



# NHS/HE Interconnectivity

## Some Background

**ICT for Education & Research**  
**Connecting Higher Education & HPSS Networks**

23<sup>rd</sup> October 2006, Lisburn

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# NHS-HE Connectivity Project

- Objective:

**”To achieve good inter-operability between NHS and Higher Education (HE) networks that enable secure anytime, anywhere access by medical, nursing and allied profession students, clinical teachers and researchers”**

- [www.nhs-he.org.uk](http://www.nhs-he.org.uk)
- NHS-HE Co-ordinator post jointly funded between JISC and the NHS for three years
- Post based at UKERNA but also part of NHS



# Overview

- **NHS-HE Forum**
- **Approaches to Connectivity**
- **Survey results**
- **N3 JANET Gateway**
- **Danish Health Network**
- **Other NHS-HE Forum Topics**



# NHS-HE Forum

- Created in 2001, Prof Roland Rosner, UCL
- Met twice a year since then
- Trying to work together in partnership to make life easier and more effective without compromising NHS security requirements
- Covers “Access to Content” issues, such as joint procurement of e-journals, as well as network connectivity



# Connectivity: Already agreed/implemented

- Authenticated browser access
- NHS to HE access through firewalls
  - Eg. Kings College Hospital, Plymouth, Birmingham
- Andrew Cormack paper (see [www.nhs-he.org](http://www.nhs-he.org))
- Three-tier client/server model - “thin client” eg using Citrix MetaFrame<sup>®</sup>
- Virtual Private Networks (VPNs)

Citrix MetaFrame is a registered trademark or trademark of Citrix Systems, Inc in the United States and other jurisdictions



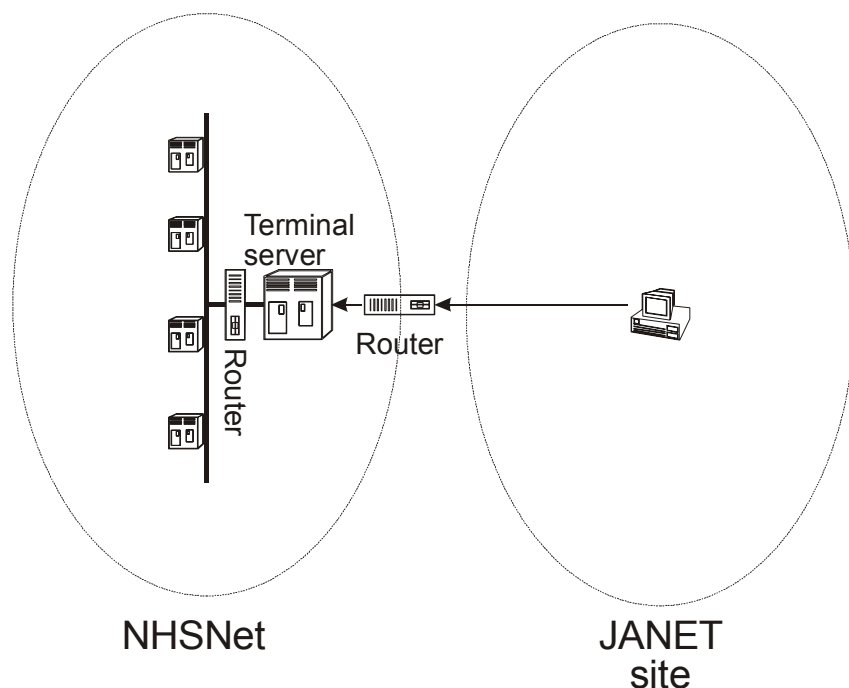
# “Cormack” Architecture

Internet/JANET

- Three tier model

(from Cormack 2002)

- Terminal Server with two interfaces on Trust network
- Firewall / router separating the University and Trust networks



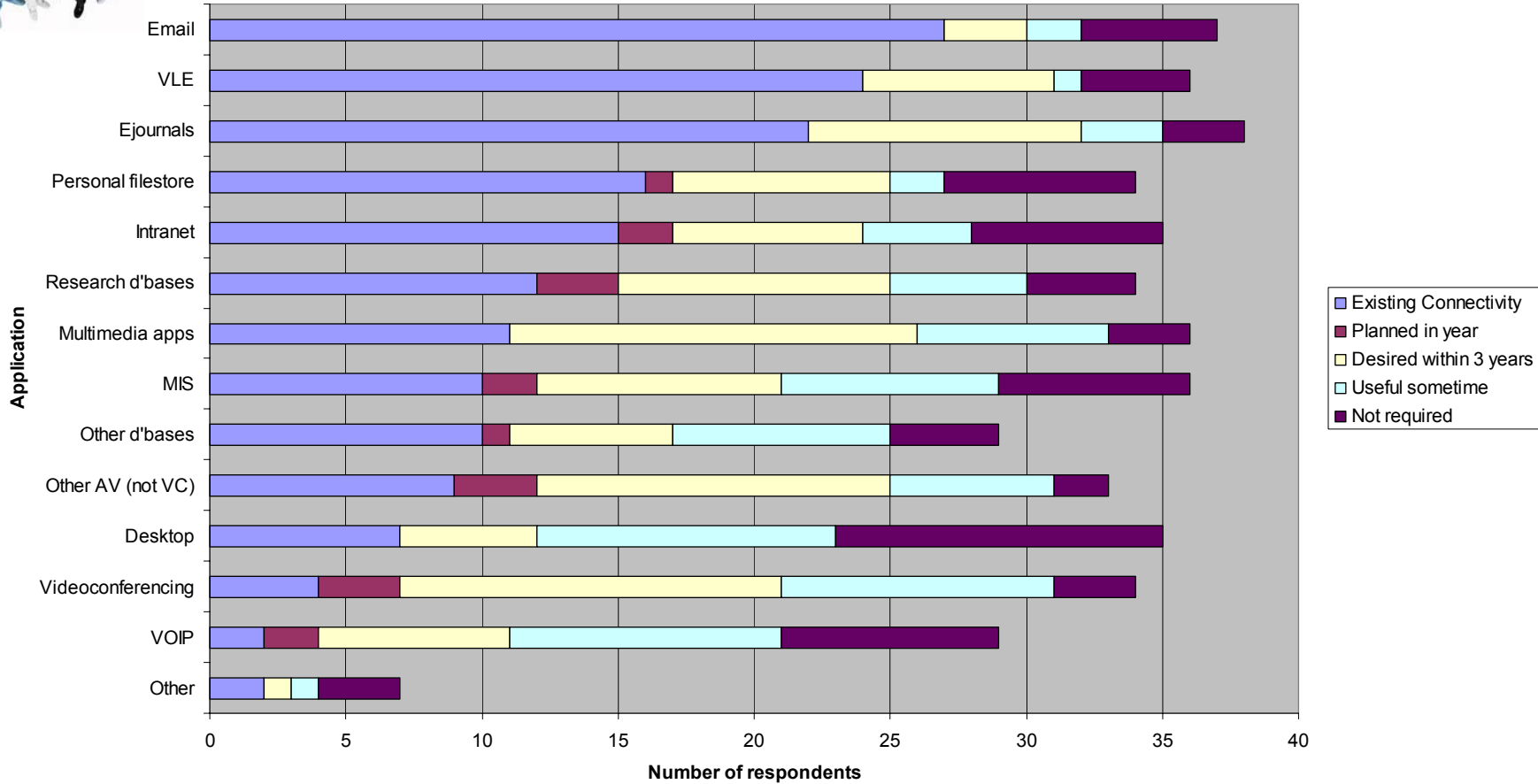
# NHS-HE Connectivity Survey

- Web-based survey tool
- Jan – April 06, via University contacts
- 41 full or part responses out of 99
- England 32 (from 77)
- Scotland 6 (from 14)
- Wales 2 (from 6)
- Northern Ireland 1 (from 2)
- Range of different types of institution



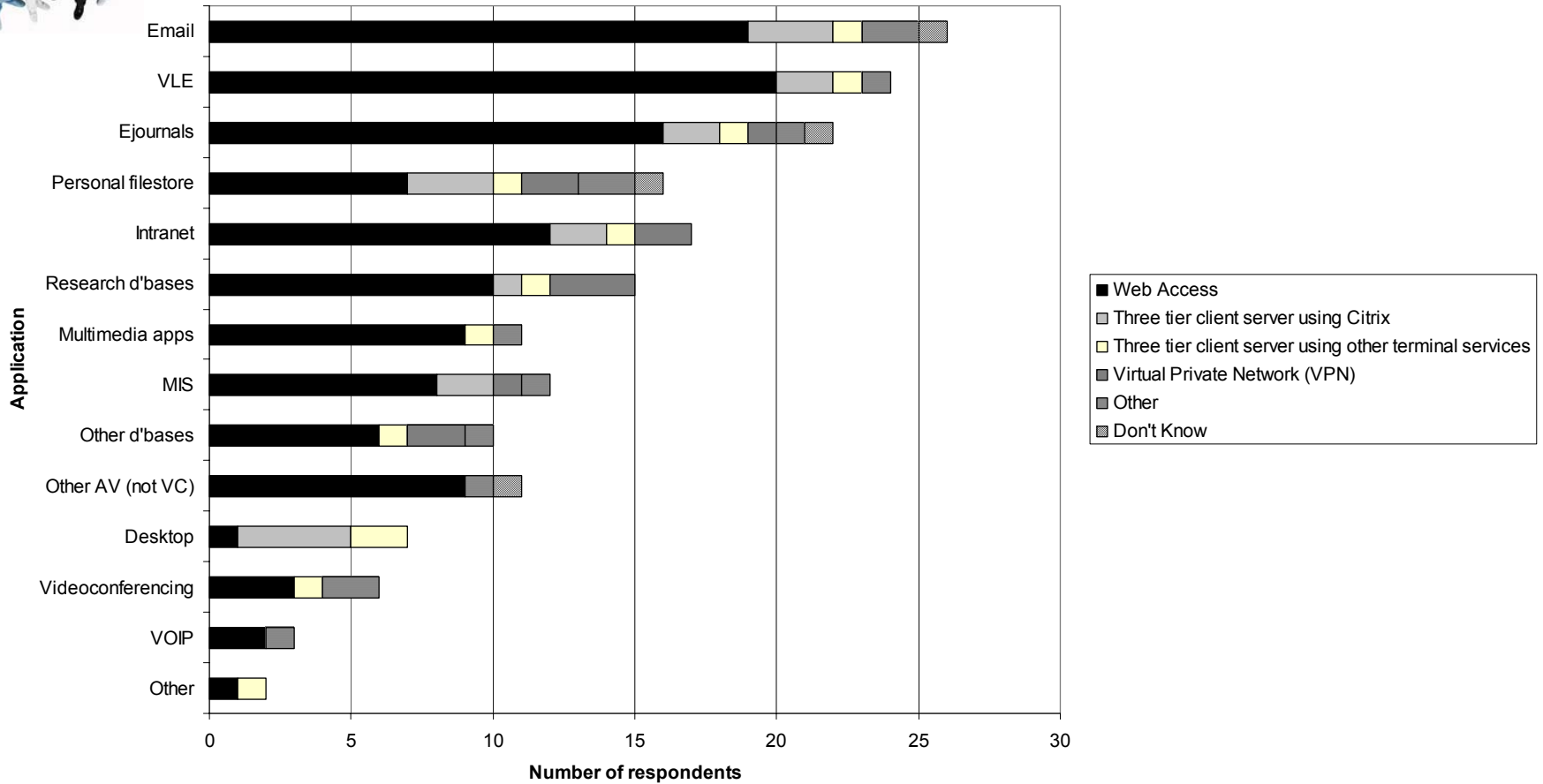


### University Applications from the NHS



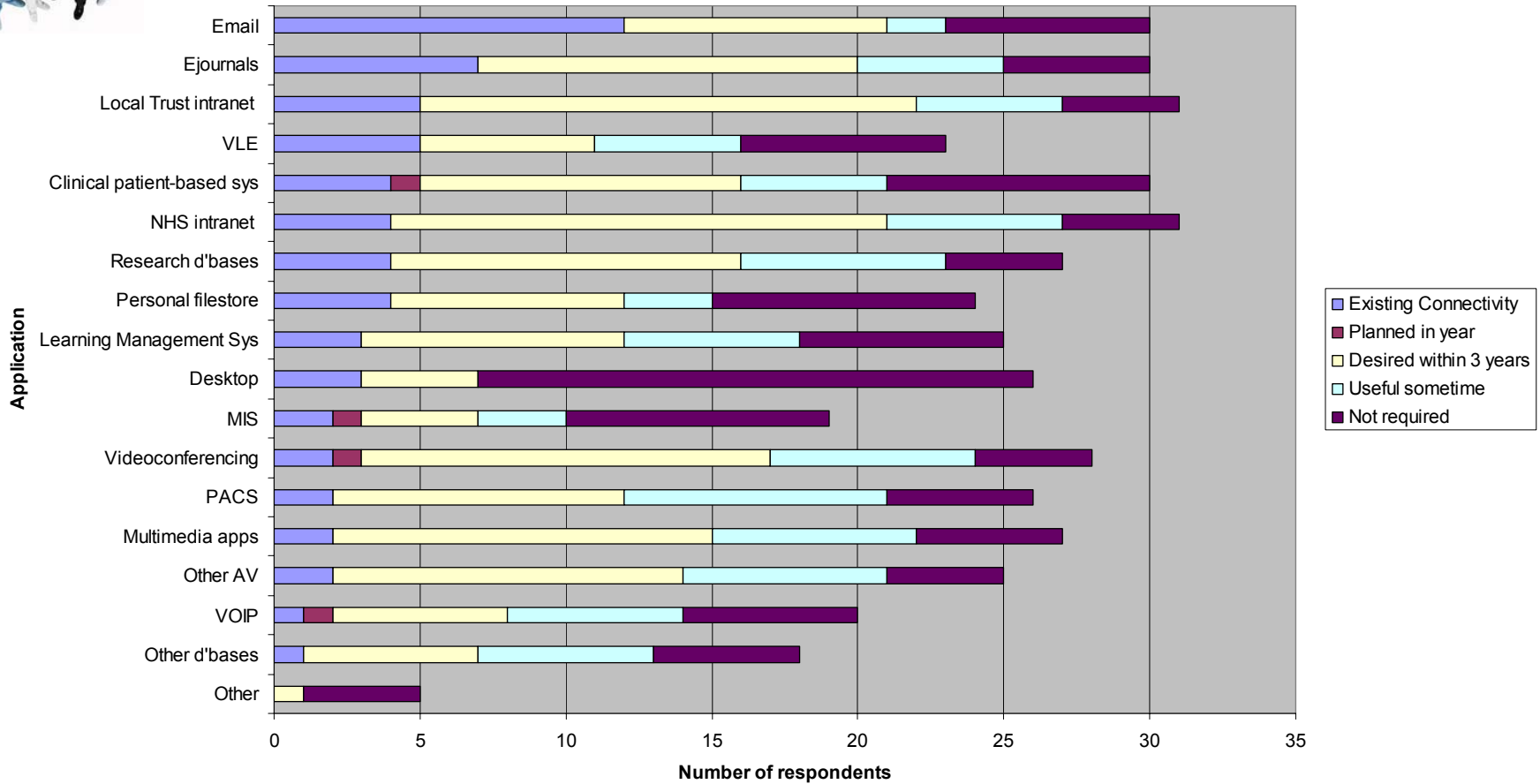


University services from the NHS: type of existing connectivity or that planned in next year



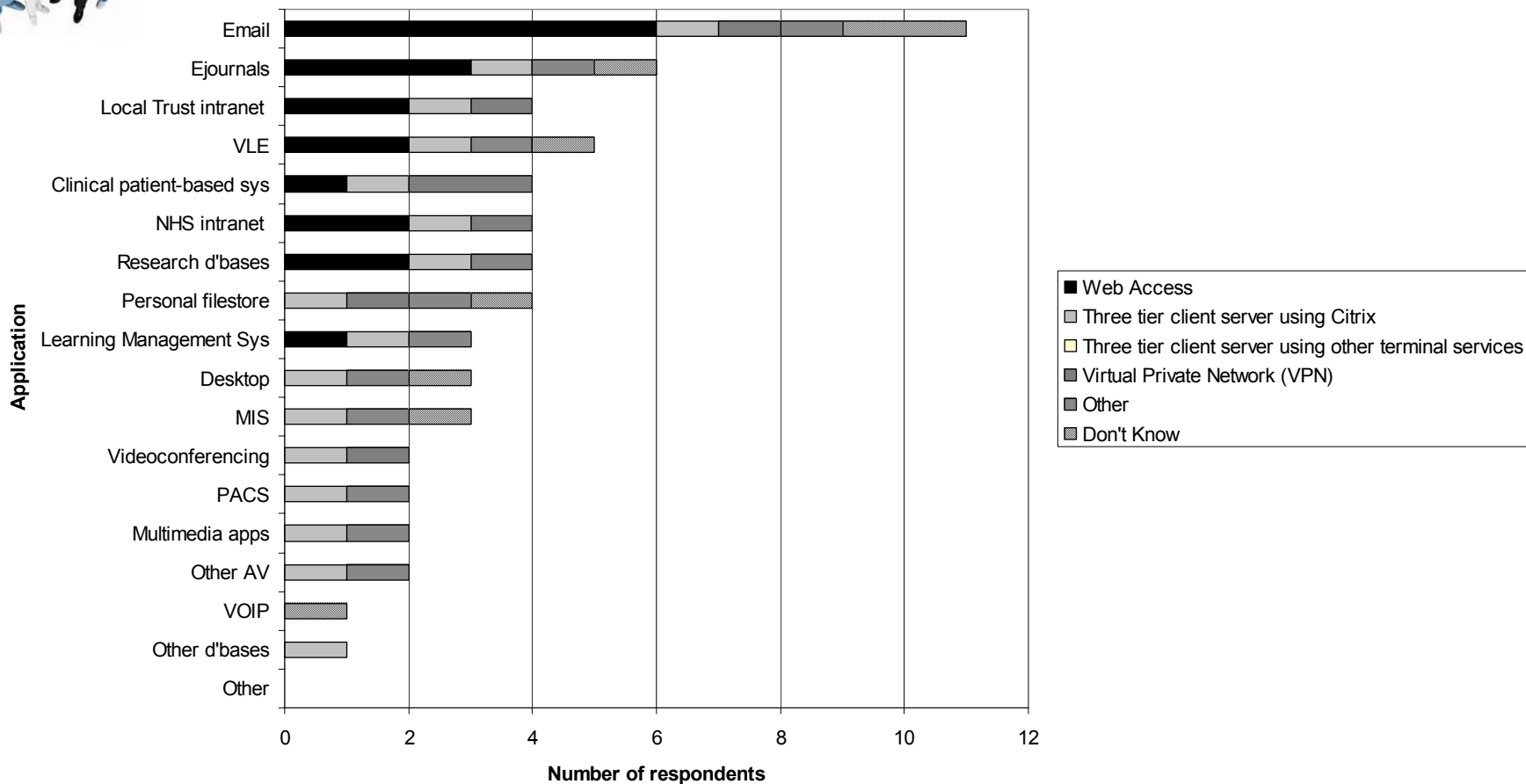


### NHS Applications from University





**NHS Applications from University: type of existing connectivity or that planned in next year**



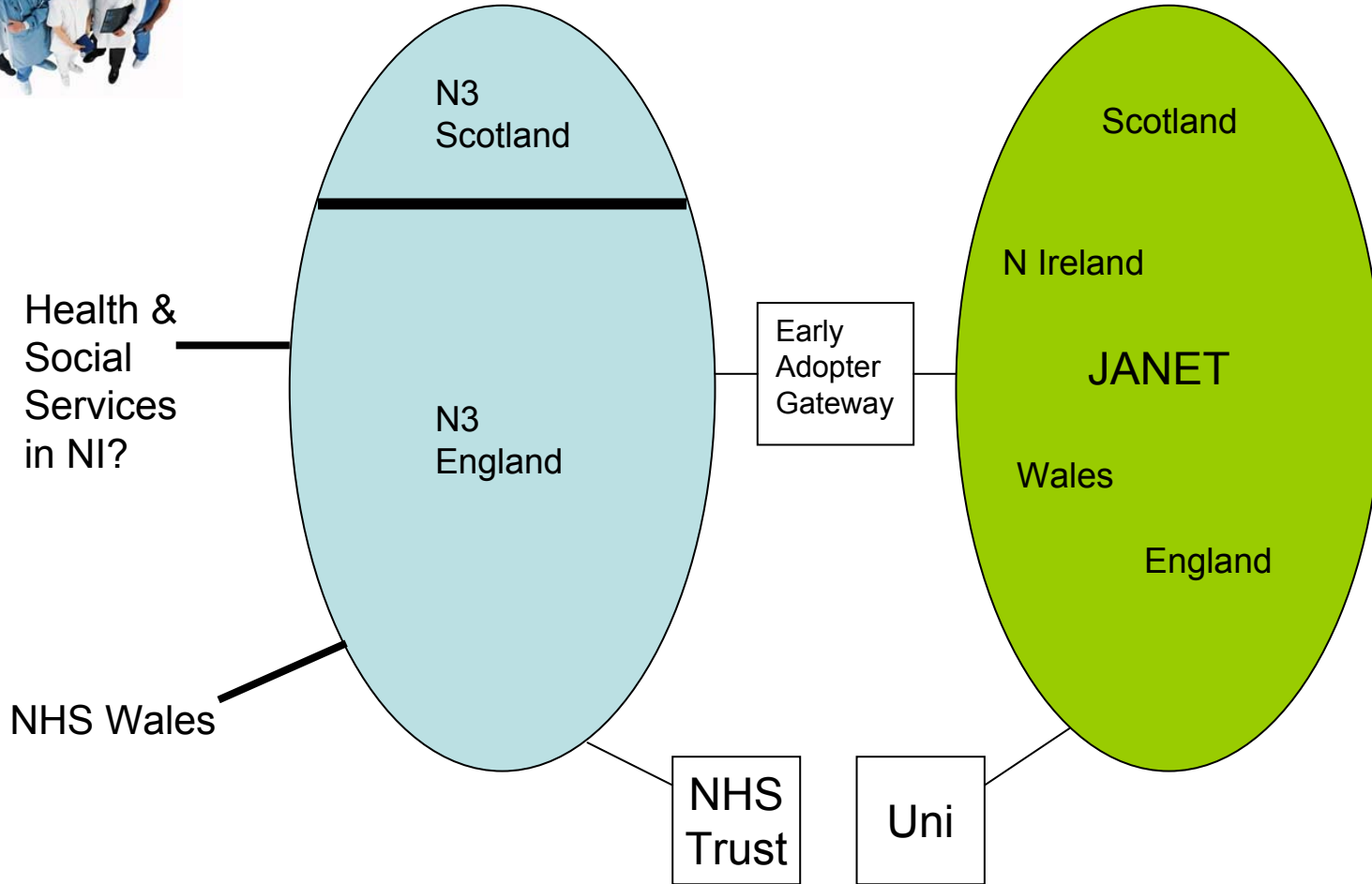


Application or Service (on University network being accessed from a device on an NHS network)	Percentage of Responders Expressing an Opinion			Number of Responders
	Desired within 3 years %	Existing connectivity or planned already %	Useful sometime or not required %	
Specialist applications for learning: software and multimedia resources	42	31	28	36
Videoconferencing	41	21	38	34
Other audio-visual services eg telematics, video-streaming	39	36	24	33
Research databases	29	44	26	34
Ejournals and knowledge bases	26	58	16	38
Management Information Systems (MIS) eg student registration, personnel, finance	25	33	42	36
Personal filestore	24	50	26	34
Voice over IP applications (VOIP)	24	14	62	29
Other inhouse databases (not research)	21	38	41	29
Intranet	20	49	31	35
Virtual or Managed Learning Environments (VLE or MLE)	19	67	14	36
Desktop tools eg MS office	14	20	66	35
email	8	73	19	37



Application or Service (on NHS network being accessed from a device on a University network)	Percentage of Responders Expressing an Opinion			Number of Responders
	Desired within 3 years  %	Existing connectivity or planned already  %	Useful sometime or not required  %	
Local Trust intranet	55	16	29	31
NHS Intranet (eg nww. In England)	55	13	32	31
Videoconferencing	50	11	39	28
Other audio-visual services eg telematics, video-streaming	48	8	44	25
Specialist applications for learning: software and multimedia resources	48	7	44	27
Research databases	44	15	41	27
Ejournals and knowledge bases	43	23	33	30
Picture Archive and Communications Systems (PACS)	38	8	54	26
Clinical patient-based record systems	37	17	47	30
Learning Management Systems (LMS)	36	12	52	25
Personal filestore	33	17	50	24
Other inhouse databases (not research)	33	6	61	18
email	30	40	30	30
Voice over IP applications (VOIP)	30	10	60	20
Virtual or Managed Learning Environments (VLE or MLE)	26	22	52	23
Management Information Systems (MIS) other than LMS eg estates, personnel, finance	21	16	63	19
Desktop tools eg MS office	15	12	73	26





# Danish Health Network

- Martin Bech speaking at NHS-HE Forum on 9<sup>th</sup> Nov in London – see copy of a previous presentation
- Run health/clinical applications on their equivalent of JANET – highly electronic
- But also useful where health is on a separate network e.g. Sweden
- Agreement system can manage the firewall configuration agreements (between secure and secure)



# Other NHS-HE Forum Topics e.g.

- Access Management – Athens future and development of shibboleth
- Procurement mapping study (e-journals & knowledge bases)
- Common Information Environment – JISC and NHS are party to this
- Health's use of Learning Management Systems and Virtual Learning Environments
- Support for health research (UKCRC etc)
- Consent for use of clinical images in non-clinical settings



# Thank you

- NHS-HE Forum, London on 9<sup>th</sup> November
- Scotland NHS-HE Forum, Edinburgh on 21<sup>st</sup> November
- [www.nhs-he.org.uk](http://www.nhs-he.org.uk)
  
- M.Teague@ukerna.ac.uk

