

Considerations on Innovation and Competition Policy

-- by [Georg C. F. Greve](#)
[Free Software Foundation Europe \(FSFE\)](#)

[Innovation](#) is the process of applying new ideas for the benefit of society. It is also an essential driver for [competition](#). Both innovation and competition are generally understood to be key factors for economic development, main contributors to employment, wealth, and all the associated benefits, including better healthcare, cultural life, and quality of life in general.

Although one would find in many cases that a monopoly arose through manipulation of competition, it is nonetheless possible that competition results in a monopoly. These situations are dangerous for society, because absence of competition for the monopolist typically leads to [monopoly pricing](#), as well as a decline in innovation. A clear and evident harm exists when a monopoly is being leveraged to distort competition and hinder innovation in a neighbouring market, which is when [antitrust law](#) is required to restore balance.

The interconnectivity of these areas necessitates an impact assessment that takes all three areas of innovation, competition and antitrust law into account as the basis for sustainable policy setting.

Areas of Innovation Policy

Because of its direct public benefit and basis for competition, all governments and [inter-governmental organisations](#) (IGOs) assign high value to innovation and seek to maximise it in their respective areas or domains through regulatory frameworks and public policies. The [Innovation Policy section](#) of the European Commission (EC) Directorate General (DG) Enterprise and Industry web site lists a wide variety of policy tools that have direct impact on innovation:

“Innovation policy is about helping companies to perform better and contributing to wider social objectives such as growth, jobs and sustainability.

There are many policy tools available to achieve this, ranging from establishing supportive framework conditions (e.g. human resources, an internal market, intellectual property) to facilitating access to finance, policy benchmarking and enabling collaboration or stimulating demand, for instance, through regulation, standards and public procurement.”

Each of these areas of regulation is highly complex in practice, and warrants individual attention. This analysis will focus primarily on where these areas of policy intersect, so on areas of synergistic stimulation or contradiction and mutual invalidation.

Consideration: Standardisation and Innovation

Standardisation is the process of establishing “*an agreed, repeatable way of doing something.*” A standard is “*a published document that contains a technical specification or other precise criteria designed to be used consistently as a rule, guideline, or definition. [...] Any standard is a collective work. Committees of manufacturers, users, research organizations, government departments and consumers work together to draw up standards that evolve to meet the demands of society and technology. [...]*” (Quotes from the [British Standards Institution](#) (BSI)).

Standardisation, finding a common way of doing something known, could therefore be perceived as the antithesis of innovation, a unique way of doing something new. This would be a premature conclusion, because standardisation follows innovation as one step of a maturing technology and market, and innovation is enabled by standardisation by providing a common and ubiquitous platform for innovation and subsequent dissemination of that innovation.

So standardisation and innovation are ideally connected. In order to maximise the benefits for society, there should be a low barrier for standardisation of the previous innovative cycle, and the results of standardisation should be ubiquitous and equally available to all potential innovators.

Consideration: Standardisation and Competition

Perfect competition means that all potential competitors can compete in any given market based on the merits of their offering. The role of standards is in the lowering of barriers to market entry and in the shaping of [network effects](#). The value of standards in a field is directly related to the strength of networking effects and the complexity of technological development.

Distortion of standardisation, e.g. in the form of vendor specific extension or technologies, will subsequently distort the market built upon that standard, translating standard-bias into market-bias, resulting in failure of competition, and increasing the risk of monopolization. This effect is amplified by an inherent bias for very large corporations in standardisation, whereas innovation is often driven by small and medium enterprises (SMEs). In result, standardisation has the potential to be abused by large players to create market bias and capture markets from the innovators.

This can only be mitigated through low barriers of entry into standardisation, through low barriers for implementation of standards, and through protection of the ability to compete for all market participants.

Consideration: Competition and Exclusive Rights

Exclusive rights, such as Copyrights, Patents, Trademarks, are often grouped together under the heading of “Intellectual Property Rights.” This grouping often leads to generalised statements of questionable accuracy, and distracts from the common root of being regulatory tools for the public benefit. Of these exclusive rights, some are motivated by direct market regulation and customer protection goals, e.g. Trademarks, others derive their justification from the advancement of knowledge and promotion of innovation, e.g. Copyrights and Patents. From the perspective of competition synergy or conflict, Copyrights and Patents tend to be the most relevant, and will be the focus of further analysis.

Copyrights pertain to a concrete expression, patents to an idea or principle. For both, the granting of exclusive rights translates into the intentional erection of a barrier to competition that competitors can only overcome with permission of the holder of said exclusive rights. It is intended and understood that this permission will only be available upon financial or other benefits provided to the holder of the exclusive rights, or can be withheld entirely for purposes of reducing competition based on that particular expression, idea or principle.

This temporary distortion of competition through exclusive rights is arguably the most powerful regulation of competition because it affects all companies equally, and usually does not require governmental intervention to be applied. The benefit of this distortion is provided through stimulation of innovation and publication that would not have taken place without exclusive rights in place. The

cost of exclusive rights is realised through monopolization and monopoly pricing, as well as prevention of follow-up innovation.

A balanced calculation of costs and benefits should balance the innovation enabled through exclusive rights without the innovation that occurred independently from exclusive rights on the one hand, and the the cost of market distortion and follow-up innovation prevention or delay on the other hand.

Evidence for estimating the part of innovation that occurs independently from exclusive rights regulation is provided by the work of [Prof. Eric von Hippel](#) and his examination of collective and user-driven innovation models. The work of [Prof. Raymond Kurzweil](#) on the exponential nature of the speed of innovation allows an estimation of the cost of regulation.

Consideration: Standardisation and Exclusive Rights

Standardisation and exclusive rights are antithetical, because “*IPRs are destined for private exclusive use, Standards are intended for public, collective use.*” (Quote from [presentation by Karsten Meinhold](#), chairman of the ETSI IPR Special Committee)

As explained above, realisation of the innovative and competitive benefits of standards depends upon ubiquitous availability of standards to all potential innovators and competitors. Exclusive rights on a standard undermine that utility of standards. In order to allow standards to become ubiquitous, this issue is partially resolved by the custom that participants in standardisation transfer their copyright to the standardisation bodies. The solution is only partial because no corresponding custom exists for patents. Instead, the industry has devised other attempts seeking to mitigate the risk of patent thickets and patent hold-ups on standards. These mechanisms are complex and there is no commonly accepted custom on which model should be followed.

As analysed in greater detail in an IP-Watch inside view on “[Innovation Policy: The Balance Between Standards and Patent Regulation](#)“ by the same author, all these concepts fall short of solving the issues for various reasons: All these concepts apply only to participants in the standardisation process, leaving an unquantified risk of third party claims which cannot be addressed. Furthermore, the assurances provided are usually non-binding and do not constitute ex-ante permission to implement, leaving the possibility for future market capture by patent holders or exclusion of specific groups of competitors, e.g. user-driven and collaborative innovation models.

From the perspective of the IT industry, the most successful common practice best available at this time appears to be an ex-ante license to implement with shielding, e.g. the Adobe [Public Patent License for ISO 32000-1: 2008 – PDF 1.7](#). This license provides a universal ex-ante permission in combination with a retaliation clause against potential third-party capture in the future. Its weakness is that it puts the burden of defence against capture on a for-profit entity that is subject to normal market effects.

Conclusions

While freedom of market and competition remains a guiding principle, existing markets are highly regulated through various regulatory frameworks, including exclusive right regimes among the most invasive and powerful. Some of these regulations, e.g. standardisation and exclusive rights, are diametrically opposed instruments. Others have the potential for synergy, but require careful optimisation of the process to bring the desired results, e.g. standardisation and innovation.

Abolition of all these regulations would result in a truly free market. But absence of antitrust law in

particular is likely to lead to concentration of abusive behaviour, resulting in a less competitive market overall. So the goal of absolute freedom of markets should be reconsidered in favour of markets that protect the ability to freely compete on the merits. These markets should be characterised by low barriers to entry and permeability, so that new champions can rise to the top, and outdated companies can fail with minimal collateral damage. In order to achieve that, all regulatory instruments and postulates needs to be assessed regularly, and dispassionately.

This need for review includes the often implicit assumption that regulators should promote the rise of local super-champions. That assumption is challenged by the financial crisis, which demonstrates the risk posed by entities that are too big to fail. A shift in the attention of regulators towards fostering a more heterogeneous ecosystem of medium sized players may be the more sustainable goal for innovation, competition and economic development.

The costs and benefits of exclusive rights regulations are likely to be different in different areas, depending on a variety of factors. Benefits will tend to be smaller in areas that are very accessible to user-driven and collaborative innovation, and costs higher. That is not to say that exclusive rights in general have no role to play in such approaches. The principle of [Copyleft](#) aptly demonstrates how exploitation of a particular exclusive right can be turned into a facilitator for collaboration.

All these regulations establish exclusive rights limited by time and sometimes geography. The value of these rights is directly proportional to time, and so are the related costs. As the work by Prof. Raymond Kurzweil demonstrates, the speed of innovation is growing exponentially. A constant duration for exclusive rights therefore translates into exponential growth of the regulatory cost. That regulatory cost is realised in system maintenance, including cost for legal departments and patent related lawsuits, as well as lost innovation and competition, which cannot be easily quantified.

Fields like multimedia technologies suggest a pattern for the IT industry where speed of innovation is inversely proportional to the number of patents in the field. In combination with public debates about the patent system this could indicate a reduction of innovation speed through regulatory cost, as [predicted in the early 90s](#) by Microsoft chairman Bill Gates. A regulatory response of policy makers to increase duration and enforcement would therefore feed a vicious cycle by further raising the cost.

As Prof. Eric von Hippel shows, user-driven and collaborative innovation models are very powerful. In some areas there are natural barriers to entry, e.g. the need for heavy machinery. In areas where no such natural barriers exist, e.g. the IT industry, barriers created by regulation have the potential to [inhibit this source of innovation](#) to the detriment of society.

Exclusive rights regulation and standardisation policy should take this into account and ensure that standards in these areas are fully accessible to all potential implementers and innovators. In areas of conflict, the direct and immediate interest of the public in working competition and enabling innovation on the grounds of standardisation should prevail over exclusive rights. This would limit the potential gain from standardisation abuse, consequently reducing the risk of innovation capture through standardisation at the expense of innovative SMEs.

It could further be accompanied by promoting minimum standards for transparency, accountability and vendor independence of standardisation bodies, as well as mechanisms to facilitate increased SME participation in standardisation. In order to be effective, these mechanisms would have to avoid placing the cost of participation on the SME alone.