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Mr Mattea Fammels
ENISA

By e-mail to economics-nis@enisa.europa.eu

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Dear Sir,

I write on behalf of Euro-IX, the European association for the operators of Internet Exchange Points (IXPs), with comments on the report “Security Economics and the Internal Market” (Anderson, Böhm, Clayton and Moore).

Euro-IX promotes an open interchange of ideas and experiences amongst IXPs, by offering fora, meetings, mailing lists and on-line resources. Euro-IX also gathers information on regulatory issues affecting member exchanges within the region and where appropriate from other jurisdictions that could potentially impact on the membership. Euro-IX was formed in May 2001 and currently has 36 members in 24 European countries, plus seven associate members in the USA, Japan and Nepal.

Euro-IX believes IXPs help contribute towards Internet resilience in Europe, by facilitating interconnection and peering. We welcome this opportunity to comment, and we hope also to begin a dialogue on network resilience.

We have not used your suggested reply form as our comments are directed to solely to Chapter 7 of the report, and to the pair of recommendations jointly labelled as recommendation 12:

“We recommend that ENISA sponsor research to better understand the effects of IXP failures.”

and

“We also recommend they work with telecomms regulators to insist on best practice in IXP peering resilience.”

We do not believe the report sets out an adequate evidence basis to support these conclusions.

To support the call for regulatory intervention towards IXPs, the report describes with apparent approval the technical design of a single IXP (LINX), and simply states “Many other European IXPs do not have this level of diversity”

The report does not describe what alternative measures are used by other IXPs to ensure internal resilience. The report strikingly fails to consider under what circumstances network system resilience is most efficiently pursued by investment at the IXP, and when it is more efficient for network operators to invest directly to increase the selection of IXPs and other interconnection opportunities they can reach, and to protect the availability of those routes.

Our members are justifiably proud of the high levels of availability they maintain, and disappointed that the authors jumped straight to a demand for regulatory intervention without properly considering what the current market has achieved, nor attempting any kind of cost-benefit analysis to support a contention that regulatory intervention would produce superior outcomes.

To support the call for ENISA to sponsor further research, the authors say:

Scaremongering about ‘cyberwar’ has proved effective at unlocking research coffers at the US Department of Homeland Security, but without more information about specifically European issues, it is hard to even scaremonger effectively. (p.77)

We do not believe that scaremongering about network resilience is a helpful activity. Even if this comment was meant flippantly, it sits too easily with repeated misleading references to IXPs as a “single point of failure”. In truth, IXPs are not the only means by which networks interconnect: the large networks that are relevant to critical infrastructure planning will have interconnection at IXPs in other countries, as well a wide variety of private peering and usually also transit arrangements. The IXPs contribution is to supplement that, providing additional diversity; they do not to act as a single point of failure in nationally critical networks.

The report also paints a misleading picture of the role of IXPs in peering, leaving lack of clarity over the difference between decisions taken by network providers (such as with whom to peer) and decisions taken by IXP operators (such as internal redundancy in the peering network).

The report further claims:

The value of joining an IXP can clearly be seen to increase as more ISPs join, so that there is an obvious economic pressure towards winner-take-all scenarios where one IXP is much larger than its local rivals

We agree that the number of potential peering opportunities at an IXP do increase as more networks participate, but the use of the term “winner-takes-all” gives a misleading impression that smaller IXPs become out-competed by a larger competitor and are forced to close, reducing resilience. We do not recognise this description: for example, in London there are four reasonably large IXPs present, established in 1994, 1997, 2000 and 2001; each provides complementary peering opportunities to the other. Further, there are at least four other smaller IXPs present, all of whom were

established relatively recently – thus casting severe doubt on the “winner takes all” contention. Other European cities with a leading IX show similar situations.

This report does not seem to us a good basis for beginning a new research project. Instead, Euro-IX hereby offers to meet with ENISA officials, as a direct dialogue might help to produce a develop understanding of our sector.

For these reasons, we recommend that ENISA does not accept recommendation 12.

Yours faithfully,

Malcolm Huddy
Regulatory Affairs spokesman for Euro-IX