



# Joint science academies' statement on growth and responsibility: the promotion and protection of innovation

## Promotion

Innovation is the engine that drives economies. Countries support innovation to ensure dynamic economic advancement and prosperity, to gain competitive advantage internationally, and to improve the quality of life of their citizens and those of other nations. The latter is fostered through international collaboration, especially in research and development.

At the very least, global collaboration requires greater promotion and funding, in priority areas such as sustainable energy, climate change adaptation and mitigation, natural hazards, biodiversity, water, and infectious diseases. It is important for governments to invest strongly in a spectrum of basic research, since the greatest benefits often arise from investigations in areas that are not the subject of international focus at a given time.

Innovation faces a fundamental dilemma: the innovator bears the cost, but is not guaranteed the full returns of his or her efforts. Innovators facing immediate imitation are less likely to engage in costly efforts. In addition to their vital responsibilities for education and training, governments have therefore pursued a number of approaches to foster innovation, including the establishment of intellectual property rights such as patents and copyrights, the financial support of R&D and innovation through public funding or subsidies, and the productive use of public procurement. It is critical to establish an appropriate balance between strong government investment and removal of barriers to research and licensing.

The development of long-term international research agendas in priority areas can markedly increase the rate and number of discoveries and inventions, and thus stimulate innovation and commercialization. Such development must include stakeholders from industry, academia and government.

Nations need to activate a culture of entrepreneurship and innovation, and ensure that policies exist to support the translation of such entrepreneurship and innovation into tangible outcomes for societal benefit.

Increasingly, the developing world is focusing on innovation as a route to growth and sustainability. International agencies and the wider donor community should support and encourage nations in the developing world to build their own systems of innovation, including instruments to fund research and development nationally. In particular, investments, including infrastructure, should encourage bringing promising innovations to market (including encouraging venture capital and microfinance, building local manufacturing ability and providing services). Relevant traditional knowledge has a role to play in nurturing discovery and innovation in developing countries.

The developed world should facilitate, where appropriate, the transfer of knowledge and innovative technologies to

the developing world, working in partnership so that such technologies can be applied and adapted to local requirements. Such transfers will enable the developing world to leapfrog the conventional route to development. At the same time, the developing world needs to ensure that local infrastructure encourages such transfer of technology, with appropriate tariff, investment and protection regimes.

It is crucial for developing and emerging economies to have people who are skilled at solving complex problems, thus enabling their nations to create and exploit research, development and innovation. The education and training of science, engineering, technology and medical graduates, free of the bias of gender, are essential for success.

## Protection

Innovation needs protection, but care should be taken that protective measures do not become impediments to innovation (at all levels, from corporate to individual). Access to knowledge is critical. Infringing intellectual property rights undermines the long-term progress of innovation. G8 countries should aim to ensure that national and international regimes to protect intellectual property also facilitate and promote access to knowledge.

In order to ensure that the patent system provides the necessary incentives for continued scientific and technological progress, patents need to reveal clearly the key criteria for patentability: utility, novelty, and non-obviousness. G8 countries should provide for harmonised standards to facilitate early dissemination of knowledge by an adequate "grace period". Such provision protects the inventor from adverse effects of his or her own publications before the filing date.

In order to encourage scientific research, patent laws should also include a properly specified research exemption and permit the use of patented technology for non-commercial research purposes, including improving and further developing the patented subject matter.

A great deal of time and resources are still expended on preparing and filing patents in multiple jurisdictions. Global efforts have been made to harmonise some requirements and share information through the Substantive Patent Law Treaty (SPLT), which is encountering problems. Since the main differences and sharing requirements arise between the jurisdictions of G8 nations, these most industrialised countries of the world could forge an interim agreement among themselves. Such a system should involve best practices and high quality levels in prior art search and examination. Moreover, in the case of patents, quality of the rights issued and thus legal certainty is in urgent need of substantial improvement.

If the application of a newly patented technology from the industrialized nations is needed mainly in the South, an adequate return on investment by the industry in the North



is often unlikely under normal conditions. The G8 governments should consider subsidizing development of such patented technology, and then its commercialization in the South. This could be achieved by subsidizing the technology development through a programme tied to the front end of the patent process (e.g. through subsidies, procurement, length of patent term, or by G8 nations paying a fair price for the licence for a developed product on behalf of a country in the South). In return, governments of countries of the South would undertake to enforce the patents, police local manufacturing under licence, etc. This strategy could be beneficial for the commercialization of products needed in the South that might not otherwise be available.

## Conclusions

### Innovation promotion

We recommend that the leaders of G8 governments

- Encourage the development of long-term international research agendas to promote innovation in priority areas.
- Facilitate the transfer of knowledge and innovation to the commercial realm, especially between universities and industry, and establish tools to activate entrepreneurship.
- Work with developing countries to build systems of science, technology and innovation for economic and

social development, and to promote the education and training of their future leaders particularly in science, engineering, technology, and medicine.

- Promote global knowledge policies that deal with generation, transmission, use and protection, rather than focusing on just the latter.

### Innovation protection

We recommend that the leaders of G8 governments

- Encourage global efforts to simplify and enforce intellectual property while making sure that a proper balance is maintained between thoroughly examined formal intellectual property rights and free access to knowledge and information.
- Develop and implement policies to remove barriers to innovation, in addition to the provision of a fertile infrastructure to foster it.
- Establish bold initiatives by global financial institutions to facilitate and protect innovation in the developing world.
- Urge and assist the developing world to have local infrastructure, laws and regulations to catalyse and protect local innovation, thus providing a stimulating environment for the transfer of technology.

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