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The Relationship between Competition and Innovation – Note by Austria

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More documents related to this discussion can be found at https://www.oecd.org/competition/the-relationship-between-competition-and-innovation.htm

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1. Innovation in the semantic sense comes from the Latin word "innovare", which can be equated with "renew". In turn, "innovare" contains the root word "novus", which means "new". As language evolves and changes, the meaning of the word "innovation" has also changed.

2. Innovation can refer to different areas. It can be a process or a product. The same applies to services.

3. A process innovation typically leads to an improvement in procedures, especially in production. The main aim of a process innovation is to streamline processes and thereby reduce costs.

4. A product innovation occurs when either a new product is created, or an existing product is substantially renewed. Product innovation is usually aimed primarily at increasing profits and market share.

5. With regard to innovation, a further subdivision is possible, at least in theory, in terms of effect or scale. A drastic or disruptive process innovation means that only the innovator, i.e. the most innovative firm, remains in the market. The drastic nature of such a process innovation lies in its effect, according to which firms that do not carry out or at least participate in the innovation will inevitably leave the market. Its counterpart is incremental innovation. An innovation is said to be incremental if its scale is gradual or selective. A clear distinction between radical or disruptive innovation on the one hand and incremental innovation on the other is not always possible, as there is no consensus on these terms.

6. The relationship between competition and innovation appears ambivalent in economic terms. Joseph Schumpeter and Kenneth Arrow are *inter alia* representative in this respect (and the resulting "Arrow-Schumpeter" controversy).

7. According to Joseph Schumpeter, the incentive for a firm to invest in innovation lies in a market structure in which the firm has, at least temporarily, a higher degree of market power. According to Schumpeter, these companies can engage in "creative destruction". With other words: Competition and innovation are negatively related. The background to this is that a company in a monopoly, for example, can count on its investments in innovation being recouped within a certain period of time. The stronger the market position of a company, the more likely it is to take the risks associated with innovation (both organisational and financial).

8. Kenneth Arrow argues that competition, not market concentration, is the engine of innovation. Accordingly, the main impetus for innovation comes from new entrants. Arrow's thinking is based on the assumption that a monopolist, for example, has relatively little to gain from innovation because of its existing market position. As a result, Arrow assumes that firms with high market shares have little incentive to innovate.

9. A key feature of Friedrich Hayek's thinking on competition is that he understands it as a process of discovery in established, open markets. For Hayek, no discoveries can be made without competition, because otherwise they cannot be recognised or exploited. It is through competition as a discovery process that the foundation for innovation is laid because the discovery process leads to more and more innovations (in the form of products or production processes). In Hayek's view, this basically means that vigorous competition has a positive effect on innovation.

10. More recently, it has also been argued that competition and innovation follow an inverted U-curve. It has been found that there may be a positive correlation between patents and firm size, with the positive effect tending to diminish as firm size increases. Other economic considerations differ according to the type of innovation. In the case of product innovation, it is argued that in the context of an acquisition where two research units remain, less is invested in R&D than before the merger. The main reason for this is seen in the fact that, from the company's point of view, there could be a cannibalisation effect between the two research units after the merger.

11. The assessment of innovation in the context of competition law may involve a certain tension. One example of this is merger control. In merger control, a distinction can be made between more static unilateral effects, such as prices or quantities, and more dynamic effects, such as innovation. Closely related to this is the fundamental question of the markets in which innovation should be assessed under merger control. While price competition, for example, undoubtedly takes place on an existing product and geographic market, this classification is more difficult in the case of innovation competition. In particular, the market structure and the competitive relationship between the undertakings concerned may be different in the case of existing product and geographic markets and in the case of innovation, and may lead to different results, since not every undertaking may necessarily be a competitor both on a relevant product market and in terms of innovation. As the focus of merger control is on consumers, a merger may lead to higher prices, at least temporarily, on the one hand, and (nevertheless) to more innovation in the longer term (and vice versa).

12. At a factual level, assessing innovation can be like looking through a crystal ball. The path from an initial idea to innovation can often be a rocky one with many twists and turns. This makes it difficult to predict innovation and, ultimately, to consider it adequately.

13. As innovation is a holistic phenomenon, it can be influenced by various factors. This applies, for example, to the regulatory framework. As innovation can be expressed in patents, intellectual property rights are closely linked to it. Innovation in patents can be expressed qualitatively (in terms of the strength of a patent) or quantitatively (in terms of the number of patents). In this context, one should also think of the licensing requirements in the pharmaceutical or chemical sectors. In the case of the latter, it should also be borne in mind that resistance to certain active ingredients may require constant innovation. All these factors can contribute to innovation and competition going hand in hand.

14. To conclude, innovation is a multifaceted phenomenon and is the engine for essential (re-)innovation. Innovation is multifaceted and occurs in different ways. The importance of innovation has also been recognised in the economic context and has been studied for more than 100 years. Although historically there has been no consensus, more recently there seems to be a growing acceptance that competition and innovation are positively related. This conclusion is also relevant for competition enforcement.