



Co-East Plus

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1. Introduction

1.1 Co-East Plus, part of Co-East's larger development initiative to promote resource-discovery and sharing in the East of England, provides a proof-of-concept model for access and electronic interlending across library domains. The Plus project team has delivered on the aims, as laid out in the original project proposal:

- Establishment of a local cluster within the region to test the technical and logistical issues surrounding resource sharing across the library and information sector
- Preparation of the groundwork for the establishment of a regional interoperability framework, which is cross-domain in nature
- Creation of a regional internet gateway.

1.2 Co-East Plus was a project funded by the British Library Co-operation and Partnership Programme (BL CPP)¹ and The Research Support Libraries Programme (RSLP)². The project team, including project manager, project officer, support and web assistants, were located in the Libraries Headquarters of Cambridgeshire County Council. The cross-domain library cluster was located in Norwich.

1.3 This final report, covering the activities of the project period from 9 October 2001 to 9 October 2002 has been prepared according to the BL CPP Final Report Guidelines. Associated project documents have been included as appendices, and where appropriate, URLs pointing to the project web site have been supplied.

1.4 The project has been rolled out against the backdrop of the development of the strategic regional agency, East of England Libraries, Archives, and Museums Council (EEMLAC)³, as well as concurrently with other major East of England initiatives, such as the NOF-Digitise project, East of England Sense of Place (EESOP)⁴ and Seamless⁵. So, although the original cluster was intended to provide 'proof-of-concept' for local library co-operation, the

¹ <http://www.bl.uk/concord/about.html>

² <http://www.rslp.ac.uk>

³ <http://www.elisa.org.uk/files/eemlacbusinessplan.pdf>

⁴ <http://www.senseofplaceeast.org.uk/>

⁵ http://www.co-east.net/projects/plus/documents/east_of_england_initiatives_and_projects.pdf

outcomes, from the very beginning of the project, were viewed within a broader regional development context.

2. Background: Models for Resource-Sharing

2.1 Co-East Plus evolved from electronic resource-sharing models, some using virtual union catalogues, developed by libraries in the East of England.

2.1.1 Co-East⁶

Co-East, a consortium of 10 public library authorities operating in the East of England region, is an innovative organisation that aims to put in place ICT solutions to enable members of the public to easily obtain resources from libraries across the region, either via computers in libraries or over the Internet.

Co-East is establishing connectivity and interoperability across different library management systems so that users can both view the resources of other library authorities and place requests for those resources. Partner library authorities are exploiting Z39.50 protocols to establish connectivity between the different systems and implementing ISO ILL protocols to establish 'interloanability' between the systems. Resources, which include the library catalogues, community information databases and other purchased content, are being made available via web-based OPACs and the Internet.

2.1.2 Agora⁷

The Agora project, developed as part of eLib Phase 3⁸, provided 'an open, standards based platform for distributed, mixed-media information management as well as a framework for end-user-oriented services and an infrastructure which can be scaled up to provide the backbone for national access to distributed collections (the Distributed National Electronic Resource)⁹'. Using middleware provided by project partner, Fretwell-Downing, Agora consisted of a portal which provided cross-searching of catalogues, as well as access to electronic interlending among its academic partners (including the University of East Anglia, which provided project management) and the British Library.

2.1.3 Angles¹⁰

ANGLES, the Anglian Libraries Exchange Scheme, promotes 'co-operation between library and information services in Norfolk and Suffolk, and in

⁶ www.co-east.net

⁷ <http://hosted.ukoln.ac.uk/agora/>

⁸ <http://ukoln.ac.uk/services/elib/projects/>

⁹ <http://ukoln.ac.uk/services/elib/projects/agora/>

¹⁰ <http://www.angles.org.uk/>

particular to improve access to information¹¹. ANGLES supports a cross-domain interlending scheme, and provides a cross-domain listing of periodicals holdings.

2.1.4 *Local Models*

In addition, the region has produced successful local resource-sharing partnerships. For example, in Hertfordshire, the University of Hertfordshire, representing the Hertfordshire 'shadow' cluster on the Plus Steering Group, shares its catalogue with local FE colleges, and has an access agreement which includes reciprocal borrowing with the colleges as well as the public library authority.

2.2 *Models Outside the Region*

Co-East Plus has also been able to draw on other resource-sharing models around the country, some using Fretwell-Downing broadcast-searching technology:

- Riding Gateway¹²
- M25 (Enquire25)¹³
- London Libraries and Learners¹⁴
- Mersey Libraries (Project WARM)¹⁵
- LASH¹⁶

2.3 During the project, the Co-East Chair, Mike Hosking, and Plus Project Officer, Linda Berube, sat on the Steering Group of another BL CPP resource-sharing project, WARM (Widening Access to Resources in Merseyside). Not only did this participation afford an exchange of issues and experience, but also first-hand experience with a technological solution different to that of Plus.

3. Project Outcomes and Deliverables

3.1 The project was scheduled to run from October 2001 to October 2002. The original plan and timetable submitted were reworked by the Project Officer into a series of work packages. The project plan was organised around specific outcomes that were set against the aims of the project:

- Establishment of a local cluster with an outline access agreement in place, using Z39.50 protocol and ISO/ILL standards to facilitate

¹¹ <http://www.angles.org.uk/visitors/about.htm>

¹² <http://www.shef.ac.uk/~riding/>

¹³ <http://www.m25lib.ac.uk/>

¹⁴ http://www.bl.uk/concord/pdf_files/liblearnprogress.pdf,
<http://www.ilda.org.uk/partners/liblearn.html>

¹⁵ <http://merseylibraries.org>

¹⁶ <http://www.lash.sunderland.ac.uk/>

‘interloanability’. This would provide ‘proof of concept’ and would also identify scalability and implementation issues before a wider introduction of clusters. A more extensive pilot of the cluster with an evaluation period to assess the effectiveness of the access agreements and allow feedback from users would follow in year 2.

- A mapping of the current state of interoperability, creation of a technical specification and a costed proposal for the second year of BLCPP funding.
- An initial Regional Internet Gateway, with clear navigation to British Library material, together with modelling of user-centred access strategies for the use of existing and potential gateways and portals.

3.2 *The Norfolk Cluster*

The Co-East Plus project has successfully brought together the resources within its pilot cluster in Norwich. The region’s various libraries have a history of local resource-sharing, especially those participating in the Plus cluster: University of East Anglia (UEA)¹⁷; City College Norwich (CCN)¹⁸; Norfolk Library and Information Service (NLIS)¹⁹; and Norfolk and Norwich University Hospital Library (N&N)²⁰. Various resource-sharing activities include UEA sharing its catalogue with the N&N, the Norwich Research Park libraries, among others, and establishing resource-sharing links with Suffolk. In addition, all the Norfolk Cluster libraries participate in ANGLES.

3.2.1. As is customary, the British Library supplies a majority of the interlending requests for HE institutions, such as UEA. FE and public library interlending staff also make significant use of BL resources. In addition, public libraries in East Anglia have traditionally borrowed through EMRLS²¹, the regional interlending system. In recent years, as regional designations have changed, these libraries are borrowing predominantly among Co-East partner authorities, UnityWeb²², and CONARLS²³.

3.2.2 The Norfolk and Norwich University Hospital Trust Library has traditionally shared resources with local libraries, most predominantly with UEA and through ANGLES. Resource-sharing on the national level has been carried out with the BL, the British Medical Association²⁴, the Royal College of

¹⁷ <http://www.lib.uea.ac.uk/lib/libinf/index.htm>

¹⁸ <http://www.ccn.ac.uk/site/library.htm>

¹⁹ <http://library.norfolk.gov.uk/>

²⁰ <http://www.norfolk-norwich-hospitals.net/>

²¹ http://www.leics.gov.uk/libraries/policy_documents/emrls/emrls.htm

²² <http://www.talis.com/products/netserv/unityweb/unityweb.htm>

²³ <http://thenortheast.com/conarls/>

²⁴ [http://www.bma.org.uk/ap.nsf/Content/ Hub+library](http://www.bma.org.uk/ap.nsf/Content/Hub+library)

Surgeons²⁵, as well as with other NHS libraries, whose journal holdings are listed in a print union list.

3.2.3 In designating the Norfolk Cluster of libraries as the pilot for Co-East Plus, Co-East and its stakeholder partners have built on the resource-sharing and IT capacity already in operation.

The libraries and their respective IT infrastructure are as follows:

Library	Domain	LMS (library management system)
University of East Anglia	HE	At the beginning of the project: epixtech. At the beginning of 2002, the library migrated to Ex Libris Aleph, Z39.50 compliant, and scheduled to be ISO ILL compliant by Summer 2003
City College Norwich	FE	Epixtech IPac Z39.50 and ISO ILL compliant
Norfolk Library and Information Service	PL	DS Galaxy, Z39.50 compliant summer 2002; ISO ILL compliant Spring 2003
Norfolk and Norwich University Hospital Library	Health	Currently shares catalogue with UEA

3.3 Fretwell-Downing, Technical Partner

Fretwell-Downing²⁶, a technical partner to Agora and the original DCMS/Wolfson Co-East project, has specialised in ‘non-LMS vendor specific products that are wholly standards-based.’ Its ISO/ILL-based product, VDX²⁷, is a leader in interlending middleware and is often used in conjunction with other library management systems. A newer library portal product, ZPortal²⁸, ‘fully enables the complete “Discovery to Delivery” process—searching for and identifying resources from the widest range of targets both internal and external, and then delivering those resources to the user’s desktop.’ ZPortal is integrated with a version of VDX as well as Open URL, a form of hypertext linking, to enable resource-sharing.

The Co-East Plus stakeholders took the decision in the proposal stages to work with ZPortal, because of its full functionality, and because it would

²⁵ http://www.rcseng.ac.uk/services/library/about/use_html

²⁶ <http://www.fdggroup.com/fdi/>

²⁷ <http://www.fdggroup.com/fdi/vdx/about.html>

²⁸ <http://www.fdggroup.com/fdi/ZPortal/about.html>

interface with the library vendor systems represented in the project (see chart above). Although the project would be tied to a degree to ZPortal's development schedule, work would progress using VDX until such time as ZPortal was launched.

Fretwell-Downing was also commissioned to supply the project with a costed technical specification, which would take into account the scaling up of the Cluster technical framework to the region.

3.4 Hertfordshire 'Shadow' Cluster

In addition to assigning a pilot cluster, Co-East had also designated a shadow cluster to observe, through participation on the Steering Group, the development of the access and technical framework, with the aim of building on this work during the pilot phase. The Hertfordshire shadow cluster consisted of the Hertfordshire Library service²⁹, The Open University³⁰ and the University of Hertfordshire³¹, which shares its catalogue with North Hertfordshire College; Hertfordshire Regional College; and Oaklands College.

3.5 Deliverables and Tasks

A listing of deliverables and associated tasks in support of the objectives demonstrates what has been accomplished by the close of the project year.

Deliverables	Supporting detail
Access Agreement (WP7)	Completed Access Agreement for both pilot and live service. Agreement also used in the ILL configuration phase of the Plus project. http://www.co-east.net/projects/plus/access_agreement_deliverable5.html
Costed Technical Specification (WP3)	Fretwell-Downing has submitted a costed technical specification, providing the technical framework for the project http://www.co-east.net/projects/plus/access_agreement_deliverable5.html (costings submitted under separate appendix to British Library)
Plus Demonstrator (WP 4,5)	http://www.co-east.net/projects/plus/gateway.html
<ul style="list-style-type: none"> • Cross-searching interface 	ZPortal Upgrade Oct 2002
<ul style="list-style-type: none"> • Interlending/Admin interface 	VDX installed Feb 2002
<ul style="list-style-type: none"> • ILL Configuration 	August 2002
<ul style="list-style-type: none"> • ILL Test transactions 	September 2002
<ul style="list-style-type: none"> • Access to British Library resources (zetoc) to demonstrator (WP 6) 	April 2002

²⁹ <http://www.hertsdirect.org/infoadvice/libraries/>

³⁰ <http://oulib1.open.ac.uk/>

³¹ <http://www.herts.ac.uk/lis/>

Regional Gateway (WP 6)	This deliverable amended to comprise mapping of regional initiatives and projects, liaising with regional stakeholders and forming partnerships that could lead to developing an overall strategy for a regional gateway. This work has led to Co-East working with EEMLAC to develop regional portal, Source-East http://www.co-east.net/projects/plus/regional_developments.html
Interoperability mapping	FE mapping completed July 2002; HE October 2002
Training	Training on Protocols and introduction to the ILL-admin demonstrator May 2002

3.5.1 The outcomes and deliverables were achieved within the overall time frame as laid out in the project plan, with variations occurring within the individual work package timetables. The timeframe of the project, from award to completion, presented a problem in terms of piloting and testing a new system: most of the development work would not be completed until the spring, and because of the academic calendar, piloting and testing in the late spring and summer would prove quite difficult with end of classes and holidays. Given the challenges posed by the testing of electronic interlending among different systems, more could have been accomplished within the project year had it started later.

4. Lessons and Observations on Deliverables and Tasks

4.1 Access Agreement

A completed access agreement, entitled the Norfolk Cluster Interlending Model Agreement, was submitted to and accepted by the Plus Steering Group on 28 May 2002. The Norfolk Cluster referred to existing models from the region (ANGLES, Co-East), from the UK (Riding etc), and from other countries (Australia)³². Whereas agreements such as ANGLES also included journal articles, because of the inclusion or lack of inclusion of journal titles in the respective catalogues, it was agreed that books would be the primary materials for resource-sharing. The Norfolk Cluster, Paul Harrison (NLIS), David Palmer (UEA), Steve Phillips (CCN), and Linda Berube (Co-East), developed two versions of the document: one which would cover the pilot, anticipated for Oct-March, and one which would cover a live service. Built into each document is a mandatory review correlated to a period applicable to each circumstance. A review session has been scheduled into the Plus II project plan.

³² Based on Australian Council of Libraries and Information Services ACLIS Guidelines for Collecting and Access Agreements
<http://www.nla.gov.au/aclis/colacces.html>

The Access Agreement formed the basis for the ILL configuration process in the project.

4.1.1 The major issues addressed in the agreement include:

- Monitoring of the Agreement
- Access to Interlending Services
- Material Available for Loan
- Material Generally excluded from Loan
- Net Borrowing/Net Lending
- Charging

4.1.2 The process of developing the agreement raised many issues, quite common in cross-domain partnerships, and highlighted in UCE's People Flow project³³:

- Conceptions/misconceptions about use, including the belief that students would have relatively little use for public library resources
- Strategy at variance with operation, in that there may be an agreement on paper about resource-sharing, but there would still be difficulties and perhaps resistance in practice
- Different remits dictated different concerns over use: for example, the academic libraries were particularly concerned by sharing of course-related materials
- Local resource-sharing marked a departure especially for academic institutions accustomed to using the British Library as the first option. Although not a major issue within the Norfolk Cluster, there is the feeling "why try locally when we know we can get it from the BL?"

4.1.3 The access agreement would also differ from the Co-East public library model, in that it would describe a staff-mediated service: requests from users would go directly to local library staff who would decide which lending libraries would receive the request. The Co-East public library model is working towards a totally user-/technology –driven service, where requests from users are sent directly to lending libraries. This difference in implementation, although not problematic in the short-term, would need to be examined in the development of an overall resource-sharing strategy for the region.

4.1.4 It was agreed, however, that although the technical outcomes of the project were crucial to its success, the most important outcome was establishing the co-operative local framework for resource-sharing, which could in turn be scaled to or used as a model for other institutions in the region. To that end, the access agreement, in its first version, is relatively free of prescriptions, such as for net borrowing/net lending. Instead, the Cluster has agreed to use the scheduled reviews to monitor issues as they arise, instead of implementing restrictions at the outset.

4.2 *Plus Demonstrator: Z39.50 Compliance*

³³ http://www.cie.uce.ac.uk/cirt/projects/past/people_flows.htm

A basic premise of the project was that the technical framework would be based on two protocols: Z39.50 and ISO ILL. Fretwell-Downing submitted a costed Technical Specification in autumn 2001, which was accepted by the Plus Steering group. This document not only offered a technical solution for the Plus project, but also one that would work with the Co-East public library technical framework.

The technical solution called for a virtual union catalogue using ZPortal/VDX. This software would allow for cross-searching and interlending: users would be able to initiate ILL requests from the interface, which would be mediated from the borrowing library through to the lending library. Each of the institutions was required to have a Z39.50 server in order to participate.

4.2.1 The Plus demonstrator, in its VDX 227 and ZPortal interface version, provided searching across the three library management systems: DS, epixtech, and Ex-Libris (at the beginning of the project, UEA were with epixtech, but migrated to Ex-Libris at the beginning of 2002). Included in the search results, library holdings and status are also displayed.

4.2.2 Setting up the demonstrator for cross-searching was achieved early in 2002, and required the following information to be submitted to Fretwell-Downing:

- IP address
- port number
- database name
- if known, record syntax (eg USmarc, OPAC1 etc)
- any authentication details if required
- Is the target available (a) openly to the world or (b) accessible only to specific IP addresses?

A Plus demonstrator has been made available on the Co-East Plus web page. FD licensed the software for the full duration of the project, and kindly agreed to extend it through a pilot stage ending 31 March 2003.

4.2.3 Although it is generally acknowledged that cross-searching can be easily achieved with Z39.50 compliant systems, there are still issues with interoperability within the different levels of the protocol. For instance, it was important in the project to determine not only whether the different systems were Bath Profile³⁴ compliant, but also which version of Bath Profile each system was working to. Differences in compliance quite often caused incorrect search results, or a reaction such as “I know we own that book; why isn’t it in the results list?”

4.2.4 The Plus demonstrator was initially developed using VDX 227, with an upgrade to ZPortal, based on outcomes of the Agora project, to be effected later in the project year. This upgrade was originally scheduled for summer 2002, but did not occur until October 2002, and not without some technical difficulty with integration of the work originally completed on ILL configuration:

³⁴ <http://ukoln.ac.uk/interop-focus/bath/>

ZPortal in its current format does not support VDX 227, but an alpha version of VDX. Moreover, although the Plus project was able to use VDX as the primary piece of middleware for ILL configuration and to demonstrate cross-searching, training progress was impeded, as Cluster institutions were reluctant to train staff on more interfaces than necessary. This delay, as well as lack of additional funding for branding and customisation, also prevented a formal launch of the interface within the project year. A launch is planned in the New Year, together with other regional projects.

4.2.5 Although VDX provides excellent ILL functionality, it does not offer the enhanced cross-searching functionality and usability of ZPortal. Feedback from staff in the early stages of the pilot phase have revealed an enthusiastic response to ZPortal for searching, whereas there have been some problems with the usability of VDX. Co-East will continue to work with Fretwell-Downing on a solution that can take advantage of the strengths of both types of middleware.

4.2.6 Additional delays to achieving full cross-searching interoperability can be attributed to the following:

- Norfolk Library and Information Service (NLIS) did not have a fully configured Z39.50 server until summer 2002. That Norfolk was waiting on a server was acknowledged at the beginning of the project, but local issues meant that the server was available to the project later than expected.
- Firewall and security, although minor impediments, were issues for NLIS and CCN. This problem is not uncommon for public libraries working towards electronic resource-sharing, and is in fact an on-going issue for Co-East. It is to be expected that FE colleges might face the same problems. The issue is not just technical; there can be a degree of suspicion on the part of IT departments (usually separate departments from the libraries, and increasingly outside contractors) and staff, as well as communication problems between staff and suppliers.
- In the course of the project, the University of East Anglia migrated library management systems, leaving a problem with accessing N&N's holdings through the Plus demonstrator.
- That both ZPortal and VDX are only compatible with IE 5.5+ may prove a problem with such institutions as CCN, where decisions to upgrade software and systems are made centrally and adhere to a specified schedule.
- The Norfolk institutions without a local ILL/ISO compliant system will need to look at how VDX can work with their local cross-searching portals. This consideration may apply specifically to UEA, currently using MetaLib/SFX.
- A frequently occurring problem, and one often common to the way the protocol operates, is the failure to notify the user if one of the libraries' systems has gone down. A search would be conducted, and it would appear that a particular library did not own a title, when in fact that library was having server problems that prevented a search of its

catalogue. There appeared to be no satisfactory solution to this problem.

- There was a consistent problem with how bibliographic detail from the different catalogues filled the interface records. For instance, records from CCN's catalogue initially appeared to have no ISBNs; upon closer examination of the ZPortal or VDX record, the ISBNs were found in different field. This problem has been replicated in Co-East Cambridgeshire (using, as does CCN, epixtech LMS)/Essex(using VDX) transactions, and has been attributed to Dynix not mapping attributes to correct fields. This problem with mapping is not uncommon in Z39.50 searching.
- The project did not deal in any significant way with branding of the cross-searching portal, partially because interface design was not included in the budget, but also because it was felt that it was an issue for Co-East itself to address.

4.2.7 As a basis for cross-searching, the Z39.50 protocol has been shown to be less effective with the addition of more institutions and resources. This issue will have to be evaluated against the scaling of the Plus technical framework to the region.

4.3 *Plus Demonstrator: ISO-ILL Configuration*

It was acknowledged within the project that ILL configuration would be a more complicated process, for various reasons, including the test transactions among the various systems and relative inexperience of most of the project and cluster team with what would be required.

4.3.1 In addition to using information from the access agreement, the libraries were required to submit the following details:

- Information related to location (central and branch libraries; type; address/contact details etc)
- Interloan status (Responder and Requester; Responder Only; Requester Only; Not an ILL Participant)
- Individual institutions rota preferences (i.e., order by which transactions would be sent).
- Loan periods
- Rotas (if multiple libraries own, which library would receive the request first; which would be the last library? The list varied among the institutions).
- User alerts/notifications: VDX comes with some standard user messages, but there is also scope for customization.

4.3.2 There was considerable testing in the form of sending ILL transactions between the institutions in September 2002. This part of the project will undergo more rigorous testing and evaluation during the pilot phase beginning in November.

4.4 Training

Of primary importance in training for this project year was the orientation of the respective library staffs to the protocols, and then to the cross-search and ILL software.

4.4.1 In the training session, conducted by Fretwell-Downing, staff were introduced to the Z39.50 and ISO ILL protocols, as well as:

- The internet:
How are services to be delivered?
What are the barriers to uptake?
- Metadata:
Why is it important?
Metadata semantics & syntax
Dublin Core
- XML and HTML - practical examples
Metadata creation & harvesting
Publishing and presentation
- Distributed Search & Retrieval - theory
Z39.50 basics
Bibliographic search & retrieval
Cross-domain issues
- Z39.50 in Action - practical
using the 'yaz' command line client
Bath Profile
- ILL/ Resource Sharing - theory
SO 10161
NCIP
distributed authentication - LDAP, SIP, etc
- ILL in Action - practical
using an ISO10161 based ILL system
requester and responder roles

4.4.2 Particular care must be taken in devising a training programme that will cut down on the confusion and attending frustration caused by introduction to new systems. The respective staffs of the institutions were relatively inexperienced with electronic ILL in particular, and did not initially respond well to using the VDX interface (responses to ZPortal, to which they were introduced later on were much more favourable). Moreover, some of the more conceptual parts of the programme, such as metadata, caused a great deal of confusion. The more the staff were able to work with the protocols in a hands-on way, the less confusion they felt.

4.4.3 Training was not provided on ZPortal until November 2002, after the close of the first project year, as the upgrade to ZPortal was not accomplished until October 2002. The delay in the upgrade precluded additional training and branding within the project year, as it was thought preferable to complete that work with the software originally specified by the project.

4.5 Regional Interoperability Mapping

An important part of the project was to determine the extent to which other institutions in the region could participate in a regional technical framework. In order to gauge the level of uptake, and at the same time disseminate information about the Co-East Plus project across the region, a regional mapping exercise was conducted over a one-month period in June 2002.

4.5.1 The mapping exercise was set the following specific aims:

- Ascertain systems used in colleges and universities in the region
- Ascertain Z39.50 and ILL-ISO compliance of the systems
- Discover whether libraries had purchased the appropriate servers for compliance
- Learn about existing local resource-sharing partnerships
- Discover whether libraries were interested in forming partnerships at the local level.

4.5.2 In order to arrive at a complete picture of interoperability readiness in the region, Co-East is still pursuing the collection of data, especially from HE libraries (at the time of the exercise, a number of libraries were planning for or in the process of migrating to new LMS). Even so, the information collected so far allows for some conclusions regarding how much work would be needed to build a regional network, although these observations may currently tell us more about the state of FE interoperability than HE (due to the delay in response from these libraries):

- A majority of the libraries returning surveys are not equipped to participate in a regional resource discovery/sharing network. Even if those unreturned have either Z39.50 or ISO capability, there would still be a significant number unable to participate
- There is a significant problem related to readiness based on availability of upgrades to existing systems (Heritage for example), although most of the suppliers appear to be in the process of developing interoperable modules. But this development, especially with ISO/ILL systems, is often subject to delays, as stand-alone products as well as those fully integrated with LMS. In addition, where upgrades may be available, some libraries have chosen not to purchase them
- There are well-established, working local partnerships based on shared catalogues and reciprocal borrowing. Some of these partnerships exist with institutions or authorities outside the region, such as the M25 consortium. In these cases, libraries often are committed more to improving on these partnerships, than developing new ones.

- Still, quite a few libraries, especially FE, are left without effective local partnerships.
- Although most institutions expressed a desire to form additional partnerships, responses were generally reserved, often giving concerns about stock availability as a major issue.

4.6 Sustainability

At least two draft costings have been submitted to the Steering Group, and a number of discussions have taken place between representatives of the project and Robin Murray and his staff at Fretwell-Downing. Significant issues have been identified which bear not only on the application of the Plus technical framework as a model for the region, but also on the ability of institutions with disparate resources and budgets to network and resource-share successfully. These issues include:

- Size of collections and the demand on resources from outside v. demand from within
- Interlending traffic—how much an institution allows for its own users; how much it restricts outside users (in other words does it make sense to pay for interlending software when interlending figures are low?)
- Value for money/Cost—how much expenditure can smaller institutions justify for cross-search/interlending capability?
- How can a pricing model offer value for money for such disparate institutions?

4.6.1 Costings of technical framework

In the final costings for buying into a regional network, Fretwell-Downing has offered a packaged selection of options, which includes purchasing one or a combination of the following:

- Broadcast searching (Package 1)
- Broadcast searching and interlending (2)
- Packages 1-2, and localised branding of services
- Packages 1-3, and end-user personalisation and authentication
- Packages 1-4, and open citation/hyperlinking
- Packages 1-5, full ZPortal/VDX implementation, for a fully functioning local shared portal.

4.6.2 Co-East and Plus project stakeholders will continue to work with Fretwell-Downing to achieve a pricing model that will allow as many different types of institutions, across sectors as well as domains, to buy in a regional network based on the Plus technical framework. Co-East intends to use this model as a basis for calculating services and associate memberships.

4.7 *British Library Resources*

Originally, the Co-East Plus proposal called for the inclusion of the British Library's product, Inside³⁵, as part of the Plus demonstrator (Co-East had been conducting a trial roll-out of the service in certain authorities concurrent with the Plus project). After discussions with British Library representatives, it was felt that a related product, zetoc³⁶, developed for HE and FE institutions (NHS institutions also have access), would be more complementary to the Plus model, as it was Z39.50 compliant. Although there were certain licensing issues with MIMAS and JISC, an agreement was achieved in which zetoc could be used, not only for the duration of the Plus project, but also for the pilot (completion date: 31 March 2003). Access to zetoc has been provided since spring 2002.

4.7.1 The Co-East model of searching across a variety of different sources with one interface is built on usability standards and user behaviour³⁷. Public library users especially are neither conversant with different interfaces and search protocols, nor do they have the patience for them. They are also not likely to consider the British Library as a source of information. For the Plus project, it was important to offer British Library resources to public library users together with search results from library catalogues. In the creation of a one-stop shop interface of cross-domain resources, inclusion of British Library resources demonstrates to public library users how pertinent these resources can be to their information requirements.

4.8 *Regional Gateway*

Early on, it was acknowledged that the project could not be developed without consideration of the changing regional landscape. Beside documenting and tracking the technical capacity in the region's libraries, the project team and stakeholders had to be aware of the regional content creation across the sectors. In addition, the Plus project should be integrated with a potential portal and IT strategy for the region as developed by EEMLAC. So, although a regional gateway was included in the original project proposal, much had happened in content development in the region that necessitated reviewing and amending this outcome.

4.8.1 The initial work package for the gateway was reworked during the course of the project and the deliverables adjusted to meet changing circumstances, without prejudicing the original objectives of the project.

The following actions have been undertaken to achieve these goals:

- Development of the project website, including results from the mapping of regional projects and initiatives
- Conducting a Mapping the Region meeting with representatives from other regional bodies such as EEDA, East of England Broadband

³⁵ <http://www.bl.uk/services/current/inside.html>

³⁶ <http://zetoc.mimas.ac.uk/>

³⁷ <http://www.useit.com/alertbox/20000109.html>

<http://www.useit.com/alertbox/9707b.html>

Consortium, Institute of Public Health, EEMLAC. This body has developed a list of technical and content issues common to all the sectors, and which can form the basis of an IT strategy for the region.

- Working with EEDA to develop a Co-East Plus page to its portal site (this work to take place in October)
- Meeting with representatives from EEMLAC to discuss Co-East participation in regional portal development
- Consultation with regional stakeholders on a technical framework and ICT strategy
- Partnership with EEMLAC in the continued development of its regional portal, Source-East.³⁸

4.8.2As with the pricing, uptake, and interoperability of systems, this work is considered on-going and is dependent on regional developments outside of the project. However, the mapping and consultation exercise has provided a better understanding of the region's technical capacity and content development.

5. Dissemination and Uptake

5.1 Co-East has pursued an active dissemination programme from the outset of the project, from the local to regional and national level. Dissemination activities have been targeted more specifically at potential for uptake in the region, not only across the library domains, but also the cultural sectors. This regional focus was of primary importance because the size and relative recent designation as a region have meant that there is not an awareness of regional initiatives and the impact and value they may add to local services. The Co-East Plus project, in essence, has been used as a catalyst for region-wide discussions and partnerships, promoting the development of a strategy and framework for a resource-discovery and –sharing network (see appendix for complete list of publications and presentations).

5.2 In addition to papers and presentations, the project officer has kept project stakeholders up to date with quarterly reports. In addition, regular reports have been submitted to the Co-East Board and Technical working group, comprised of representatives from all 10 library authorities, and in the case of the Technical Group, representatives from LMS suppliers DS, epixtech, and GEAC. In this way, transferable lessons from the project were immediately fed into Co-East's public library framework. Co-East has also produced a quarterly newsletter that includes updates on the project; this newsletter is not only distributed to Co-East partners, but has also been distributed at talks presented to other LIS groups around the country, and has been added to the Co-East website. There has also been presentations made to specific authorities within Co-East, for instance in Norfolk and Cambridgeshire.

³⁸ <http://www.source-east.org>

5.3 Regional cross-domain dissemination has included two presentations to the Association of Colleges Eastern Region, and working with them in partnership during the interoperability mapping exercise, contacting libraries, distributing information about Co-East Plus as well as the questionnaires, and feeding back to colleges across the region. This partnership will continue, not only in pursuit of building a regional network, but also in the areas of electronic procurement level.

5.4 The interoperability exercise has also aided in dissemination to the HE community in the region. As there are seven universities and at least four are involved with Plus project activities (UEA, University of Hertfordshire, Open University, Anglia Polytechnic University), the project team have been able to conduct one-to-one interviews, discussing Co-East, Plus, and the development of a regional technical framework.

5.5 Co-East has also developed a Plus web site with access to important documentation, results of regional mapping, and links to the Plus demonstrator.³⁹

6. Evaluation and Transferable lessons

6.1 Although the Plus project has built upon considerable and existing projects and services featuring interoperability of systems and access agreement, it has had relatively few models in trying to apply these components to cross-domain electronic resource-sharing. A majority of the examples of cross-domain access agreements deal solely with reciprocal lending, and therefore do not have to take into account the introduction of new systems and procedures not only to users, but also to staff. So, the primary lessons from Plus and its inherent value to its stakeholders have been

- The building of resource-sharing partnerships
- The understanding of how the Plus work fits in with regional developments overall
- The education, especially for staff, in how the protocols and the related systems work
- A consideration of how this new service can or should be integrated into local interlending procedures
- Raising the security and technical issues of interoperability with the IT departments of the local institutions, specifically the FE and public library institution.

6.2 This last lesson cannot be underscored enough. While the HE partner, UEA, was representative of the advanced level of understanding and experience with delivering this type of service, NLIS and CCN staff, including the institution or authority IT departments, were still relatively new to the requirements of interoperable systems.

³⁹ <http://www.co-east.net/projects/plus/>

6.3 The difficulties surrounding this work provoked a real frustration: for the more experienced partner who perceived the progress as being slow, and for the less experienced partners who needed more time to work through the requirements (firewall, configuration, etc), especially when it involved working with departments outside of the library. There was a sense among these partners of “we had no idea the work that would be involved.”

6.4 By extension, there is still a lack of clarity with how the Fretwell-Downing middleware can be made to work smoothly with local systems, as well as how systems which do not rely on the middleware can interoperate with those which do. It has been acknowledged by the Norfolk partners that they would eventually rely upon their own systems, and that this particular technical framework would be more pertinent to smaller institutions looking to buy into a regional network.

6.5 How these smaller institutions buy into the network has been an ongoing issue for the project, as well as what Co-East’s role is in widening its membership and costing maintenance. Fretwell-Downing has produced a few costing models, allowing smaller institutions to buy in a different levels of operation, but until there is more of a certainty regarding uptake in the region, it would be difficult to confirm pricing. However, the process of trying to accommodate disparate institutions in a competitive pricing structure can, indeed, stand as a transferable lesson in itself.

7. Co-East Plus and the Future for Regional Networking

7.1 Plus is promoting and developing electronic resource-sharing systems integrated with local library management systems, not independent of them. The transferability of the lessons arising from this process has been immediate regionally, in that they have made an impact on the Co-East framework and its future. In the light of Plus findings, Co-East itself will evaluate its regional framework, and look at adapting the technical solution offered by the Plus project to the current Co-East public library framework. This evaluation will have two objectives:

- Co-East will working increasingly in partnership with EEMLAC to develop services for the region, and has submitted a proposal for funding a regional network that would support Plus and other regional initiatives and programmes. This proposal is a direct result of the lessons of the Plus project, in that it takes into consideration the use of portal solutions and meta-servers to build a more robust and efficient network for a range of institutions.
- Co-East will develop a plan for widening its remit to include libraries across the domains. A Task group has been set up to identify the issues involved and recommendations to the Co-East board. The pricing structure developed by Fretwell-Downing will be used as a basis for constructing membership subscriptions.

7.2 Co-East, in conjunction with Plus stakeholder partners, will be conducting a pilot of Plus in Norfolk from November to 31 March. ILL configuration has been completed and training of the respective staffs is underway

7.2.1 In its pilot phase Plus will have to address

- Staff training and work load
- Staff acclimatisation to a different lending culture; in other words, Does local resource sharing through virtual catalogues provide an alternative to British Library? Or, will a more integrated approach offer more value to users?
- The robustness of the technology
- The responsiveness and responsibility of a managed service
- The functionality of the access agreement

7.2.2 The outcomes of the pilot together with the outcomes of the evaluation of the Co-East technical framework will feed into the Co-East Business Plan, which will serve to underpin a regional ICT strategy. This ICT strategy is one of the challenges facing the new regional agency, and the lessons from the Co-East Plus project, with the development it has engendered, has identified the issues and work yet to be done.

8. Appendices

Costings of Technical Framework

Publications, Presentations list

Project Budget