

# Chapter 13

## Manufacturing in a High Cost Environment: Basis for Success on the Firm Level

**Göran Roos**  
Swinburne University, Australia

### ABSTRACT

*This chapter draws on an overview of contemporary literature to distil the best ways for manufacturing firms to adapt to and succeed in high cost environments. Parts of global value chains will move back to sophisticated, economically complex, high operating cost environments like the US and the European Manufacturing Belt. However, the firms that participate in these value chains will look different. The forces that impact the structure and location of manufacturing activities will also impact the individual firm, and this chapter discusses how this will result in successful firms becoming so called “Hidden Champions.” A successful transformation into tomorrow’s Hidden Champion will result in fewer employees with higher capability, producing a higher level of output of which a very high share will be produced and delivered digitally. These firms will participate in smaller, more concentrated value chains serving a global market but operating both competitively and collaboratively in agglomerations like clusters. These agglomerations will be located in jurisdictions with high economic complexity and with a deep and broad industrial commons and with a supportive policy regime.*

### LOW COST OPERATING ENVIRONMENT

In a low cost operating environment, the basis for success is normally to successfully compete on price i.e. to have the lowest total cost. This leads to a focus on efficiency (which is interpreted as doing what you do as well as possible) and consequently on imitation (normally called benchmarking, best

practice, etc.) which reduces the risk, and thereby cost, associated with introducing new things into the firm. It also leads to a focus on productivity improvements which are interpreted as cost reduction and work efficiency.

Low cost operating environments are characterised by most production factors being available at lower or similar cost to other locations. With globalisation, an increasing number of produc-

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tion factors become available at similar cost in different locations, which makes the remaining production factors that are still available at lower cost increasingly valuable as a basis for the firm's competitiveness.

## **HIGH COST OPERATING ENVIRONMENT**

In a high cost operating environment, the basis for success is normally to compete on superior value for money. This means an emphasis on effectiveness balanced with an emphasis on efficiency. Effectiveness (which is interpreted as doing the right thing) is about delivering what the customer values; efficiency (which is interpreted as doing what you do as well as possible) is about delivering this value at the lowest possible cost.

This emphasis on effectiveness leads to a focus on innovation and on productivity defined as doing smarter things in smarter ways, whereas the secondary emphasis on efficiency means ensuring as short a lead-time as possible from idea to product and as rapid a cost reduction as possible for the new innovation once it is put into production.

Given the continuously increasing speed of knowledge dissemination (including the codification of tacit information) in an increasingly globalised world, firms in a high cost operating environment must do one or both of (Roos, 2013a):

- Creating and accumulating knowledge faster than firms in low cost operating environments, at the same time as converting this new knowledge to a temporary competitive advantage<sup>1</sup> faster than firms in low cost operating environments.
- Shielding some critical part of their knowledge base (usually partly tacit) from becoming globally accessible in order to extend the duration of their temporary competitive advantage.

The ability to achieve one or both of these outcomes is frequently based on close interaction and cooperation with customers. Building up and maintaining strong interactive relationships with external partners, and primarily with lead customers, is critical to firm success (Kleinaltenkamp & Jacob, 2002; Jacob, 2006; Arnold et al. 2010). The benefits include dramatic reduction in rework cost (Bürgel & Zeller, 1997) and enhanced idea generation (Arnold et al. 2010). Maintaining close relationships and engagement with suppliers is similarly critical as they frequently are drivers of process innovation and technology transfer (Chronéer, 2005; Aylén, 2010; Lee et al. 2010; Sjödin & Eriksson, 2010), especially in process industries (Rönnberg Sjödin et al., 2011; Sjödin, 2012; Rönnberg-Sjödin, 2013). Likewise, relationships with competitors (the concept of cooptition<sup>2</sup>) is critical here (Johansson, 2011; Peng et al. 2012; Ritala & Hurmelinna-Laukkanen, 2013; Yami & Nemeh, 2013) and can lead to positive outcomes (Bengtsson & Kock, 2000) like shorter time to market and increased technological diversity (Lou, 2007; Faems et al., 2010) and stimulus for new product innovation (Belderbos et al., 2004; Quintana-García & Benavides-Velasco, 2004; Ritala, 2012). These benefits also result from engaged working relationships with research providers (Roos & Pike, 2011; Estep & Daim, 2013). Crespi et al. (2008) found that vertical linkages and cooperation within the business group account for 50 percent of total factor productivity growth and Harris et al. (2012) found that cooperation with universities account for 16.3 percent of total factor productivity growth, hence it can be stated that firms that have a higher level of cooperation are more likely to innovate successfully with positive impact on total factor productivity growth.

Knowledge creation is normally strongly influenced by particular location-specific factors in the regional innovation system, combined with social and cultural institutions and behaviours

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