

Use of Licence-Exempt Spectrum For Provision of Public Telecommunication Services Review Response

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Introduction

This response has been initiated by the Consume project [<http://www.consume.net>]
The original document is available at
[<http://dek.spc.org/julian/consume/bwobreview.txt>]

Consume is a strategy for users to self provide, own and manage networks using a variety of network technologies. The technical focus to date has mainly, though not exclusively, been on license exempt radio technology based around 802.11b in 2.4 Ghz. Our strategy aims to create networks where the capital cost is directly borne by the users, and bandwidth is not charged for. It shares similar aims and goals to the many and growing community or free networking projects in the UK and around the world of which it was one of the first. [<http://freenetworks.org>]

Consume is a meeting place for research and development, resolution of practical issues and information sharing between like-minded individuals. It is not an incorporated body and operates on a non-funded basis. I am co-founder and frequent contributor to the project.

This response is the view of the author and not necessarily that of other members of the group. In common with other Consume related information it is distributed to other members of the project and may be freely distributed and published as long as it is credited to the author.

Experience of operating within the by way of business restrictions

One of the first things that consume participants wished to do on launching the strategy 18 months ago was to establish their legality of operation. To do this we consulted with both the RA and the DTi to establish the legality of creation of our non-commercial networks within the license exempt 2.4 Ghz frequency bands. We established that;

1. The non-commercial nature of the networks allows them to be permitted by the RA under the BWOB restriction in the WT act.
2. The self-provided nature of the networks allows them to be permitted by the DTi under the T act Self Provision License.

Since then many individuals have established networks around the country that provide them access to their network services. Access details to the networks and their locations are held in a publicly accessible database.

While freenetworks have been a beneficiary of the BWOB clause the emergence of many similar projects around the world in regulatory regimes which do not have the by way of business restriction, suggests that free networking is not just a response to the UK framework but a separate and sustainable strategy.
[<http://www.freenetworks.org>]

Due to the considerable interest in Consume and its extremely active membership, we have been instrumental in spreading information about the legislative framework and how it can be complied with. We have also pointed out to commercial operators where they might fall foul of the legislation in at least one case significant changes being made to an operators business model.

From a freenetworks point of view, the by way of business restriction has so far not had much effect on operation of due to our commitment to operate non commercially. However there have been instances when conflicts have been noticed when considering possible models for community funding of infrastructure maintenance or shared funding of connection to third party commercial networks have been considered.

This response limits itself to the advisability of removal of the 'by way of business restriction' defined in SI 2000 No 1012 and is primarily concerned with the operation of data networks in 2.4 Ghz and also in the emerging definition of legislation concerning 5 Ghz.

Q1: What are the potential gains and benefits to the UK of allowing commercial services in licence-exempt bands, in terms of new innovative services (business models), promoting competition, and making Britain the best place to do e-business?

Q8: Are there any potential problems associated with allowing commercial services in licence-exempt spectrum?

The focus of this review has been the provision of public access networks in license exempt spectrum. The prevailing technology in 2.4 Ghz (802.11b) is suited to this task. It also has a low capital cost and is relatively easy to install and operate and has a short range and high data throughput. This combination of properties lends itself to the creation of small-scale networks, typified by the community network, where a community (residential or business) installs and operates a network both for local use and often for high-speed connection to the internet.

The benefits to these individuals, communities and businesses of low cost high-speed network access are very varied. In my personal experience a pair of buildings consisting of small offices and studios that were connected internally using both wired and wireless networks, and externally to the internet using a high speed fixed line, experienced a rapid economic transformation. This was a direct result of the huge increase of opportunities for social and business transactions that were offered by the new infrastructure, both locally within the premises and outside. Network access is likewise seen as a key strategy for both regeneration, and business growth. Pervasive affordable high-speed networking creates new spaces for social and economic activity and the lower the cost of access, the more pervasive, and the higher the speed of these networks, the larger the resulting space for activity of all sorts. Benefits are felt in social networks and the wider economy as a whole.

The evolution of new innovative businesses and services, means of expression and forms of social interaction, can occur when there is access to such a network medium (high speed, pervasive, low cost).

Even in the relatively deregulated UK telecom market, this type of network has been slow to emerge with end user access costs decreasing and speeds increasing only slowly while cost of backbone provision has continued to fall as a result of the overcapacity in that market.

This has been mainly due to difficulties in competing in the local market which means that prices have tended towards the point of maximum return rather than the cost point of provision. Among the roots of this competitive difficulty are;

1. High cost fixed local loop infrastructure installation requiring large scale inefficient capital intensive roll out to achieve the necessary economies of scale
2. High cost of setting up a business (TSL compliance/radio licensing costs)
3. Inflexible physical network architecture leaves users physically tied into local loop solutions from specific suppliers, resulting in a static market.
4. Domination of the market by a few players

By contrast license exempt networking technologies such as 802.11b can provide

1. High speed networking at low cost suited to ad hoc capital efficient installation or user pull through on an as needed basis
2. Low cost of legal compliance (self provision/license exemption)
3. Flexible network architecture as new connections to other individuals networks or service providers can easily be set up
4. Thousands of existing operators of small networks, whether by businesses individuals or communities

License exempt wireless networking using 802.11b and 2.4 Ghz has begun to provide an alternative networking model for those users such as Consume participants or business users who have been willing to self provide on a non commercial basis. The usage of flexible license exempt wireless technology goes some way to further liberalising and normalising the relationship between network 'consumer' and 'supplier' and to stimulate the attendant social and economic gains.

How does removal of the by way of business clause in (Statutory Instrument 2000 No 1012) aid or hinder the emergence of these networks?

The by way of business clause is only one of two pieces of legislation which effect the operation of wireless networks for public and commercial use, the other being the T act. Currently users of 2.4 Ghz for networking comply with the T act under either the Self Provision License (SPL) or The Telecommunication Services License (TSL) that permits them to operate without fulfilling the onerous legal and financial obligations necessary to be Public Telecom Operators (PTOs).

Removal of the by way of business clause as proposed would still leave in place the T act restrictions on operation in the TSL and SPL. This would mean that it is effectively ONLY the 140 existing PTO's that would be able to operate commercial networks in the license exempt space. ALL existing license exempt users would still effectively be unable to provide services by way of business.

Far from increasing competition, the removal would put the commercial control of the license exempt space firmly in the hands of those that already have commercial control of the rest of the UK telecom market. This is very likely to damage rather than encourage the emergence of high-speed low cost pervasive networking.

For instance a mom and pop WISP (wireless ISP) of the sort that have sprung up in the US as a counter to the major commercial players, would be unable to operate under this regime without connecting to a PTO. Fixed line ISP's operate under the T act license of its underlying carrier, and similarly in this asymmetric legislative framework PTO's would become the underlying carriers of the license exempt spectrum.

The proposed removal by itself, would also have the effect of stopping those who have innovated so far from exploiting their knowledge to build livelihoods around their networking practices, whilst rewarding those businesses who have pursued other less successful strategies.

To see the asymmetry of the proposed clause removal more clearly, imagine a proposal for removal of the by way of business clause, that restricted ONLY PTO's from operating commercial services whilst allowing anyone else to operate! Though it is possible that a positive argument for such a proposal could be constructed, it is inconceivable that it would be acceptable on competitive grounds. However the equivalent case is what is effectively what is being argued for here.

By contrast in the context of a changes to the T act rules about public and private networking, the TSL and the SPL, the removal of the clause could result in a more liberalised competitive situation which would be more suited to the needs of end users and create improvements in the networking situation as a whole. Changes of this nature are discussed in the 5 GHz recommendations 6, 7, 8, and 9 and Consume would be interested in participating in any forthcoming review of the T act legislation with the DTi

Q9: Assuming that public telecommunication services are permitted in licence-exempt spectrum, what would be considered suitable time scales for making these changes in each of the bands identified in Appendix B?

Due to the tight relationship between the by way of business clause and elements of the T act it is suggested that any changes to the legislation allowing commercial public telecommunications services in 2.4 Ghz are only made once changes to the T act have been reviewed and resolved that allow the existing users of the spectrum to compete and operate fairly. It is likely that the timetable for this will be set by the 5 Ghz legislation which will most likely be mirrored by 2.4 Ghz.