The London Internet Exchange (LINX), one of the world’s biggest and longest established Internet exchange points, is celebrating its 20th anniversary year. From small beginnings in East London the exchange has grown into an Internet powerhouse with traffic being passed over multiple sites by over 500 member networks from 60 territories.

The LINX ethos remains clear and strong: we are dedicated to serving our members, both with our peering services and in our efforts in the public affairs arena. Member support comes through active consultation, healthy debate, and a constant stream of ideas and suggestions, which we are very keen to encourage.

This special souvenir edition of HotLINX looks back at the LINX story with the aid of photographs and images from around the world while acknowledging the support of everyone who helped make LINX what it is today.

The LINX Story
LINX was formed when pioneering ISPs (Demon Internet, BT, PIPEX, and UKNET – along with the UKERNA, now Janet) started linking their UK networks together. The reason they did this was to avoid paying high transatlantic bandwidth costs and to reduce the time delay which was involved when they had to route their data across the Atlantic to the US and back.

Keith Mitchell, then Chief Technical Officer of PIPEX, initiated a meeting to discuss the creation of an Internet Exchange in London. It all started with PIPEX providing a Cisco Catalyst 1200 switch with eight 10-megabit ports. Rack space was leased at a virtually empty data centre operated by Telehouse in London Docklands. Switching the first data through the Telehouse hub was a momentous event as the vision became a reality.

In those early days LINX was run by volunteers from the member organisations, but engineering excellence has always been at the heart of what we do. We have worked continuously on updating and developing our network to keep up with member demand and the changing landscape of the Internet.

Since 1999 LINX has worked tirelessly on regulatory issues on behalf of our membership. Roland Perry was the very first Regulatory Officer and was succeeded in 2003 by Malcolm Hutty, who is still with LINX as our Head Of Public Affairs. The role has involved advising organisations such as the Home Office Internet Task Force, the National Hi-Tech Crime Unit, the Department of Trade and Industry and relevant departments of the EU commission. In 2007, the membership agreed to make representing their interests on regulatory matters a core objective of LINX and we have gone on to be respected throughout the world for our work in this area.

From the beginning LINX was established as a not-for-profit organisation, run for the benefit of members and governed by them collectively. This has been a constant for the last 20 years, and something that still drives the exchange and everything that we do today. It means that any profits LINX makes are put right back into the exchange either in the form of reducing fees for its members or funding network upgrades. LINX is only just beginning!
"LINX’s basis is the basis on which the Internet was founded - a way of sharing, co-operating and developing to the benefit of all whether large or small. In a business where nothing stays the same for too long, LINX has always been a place at which the interests of its constituents come first every time. The Internet is a fast moving industry making it difficult to predict, however, I anticipate that LINX’s continued dedicated exemplar role will outlive all other predictions."

Grahame Davies, LINX Chairman

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Working for the Good of the Internet

As a neutral, mutually-owned and member-governed organisation, and the UK’s largest membership association for ISPs and other network operators, LINX has always strived to further the interests of the Internet community as a whole.

LINX has represented its members’ interests in the public policy arena since 1999, and in 2005 the membership voted to make Public Affairs one of LINX’s core purposes, placing it on an equal footing with peering and interconnection. We’ve achieved a number of important policy victories over the years, both on our own and in cooperation with partner organisations such as EurolSPA, ISOC and ISPA-UK. These include the defeat of the Intercept Modernisation Programme in 2009, and its successor the draft Communications Data Bill in 2012, and the extension of protections for ISPs under the E-Commerce Directive to cover the new Terrorism Act and the Racial and Religious Hatred Act in 2006. In 2012 we worked closely with the UK government at the World Conference on International Telecommunications (WCIT), which concluded with 55 countries refusing to sign the new Treaty for International Telecommunications Regulations (ITRs).

LINX helped to found the Internet Watch Foundation in 1996 as a way to help hosting providers identify and remove child pornography hosted on their servers. We continue to provide governance support and funding as members of the IWF Funding Council.

We’ve also played an important role in educating future generations of network engineers. In 2000 we created the LINX Accredited Internet Technician (LAIT) qualification, in order to address concerns within our membership about a critical shortage of skilled engineers and technicians. This highly successful course continues to this day, delivered by our commercial partner Systems & Network Training.

Crucially, our members have always been able to trust us to avoid competing with our members, taking policy positions on matters of commercial controversy between members, or taking any action which shows preference or partiality towards any member or its business model.

Malcolm Hutty
LINX Head of Public Affairs
LinX Gallery

Since the earliest days LinX has staged specialist technical meetings which sought to provide members with information on the major industry talking points of the day. The above montage shows a number of familiar faces who all attended LinX’s IPv6 workshop at the Goodenough College in London in the Spring of 2009.

Peering Forums have played an increasingly important part in the development of the industry in recent times. The Global Peering Forum, launched in 2005, has led to a number of regional variations including the European Peering Forum which was first held in Frankfurt in 2006. LinX co-hosts these events along with AMS-IX, DE-CIX and Netnod. The 2014 event will be held in Split in Croatia.

LinX launched its ConneXions reseller product onto the American market at the ‘Beer’n’Gear’ event at NANOG54 in early 2012. Pictured on the stand is LinX’s Technical Sales Advisor, Mark Stokes.


Pictured above is the first LinX switch on display at the British Science Museum. On the left is the LinX Board from 2000 while below we have a photo from the third European Peering Forum in Dublin in 2008 and the cake from IXManchester’s first birthday in 2013.

In October 2013 a wild west style ‘quick on the draw’ competition formed part of the LinX NoVA launch celebrations at NANOG59 in Phoenix, USA.
Footprint expansion into new datacentres at Telehouse and Telecity

LINX honoured in IWF campaign against Internet child abuse

LINX co-hosts the first ever European Peering Forum

The LINX brand is well known throughout the Internet industry and this awareness is re-enforced by the range of merchandising produced for national and international events. Over the years LINX has produced branded items as diverse as pencil sharpeners in the shape of British telephone box, wash bags, ice cubes that light up in your drink, tea caddies and even playing cards and casino chips!

T-Shirts are understandably very popular and have long been the attire of choice for many in the peering industry. Below are just a few that have marked particular points in our history including the LINX@10 design from 2004, the 15th anniversary IPv6 ‘sum’ and finally, in 2012, two topical designs reflecting the royal jubilee and London Olympics.

To demonstrate the collaborative nature of the peering industry we are showing on this page the joint LINX, Interxion and DE-CIX stand at Capacity Asia from 2012 plus a picture of Ben Hedges and Luke Bonnici (bottom image, far right) meeting with our twin exchange, the Zambian Internet Exchange (ZIXP), in Lusaka, the following year.
Footprint expansion into datacentres at InterXion and Equinix

Primary LAN switches to Juniper & VPLS

First local exchange, IXManchester, opens
First member 100G port connected (BT)
LINX tops 1000 connected member ports

The People

Keith Mitchell
First LINX Executive Chairman
Involved since LINX’s inception in 1994 as part of founder member PIPEX, Keith undertook the full-time role of Executive Chairman of LINX in 1996. During his time at the helm, the exchange grew to become the largest IXP outside the US, and one of the top five globally. At Keith’s departure, LINX had 110 member ISPs, 16 staff, and £2 million revenue.

In September 2000, Keith and three other former LINX Directors founded XchangePoint, in conjunction with their proposal to conduct a management buy-out of LINX. This was ultimately rejected by the membership.

In 2006 Keith set up the UK Network Operators’ Forum which continues to hold regular successful meetings of British ISPs. In 2008 Keith was appointed as Director of Engineering at the Internet Systems Consortium (ISC), and in 2011 became its VP of Systems Engineering. He currently runs his own company, SMOTI Enterprises Inc.

Keith has also served as a non-executive Director of Nominet UK (1996-2002), and Chairman of the RIPE NCC Executive Board (1997-99).

Grahame Davies
Current LINX Chairman
Grahame Davies was a pioneer of Internet access in the UK when, in 1992, he co-founded the first dial-up access provider Demon Internet. He was Group Managing Director at Easynet Group Plc, a listed pan-European Internet Service Provider, for six years and CEO of Astra Associates for three. He has also been a Director and Chairman of LINX since 1999 and served on many Internet industry boards including the IWF and Nominet PAB.

He is an Internet consultant and investor working with a range of companies. He is a non-executive Director at LINX member Bytemark and chairman of LINX member Simwood.

Grahame says, “The mutual ethos of LINX is fascinating, inspiring, educational and has served the organisation very well from its inception through the attempted privatisation and onwards and upwards to the excellent organisation it is today. Whatever few downsides there may perceived to be to the mutual status, they are outweighed by the positives numerous times.”

An interview with Grahame Davies can be read in issue 16 of HotLINX:
www.linx.net/files/hotlinx/hotlinx-16.pdf

John Souter
LINX Chief Executive Officer
John Souter joined LINX as Chief Executive in March 2001 and was appointed to LINX Board of Directors in February 2002. In his time at LINX membership has more than quadrupled despite a number of member mergers and acquisitions along the way. He has overseen major year-on-year investment in the LINX network to keep the company at the cutting edge.

John has been responsible for a focus on a fair pricing policy for LINX, encouraging membership growth from all sectors of the Internet industry. This has reinforces the mutual ethos of LINX whereby all members have an equal share and say in policy and direction fostering a continued sense of community.

As Board Director and Treasurer of Euro-IX since its formation in 2001, John has played a major part in ensuring that European Internet Exchanges have a platform to collaborate on issues such as benchmarking, regulation and the sharing of knowledge and expertise.
Conspicuous Contribution to LINX Award

The LINX Conspicuous Contribution Award is a prize presented to an individual or organisation who has shown steadfast and continuous support in the development and growth of LINX. The award was first presented in 2007 and to date there have been five recipients.

Roll of Honour

Nigel Titley
Nigel Titley was a LINX council member from its 1994 formation through to 2006. Nigel played a pivotal role in ensuring that LINX became one of the world’s leading Internet exchanges and LINX owes much of its success to Nigel’s extensive industry expertise and sound judgement. He continues to play an important role at LINX today presenting updates on RIPE NCC policy and LINX member meetings.

Read Nigel’s ‘In the Spotlight’ interview in issue 20 of HotLINX: www.linx.net/files/hotlinx/hotlinx-20.pdf

Dr Richard Clayton
An academic at Cambridge University, Dr Richard Clayton was also a consultant for LINX member; THUS plc (incorporating founding LINX member; Demon Internet). Richard attended LINX general meetings for nearly 10 years and could always be relied upon to provide support through objective questions and points of view. His contribution to many of LINX’s Best Current Practice documents were also very important.


Clive Feather
Clive Feather served on the LINX Council for five years taking part in a number of strategic reviews and contributed to LINX’s Best Current Practice documents. He also provided the software by which the LINX council elections results were computed and held the role of Regulatory Officer for a period as a secondment.


NIX.CZ and CZ.NIC for the BIRD Route Server Project

BIRD began life as a university project at the Faculty of Math and Physics at Charles University in Prague before going into full development under the support of CZ.NIC Labs at the end of 2008. It is an open source route server platform which has proved to have been of great benefit to LINX and other European IXPs. It is a fully functional dynamic IP routing daemon primarily targeted for LINUX-like systems. The BIRD team consists of Ondrej Filip, Libor Forst, Pavel Machek, Martin Mares and Ondrej Zajicek.

Read the NIX.CZ and CZ.NIC award article in issue 22 of HotLINX: www.linx.net/files/hotlinx/hotlinx-22.pdf

Raza Rizvi
Raza served on the Board of LINX from 2002 to 2012 and was vice-chairman for five of those years. Diligent, independent, patient, supportive and hard working, he produced many of the policy documents that the Board operates within today. Outside of his direct role, Raza implemented the LAIT training scheme and managed projects for LINX as a consultant. Read Raza’s reflections on 10 years on the LINX Board in issue 29 of HotLINX: www.linx.net/files/hotlinx/hotlinx-29.pdf

“In celebrating our 20th anniversary year we would like to pay tribute to the efforts of our members as well as staff, past and present, for helping build the successful operation of LINX.”

John Souter, LINX Chief Executive Officer
First IXP to deploy 100M, 1G and 10G Ethernet

First IXP to utilise Juniper PTX switching gear

First IXP to be awarded Open-IX certification

First IXP from Europe to launch a regional exchange in the USA

First IXP to introduce accredited training for Internet engineers

Contact LINX

London Internet Exchange Ltd
21-27 St Thomas Street
London SE1 9RY United Kingdom

London Internet Exchange Ltd
Trinity Court Trinity Street
Peterborough PE1 IDA United Kingdom

Phone: +44 20 7645 3501
Fax: +44 20 7536 0720
Email: info@linx.net
Web: www.linx.net