

## INTRODUCTION

This annual report covers the period January 2006 to December 2006. Quarterly reports are delivered at each member meeting which are more topical and immediately relevant, and are available through our website.

Once again, it was a successful period for LINX through a time of change, not only within our own network, but also in other areas of service delivery, notably the merger of two of the data centre operations which host LINX PoPs.

The objectives we set for the year and agreed with the Board were successfully achieved.

## GROWTH

Notable statistics:

- Membership grew from 199 to 239 during the year, a net growth of 40 (one of the highest on record), and actually representing xx new members
- 100Mb member ports grew from 184 to 215
- 1GigE member ports grew from 249 to 277
- 10GigE member ports grew from 6 to 28
- Peak traffic across the exchange grew from 82 to 126 Gb/s by the end of the year

## GOVERNANCE

Nigel Titley, Raza Rizvi, the two Council members who retired by rotation at the AGM in May 2006, ran for election again. Raza was re-elected and Patrick Gilmore was welcomed as a new board member, with Grahame Davies re-appointed as LINX Chairman. Nigel's outstanding contribution to LINX (having served on the Board since inception) was marked by an award ceremony at LINX 55. We intend to continue to recognise significant contributions by members to LINX in this way in future years.

## GENERAL ADMINISTRATION

### Emergency Planning

LINX has continued to take a proactive role in the UK telecoms industry's emergency planning function, and attends the Telecoms Industry - Emergency Planning Forum. Howard Fisher has been a member of the Planning Committee for the TI-EPF's annual Empex exercises to ensure that the issues affecting the Internet are fully represented.

LINX also participates in the emergency response activities, with a process to cover National Emergency Alerts for Telecoms (NEAT alerts) and has exercised its participation on tests and real incidents (which did not in fact affect Internet performance).

### Staff satisfaction survey

In 2006 LINX carried out its second Staff Satisfaction Survey. This showed some improvements over the

previous survey in late 2004 and confirmed that staff are generally very positive about working for LINX.

## BQF

LINX values its membership of the British Quality Foundation, with several members of the management team being involved in improvement workshops over the year, specifically in the areas of Business Continuity Management and the Excellence Model. In time LINX hopes to develop the BQF's Excellence Model for use within the company.

## EURO-IX & OTHER INDUSTRY FORA

LINX staff contributed to the Euro-IX forums in Dublin in May 2006 and Frankfurt in November 2006.

LINX continues to be involved and drive relevant government and industry bodies covering a wide spectrum of issues 'for the good of the Internet'.

## SALES & BUSINESS DEVELOPMENT

### LPC

During the latter part of 2006 we initiated the LINX Programme Committee, made up of six representatives of the membership together with staff. This group was specifically set up to advise and guide the LINX meeting planning, and we acknowledge their valuable contribution since inception.

### Emerging Markets

As part of our marketing campaign to gain visibility and pursue sales opportunities in Asia, we were a sponsor of the APRICOT meeting in Perth, Australia. Representatives from the engineering and sales departments attended the event, and several good leads were generated.

### EPF

AMS-IX, DE-CIX and LINX co-hosted the first ever European Peering Forum during November 2006 in Frankfurt. The event attracted 178 non-IXP delegates, 98 of whom travelled internationally to get to the event - from Eastern Europe, US, and Asia. The feedback from attendees was excellent and we will be repeating the event in 2007.

### Co-location

During this period we faced several issues with our London co-location sites, including lack of space, large price increases, and less flexible routine operations. We have worked together with the operators through this time of change to assist our members in maintaining a consistent and stable relationship to the benefit of both sides.

## REGULATORY & PUBLIC AFFAIRS

2006 was as busy a year as ever for government relations and public policy work, as government interest in the Internet continues to grow and relevant new legislation is proposed with every Parliamentary session. The Public Affairs website continues to be the main communications tool whereby LINX keeps its members informed of policy developments as they occur.

We continued our programme of building relations with government, both in the UK and at European level, so that our technical advice and our representation of LINX members' interests can influence government policy and legislation.

A selection of highlights of the year 2006 follows:

- LINX continued its excellent relationship with the DTI, hosting the Director its Telecommunications Directorate on her 'Week In Industry' in which she contributed to our scheduled review of our Business Continuity plan.
- The E-Commerce Directive, one of the most important and useful pieces of EU legislation, was expected to be reviewed (and possibly diluted) this year. In the event this was postponed, but not before we had begun preparations to support it with a detailed research report, as well as building links with the most relevant part of the European Commission.
- The proposed Audiovisual Media Services Directive, designed to update the Television Without Frontiers Directive, was much improved by reducing the scope of its application to online content. By the end of the year the text was still not finalised.
- The Computer Misuse Act was extended and the law of fraud was reformed with a new Fraud Act, both of which are expected to make it easier to bring prosecutions against hackers. Unfortunately some of the changes to the Computer Misuse Act risk criminalising legitimate supply of multi-purpose software, and LINX continues to discuss its interpretation with the Home Office and the Crown Prosecution Service.
- LINX continued to work at the Internet Governance Forum to support the existing institutions responsible for co-ordinating essential Internet functions such as IP address allocation and DNS, against the desire by some governments to make this subject to intergovernmental rule.
- An attempt by the European Commission to require all ISPs to subscribe to a Code of Practice to be written by non-industry pressure groups was seen off, when EuroISPA declined to enforce a Code in which it would not have a decisive say.
- Home Office Ministers demanded that deploy network-level content blocking for web sites using a block list produced by the IWF. Although not backed by a legal requirement, they set a 'target' that 100% of ISPs "providing broadband access to the public" deploy such a system by the end of 2007. The IWF agreed to publish a list of compliant ISPs on its web site from July 2007. LINX offered advice for members on issues to consider when reacting to this policy.

More detailed reports on these and other topics are available on the web, sorted either by month or by topic.

## ENGINEERING

Senior Network Engineers Andy Furnell and Paul Vlaar left us and were replaced by Owen Conway and a welcome return to LINX of Andre Els, who had worked for LINX as a network engineer in previous years. We were able to work co-operatively with our infrastructure suppliers to ensure a smooth transition and the maximum uptime during the comprehensive upgrades of both LANS.

All sites were upgraded to Extreme BlackDiamond 8810 (Aspen) and we introduced two Foundry RX-16s that replaced an MG8 (Telehouse North) and BI15000 (Telehouse East). We also upgraded TeleticityRedbus Sovereign House Foundry switch to an MG8.

Both LANS and switching topology were upgraded to multiple 10Gbps rings, enabling 10Gbps port capacity at three core sites. There was also an additional expansion site added at TeleticityRedbus Meridian Gate.

## Multicast

The multicast router was upgraded to a 1GigE interface, as projected traffic was due to exceed 120Mbps at peak time. PIM snooping was enabled on the Foundry LAN, to reduce unsolicited multicast traffic to member ports.

## Installation of Web cams in the suites

All core sites now have IP webcams for monitoring uninvited presence and contractor behaviour.

## IT

Rob Holland took a position with Google in Dublin and was replaced by Tony Vroon. He brings his skills with Gentoo Linux and a considerable fund of hardware knowledge to the team. During the recruitment period we took on a temporary member of staff, Thomas O'Brien, who proved very capable with IT support issues and made great inroads to the backlog of work.

## Servers

Maintaining our route servers was a considerable challenge during the year. Various problems occurred with MD5 (no longer a requirement, but we continue to support some members who use it), non-maintained Quagga code, and system memory. Happily, things are now much more stable.

A Google Mini was deployed initially on our Intranet to index all documents and provide a fast search capability, as a precursor to deployment on the new web-site planned for 2007.

## BUDGET & FINANCE

On the whole, timely member quarterly payments have improved, apart from a regular group of around 25 members, who continue to pay take advantage of the second 30 day period allowed (which incurs an additional charge). 75 members have now signed up to direct debit.

A full financial report for the year is published separately.