Illustration 8.1

Silicon Valley – the best example of an innovation network

Silicon Valley is a leading hub and start-up ecosystem for high-tech innovation and development, accounting for one-third of all of the venture capital investment in the United States. Silicon Valley is located in the southern San Francisco Bay Area. Significantly, it is home to hundreds of start-up and global technology companies, with Google, Apple and Facebook amongst the most prominent (see Figure 8.1). The word 'Valley' refers to the Santa Clara Valley, where the region traditionally has been centred, which includes the city of San Jose and surrounding cities and towns. The word 'Silicon' originally referred to the large number of silicon chip innovators and manufacturers in the region. Stanford University is also located close by and has a large postgraduate population. Many of its graduates take up positions in the region with large and small firms; many have started their own business. The term 'Silicon Valley' eventually came to refer to all high-tech businesses in the area. It was in Silicon Valley that the silicon-based integrated circuit, thed microprocessor, and the microcomputer, amongst other key technologies, were developed.

And what about other Silicon Valleys? It seems that, across Europe, there are many other clusters forming in the regions circling around London/Cambridge, Paris, Amsterdam and Munich. Any of these could develop into a thriving innovation centre. Time will tell.

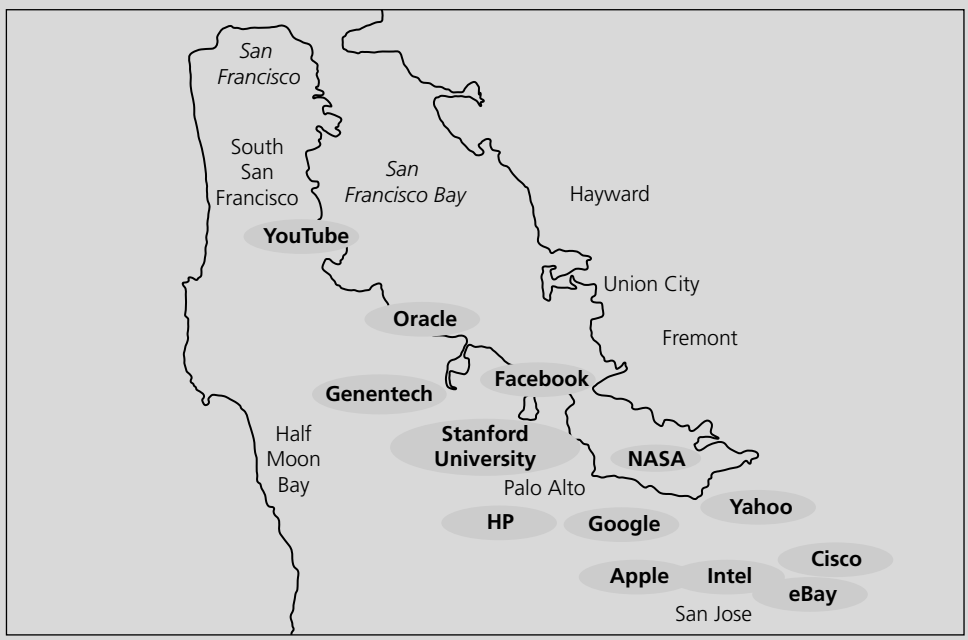

Figure 8.1 **Silicon Valley**

The fall of the go-it-alone strategy and the rise of the octopus strategy

Businesses are beginning to broaden their view of their business environment from the traditional *go-it-alone* perspective of individual firms competing against each other. The formation of strategic alliances means that strategic power often resides in sets of firms acting together. The development of mobile phones, treatments for viruses such as AIDS, aircraft manufacture and motor cars are all dominated by global competitive battles between groups of firms. For example, the success of the European Airbus strategic alliance has been phenomenal. Formed in 1969 as a **joint venture** between the German firm MBB and the French firm Aerospatiale, it was later joined by CASA of Spain and British Aerospace of the United Kingdom. The Airbus A300 range of civilian aircraft achieved great success, securing large orders for aircraft ahead of its major rival Boeing.

The so-called octopus strategy (Vyas et al., 1995) gets its name from the long tentacles of the eponymous creature. Firms often develop alliances with a wide range of companies. Car making may be one of the world's most competitive big industries, but rival producers have always been ready to cooperate on expensive new technologies and products when the cost or risk of going it alone was too high. The hunt for partners is now intensifying as automakers seek to build scale, cut costs and pool efforts in areas like small cars, vehicle electrification and emerging markets, as Figure 8.2 shows.

It is not just large established firms that are rushing into new fields in which they are comparatively small and inexperienced. Many small and medium-sized firms (SMEs) are also entering strategic alliances with a variety of different firms. For example, in a survey of 137 Chinese manufacturing SMEs, Zeng et al. (2010) find that there are many significant positive relationships between inter-firm cooperation. Furthermore, they find that inter-firm cooperation has the most significant positive impact on the innovation performance of SMEs. They are able to offer their existing skills, knowledge and technology, which, together with other areas of expertise, can create 'hybrid' technologies, such as bioelectronics, or by combining process and product innovations from different industries. Even competitors are collaborating. Ritala and Hurmelinna-Laukkanen (2009) found that collaborating with competitors (coopetition) has been found to be an effective way of creating both incremental and radical innovations, especially in high-tech industries. Firms are increasingly finding they need an array of complementary assets (Teece, 1998).

Pause for thought

Many small firms are reluctant to engage in any form of sharing information and knowledge, because they believe other firms may steal their valuable information and customers. Maybe there are some firms that should not engage in alliances?

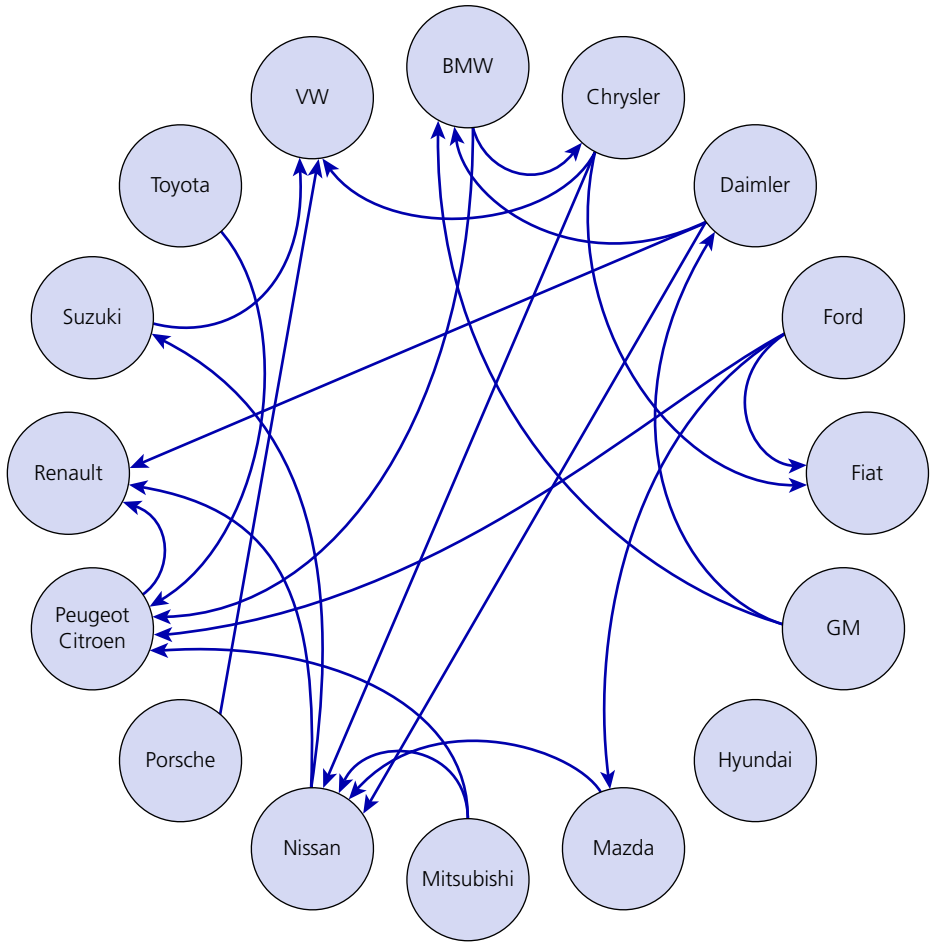

Figure 8.2 The tangled web of alliances between car manufacturers

Source: FT.com, 4 May 2010.

Complementary capabilities and embedded technologies

The example of Silicon Valley above illustrates that even firms with a long and impressive heritage to defend see technology as the main determinant of competitive success. As a result, they increasingly realise they need access to new technology. Moreover, they also realise they cannot develop it all themselves. Acquiring technology from outside using technology transfer (the subject of technology transfer is explored in much more detail in Chapter 11) and forming alliances with others is now regarded as the way forward.

Many large established firms, such as Sony, IBM and HP, have developed global brands and sophisticated distribution infrastructures, but these are of limited value in the computer hardware industry without a constant stream of new products and technologies. Hence, these firms have developed extensive linkages or networks around the world. Hamel (1991) argues that this is necessary because, historically,