

## Innovation life cycle and dominant designs

The launch of an innovative new product into the market is usually only the beginning of technology progress. At the industry level, the introduction of a new technology will cause a reaction: competitors will respond to this new product, hence technological progress depends on factors other than those internal to the firm. We need to consider the role of the competition. Product innovation, process innovation, competitive environment and organisational structure all interact and are closely linked together. Abernathy and Utterback (1978) argued there were three different phases in an innovation's life cycle: fluid, transitional and specific. This concept will be discussed in detail in Chapter 7, but at this stage we need only to recognise that one can consider innovation in the form of a life cycle that begins with a major technological change and product innovation. This is followed by the

## Illustration 1.6

### The 'sailing ship effect'

The so-called 'sailing ship effect' often has been stated as though there is no doubt that it really took place at the end of the nineteenth century. The notion is that the substitution threat of new radical technologies (steamships) may lead to a renewed spurt of innovation in an old and established technology (sailing ships). Recently,

Mendonça (2013) reviewed the field of maritime history and shows that the effect is nowhere to be found, even in the very case from which it derives its name. Mendonça says the modernisation of the sailing trader occurs before, not after, the steamship had become an effective competitor.

emergence of competition and process innovations (manufacturing improvements). As the life cycle proceeds, a dominant design usually emerges prior to standardisation and an emphasis on lowering cost. This model can be applied to many consumer product innovations over the past 20–30 years, such as VCRs, CD players and mobile phones. The so-called sailing ship effect can sometimes enable old technologies to have new life (see Illustration 1.6).