

INTRODUCTION

This annual report covers the period January to December 2007. Quarterly reports are delivered at each member meeting which are more topical and immediately relevant, and are available through our website.

The objectives we set for the year and agreed with the Board were successfully achieved, and overall we feel we had another successful year.

GROWTH

Notable statistics:

- Membership grew from 239 to 280 during the year, a net growth of 41, and actually representing 51 new members (both are new records)
- There were 577 member ports on the exchange at the end of the year, and the most significant change was the growth in the number of 10GigE ports from 28 to 86
- 100Mb and 1GigE member ports numbers stayed fairly constant, influenced by the 10GigE port growth
- Peak traffic across the exchange grew from 126 to 225 Gb/s by the end of the year

GOVERNANCE

Neil McRae and Simon Lockhart, the two Council members who retired by rotation at the AGM in May 2007, were both re-elected. Grahame Davies was re-appointed as LINX Chairman.

In 2006 we initiated the LINX Programme Committee (LPC), made up of six representatives of the membership together with staff. This group guides the LINX meeting planning, and we acknowledge their valuable contribution during 2007. Our member meetings continued to be successful and well attended throughout the year.

Richard Clayton's outstanding contribution to LINX over the years was marked by an award ceremony at LINX59.

GENERAL ADMINISTRATION

Member & staff satisfaction surveys

In 2007 LINX continued to carry out annual surveys of member and staff satisfaction. The member survey provided us with much valuable information to improve our services, and told us that our network engineering is held in very high regard, and that there is very strong support for our public affairs work. Our third staff satisfaction survey showed continuing improvements over previous years and confirmed that staff are generally very positive about working for LINX.

At the start of the year LINX's London office relocated "round the corner" to Maya House, 134-138 Borough High Street - a building distinguished by the blue men scaling the front elevation. This has allowed us to provide better meeting facilities and a larger Engineering laboratory, as well as room to grow.

The existing analogue office telephone system was replaced with a state of the art Voice-over-IP system, based around the open source software PBX 'Asterisk', with the project deployed in-house by LINX's Engineering staff.

EURO-IX & OTHER INDUSTRY FORA

LINX staff contributed to the Euro-IX forum in Amsterdam in May 2007 and also in Vienna in November 2007.

LINX continues to represent Internet interests in planning the annual Cabinet Office sponsored Empex telecoms emergency planning exercises. In addition, in 2007 we were involved in the planning of a full government emergency exercise by providing support to the DTI (now the Department for Business). This is in addition to our involvement in a number of relevant government and industry bodies covering a wide spectrum of issues 'for the good of the Internet'.

EPF

AMS-IX, DE-CIX and LINX co-hosted the second European Peering Forum during November 2007 in Barcelona. The event attracted around 170 non-IXP delegates, many of whom travelled internationally to get to the event - from Eastern Europe, US, and Asia. The feedback from attendees was excellent and it will be LINX's turn to be the primary organiser for EPF3 in 2008.

GPF

LINX joined (or possibly rejoined, as we were one of the originators of the idea) the Global Peering Forum host consortia, and were involved in the GPF2.5 event held after NANOG41 in Albuquerque, USA.

SALES & MARKETING

Emerging Markets

We received 32 international applications (63% of the annual total) from 17 countries. Of these, 10 represented new markets for LINX ranging from Jasmin Media from Central Europe, through Qtel in the Middle East to China Telecom and Biznet from Asia Pacific. Our strongest international growth came from the USA with 8 applications though Russian operators showed strong interest with 5.

We were very pleased to see the creation of the Middle East Network Operators Group (MENOG) in April and fully supported this event in Bahrain with sponsorship and attendance from both sales and engineering teams.

Co-location

Whilst 2007 saw some of the same issues from previous years, including pressure for both space and power, it also showed the beginning of a re-invigorated market. The first half of the year saw the announcement of several significant new neutral colocation facilities for London with the first of these opening by the end of the year. This allowed us to begin planning for a series of new LINX PoPs to allow our members to get maximum benefit from this space.

REGULATORY & PUBLIC AFFAIRS

2007 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 2007 follows:

- LINX members received a privileged insight into developing government policy on traffic data collection, when members of the Home Office "Interception Modernisation" team presented plans to create a nationally centralised database of customer records and traffic logs at LINX 59. This was the first time these plans had been disclosed in a non-classified environment.
- The House of Lords enquiry into Personal Internet Security cited with approval key passages from LINX's testimony on the importance of maintaining an open network that supports innovation. Our description of the defining features that led to the success of the Internet - the separation of network layers and the end-to-end principle - was adopted at the very front of the report, providing the framework within which the debate on Internet Security takes place.
- LINX worked with the Home Office and the DTI/Department for Business, successfully arguing for regulations to extend the protections for ISPs given under the E-Commerce Directive to cover the new Terrorism Act and the Racial and Religious Hatred Act. LINX also established contact with the unit within the European Commission charged with oversight of the E-Commerce Directive, and deciding whether it needs to be changed.
- Malcolm Hutton, LINX's Head of Public Affairs, was appointed as EuroISPA's representative on the European Commission's Experts' Group on Data Retention, charged with producing guidance for European member states on the implementation of that Directive.
- At the Rio meeting of the Internet Governance Forum, government participants from the developing world expressed new interest in learning about IXPs, how they operate, and how to establish them. This made a welcome change from the political positioning that had made previous meetings challenging. We take this as a sign of progress, and that LINX's investment in contributing to the global internet governance debate was starting to yield dividends.

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

ENGINEERING

One of the things we've been monitoring closely in 2007 is the 100 Gigabit Ethernet standards efforts. Getting faster link speeds will be important for the long term stability of LINX and many other Internet Exchanges, and our IXP and carrier customers.

However, faster ethernet won't be with us until late 2009 or 2010, so it has been important to work on measures to keep up with the growth in LINX membership and the demands they may put on the network. To this end, our engineers have been investigating various new technologies from vendors both new and existing, including a successful evaluation of the MLX-32 hardware from Foundry, which culminated in the order for two MLX-16 systems in late 2007, to be followed by further MLX-16s and new MLX-32 systems in 2008. The primary advantage of the MLX hardware is the ability to scale to link aggregated bundles greater than 8x10G ports, a limiting factor on many other platforms.

To better use existing fibre resources, the first span, using 10 Gigabit DWDM, was installed in 2007 using a cost-saving method of putting the DWDM optics directly in the LINX switches, rather than using "classic" DWDM terminals.

In addition, we embarked on a redevelopment of our sFlow statistics platform, following on from a proof-of-concept. This will give LINX Engineering staff more insight into traffic flows around the network, which will help in traffic management and future network planning, and the LINX members will benefit from more detailed statistics about the volumes of traffic they exchange with their LINX peers.

Because of our growth in membership, an additional position was created on the team, focusing on first-line member support, provisioning of new member connections, and handling changes to existing member connections.

IT

We successfully replaced the Plone-based web-site with a faster, more useable site. It was announced at LINX56 and went live at LINX57, thanks in large part to Chris Hobden, who has since moved from being a contractor to an employee. A second Google Mini was deployed as a dedicated search engine for the new site.

Pentium III-based route servers were replaced with dual AMD64 based servers, to cope with the increased workload. A programme of phasing out all Pentium III and Pentium IV servers and replacing with AMD64 based hardware was undertaken with the target of completion by the end of 2008.

BUDGET & FINANCE

We made a surplus of over £500,000 for the year, driven primarily by the faster than expected take up of 10GigE ports. Given this strong financial position, we offered discounts on 10GigE ports on the Extreme LAN, to offer an incentive to our members to take balanced connectivity at the exchange. A full financial report for the year is published separately.

On the whole, timely member quarterly payments have improved, apart from a regular group of around 60 members, who continue to take advantage of the second 30 day period allowed (which incurs an additional charge). Over 80 members have now signed up to direct debit.