## 2.2 WHAT IS INNOVATION?

The term innovation was first introduced by Joseph Schumpeter and defined as "Durchsetzung neuer kombinationen" [1]. During the following decades many other interpretations and definitions of innovation have been added. Wikipedia describes innovation as a new idea, more effective device or process. Innovation can be viewed as the application of better solutions that meet new requirements, inarticulated needs, or existing market needs. This is accomplished through more effective products, processes, services, technologies, or ideas that are readily available to markets, governments and society.

Innovation can be defined as something original and more effective and, as a consequence, that it is new and "breaks into" the market or society. While a novel device is often described as an innovation, in economics, management science, and other fields of practice and analysis innovation is generally considered to be a process that brings together various novel ideas in a way that they have an impact on society. In general the objective, the level of change, and the outcome of innovations are key.

Ultimately, innovation should increase the added value of an organisation and the customer value. The level of change is a crucial factor and innovations do differ in this. See Figure 2.1. Usually, a linear development or improvement is not seen as an innovation because innovations typically show an upwards curve in change. A radical innovation (middle) shows the biggest change. Incremental innovations demonstrate a series of small improvements in a product or process. This last type of innovation is popular because it reduces the risk in comparison to radical innovations [1, 2].

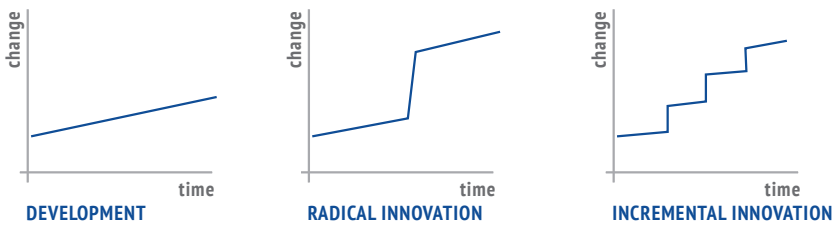
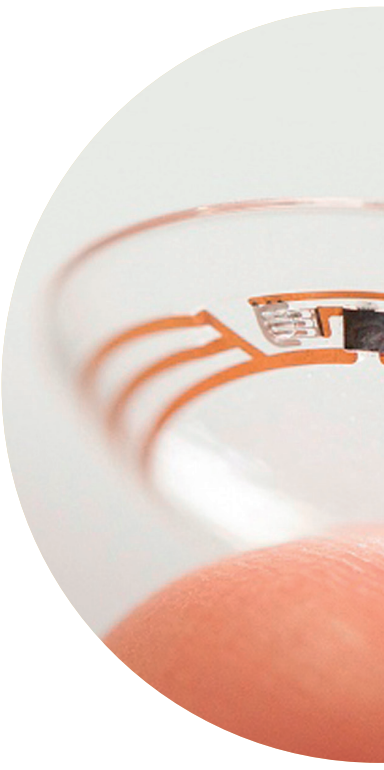



**Figure 2.1: Levels of change for innovations.**



A more sophisticated approach on levels of change towards innovations is demonstrated in Figure 2.2. In this figure two dimensions are combined, the level of innovation and the magnitude of the innovation. The vertical line makes is clear that companies can develop new aspects of an existing product, or a totally new product, or a product line to the highest type in developing a new category. On the horizontal line, this is related to the magnitude (individual to globe).

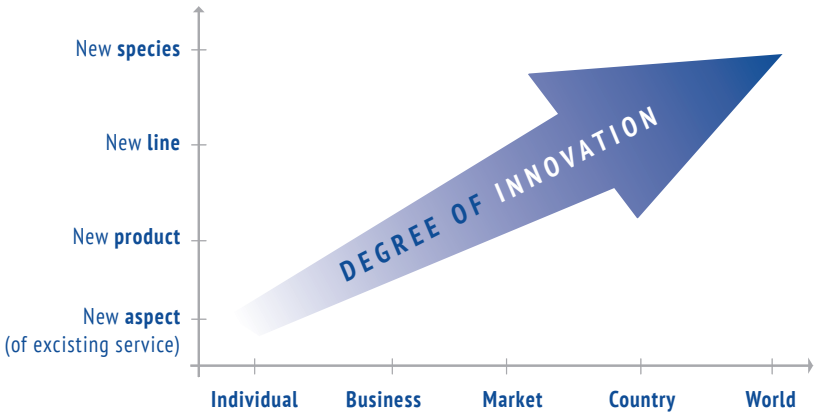



**Figure 2.2: Multidimensional levels of change and innovations.**

## BIOWEARABLES

Laura Hill published a short article on WELLTODO (November 26th 2015) (http://www.welltodolondon.com), on the future of wearables, discussing Biowearables. The so-called Tech Tats, high-tech tattoos, have the capability to collect, store, send and receive data much like a Fitbit or an Apple Watch. But instead it uses skin-mounted components and conductive paint to create a circuitry that lives on the human body.

The reasons for innovations can easily be explained by two well-known theories in business; the product lifecycle, and the Boston Consultancy Group (BCG) matrix [1, 2, 3]. In Figure 2.3, the lifecycle of a product is described chronologically in the following stages: development, introduction, growth, maturity and decline. When products are at the end of their lifecycle, there is a need for new products and innovations to maintain the level of business. Of course, innovations can always be introduced to create new business opportunities, even if the existing business is still growing and performing well.

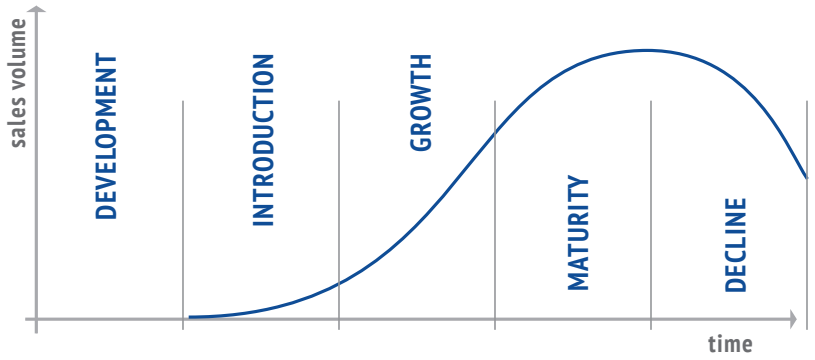



**Figure 2.3: Product lifecycle.**

Another approach to this process is presented by the Boston Consultancy Group (BCG), as displayed in Figure 2.4.

BCG combines market growth with relative market share, both labelled as high or low. "Cash cows" is a term used where a company or product has high market share in a slow-growing industry. These typically generate revenue in excess of the amount of cash needed to maintain the business. They are to be "milked" continuously with as little investment as possible, since such investments would be wasted in an industry with low growth. "Dogs" are products or programmes with low market share in a mature, slow-growing market. These are typically break-even, generating barely enough cash to maintain the market share.

The question marks are products or businesses operating in a high market growth, but having a low market share. Most innovations will start in this section of the BCG matrix. The" question marks" have a potential to gain market share and become stars, and eventually cash cows, when market growth slows. If question marks do not succeed in becoming a market leader, then after perhaps years of cash consumption, they will degenerate into dogs when market growth declines. The "stars" are products with a high market share in a fast-growing sector, and often with graduated question marks.

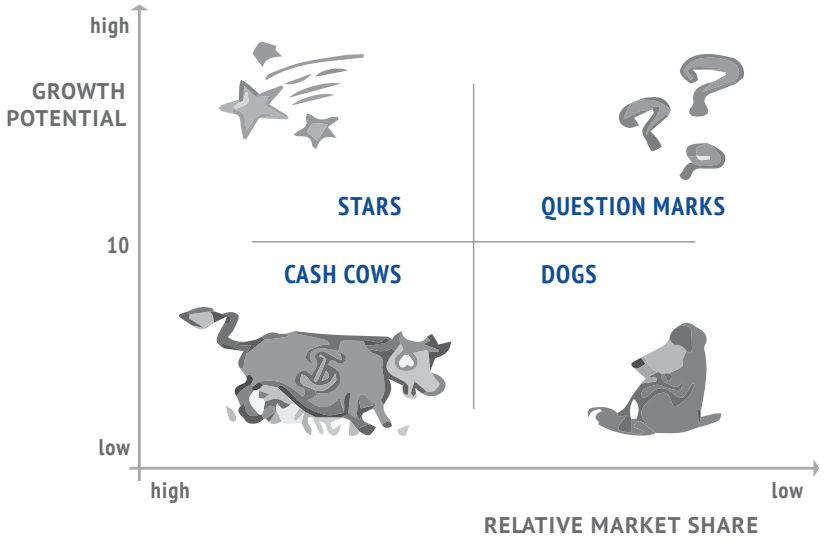



**Figure 2.4: BCG-matrix.**

The need for innovations in the fitness sector can be analysed by using the product lifecycle system and BCG matrix. When many products, programmes or business models are in the decline stage, the need for innovations is high. For example, joining fees can be seen as a construct of a business model. In the nineties fitness clubs introduced joining fees to become a member of a fitness club. Currently, the joining fees are under stress and many clubs do not charge the same fees as they did many years ago. The boutique clubs mostly do not charge these fees, and at the same time use only "pay as you play" concepts. So, joining fees are at the end of their life cycle, but new types can be developed and introduced.

## CIRQUE DU SOLEIL

A great example of a market innovation is Cirque du Soleil. Where traditional circus focussed on kids and travelled from town to town, Cirque du Soleil targeted a new segment: adults visiting theatres. With modern and intelligent types of acts, including live music, and quality facilities (and substantial prices) a new market was born [4].