LinX Confirms Independent Strategy For The Future

Members of the London Internet Exchange (LinX) have supported plans for a wide-ranging review of our structure and strategy to keep us ahead of the growing demands of the Internet industry.

Meeting in London in October, representatives of the more than 110 Internet Service Providers (ISPs) which own LinX backed a recommendation from the board of directors that we should maintain our independence. Alternative strategies of seeking a commercial partner to which we could outsource our operations or selling those operations to an external bidder were rejected in favour of continuing to develop LinX's own services.

The board is now working with the LinX Ad-Hoc Committee (LAHC) to draw up strategic options for the future. These will then be circulated to members for comment before the board draws up recommendations which will be presented to the AGM in February 2001 for approval or amendment.

Grahame Davies, group managing director of Easynet Group Plc and non-executive chairman of the LinX board, said: "There was clear support from the members for the board's position and a commitment to assist the directors in drawing up a future strategy.

"Members agreed that there was no need to rush into a decision to make radical changes to our structure and we have given ourselves a breathing space to review our options. We shall have a wide-ranging debate in the months leading up to the AGM to ensure that we focus on meeting our members' needs.

"In this fast-moving industry it is important that we continually examine our structure and operations."

As well as supporting the board's recommendations on strategy the October meeting also approved a number of changes to our Articles of Association – the legal document which defines our constitution. It was the first step in a continuing process of review and a number of issues discussed at the meeting are to be reflected in proposals to come to a future meeting of members.

Grahame Davies said: "We need to address issues of governance to make sure that as members we have control of our organisation whilst also permitting the board and management team to manage the business."

Interim chief executive Roland Perry added: "We are setting a clear path for the future and in the meantime are continuing to expand our operations to meet growing demands from our members."

LinX currently has a team of 18 engineers and management staff, an increase of six since the start of 2000. Recruitment is taking place to fill two newly-created posts.

Below: The new board at LinX (standing left to right) Nigel Titley (Senior IT Engineer of Level 3 Communications), Grahame Davies (Group Managing Director of Easynet Group Plc), Clive Feather (Internet Expert of Thus), and Neil McRae (Director of Network and Application Engineering, COLT Internet).
See story on back page.
NEW BUDGET PROVIDES CAPABILITY TO HANDLE TRAFFIC GROWTH

LINX 30 – the meeting of LINX members held in August – approved a budget for the financial year which will provide us with the resources to handle the explosive level of growth in Internet traffic. It will allow us to enhance the service we offer to members and keep LINX at the centre of the Internet industry in Europe.

Our total capital expenditure in the twelve months from October 2000 will be around £750,000, enabling us to further develop our primary site in the London Docklands and invest in new hardware. The budget also provides for an expansion of our operations engineering staff and our research and development team. This will ensure that the new equipment is operated and maintained to the highest standards.

We plan to be one of the first exchange points in Europe to introduce wave division multiplexing. In future we may take traffic from members in this form. Initially, however, we will be installing the technology to increase the amount of traffic we can pass between our centres without investing in new fibre links.

We shall also be upgrading equipment to handle the anticipated demand for 10 Gigabits per second connection. Some of our existing hardware already has this theoretical capacity but we are waiting for final agreement of common standards and specifications to make it operational.

Mike Hughes, head of network architecture, said: “We are working in a rapidly changing, capital-intensive industry in which hardware is obsolete within two years. We need to keep investing in new equipment and new services to meet the growing demands of our members.

“Our new budget provides us with the resources to make those investments and to expand our team of highly experienced and qualified engineers. At the same time it will help us to make a modest increase in our reserves – which is vital to meet any unexpected challenges – and will assist our cashflow.

“Overall, it will give improved services to members and greater financial stability to LINX.”

NEW FACES AT LINX

LINX is expanding its engineering and management team in order to maintain and develop the quality of service to members.

Martin Overend has joined LINX as our first-ever sales executive. The appointment is recognition of the fact that to maintain our position at the heart of the Internet in the UK we need to bring more ISPs into membership.

Martin comes to LINX after a career spent mostly in sales and management posts in the financial services industry.

To support our new training initiatives (see page 5) we have appointed Hugh Spencer as technical training manager. He will spearhead our campaign to help universities tailor electronics and engineering courses to the needs of the Internet industry.

After initially training and working in the agricultural industry – including running a smallholding in France – Hugh made a dramatic career transition and gained a 2:1 BSc Hons in Information Business Systems Technology at the University of Essex. During the past five years he has worked with ICL, ElectricMail (later Kewill) and PSINet on a wide range of projects including Internet security applications, network testing and switch equipment development. He also has experience as a guest lecturer at Essex University.

Neena Singh has joined LINX as a management assistant. She has spent the last few years working at the BBC and at a leading magazine publisher. She will now be supporting our existing management in human resources, administration and marketing.

Sheilagh Shaw has given up running her own company offering secretarial services to clients such as UUNET, Arrow Electronics and Microtronica to become PA to interim chief executive Roland Perry. Amongst her professional credentials she includes membership of the Institute of Qualified Private Secretaries and of the Telecottage, Teleworker Association.
RESILIENT PACKET RING MAY OFFER TRAFFIC GROWTH SOLUTION

In the continuing search for new technologies which will help LINX and our members cope with the explosive growth in traffic, LINX technical staff have been carefully monitoring the progress of resilient packet ring (RPR) systems.

Chris Fletcher, LINX's head of technology development, explained:

"Existing data communication is largely based on time-division multiplexing systems which, in effect, reserve far more bandwidth for a given data transfer than it actually requires. RPR uses only the bandwidth which is actually required. "At the same time, RPR has self-healing capabilities so that networks can be far more reliable. If there is an equipment or cable failure the data is re-routed and the users will be unaware of any problem, even if the fault occurs in mid-transmission.

"The appeal of RPR as a technology for increasing available bandwidth is that it naturally supports rings, which we already have in the ground, and has low level fault protection through its 'self-healing' properties."

Switch and router manufacturer Cisco is one of the leaders in this technology. It is committed to working with the Internet industry to develop open standards for Dynamic Packet Transport (DPT), its proprietary version of RPR. The company says that DPT potentially reduces both capital and operating costs by eliminating time division multiplexing equipment and integrating its capabilities — such as performance monitoring and fast protection switching — into the router. It also maximises the traffic-carrying capacity of optical fibre by providing bandwidth multiplication through statistical multiplexing and packet-by-packet spatial re-use techniques.

Cisco says that DPT’s 'plug and play' capabilities make it easier to install and maintain than conventional multiplexers, giving further efficiency gains.

CONFERENCE TO HIGHLIGHT MULTICAST FUTURE FOR INTERNET

LINX is organising a demonstration of multicast technology as the centrepiece of a day-long conference designed to highlight its potential.

Chris Fletcher, head of technology development at LINX, said: 'Multicast offers opportunities for major developments on the Internet, such as large scale video delivery and internal company communications. Recent UK experience with, for example, the screening of TV series Big Brother from its website has shown that there is a mass market demand for video content by users. It has also shown the inability of existing unicast technology to deliver a reliable service.'

"The conference will bring together ISPs - many of which say they will offer multicast capabilities when there is demand from content providers - and content providers, which are generally reluctant to get involved until the technology is in place and there is a reliable method of audience measurement." The event will feature a live demonstration of multicast and will also showcase some audience management technology. It will include key speakers from hardware developers, content providers and the Internet industry.

The event - to be held in London on 30 November 2000 - is being sponsored by Cisco Systems. The company will be providing the live demonstration using Cisco hardware.

A number of small discussion groups will allow delegates to explore some of the key issues surrounding the implementation of multicast.

Chris Fletcher said: "One of the key objectives of the event is to get ISPs and content providers talking to one another in order to identify and overcome obstacles to the deployment of this new technology."

Attendance at the event will cost £100 per head for LINX member companies and £200 per head for people from other organisations. Delegates can register online at www.linx.net/multicast.
Non Core Activities – At The Heart Of LINX

LINX’s core business is to facilitate the exchange of data traffic between members. However, our members have always recognised that our position at the heart of the Internet in the UK confers both opportunities and responsibilities.

Over the years LINX has developed a number of ‘non core’ activities which result from this situation. Each is overseen by a sub-committee of members working to a non-core activity plan (NCAP) which is approved by a LINX members meeting.

Fundamental to the approval of any NCAP is that it should benefit the membership. Each year the LINX staff responsible for implementing the NCAPs report back to members on progress and request a budget for the coming year.

Once our objectives are achieved or members decide for some other reason to terminate the activity, the NCAP is withdrawn.

We are currently operating five NCAPs (see article below) covering a number of key issues.

LINX chairman Graeme Davies said: “Our unique position in the Internet industry means that we are often the body best-placed to advise or defend our members’ interests in areas such as legislation, regulation and education. This type of activity is not our core function but is something from which members – and the whole Internet industry – derive substantial benefit.”

LINX’s Non Core Activity Plans

Regulation of unsolicited bulk messaging:
The sub-committee operating this NCAP is looking for solutions to the problem of ‘spam’—officially known as unsolicited bulk messaging (UBM)—including unsolicited commercial email (UCE) and abuse of Usenet news. It is co-ordinating with other organisations working on the same problem to minimise duplication of effort and engaging in active dialogue with legislators to ensure that any new laws to deal with this problem are in the interests of LINX members and their customers.

Telecoms regulation:
This sub-committee is working to improve communication between LINX and bodies responsible for telecoms regulation. Meetings are held with representatives of telecoms regulator OFTEL, the Department of Trade & Industry, the Service Providers Interest Group, the EU Commission and other bodies.

Law enforcement:
The work of the law enforcement sub-committee has been brought sharply into focus over recent months by the passage through Parliament of the Regulation of Investigatory Powers Bill (see HotLINX issue 1). LINX staff and members of the sub-committee have met with ministers, civil servants and others to discuss issues relating to interception, regulation of communications and disclosure of communications data on the Internet.

Content regulation:
LINX staff and members of the content regulation sub-committee regularly meet representatives of government, police and other bodies to discuss regulation of content on the Internet. The sub-committee’s objective is to ensure that official policies and actions are realistic and reasonable for LINX members.

Training:
The LINX members meeting in August – LINX 30 – approved the creation of a new NCAP related to training. An outline of the new activity appears on page 5 of this issue.

IWF Hotline Success Grows

Operating the ‘hotline’ – by which users alert the industry to abuses of the Internet – continues to be the core activity of the Internet Watch Foundation (IWF).

Over 5,500 reports have been processed this year and more than 1,600 of these identified material which is potentially illegal under UK law. These have been referred to the police and, where appropriate, to UK ISPs. The vast majority of these relate to child pornography in a small number of Usenet newsgroups.

The list of recipients of IWF notifications continues to grow and IWF is keen to hear from any ISP which does not receive them.

Feedback indicates that recipients of notifications act promptly to remove potentially illegal material. No criminal prosecution has been brought against a UK ISP since the launch of the hotline in December 1996.

The IWF’s work is, however, leading to the prosecution of those publishing illegal material on the Internet. For example, a London man recently received a four-year prison sentence for distributing child pornography in Usenet newsgroups after an IWF report to the police and industry. About 95 per cent of actionable material is sourced overseas. Details of this are passed to law enforcers in the country of origin.

IWF has now established a ‘one stop shop’ to
LINX is to launch a scheme to help tackle a shortage of skilled Internet engineering staff which threatens to hamper development of e-commerce in the UK and the rest of Europe.

The LINX 30 meeting of members, held in August, approved a new 'non-core activity plan' (NCAP) which authorised us to get involved in training and education for the first time — a clear indication of the seriousness with which ISPs view this problem.

We are now planning to help universities and other educational institutions design and deliver courses which will lead to graduates being qualified as LINX Accredited Internet Engineers. It is intended that the new courses will be integrated into the syllabuses of existing Internet-related engineering courses.

In parallel with the new training initiative, LINX is to assist students and graduates seeking work experience to be placed within member organisations.

Philip Shaw, platform infrastructure manager for Teletext and chairman of LINX's training NCAP committee, said: "Members have identified a shortage of skilled people as one of the biggest constraints on the development of their businesses. This new initiative by LINX is designed to help tackle this problem.

"By influencing the course content to cover more appropriate course material LINX will be raising the overall technical competence of graduates. The LINX accredited training module will fill in the gaps in the current education system syllabus in order to equip graduates with the exact skills which industry is looking for."

Discussions have already been held with education establishments in the UK and Germany and plans are at an advanced stage for some of these institutions to introduce the new training module into degree courses next year.

Meanwhile, LINX has already begun to assist students from some of these universities to find work experience placements. We will soon launch an e-bulletin for members which will link companies seeking students with students looking for placements.

Philip Shaw said: "Students and graduates placed within participating LINX member organisations will benefit from the direct Internet experience. Members will benefit by increasing their workforce and the education sector may benefit by being awarded more grants for assisting student industrial placements."

A conference is being planned for next year which will bring together academics, our members and others in the industry — particularly equipment vendors. We hope companies attending the event will be represented by their own training experts, so that the conference can focus on specific curriculum development and training issues.

LINX has joined the European Internet Service Providers Association to ensure members' views are presented to the European Commission, European Parliament and other bodies which are drawing up regulations and setting standards on a Europe-wide basis.

Interim chief executive Roland Perry said:

"The Internet is an international communications medium and the regulations which affect our members and their businesses are increasingly being made on an international basis. The current redrafting of the European Directives on data privacy and telecommunications, which will have wide-ranging implications for ISPs in the UK, is an excellent example of the importance of the 'European dimension'.

"LINX and our members need to be represented at this level if we are to have any influence on the content of legislation before it is imposed upon us."

Through INHOPE (Internet Hotline Providers in Europe Association) IWF has helped to secure European Union funding for eight individual European hotlines (including IWF) and for the INHOPE network. The network exists to facilitate and co-ordinate the work of member hotlines through the sharing of expertise, the exchange of specific reports and support for new hotline initiatives.

IWF has been consulted from as far afield as Japan and South Africa for advice on setting up self-regulatory hotline systems, showing that the IWF hotline is regarded as a model of good practice. This reflects the success of the UK's co-regulatory approach to dealing with problems of illegal and harmful use of the Internet.

- IWF is financially supported by LINX, leading ISPs and other organisations. For details of IWF activities and membership — and information on the IWF hotline — see www.iwf.org.uk. Hotline reports can be made on-line via the IWF website, by e-mail to report@iwf.org.uk or by telephone on 08456 008844.
ACQUISITIONS PAVE WAY FOR CONTINUED EUROPEAN EXPANSION

IXEurope, Europe’s premier neutral colocation company, has now added Milan, Barcelona and Sophia-Antipolis to the IXDataCentre roster of London City, Heathrow, Paris, Frankfurt, Dusseldorf and Zurich.

This announcement follows within a month of a multi-million Euro share and cash deal in which IXEurope made the first European acquisitions of pure-play colocation companies – Telebridge GmbH of Germany and Telehouse AG of Switzerland.

Like IXEurope, Telebridge and Telehouse are neutral co-location providers, having no ties with any telecoms or Internet operators. This gives clients an unrivalled choice of carriers as well as the opportunity to change service providers without the need to move to a new site.

IXEurope, Telebridge and Telehouse share the vision of data centres offering multi-ISP and carrier choice and a virtual marketplace of service providers.

Commenting on this expansion, Guy Willner, CEO of IXEurope said: “With the European colocation market expected to grow to US$5.4 billion by the end of 2001, the market opportunities for high calibre businesses are enormous. We intend to be at the forefront of this fast growing sector and our continuing site roll-out paves the way for IXEurope to achieve that.”

With plans to have 24 IXDataCentres operational across Europe by 2002, these announcements give IXEurope a strategic presence in ten key European locations within a year of the company being established.

COMMITTED TO TiX

The Zurich facility, Telehouse, also houses the TiX – the most active Internet exchange in Switzerland with more than 30 ISPs peering at the facility. Andre Opperman, general manager of IXEurope Switzerland and founder of TiX, stated: “IXEurope is committed to promoting the neutral Internet exchange as paramount to the success of the Internet as a whole.” He went on to say: “The TiX will remain and grow with its stated objectives of promoting an independent exchange for ISPs to agree peering arrangements.”

Commenting on the announcement, Guy Willner stated: “We see great opportunities across Europe to develop colocation services - the management and technological expertise which Telebridge and Telehouse bring to IXEurope will allow us to expand significantly our range of colocation services throughout Europe.”

He added: “I was very impressed when I first visited the Palo Alto Internet Exchange (PAIX) in the US (a similar operation to TiX) in 1998 and so was especially interested when Andre approached us with the TiX. Everyone on all sides has worked very hard on this project and we are all excited by the results. It positions the new group well for further expansion.”

CO-MARKETING AGREEMENT:

Confidence in IXEurope’s ability to establish itself successfully as Europe’s premier neutral colocation provider has led Nupremis UK, a full-service application service provider (ASP), and IXEurope to announce a strategic alliance for colocation hosting and managed applications services.

As part of the five-year agreement, Nupremis will occupy up to 200 high-density racks or about 5,000 square feet of data centre space in IXEurope’s flagship IXDataCentre in Heathrow.
Located at the heart of Europe's Silicon Valley, the Heathrow IXDataCentre offers unlimited connectivity, massive redundancy with diverse connections from a minimum of six carriers. Comprising a total area of 7,400m² (74,500ft²) with space for up to 4,000 racks, together with customer offices and amenities for technical staff, the site is ideal for customers deploying multi-site distributed networks.

The companies also announced a mutual co-marketing and distribution agreement in the colocation and managed server marketplace. Nupremis is in discussion to utilise other IXDataCentres for its pan-European ASP roll-out. Charles Cade, Chief Executive Officer of Nupremis, said: "We are partnering with IXEurope to leverage its world-class hosting facilities in one of the most dynamic e-commerce markets in the world.

"The Heathrow data centre provides Nupremis with a state-of-the-art facility with outstanding network connectivity. IXEurope's certified ISO 9002 compliant Internet data centre enables Nupremis to focus on our core competencies – providing customers with shared infrastructure environments for scalable e-commerce, combined with managed enterprise applications."

The estimate common in the Internet industry, that traffic doubles every 100 days, looks to be proving accurate at LINX this year.

Having seen peak traffic reach 3 gigabits per second (Gbps) in August, we were handling up to 4 Gbps by the start of October and will almost certainly have passed the 5 Gbps level before the end of the year.

LINX head of technology development Chris Fletcher said: "We are planning on the basis that we will be handling 10 Gbps very soon."

Meanwhile, in another indication of the growing significance of the Internet, the number of domain names registered has passed the 30 million mark – and is expected to double within two years.

The Internet Corporation for Assigned Names and Numbers (ICANN) is now considering introducing new top level domains such as .web, .info and .site in order to accommodate the expected expansion.

Regularly updated statistics on LINX traffic are published at http://www2.linx.net.
ROLAND PERRY TO HEAD LINX STAFF

Roland Perry was appointed as interim chief executive officer of LINX in September 2000. He had previously been appointed as the first full-time regulation officer in April 1999 to exploit his considerable technical, legal and commercial understanding.

Roland was attracted to the online industry as far back as 1983 when he created an online supplement for Radio and Electronics World which was delivered at a blistering 300 bits per second. Years later in 1994, he helped to create the concept, consumer interface and partnerships for fledgling UK Online.

Roland went on to become the managing director of online conferencing company CIX. When he moved to Edex, a satellite and Internet trading service, Roland used his experience of running an ISP in his role as director of user equipment development.

Like many people from the early days of the Internet industry, Roland was formerly one of the pioneers in the computer industry. He opened the UK’s 4th computer retail store in 1978, selling kits imported from the USA. This was before mass market PCs but Roland’s next job would change that. He managed the engineering team that created AMSTRAD’s most successful computers – the PCW word processor, PC1512, PC1640 – and one of the first consumer portable (OK luggable) computers with a built-in modem.

Roland has always been there at the beginning of technology. He started computer programming at the tender age of 15. Two years later in 1970, he took Oxford’s first computer science A level exam and then went on to read engineering and management studies at Sidney Sussex College, Cambridge.

“I’ve always liked the challenges that new technology developments throw at you. From design and debugging, through testing and trials, then on to success,” Roland said.

LEADING THE WAY TO DYNAMIC GROWTH

LINX is well placed to exploit its leading position in the dynamic Internet business, says new chairman Grahame Davies.

“We face a challenging yet enjoyable future,” he said. “The opportunities that LINX faces are being mirrored in other exchange points across Europe so there are good prospects for closer co-operation and further dynamic growth.”

Grahame, who became a LINX director in 1998 and recently became chairman of LINX also serves as chairman of the content regulation NCAP. He says he is impressed with the high morale among LINX staff and the positive outlook evident among board members.

He is group managing director of Easynet Group Plc, a £27.7 million turnover ISP and Telco with over 500 staff in seven European countries. Grahame has been involved in Internet access since 1992.

THREE NEW DIRECTORS JOIN BOARD

Three new non-executive directors have been appointed at LINX.

Heather Islip (general manager of VBCnet), Ian Mason (UK operations manager at Gigabell), and Neil McRae (head of engineering and operations at COLT Internet) have filled vacancies to bring the six member board back to full strength.

Heather Islip has been manager of Bristol-based ISP VBCnet since 1995.

Her previous career has included sales, engineering and management posts and she has lived in the USA, Germany and Japan as well as in the UK.

Neil McRae is responsible for the design and implementation of COLT Telecom Group plc’s Internet network and services. Before joining COLT he held engineering positions with Easynet and Demon.

Ian Mason is responsible for engineering management at Gigabell. He has previously held technical posts with Zioo Internet, Creative Logic and Convergent Solutions and has worked as a journalist for PC Pro and PC Magazine.

Grahame Davies, board chairman, said: “Having these highly experienced people on the board will help to ensure that LINX remains the undeniable leader in interconnect services in Europe.”