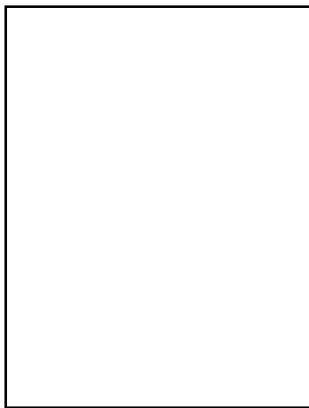


Innovation opportunities from fusing high technologies

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During the first few decades of the new millennium, advances in information technology, bio-technology and nano-technology can be expected to create an unprecedented wealth of opportunities for innovation. It is not only advances within these 'triad' technologies, but also their combinations that are significant. The challenge for technology policy makers is to foster the exploitation of the emerging opportunities. Small and medium-sized enterprises (SMEs) have a special role as engines of societal change. That is why technology policy will have to create favourable conditions for innovation-driven SMEs specializing in high technology.



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Introduction

During the first few short decades of the new, long millennium, nations all over the world are going to emphasize technological innovation as a means of fostering economic growth and societal welfare. It is innovation activity which turns technological opportunities created in R&D into commercial reality. An innovation is usually defined as a new product or service that is successful in the marketplace. Incremental innovations, i.e., variations of existing products or slight improvements of dominant designs, do not require many changes in the way the company or the market works. The more radical an innovation is, the more extensive organizational changes are called for before the new product can be successful.

Innovation is a driver of social change. One of the first social impacts a serious technology development effort

has is to bring together individuals from universities, government laboratories, start-up companies, established enterprises, and venture capital firms. That is why innovative efforts lead to the creation of networks. If commercialization follows, it is possible that new SMEs are launched by members of the network or outside entrepreneurs. The upstarts can specialize in the manufacturing, technical development, or marketing of the innovation. New partners may join to take care of services such as parts supply - testing, financing, intellectual property protection, and distribution. Finally a full-fledged market may emerge with competing suppliers, service providers, as well as national and international standardizing bodies and regulatory authorities. The overall result is that the economy has become more varied and robust.

Usually innovation is considered to result from previous investments in in