Chapter 2
The Evolution of Competition in the Automotive Industry[1]

Matthias Holweg

Judge Business School, University of Cambridge

Abstract. At the dawn of the second automotive century it is apparent that the competitive realm of the automotive industry is shifting away from traditional classifications based on firms' production systems or geographical homes. Companies across the regional and volume spectrum have adopted a portfolio of manufacturing concepts derived from both mass and lean production paradigms, and the recent wave of consolidation means that regional comparisons can no longer be made without considering the complexities induced by the diverse ownership structure and plethora of international collaborations. In this chapter we review these dynamics and propose a double helix model illustrating how the basis of competition has shifted from cost-leadership during the heyday of Ford's original mass production, to variety and choice following Sloan's portfolio strategy, to diversification through leadership in design, technology or manufacturing excellence, as in the case of Toyota, and to mass customisation, which marks the current competitive frontier. We will explore how the production paradigms that have determined much of the competition in the first automotive century have evolved, what trends shape the industry today, and what it will take to succeed in the automotive industry of the future.

[1] This chapter provides a summary of research conducted as part of the ILIPT Integrated Project and the MIT International Motor Vehicle Program (IMVP), and expands on earlier works, including the book *The second century: reconnecting customer and value chain through build-to-order* (Holweg and Pil 2004) and the paper *Beyond mass and lean production: on the dynamics of competition in the automotive industry* (Économies et Sociétés: Série K: Économie de l'Enterprise, 2005, 15:245–270).

2.1 All Competitive Advantage is Temporary

The roots of today's motor industry can be traced back to Henry Ford, who, based on the inter-changeability of components and the use of the moving assembly line, laid the foundations for modern-day mass production techniques. Even the basic features of a car have not changed much since Ford's days: a car still has four wheels, is propelled by a gasoline engine and its body is still welded together from pressed metal parts. Despite the profound impact that Ford has had on the "industry of industries"[2], its competitive advantage was short-lived and Ford was soon overtaken by GM, which, based on the visions of Alfred P. Sloan, introduced a more decentralised organisational structure and offered customers the choice they wanted through a much broader product portfolio. While civilian production significantly shrunk during the years of the Second World War, the mass production of cars in the US leveraged the growth of the post-war period until the 1970s saw increasing competition from Japan, where companies like Toyota seemed to be able to offer better deals – in terms of quality and cost – to customers in the US and Europe.

The success story of lean production, leading to the difficult situation faced by the US and European manufacturers in the three decades since 1970, is well known and all major players in the industry have adopted the set of techniques that were first introduced at Toyota in Japan, the Toyota Production System (TPS), or "lean production" as it is more widely known. However, competitive forces are far from being static, and hence vehicle manufacturers can no longer rely on excellence in production only, especially since the performance gap between them has been closing (Holweg and Pil 2004). The automotive industry in the new millennium has seen the advent of three key challenges: regionalisation, saturation and fragmentation of markets, challenges that few manufacturers have addressed successfully to date. New capabilities are required to deal with this competitive situation and return to profitability. There is an increasing number of countries in the world today that have mastered the skills of producing cars with acceptable levels of quality, and often at a much lower cost compared with the US, Europe or Japan.

At the turn of the second automotive century the news from the automotive industry in the established regions is anything but encouraging: record losses are being reported in Detroit, and in Europe household names are, for the first time, being squeezed out of the market. Britain alone has seen the closure of five major car plants over as many years, and one might get the impression that for every factory that closes in the West, (at least) one is opening in Eastern Europe, India or China – suggesting that the days of the motor industry in the western world are numbered. In Japan, several corporate crises and even threats of bankruptcies have been averted, most prominently in the case of Nissan.

But painting a picture of gloom misses the point: the industry is mature, the barriers to entry are high and demand is growing – on average, global car production

[2] A term coined by Peter Drucker in 1946.