

5.8 Research and development (HL)

The big picture

The dynamic relationship between social change, innovation, fashion and technology is captured in **Video 1**. The close relationship we have with our clothes is in part due to extensive research and development (R&D) in the fashion industry.

Fashion is fuel for innovation | TED Institute



Video 1. The fashion industry as an innovator.

Research and development (R&D) is the process of bringing new products to market. In fast-moving innovative industries such as consumer electronics or fashion, companies continually update their products to create and keep up with trends. This requires high levels of spending.

Fashion houses employ creative designers to come up with new collections, while consumer electronics companies spend millions in technological research to try to stay ahead of their competitors. The goal of this spending is the release of new products with unique selling points that consumers will value.

Section 4.5.1 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/product-life-cycle-id-39005) introduced the concept of the product life cycle, which attempts to map out the phases a product will pass through from its launch to its eventual withdrawal from the market. This section will focus in greater detail on the first step of the product life cycle: research and development.

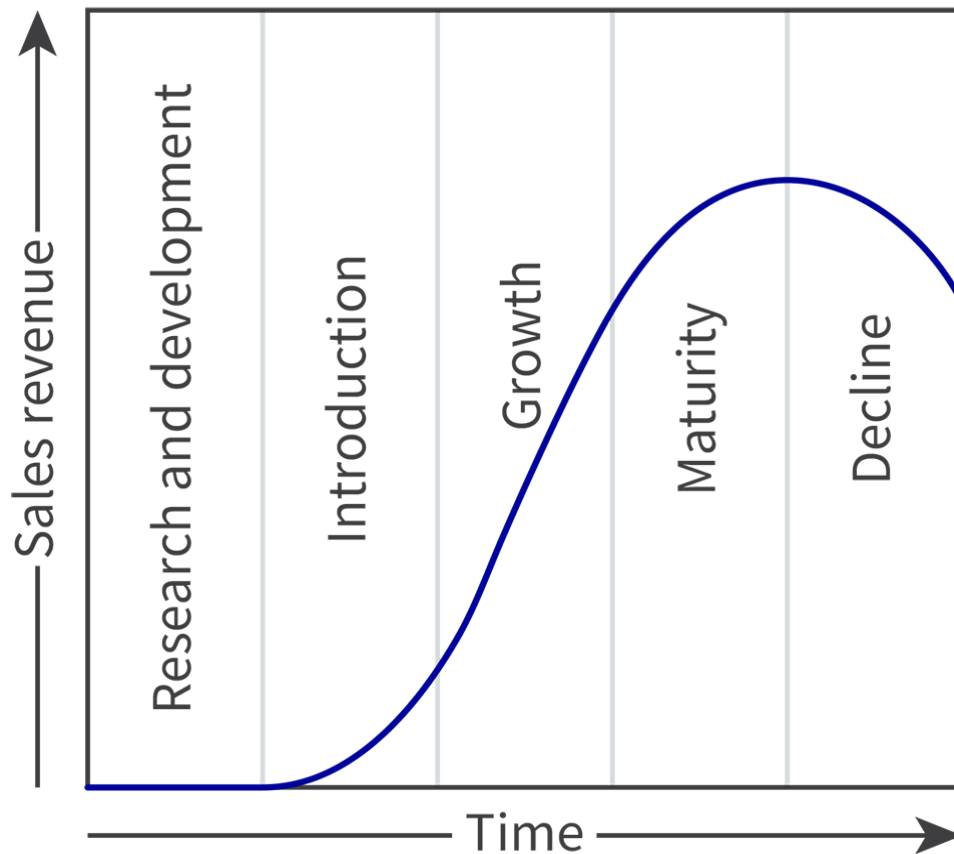


Figure 1. Research and development is a key element of the product life cycle.

Not all research and development will be successful. Research can lead to ineffective formulas or new designs that may be rejected by the consumer. Successful companies are aware of these risks and are willing to accept some failures from their research and development teams.

Pharmaceutical companies can make billions by developing new and useful drugs. Moderna, one of the pharmaceutical companies responsible for developing a COVID-19 vaccine, reported making 18 billion USD in revenue and 13 billion USD in profit in 2021. And Pfizer reported generating 31 billion USD in revenue from the production of its vaccine developed in collaboration with Biontech. These profits may seem excessive, but the pharmaceutical industry would argue that such profits are justified by the enormous risks these businesses take in developing new drugs. Before a new drug is launched, it must pass many test phases. These include computer modelling, testing and, finally, human trials. This process can take over 12 years to complete and costs billions of dollars in additional R&D funding.

How many companies can afford to spend this much on possible product failures? Do you think banks are likely to be willing to lend businesses money to invest in research and development when there is no guarantee of success? How can businesses improve

their chances of bringing a successful new product to market?

Some critics argue that these pharmaceutical companies are profiteering from the COVID-19 pandemic. They suggest the prices these companies are charging for the much-needed vaccines are high and that the vaccines are mostly being sold to rich countries. Ethical questions could be raised in relation to the practices of the pharmaceutical companies. Yet the vaccines they develop are vitally important.

This subtopic will investigate the process of innovation and how and why businesses undertake product research.

Concept

Change and creativity

Innovation and creativity have the capacity to change the product or processes a business uses. For example, creative innovation may lead to the development of new products for new markets. Creativity and innovation are also necessary both internally in the business, and to respond to changes in the external environment.