1996a,b).

Also in the 1970s another change was occurring in the production paradigm. Japanese firms were developing new methods of quality control. Based on the teachings of Deming, Juran, and others following the Occupation of Japan in the 1940s and 50s, Japanese firms had learned to apply rigorous statistical quality control in their manufacturing industries, as well as utilize other quality improvement tools as the Deming Wheel and Quality Circles, to dramatically improve quality of their exports in a few years. This provided an additional competitive challenge to Western managers, and their response was much the same as with the productivity challenge; i.e. denial, blaming cultural differences, and protectionism. Again, however, managers in a few firms began to realize the

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