

for one client that it can draw on to serve multiple clients better. Around 10 000 *Wipro* engineers are involved with such high-end design and development work for numerous clients, but *Wipro* has fewer than ten patents.²² By developing and keeping the technology (mostly) in-house, *Wipro* protects the rarity of such expertise and uses it as a competitive advantage when competing for contracts. Overall, the question of rarity is a reminder of the cliché: if everyone has it, you cannot make money from it.

The question of imitability

Value-creating and rare resources can be a source of temporary competitive advantage, but this will disappear quickly if competitors can imitate the resources. The third question thus is, how difficult is it for competitors to imitate the resources? It is relatively easy to imitate many tangible resources (such as plants), but it is a lot more challenging and often impossible to imitate intangible resources (such as tacit knowledge, superior motivation and managerial talents).²³ In an effort to maintain a high-quality manufacturing edge, many Japanese firms employ 'super technicians' – an honour designated by the Japanese government – to handle mission-critical work, such as mounting tiny chips onto circuit boards for laptops at *Toshiba*.²⁴ Similarly, *Rolls-Royce* (In Focus 4.1) develops and trains its engineers internally and thereby creates an organizational engineering competence that cannot be matched by rivals. Although robots can be purchased by rivals, no robots, and few humans elsewhere, can imitate the capabilities of a dedicated, specialized and loyal workforce. In an effort to create an imitable brand, *Burberry* focused on its British heritage as the core of its brand identity.

IN FOCUS 4.1



Rolls-Royce: evolving capabilities

Many resources are developed over long periods of time and are continuously renewed to achieve competitiveness in changing market places. One company going strong for over a century is *Rolls-Royce* (*RR*), founded in 1904. From the outset the company reflected the values of its founders, Henry Royce, a perfectionist engineer, and Charles Rolls, a persuasive salesman. Soon, *RR* became Britain's leading manufacturer of aero engines, supporting the war efforts in World War I.

In the early 1930s, an independent engineer, Frank Whittle, invented a completely new form of engine, the jet engine. In 1943, *RR* took over Whittle's

entrepreneurial operation and put jet engines into mass production. By the end of World War II, the jet-engine technology had largely replaced piston engines in the military, with *RR* leading in this novel technology. In the 1950s, civilian air travel took off, powered by jet engines. However, US competitor *Pratt & Whitney* also invested in the technology and was able to leapfrog *RR*. By the 1960s, competition in this industry had already become global, and US competitors were flying ahead. *RR* was trying to catch up. A creed of engineering excellence guided the company, and it was reproduced generation after generation through recruitment and internal training. Employees tended to join the company young and stay for most of their working life. The top management of *RR* was mostly internally promoted