

Consumers

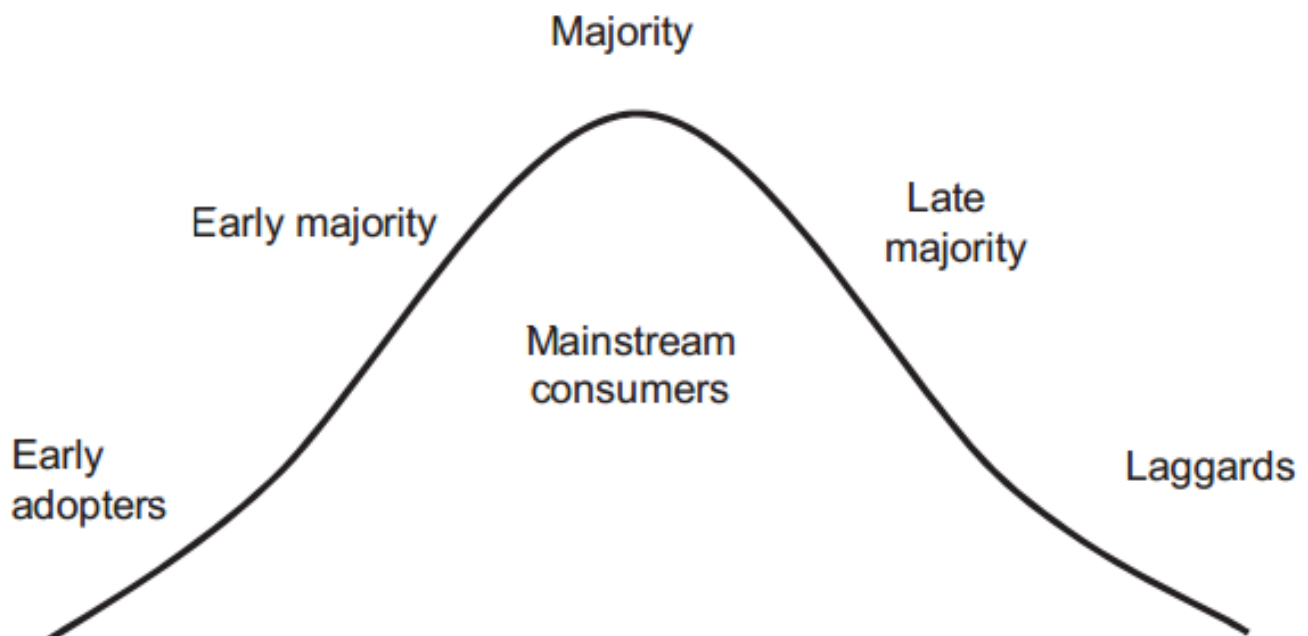
Consumers are relevant for firms' innovation not only with regards to the way they shape market demand for products but also with regards to how they may shape firms' innovation activities. Consumers can be directly involved firms' innovation processes. Policy can influence consumers' demand for and contributions to innovation by establishing regulations and standards in a way that reduce the risks for consumers in adopting innovative products and services; ensuring efficient ICT infrastructure that allow collaboration between firms and end users; stimulating user-driven innovation through grants; using public procurement for innovations that will ultimately be sold to private end user; providing information, organizing awareness campaigns, and promoting education initiatives to inform consumers about innovative products and services.

What are consumers?

Consumers are end users of firms' products and are relevant for firms' innovation not only with regards to the way they shape market demand for products but also by the ways in which they may shape firms' innovation activities.

Attitudes to innovation differ across consumers. Early adopters are the first users, followed by mainstream consumers, and laggards (figure 1). Early users take the risk of testing an innovation that may not be fully optimised or functional in return for the possibility of solving a problem faster (e.g. high-technology lightweight materials were only used for mountain bikes many years after the introduction of the first models). Mainstream consumers usually join in when innovations become more incremental and tend to embody a smaller degree of inventiveness, but also when price competition between suppliers starts and prices fall.

Figure 1: The process of innovation diffusion



Source: OECD, based on Rogers (1962).

How do consumers influence innovation in firms?

- Consumers' demand is a key driver for firm innovation.

Demand directs firm resources and capabilities for innovation (Schmookler, 1966; Rosenberg, 1969). The size and structure of demand affect the magnitude and orientation of inventive efforts (Von Hippel, 1988). It will also have impacts on firms' ability to achieve critical mass and bring prices down, which may encourage further diffusion and adoption of innovations.

- Consumers' demand is also a challenge for innovation, in particular for radical innovation.

For the successful introduction of a radical innovation into the market, it must be commercially viable but also socially accepted (e.g. public resistance in some countries to the introduction of genetically modified organisms in food crops). While the diffusion of innovations and their take-up by consumers is generally not an issue for incremental innovation, it is for radical innovations (Bower and Christensen, 1995).

- The role of consumers in innovation varies depending on consumer characteristics.

Early users play a particular role in innovation in two respects: i) they allay possible concerns about the perceived risk of adopting a new technology; ii) they provide the producer with early revenue and feedback, which can lead to improvements. The effects of early users in pulling radical innovation can be critical for the emergence of a new technology (Malerba et al., 2007).

Besides, consumers can be directly involved in the innovation process. Users can help companies to find solutions to their needs and become drivers of innovation. User co-invention is particularly important in explaining technological change in information technologies (Malerba, 2005). In sectors such as software, communities are an important source of innovation (see [Open source](#) [1]).

What innovation policies relate to consumers?

Public policy can influence consumers in the context of innovation by:

- Providing information, organizing awareness campaigns, and promoting education initiatives to inform consumers about innovative products and services. This is an important policy instrument that can be used to counter inertia and scepticism about new goods and services, and it helps improve the flow of information between users and developers. To be effective, education and awareness strategies must go beyond addressing information asymmetries in individual transactions: they should help promote critical and active engagement by consumers generally (OECD, 2010).
- Establishing regulation and standards to reduce risks for consumers of innovative products and services (e.g. through enhanced protections against Internet fraud, and regulations for product safety risks). This may encourage the diffusion of innovation.
- Ensuring efficient ICT infrastructure as ICT allow firms, consumers and users to collaborate more so that innovative products respond more adequately to consumer demand and, thus, contribute more substantially to welfare.

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- Stimulating user-driven innovation through grants with the aim of supporting innovations that will satisfy users. For instance, grants may help companies to integrate customer needs in their product development process, and make accurate use of user surveys. Using public procurement for innovations that will ultimately be sold to private end user. Public procurement may help firms test and improve their innovation, achieve critical mass, and bring prices down. It may also create a positive signal as lead user, encouraging, thereby, diffusion and adoption of innovation.
 - Encouraging open innovation (see [Open innovation](#) [2]) involving end users. For instance, government can promote access to scientific data, and facilitate the exploitation of dormant or inaccessible data at low cost. Initiatives may include the creation of online repositories, digital libraries, online platforms and public databases.

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