

LondonMet EII Project

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at Chester Zoo
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So what's the problem anyway?

- information is not seen as a corporate asset
- information is frequently inaccessible
- information is not discoverable
- information is often incomplete
- information is sometimes out-of-date
- information is often duplicated but not synchronised
- information is poorly managed
- post merger, these issues have generally been exacerbated

What is EII?

- EII is Enterprise Information Integration
- EII is **not** Enterprise Application Integration
- has no connection with EIEIO (a farming-related acronym)
- EII is a relatively new paradigm, but maturing rapidly
- some definitions:

An integration technology that pulls and combines data from multiple systems “real time”, without storing it on a disk (“on the fly” transformation), creating a “virtual” data warehouse; eliminating the need to store or move data. [Informatica.com]

EII accepts the premise that enterprises have a variety of information sources and information types, distributed geographically, and owned by different parts of the enterprise. A basic tenet of EII is that information should be able to integrate regardless of its native physical storage characteristics. [MetaMatrix.com]

How EII will solve the problem

- persuade stake-holders that the information they 'control' should be seen as a valued asset, owned by the University
- gradually model the information 'owned' by departments to form a coherent view of the University's information assets
- extend the information model with the association of business meta-data
- introduce a centralised system of governance of policy relating to information management
- begin to resolve information quality issues
- allow model-driven development of services

The LondonMet EII project

- Ambitious project to radically improve our management of information (near end of first year of 5 year roadmap)
 - start-up
 - document scanning
 - functional modelling & 'virtual-database' development
 - service oriented architecture (SOA)
 - business modelling (meta-data)
 - application development (prototype staff portal)
 - business intelligence (BI)
 - policy governance

LondonMet EII project (start-up)

- so far:
 - selected *MetaMatrix* as candidate EII solution
 - identified skills shortfall
 - employed consultants from *Intelligent Solutions* to develop the 5 year roadmap
 - employed consultants to produce a proof-of-concept demonstration of modelling & BI, using *MetaMatrix* and *Business Objects*
 - used demo to secure senior management support & significant (internal) funding - purchased *MetaMatrix* and *Business Objects*
 - created project team with existing staff, trained to use *MetaMatrix*, and recruited staff to 'back-fill' project team
 - recruited professional information modeller
- next:
 - show a fuller demonstration to the board of governors for them to approve continuation of the project and further funding

LondonMet EII project (scanning)

- so far:
 - selected *Livelink* to act as document repository
 - created simple classification scheme in *Livelink* for testing & development
 - secured support from academic registry and finance departments
 - scanned sample (real) documents into *Livelink* for testing & development
 - met with a Manchester University team who have a similar scanning project
 - costed scanning hardware & software
- next:
 - identify meta-data requirements
 - design business classification scheme for scanned documents
 - establish a scanning 'bureau' close to each student support/enrolment centre
 - employ temp staff to scan thousands of documents

LondonMet EII project (functional model)

- so far:
 - created models of the following (some models are cross-system):
 - student records system (*SITS*)
 - finance system (*eFinancials*)
 - knowledge/document management system (*Livelink*)
 - room-bookings & time-tabling system (*CMIS*)
 - gate-access security system (*PAT*)
- next:
 - create models of the following:
 - human resources system (*SAP*)
 - library system (*Millennium*)
 - content management system (*Shado*)
 - other smaller data-stores / network file-systems (shared drives etc.)?
 - email system?

LondonMet EII project (*MetaMatrix*)

MetaBase Modeler - svSTU_COURSE.xml - MetaMatrix MetaBase Modeler

File Edit Refactor Navigate Search Project Metadata Run Window Help

Model Explorer

- svSTU_AWARD.xml
- svSTU_CLEARANCE.xml
- svSTU_COMP_RES.xml
- svSTU_COURSE.xml
 - import declaration
 - Package Diagram
 - STU_COURSE
- svSTU_ENROL.xml

svSTU_COURSE.xml

<<Base Table>>
STU_COURSE
STU_COURSE

- STU_CRS_ID : string(12)
- STUDENT_ID : string(12)
- MOA : string(6)
- CRS_STARTD : timestamp
- CRS_ENDD : timestamp
- CRS_STATUS : string(6)
- CRS_CODE : string(12)
- CRS_TITLE : string(50)
- RCU_CODE : string(12)
- PAA_CODE : string(12)
- UGPG_CENTRE : string(12)
- PAA_NAME : string(15)
- LEAVING_REASON : string(50)
- RCU_NAME : string(250)

PRC_HAT3 : string
PRC_ITEL : string
PRC_IFAX : string
PRC_EMAD : string
PRC_HAFN : string
PRC_HAEM : string
PRC_MAXS : string
PRC_MITK : big
PRC_LSRC : string
PRC_P5WD : string
PRC_STUC : string
PRC_LDF1 : string
PRC_LDF2 : string
PRC_LDF3 : string
PRC_LDF4 : string
PRC_LDF5 : string
PRC_LDF6 : string
PRC_LDF7 : string
PRC_LDF8 : string
PRC_LDF9 : string
PRC_FARC : string
PRC_ADID : string
PRC_FXTD : string

Diagram Table Editor

Properties

Property	Value
creator	Registry
definitiveS...	SITS.SRS_S...
mandatory	mandatory
rightsHolder	Registry
Info	
Name	CRS_CODE
Name In S...	
Searchability	SEARCHABLE
Selectable	true
Updateable	true
Type	
Datatype	string

Problems (0 items)

✓	!	Description
---	---	-------------

Message Log MetaBase Console MetaBase Status Problems

Column: svSTU_COURSE/STU_COURSE/CRS_CODE : string(12) Writable

LondonMet EII project (SOA)

- so far:
 - decided not to be too ambitious initially
 - separated service functionality from application functionality
 - developed a framework for core services such as logging, security, caching
 - developed some read-only services based on ReST principles, which query the EII models and respond with XML
 - developed simple webapps and portlets which demonstrate the consumption of these services
- next:
 - create more services - adopt model-driven development approach
 - create services which can write information as well as read
 - probably introduce SOAP services to do this
 - extend core services such as logging, audit trails, caching, service discovery, service orchestration, business rules management etc.

LondonMet EII project (service example)

Mozilla Firefox

<http://loki.unl.ac.uk:8080/eiiServicesStudentInfo/studentRecords?func=getStudentSecurityInfo&studentId=00008773>

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
- <eiiQueryResults>
  <eiiQueryResultsMetaData recordCount="1" queryDuration="0" errorState="false"/>
  - <eiiQueryResultsData>
    - <record>
      <lastSuccessfulGateAccess>09/03/2005 10:07</lastSuccessfulGateAccess>
      <lastFailedGateAccess/>
      <lastSuccessfulGateAccessLocation>NA</lastSuccessfulGateAccessLocation>
      <lastFailedGateAccessLocation/>
      - <exclusions>
        <message feeType="Home Fees" effectiveDate="11th May 2005" type="Excluded"/>
        <message feeType="Accommodation Fees" effectiveDate="27th April 2005" type="Excluded"/>
        <message feeType="Overseas Fees" effectiveDate="27th April 2005" type="Excluded"/>
      </exclusions>
    </record>
  </eiiQueryResultsData>
</eiiQueryResults>
```

Done

LondonMet EII project (business model)

- so far:
 - proven we can extend the functional models in MetaMatrix to accommodate a business meta-data model of our own devising
 - begun to explore how we can make the meta-data available to staff as a catalogue or 'information atlas'
 - begun to evaluate approaches to business classification
 - designed logical framework to handle user entitlements governing access to information
- next:
 - create an approved business meta-data model
 - create a catalogue of information, showing sources, governance, services provided to access the information etc.
 - start to use this to address information quality issues
 - use this to formalise model-driven development of services
 - create framework of user-roles to manage user entitlements

LondonMet EII project (app development)

- so far:
 - created a prototype staff portal to demonstrate capability
 - portlets are light-weight GUIs and aggregate the EII query services in the SOA
- next:
 - create specific standalone web-applications, based on the EII services, to cater for immediate requirements
 - create a real staff portal, based on user-requirements and officially sanctioned rules governing information access
 - create an interactive version of the business meta-data catalogue

Portal screenshot 1

London Metropolitan Staff Portal

http://loki.unl.ac.uk:8080/uPortal/portlet-par

Getting Started Latest Headlines Portals

London Met Staff Portal Home | Logout
Welcome Paul Walk

HOME PERSONAL RESOURCE DISCOVERY DIRECTORY STUDENT INFO STAFF INFO QUICKREF ABOUT ADMIN

Student Info

NEW SEARCH IDENTITY SECURITY CONTACT TIMETABLE FINANCE ACADEMIC

Student Record

	StudentID: 90808691	Name: Paul WALK
	Library ID: 08086915	Domicile: England
	DOB: 27/04/1968	Sex: Male

powered by uPortal 2.4.2

Done

Portal screenshot 2

London Metropolitan Staff Portal

Getting Started Latest Headlines Portals

London Met Staff Portal Home | Logout Welcome Paul Walk

HOME PERSONAL RESOURCE DISCOVERY DIRECTORY STUDENT INFO STAFF INFO QUICKREF ABOUT ADMIN

Student Info

NEW SEARCH IDENTITY SECURITY CONTACT TIMETABLE FINANCE ACADEMIC

StudentID: 90808691 Name: Paul WALK DOB: 27/04/1968 Sex: Male

Course Records [3 records]

Course	Route	Status	Start	End	Centre	PAA	Leaving Reason	Details
PG Dip Computing	Computing Postgraduate Scheme of Study	L	19/09/1995	29/07/1999			Withdrawn by the University	Enrolment Records Module Registrations Module Results
Humanities Undergraduate Degree Scheme	English	G	28/09/1990	24/06/1993			Completed Course Successfully	Enrolment Records Module Registrations Module Results
Computing Postgraduate Scheme of Study	Computing Postgraduate Scheme of Study	G	19/09/1996	27/02/1998			Completed Course Successfully	Enrolment Records Module Registrations Module Results

powered by uPortal 2.4.2

Done

Portal screenshot 3

London Metropolitan Staff Portal

Getting Started Latest Headlines Portals

London Met Staff Portal

HOME PERSONAL RESOURCE DISCOVERY DIRECTORY STUDENT INFO STAFF INFO QUICKREF

Student Info

NEW SEARCH IDENTITY SE

StudentID: [REDACTED]

Enrolment Records for 990

Ac Year	Year	Status	Enrol
2000/1	2	PR	Prosp
1999/0	2	E2	Enroll

Documents Related to Enrolment

Document Name
Credit Transfer 2.PDF
Direct Application 3.PDF
Personal Record Form 3.PDF
Direct Application 1.PDF
Direct Application 4.PDF

Done



University of North London

Direct Application Form

(for Postgraduate, Professional, Undergraduate Part-Time and Distance Learning Courses only)

Please complete this application form in BLOCK CAPITALS and in black ink

1. Personal Details

Title: Mr/Ms/Miss/Mrs etc: **MR**

Surname/Family Name: [REDACTED]

First Name(s): [REDACTED]

Correspondence Address:
**22 KINGSHILL
BRANDON STREET
ELEPHANT & CASTLE**

Postcode: **SE17 1UQ**

Telephone Number: (including STD Code):
Day: [REDACTED] Evening: [REDACTED]

Fax Number:

Email:

Home Address (if different):

3. Fee Status

Application No. (Office Use Only)

(i) Country of Birth: **BRIT**

(ii) Nationality (as on Passport): **BRITISH**

(iii) Have you ever lived outside (or were born outside) the EU?
Yes No

(iv) Applicants not born in the EU answer the following:

(a) Last date of entry to the EU excluding holidays?
Date:

(b) Have you applied for Refugee or Asylum status?
Yes No

(c) Have you been granted indefinite leave to remain in the UK?
Yes No
Date Permanent Residence granted:

(d) Is your stay in the UK for education purposes, ie. a student visa?
Yes No

4. Payment of Fees

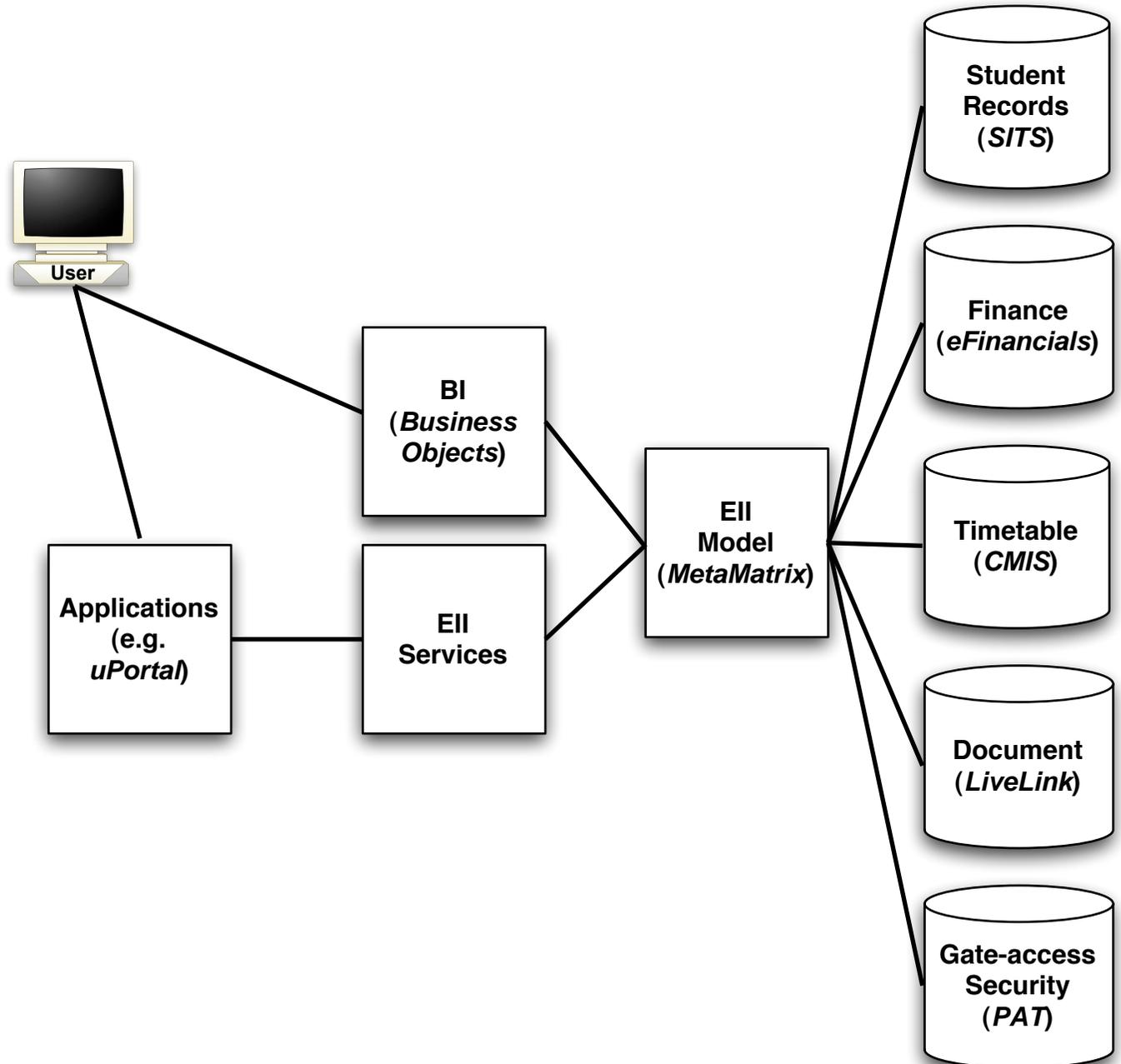
LondonMet EII project (BI)

- so far:
 - recently acquired *Business Objects*
 - demonstrated that *Business Objects* can utilise *MetaMatrix* models
 - identified some pressing BI requirements - e.g. discovering patterns of information which are related to student-retention
- next:
 - enhance existing management reporting services with this new approach

LondonMet EII project (governance)

- so far:
 - demonstrated prototype staff portal to senior management team
 - received acknowledgement from senior management team that EII requires policy decisions in terms of priority of service development and control of sourcing of, and access, to information
 - senior management team have formed two committees to address these issues
- next:
 - provide the necessary framework to allow the two senior committees to function - e.g. information catalogue, framework of user roles etc.
 - apply governance decisions to model development

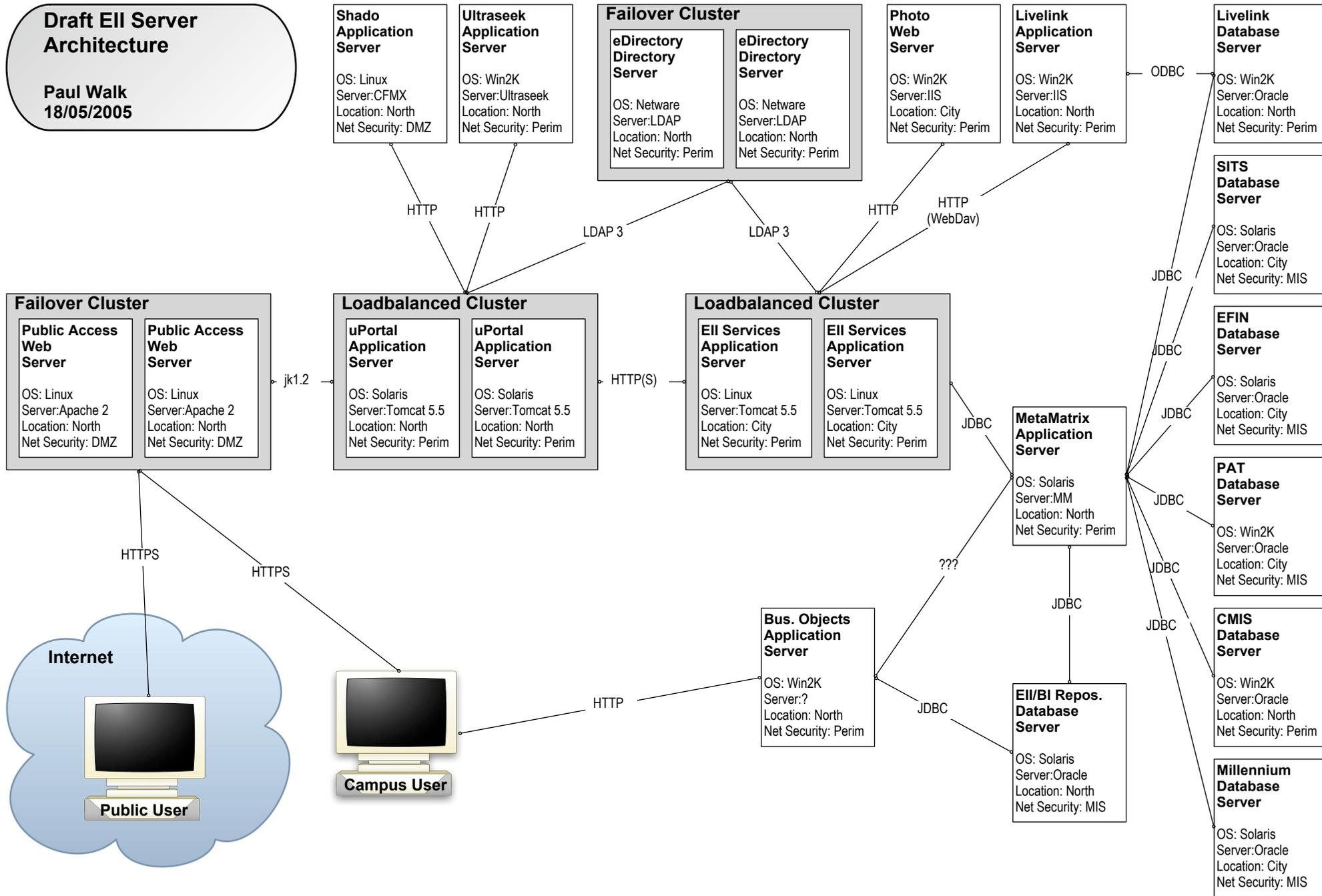
LondonMet EII project (architecture)



LondonMet EII project (servers)

Draft EII Server Architecture

Paul Walk
18/05/2005



Some outstanding issues

- security - need to convince network security manager that we are not compromising systems
- performance - distributed architecture places greater load on network
- no eLearning aspect to project - we are campaigning to get this onto the agenda
- no access to HR system yet - may prove to be difficult for political reasons
- portal cannot go live until all stake-holders are satisfied - likely to release functionality in standalone applications until we have a critical mass of approved content for a viable portal.