Chapter 15
Reconfiguring Supply Chains for a Global Automotive Industry

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ABSTRACT
As the industrial landscape is altered by emerging markets like China and India and the bankruptcy of Detroit automakers and their parts suppliers, motor vehicle firms are reconfiguring their supply chains in order to be cost-competitive on a global basis. Backup capacity and cross-docking are being incorporated into just-in-time delivery systems in an attempt to keep car prices affordable for first-time buyers. This will entail a rebuilding of the global alliances between automakers and key component suppliers that lead to stringent quality standards, adhered-to-delivery schedules, and productivity increases which are needed to keep operating, procurement, and distribution costs under control.

INTRODUCTION
“Global growth is the big story of our times [which followed] three tectonic power shifts over the last five hundred years, fundamental changes in the distribution of power that reshaped international life – its politics, economics, and culture.” These shifts resulted in:

1. The rise of the Western world and the Pax Britannica;
2. The rise of the United States and the Pax Americana;
3. The rise of the rest of the world with particularly China and India “pumping out goods and services for a fraction of what they would cost to produce in the West” (Zakaria, 2008, pp. 1-2, 27; Hiraoka, 2009).
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In a related 100-year assessment and forecast of the world’s economies, the investment bank, Goldman Sachs, concluded that four large developing countries collectively called the BRICs (for Brazil, Russia, India, and China) were expected to surpass the industrialized economies of the United States, Japan, Germany, United Kingdom, France, and Italy by 2040 — “leading to a dramatically different world [with the BRICS becoming] a very important source of new global spending in the not too distant future” (Wilson & Purothaman, 2003, p. 3).

As global growth and spending shift, major industries like automobile (including light truck) manufacturing will be forced to alter their production and supplier networks to address the needs of new buyers, advances in technology, and different government policies and national infrastructures in which to operate. Those firms that succeed in the new world environment will need to create supply chains that:

1. “Respond to sudden and unexpected changes in markets and strategies;
2. [Deliver] sustainable advantage [by being adaptable];

Supplier relations and management are, furthermore, particularly crucial in auto manufacturing because most of a vehicle’s 15,000 components are designed and produced by supplier firms. “The situation becomes potentially more difficult for firms that attempt to locate abroad in order to increase access to foreign markets” (Cusumano & Takeishi, 1991, p. 563). This was the case for the Japanese auto industry when the U.S. economy and its auto industry were crippled by the Arab oil embargo of 1973-1974: “Before the embargo, the United States had been importing 1.2 million barrels a day; by February (1974) that figure had dropped to virtually nothing…. In just two months the price of oil had quadrupled” (Halberstam, 1986, p. 458). Demand for fuel-efficient vehicles promptly surged paving the way for Japanese imports of economical, subcompact cars which Detroit automakers could not produce. The imports were followed by transplants as Honda, Nissan, Toyota, and others attempted to meet the demand and secure market share by investing in North America. How they succeeded in doing so will be analyzed in this study in order to determine how manufacturing enterprises as complex and important as auto-making were successfully transplanted from Japan, across the Pacific Ocean, to challenge powerful firms like GM and Ford. Such an industrial transition becomes even more significant as automakers in the United States, Europe, and Japan confront mature and stagnating economics in their home markets and are being forced to move to emerging areas like the BRIC countries. The lessons learned from analyzing how the Japanese automakers became competitive in the United States in the 1980’s by building assembly plants and new supply chains can then be applied to the emerging areas where they are now competing in.

TRANSPLANTING A NEW PARADIGM

Because of the importance of the auto industry in the U.S. economy, the arrival of the Japanese transplants came under intense scrutiny:

We concluded that the auto industries of North America and Europe were relying on techniques little changed from Henry Ford’s mass production system and that these techniques were simply not competitive with a new set of ideas pioneered by the Japanese companies, methods for which we did not even have a name

(Womack et al., 1990, p. 3).