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A contribution to the EU IPv6 Taskforce

1. Requirements for training and education on IPv6 in Europe

No specific comments at this time outside the UK. However anecdotal evidence suggests findings in the UK are also relevant in the broader European context. In this sense a European wide initiative to promote IPv6 adoption is helpful.

In the UK we have a considerable amount of work to do in developing a sense of urgency amongst ISP's to support IPv6. My sense of a presentation I organised on IPv6 to the London Internet Exchange meeting in November 2000 was that ISP's did not believe they need look at IPv6 implementation until 2004 at the earliest.

As ISP's tend to inform government policy of what they expect to need this means that the UK Government may be under a serious misapprehension as to the true status of IPv6.

The Internet Society is targeting to explore this factor to determine how best to promote IPv6 to the UK Government.

2. Actions required at National and European level to bridge the skills gap on IPv6

The first gap is an information gap. A survey is required to ascertain and develop information resources. These can be used to determine the existing understanding and to stimulate

a) awareness of IPv6 and its applications amongst

- i) Internet Service Providers
- ii) Government departments
- iii) Business organisations

b) Universities, Further education organisations, and industry training programmes should be encouraged to include IPv6 as standard

- i) in relevant degree courses
- ii) engineering qualifications

3) The Address shortage issues and impact in the Developing world (from G8 DOT Force).

My recommendation is that IPv6 should be mandated in all network infrastructure and applications implementations that address developmental issues. There are several reasons for this.

- a) IPv6 democratizes access to Internet resources by relieving the current shortage of Internet address space in many developing regions.
- b) IPv6 is a next generation protocol. Development projects that are investing in new infrastructure would be potentially increasing the digital divide as opposed to reducing it if they implemented IP based networks using IP4 when the developed world is migrating rapidly towards IPv6.
- c) IPv6 integrates a number of important technologies which are ideally suited to the demanding environment for development projects. In particular IPv6 offers mobile access to data resources. This is particularly important for regions where wireless access to Internet resources are liable to have greater implementation impact than fixed access.

As an example IPv6 over wireless offers the prospect of stimulating usage of network resources in developing countries which in turn offers the prospect of greater economic returns in further local investment in Internet backbone infrastructure.

- d) IPv6 multicast ability offers a convergent route for delivery of multiple media. Including TV, Radio, as well as traditional data resources. This allows a convergence and simplification of investment in delivery channels stimulating greater returns for the investment made. In this sense IPv6 is likely to stimulate new generation fibre broadband roll out. The installation of extensive fibre networks offers considerable productivity enhancements and the development of integrated service business models which will stimulate business revenues impacting positively on Gross Domestic Product figures. In this sense IPv6 offers an unknown but positive potential to stimulate economic growth.

4) Actions required by European Members States to fight the IPv6 divide (from the G8 DOT Force)

- a) Mandate rollout of IPv6 support for government and EU contracts wherever possible.
- b) IPv6 compliant DNS and DNSSEC for government services.
- c) Applications for government services such as Tax Returns need to implement IPv6 with IPSEC.
- d) Bolster Privacy Policies and Best Current Practice industry policies to stimulate confidence in IPv6 by industry and consumers.
- e) Establish and promote testbeds.