

# Federated access management: institutional preparedness study II



Federated access management:

# institutional preparedness study II

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## Executive summary

### ***Introduction***

1 Curtis+Cartwright Consulting Limited, supported by Mindset Research Limited, has conducted an institutional preparedness study of English Further Education (FE) for the Joint Information System Committee's (JISC's) federated access management initiative. This version of the report is for review by the JISC (v0.2).

### ***Objectives***

2 The objectives of the study are:

- to survey a statistically significant sample of English FE institutions and to assess their awareness of, and readiness and willingness for, federated access management;
- to conduct basic outreach activities;
- if possible, to inform the planning of the Access Management Transition Programme (AMTP), including outreach and support activities for institutions.

### ***Approach***

3 *Circa* 330 institutional contact details were provided at the outset of the study, and all of these were approached by telephone, email or both. A total of 158 complete responses were obtained, with 55% of these responses being elicited by email and the remainder by telephone interviews. This represents approximately 40% of the total number of FE institutions in England, and provides a statistically significant sample.

4 This survey was designed to provide a snapshot of the present situation, rather than a forecast for the situation in the future. Given the high level of uncertainty in institutions' planning regarding access management, it is doubtful whether it is currently possible to make a reliable prediction for the future uptake. Much will depend on the decisions that institutions take over the coming year.

5 Although this study was not designed to provide a longitudinal dataset, the findings are comparable with that generated for non-English FE in the previous study.<sup>1</sup> It is probably valid to generalise results from this survey to the entire UK FE sector.

### ***Findings***

6 There is currently substantial uncertainty within the FE sector, with only a small number of institutions having understood the issues adequately to make a reasoned decision.

7 Understanding of, and preparedness for, the move to federated access management is currently low, with institutions unclear of what options are available to them, what these options may cost, and how to move forward.

8 There are pockets of understanding within institutions. This is especially significant where an institution's library has responsibility for online resources and Athens, but does not have the

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<sup>1</sup> *Federated access management: institutional preparedness study*, CC273D001-1.0, 5 December 2006.

technical expertise to understand federated access management. The IT departments may have a clearer understanding of the concepts and the technology, but have not prioritised adoption of federated access management.

- 9 Athens is widely used within the FE community, with 75% of institutions using Athens or AthensDA to control access to resources to which they subscribe. However, the number of resources protected is typically low, with 53% of those institutions who subscribe to any electronic resources having fewer than 10 such resources, and a further 31% having between 10 and 20. Administration of Athens is not a major workload, with a majority of institutions having one or two staff members involved, and spending significantly less than 1 Full Time Equivalent (FTE). For these institutions, replacing Athens is unlikely to represent a significant driver for the substantial effort involved in the adoption of federated access management.
- 10 Although few<sup>2</sup> institutions have any concept of the costs involved in adopting federated access management, they are clear that their resources are very limited. Respondents were concerned that they would not be able to afford to pay for Athens, and did not have the technical capability to deploy a Shibboleth Identity Provider (IdP) service on their own.
- 11 Many respondents have neutral or even negative perceptions of the JISC, and of the move to federated access management specifically. There is a general feeling that the JISC is HE-focused, and that institutions are being forced towards adopting a complicated service which they neither want nor need, when they are currently happy with the Athens service.

### ***Outreach planning***

- 12 The JISC should acknowledge that for some institutions the appropriate solution will not involve operating an IdP of their own. With this in mind, the focus for outreach should be on supporting the decision-making process through provision of appropriate information and guidance, and by taking a broader approach to the possible benefits of federated access management, beyond replacing Athens. The aim should not be to directly persuade institutions to adopt federated access management through operating a Shibboleth IdP. The JISC should consider alternative mechanisms by which smaller institutions could join the UK Access Management Federation (the Federation).
- 13 The JISC Regional Support Centres (RSCs) are a key support channel for FE institutions, with 75% of institutions engaged in this manner. The RSCs are also a leading support channel for federated access management, with 33% of institutions having gained information this way.
- 14 Microsoft Active Directory is widely used within the sector. The JISC should consider ways in which institutions using this system could be supported with their adoption of federated access management.
- 15 A significant number of respondents demonstrate limited awareness of the JISC access management agenda. There is a strong feeling that published material is aimed at IT staff rather than library staff, whereas it is often the library staff who are responsible for Athens, and for access to external resources.
- 16 It is likely that Eduserv will have an important role to play in meeting the access management requirements of a significant number of FE Institutions. They are currently in contact with almost all institutions, as the providers of Athens. The JISC should develop a clear and

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<sup>2</sup> Where relative terms such as "few", "some", or "many" are used, these represent synthesised views of the total picture, rather than presenting any specific quantitative data.

coherent view of the way ahead, and agree this with Eduserv in order to ensure that a consistent message is conveyed.



## Document History

| <b>Version</b> | <b>Date</b> | <b>Description of Revision</b>         |
|----------------|-------------|--|
| 0.1            | 24 May 2007 | Initial version for comment by Mindset |
| 0.2            | 25 May 2007 | Initial version for review by the JISC |
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## List of abbreviations

|        |  |
|--------|--|
| ADFS   | Active Directory Federation Services       |
| AMTP   | Access Management Transition Programme     |
| CM     | Core Middleware                            |
| CoLRiC | Council for Learning Resources in Colleges |
| DK     | Don't Know                                 |
| FAM    | Federated Access Management                |
| FE     | Further Education                          |
| FEI    | Further Education Institution              |
| FTE    | Full-Time Equivalent                       |
| HE     | Higher Education                           |
| HEI    | Higher Education Institution               |
| IdP    | Identity Provider                          |
| ILT    | Information and Learning Technology        |
| JISC   | Joint Information Systems Committee        |
| LRC    | Learning Resources Centre                  |
| MATU   | Middleware Assisted TakeUp                 |
| NR     | No Response                                |
| PKI    | Public Key Infrastructure                  |
| RSC    | Regional Support Centre                    |
| SSO    | Single Sign On                             |
| USO    | Unified Sign On                            |

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# 1 Introduction

## 1.1 General

1.1.1 Curtis+Cartwright Consulting Limited, supported by Mindset Research Limited, has conducted an institutional preparedness study of English FE for the Joint Information System Committee's (JISC's) federated access management initiative.<sup>3</sup> This version of the report is for review by the JISC (v0.2).

## 1.2 Objectives

1.2.1 The objectives of the study are:

- to survey a statistically significant sample of English FE institutions and to assess their awareness of, and readiness and willingness for, federated access management;
- to conduct basic outreach activities;
- if possible, to inform the planning of the Access Management Transition Programme (AMTP), including outreach and support activities for institutions.

## 1.3 Background

1.3.1 In November 2006, the JISC officially launched its UK Access Management Federation for Education and Research ("the Federation"). FE and Higher Education (HE) institutions throughout the UK can now join the Federation and adopt new technology such as Shibboleth. This will provide institutions with a route to Single Sign-On (SSO) to resources for users through the implementation of federated, devolved authentication.

1.3.2 The Athens service, currently funded by the JISC on behalf of institutions, will become a subscription service post-July 2008 for institutions which choose to use it. JISC-funded technical solutions ("gateway" interfaces), free at the point of use, will ensure interoperability between:

- Athens-serviced institutions and federated access management enabled service providers;
- federated access management enabled institutions and Athens-serviced service providers.

1.3.3 Widespread uptake of federated access management is intended to provide a flexible infrastructure capable of functions beyond those covered by the Athens service. This includes, for example, access controls for intra-institution services and inter-institution collaborations. There is a range of approaches to implementation (choice of software, approach to serving attributes, *etc*).

1.3.4 The JISC's initiative, led by the AMTP, builds on the JISC Core Middleware (CM) Infrastructure Programme and, in particular, on the Early Adopter projects that have been exploring the process of adopting federated access management technologies. Projects within this programme have provided the JISC and its community with insight into the process of institutional adoption of federated access management.

1.3.5 In order to inform the AMTP the JISC commissioned a study of institutional awareness of and preparedness for federated access management, covering UK HE, and Scottish, Welsh and

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<sup>3</sup> *JISC Core Middleware Programme Institutional Preparedness Study for English FE, Contract Letter, 26 March 2007.*

Northern Irish FE institutions.<sup>4</sup> This current study has been commissioned to extend the original survey to cover English FE institutions.

## **1.4 Methodology**

1.4.1 A combined telephone/email survey was conducted, using institutional contact details provided by the JISC. The methodology employed in this study is set out in detail in Annex A.

## **1.5 Overview of this document**

1.5.1 The remainder of this document is structured as follows:

- Section 2 sets out the quantitative and qualitative findings of the study;
- Section 3 assesses the findings of the study with respect to the JISC's outreach activities concerned with federated access management and discusses outreach planning;
- Sections 4 and 5 summarise the key conclusions and recommendations, respectively;
- Annex A describes the conduct of the study, including the methodology for data gathering.

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<sup>4</sup> *Federated access management: institutional preparedness study*, CC273D001-1.0, 5 December 2006.

## 2 Survey findings

### 2.1 Introduction

2.1.1 Respondents came from a variety of functions within the institutions, but a majority are library or Learning Resources Centre (LRC) staff.

|                               |     |
|-------------------------------|-----|
| <b>Library</b>                | 63% |
| <b>IT</b>                     | 16% |
| <b>Converged library/IT</b>   | 8%  |
| <b>Senior Management Team</b> | 3%  |
| <b>Other</b>                  | 10% |

*Table 2-1: which departments are respondents from?*

2.1.2 Although respondents were asked to present their institutional viewpoint, there is inevitably a limit to how effectively this can be achieved. It must be borne in mind that responses may not be representative of the institutional viewpoint. This may be especially significant for questions regarding the technologies currently in use, or the level of understanding of the technical aspects of federated access management, where many library staff appear to be relatively uninformed, but IT staff may have a higher level of awareness and understanding.

### 2.2 Federated access management context

#### ***How many institutions have converged library and IT services?***

2.2.1 An early finding from the Early Adopters funded by the CM Programmes was that adoption of federated access management is easier with converged library and IT services, due to the need for changes in business processes and responsibilities across what would otherwise be a organisational gap.

2.2.2 Approximately 22% of FE respondents state that they have converged library and IT services.

#### ***Do institutions share, validate or franchise courses?***

2.2.3 Respondents were asked whether any of the institution's courses are shared with, validated by, or franchised to another institution. This may be a driver for adoption of federated access management if the collaborating institution uses the technology. 74% of respondents reported some form of collaboration or validation.

#### ***How many institutions subscribe to electronic resources?***

2.2.4 Respondents were asked a series of questions to judge their institution's usage of electronic resources. 94% of institutions did subscribe to external electronic resources, and these institutions were asked for further details of their usage. It was left to the respondent to decide what "heavily-used resources" implies. It is clear that the majority of FE institutions subscribe to a limited number of electronic resources.

2.2.5 Additionally, at many institutions only a limited number of users require access to protected electronic resources. The details vary between institutions, but typical groups include:

- students undertaking HE foundation or access courses;
- students of a particular subject;
- staff.

| <b>Response</b>                      | <b>Resources</b> | <b>Heavily-used resources</b> |
|--------------------------------------|------------------|-------------------------------|
| <b>DK<sup>5</sup> or no response</b> | 21%              | 28%                           |
| <b>0</b>                             | –                | 13%                           |
| <b>1</b>                             | 2%               | 8%                            |
| <b>2-5</b>                           | 15%              | 45%                           |
| <b>6-10</b>                          | 26%              | 13%                           |
| <b>11-20</b>                         | 24%              | 1%                            |
| <b>21-50</b>                         | 12%              | –                             |
| <b>50+</b>                           | 1%               | –                             |

*Table 2-2: how many resources do you subscribe to? How many are heavily used?*

2.2.6 The number of resources subscribed to by each institution was cross-tabulated against the JISC Collections band,<sup>6</sup> and the mean number of resources subscribed to per band was calculated. There is some correlation between the size of institution and the number of resources, with band E and F institutions having on average substantially more subscriptions than the smaller band G-J institutions. As there is only one institution in band D, this number means little.

<sup>5</sup> Don't Know (DK).

<sup>6</sup> The JISC Collections band correlates approximately with institutions size – for further information see <<http://www.jiscollections.ac.uk/jiscbanding/>>

| Band           | Mean number of resources | Band population |
|----------------|--------------------------|-----------------|
| D              | 8.0                      | 1               |
| E <sup>7</sup> | 17.5                     | 12              |
| F              | 14.0                     | 28              |
| G              | 9.1                      | 30              |
| H              | 9.0                      | 30              |
| I              | 9.4                      | 41              |
| J              | 6.8                      | 15              |

Table 2-3: how do the number of resources vary with JISC Collections banding?

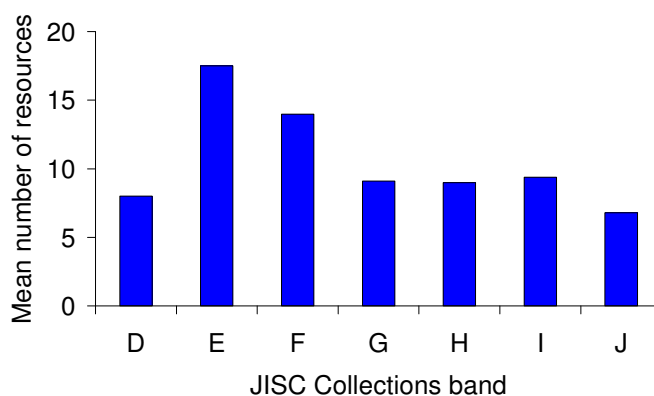


Figure 2-1: variation of number of resources with JISC Collections banding

2.2.7 To gain further insight into the potential business case for the usage of access management technologies, it is necessary to look beyond the mean number of resources. When the distribution within each band is examined, it is clear that even in the higher bands (D-F) a significant proportion of institutions report subscribing to fewer than 20 electronic resources.

<sup>7</sup> NB. one Band E institution reported subscribing to 1000 resources, which is two orders of magnitude greater than any other respondent – this significantly distorts the picture presented by the mean number of resources, and is not included within this table. One institution is unclear of its status with JISC, and does not have a JISC Collections band. This institution is also not included within this table.

MANAGEMENT IN CONFIDENCE  
DRAFT

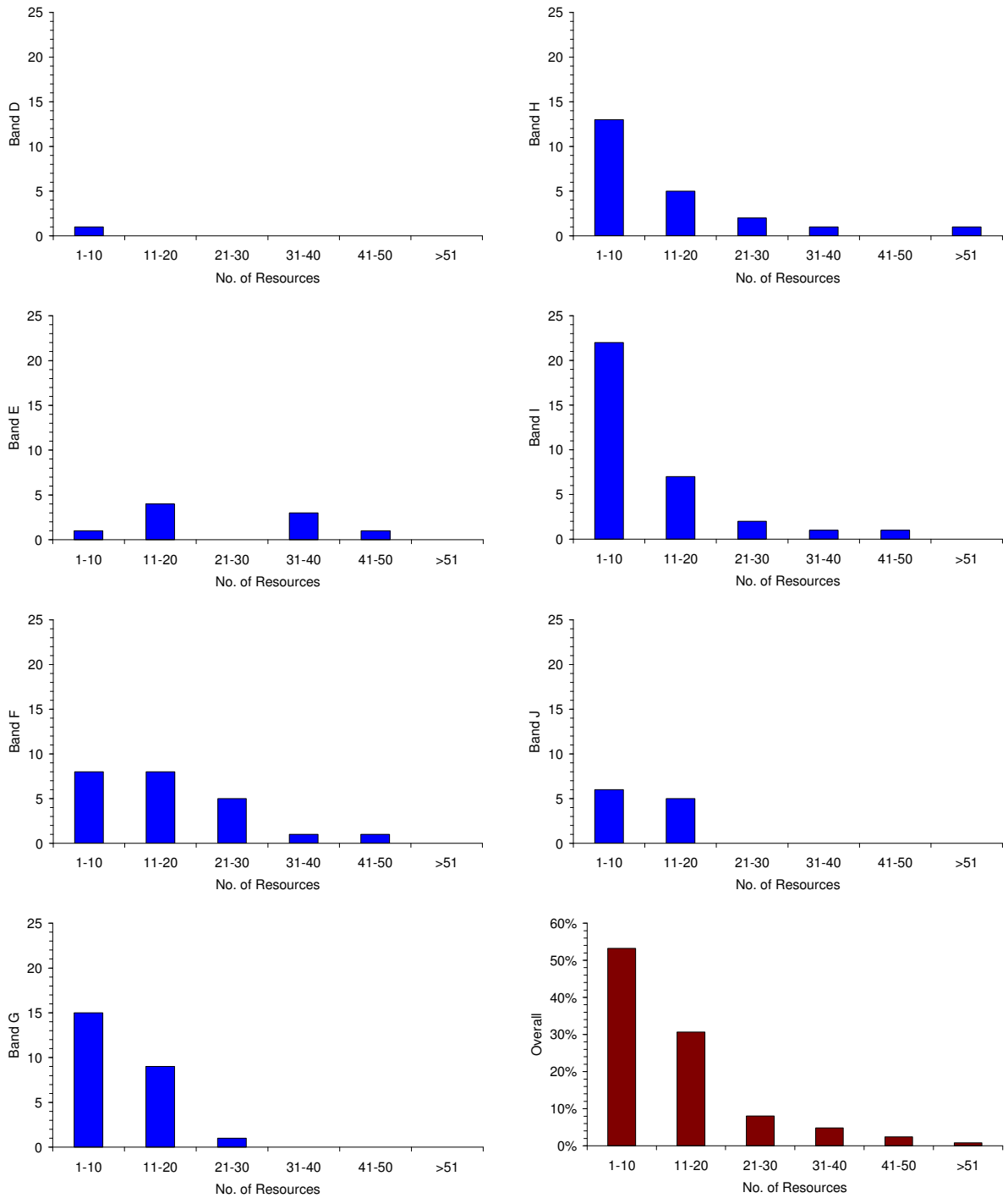


Figure 2-2: number of resources subscribed by institutions, by JISC Collections Band

***How do institutions protect access to resources?***

What technologies are used?

2.2.8 Respondents were asked “How do you control access to [protected] resources?”. A majority of institutions currently use the Athens service, although a significant proportion use IP-based and password-based access controls, and frequently a combination of methods (*NB.* the responses add up to greater than 100%, as institutions can choose more than one option).

|  |     |
|--|-----|
| <b>Athens [Classic Athens]</b>                         | 70% |
| <b>AthensDA</b>  | 5%  |
| <b>IP-address based authentication</b>                 | 47% |
| <b>Username and password specific to each resource</b> | 32% |
| <b>Other</b>   | 6%  |

*Table 2-4: how do you control access to [protected] resources?*

How much effort is spent administering Athens?

2.2.9 In order to gauge the level of administrative effort required to maintain the Athens service, respondents were asked about the staff involved and how much effort they spent on Athens. Administration of Athens is not a major workload for the institutions who responded to this survey, with the majority having one or two staff members involved, and spending significantly less than 1 FTE.

|                          | <b>No. of Athens administrators</b> | <b>FTE required for Athens administration</b> |
|--------------------------|-------------------------------------|---|
| <b>DK or no response</b> | 32%                                 | 38%   |
| <b>0-1</b>               | 1%                                  | 37%   |
| <b>1</b>                 | 35%                                 | 20%   |
| <b>2</b>                 | 16%                                 | 4%  |
| <b>3</b>                 | 8%                                  | 1%  |
| <b>4</b>                 | 1%                                  | –   |
| <b>5 through 10</b>      | 4%                                  | –   |
| <b>11+</b>               | 0.5%                                | –   |

*Table 2-5: how many FTE are required to administer and maintain Athens?*

***How many institutions have an information strategy?***

2.2.10 48% of institutions report having over-arching information strategies, but only a small proportion of these are publicly available. Many institutions incorporate the information strategy within a larger document such as the Information and Learning Technology (ILT) strategy.

***Who has responsibility for user records and identity management?***

2.2.11 Institutions were asked about the management of student and staff information, and in particular who within the institution has responsibility for this information. A large majority of respondents hold responsibility for user and identity management at the institutional level.

|   |     |
|---|-----|
| <b>Institution holds responsibility</b>   | 92% |
| <b>Departments hold primary responsibility</b>  | 4%  |
| <b>Some at institutional and departmental level</b>                                   | 1%  |
| <b>Management of information is subcontracted by the institution to a third party</b> | 1%  |

*Table 2-6: who has responsibility for user records and identity management?*

**2.3 Federated access management technical environment**

***What technical capabilities and capacity do institutions have?***

2.3.1 Institutions were asked "how many in-house IT staff does your institution have?" The results show that the majority of institutions have fewer than 10 IT staff (and 23% having fewer than 5).

| <b>No. of staff</b> |     |
|---------------------|-----|
| <b>0-5</b>          | 23% |
| <b>6-10</b>         | 42% |
| <b>11-25</b>        | 27% |
| <b>26-50</b>        | 3%  |
| <b>DK</b>           | 5%  |

*Table 2-7: how many in-house technical and systems staff does your institution have?*

2.3.2 Institutions were asked in which areas they had technical experience. It is clear that whilst a majority of institutions have an understanding of the “basic” IT services (*eg* Windows, web servers, firewalls), their capability for providing more advanced systems may be limited.

|  | Yes | No  | Don't Know |
|--|-----|-----|------------|
| <b>Windows</b>   | 91% | –   | 9%         |
| <b>Linux/Unix</b>  | 44% | 23% | 33%        |
| <b>Web server deployment and configuration</b>                         | 78% | 3%  | 18%        |
| <b>Writing own CGI scripts</b>   | 28% | 15% | 57%        |
| <b>Directory service deployment and configuration</b>                  | 57% | 3%  | 40%        |
| <b>Firewall deployment and configuration</b>                           | 82% | 1%  | 17%        |
| <b>Application programming</b>   | 62% | 8%  | 30%        |
| <b>Java programming</b>  | 35% | 21% | 44%        |
| <b>PKI certificate server deployment, configuration and management</b> | 13% | 20% | 66%        |
| <b>Shibboleth</b>  | 3%  | 72% | 26%        |

*Table 2-8: what technical skills does your institution have?*

***Where do institutions receive technical support?***

2.3.3 Institutions were asked whether they participate in or gain technical support from inter-institutional collaborations, formal regional support groups and support contracts with commercial organisations. The RSCs are clearly a key support channel for FE institutions, with 75% of institutions engaged in this manner. Other formal regional support groups mentioned include “JANET” and the Council for Learning Resources in Colleges (CoLRiC).

|  |     |
|--|-----|
| <b>DK</b>  | 19% |
| <b>Inter-institutional collaborations</b>                  | 40% |
| <b>Formal regional support groups (including JISC RSC)</b> | 75% |
| <b>Support contracts with commercial organisations</b>     | 47% |

*Table 2-9: from where does your institution receive technical support?*

***What sign-on systems do institutions currently have or plan to deploy?***

2.3.4 Institutions were asked how users currently log in to resources at their institution, and asked to choose between SSO, where once logged in all resources may be accessed), Unified Sign-On (USO, where the user must log in to each resource separately, but with the same credentials at each), and having separate credentials for each resource. Less than 50% of institutions currently use USO or SSO systems.

|                        |     |
|------------------------|-----|
| <b>Single sign-on</b>  | 22% |
| <b>Unified sign-on</b> | 13% |
| <b>Neither</b>         | 53% |
| <b>Other</b>           | 12% |

*Table 2-10: what sign-on system does your institution have?*

2.3.5 Those respondents who were not using SSO were asked whether they had plans to adopt USO or SSO. Although 28% stated a plan to move to SSO, and 7% a plan to move to USO, 67% of those did not have a timetable for the work, suggesting that plans for these technologies are aspirational.

***What directory services do institutions have or plan to deploy?***

2.3.6 Respondents were asked “does your institution have an enterprise directory service in place?” A large proportion of “Don’t Know” responses reflects a lack of awareness of institutional ICT technology amongst library staff – this is clearly demonstrated when IT Staff are compared to other staff. This suggests that the “overall” figure somewhat under-represents the true picture.

|                              | <b>IT staff</b> | <b>Other staff</b> | <b>Total</b> |
|------------------------------|-----------------|--------------------|--------------|
| <b>DK</b>                    | 4%              | 60%                | 50%          |
| <b>Yes</b>                   | 88%             | 26%                | 39%          |
| <b>No, but it is planned</b> | 4%              | 5%                 | 3%           |
| <b>No and no plans to</b>    | 4%              | 9%                 | 8%           |

*Table 2-11: does your institution have an enterprise directory service in place?*

2.3.7 The institutions with no plans to deploy a directory service frequently reported that there was no need for it within their institution, or no motivation to deploy one. In order to judge how user information was handled in these institutions, respondents were asked how the library systems were loaded with user details. Responses varied, with a large number taking a data file from the student records system. If these are also representative of the institutions which report having directory services, it seems likely that the directory service is often not a unique source of identity information.

2.3.8 Those institutions which currently have enterprise directory services or intend to deploy them in future were asked which technologies they use or would use in future.<sup>8</sup> Microsoft Active Directory is the dominant technology within the sector. There is a possibility that the relatively high reported use of Apache Directory Server represents confusion with the widely-used Apache web server.

|   | Currently Use | Intend to Use |
|---|---------------|---------------|
| <b>Apache Directory Server</b>                      | 10%           |               |
| <b>Microsoft Active Directory</b>                   | 71%           | 3%            |
| <b>Novell eDirectory (NDS)</b>                      | 23%           | 3%            |
| <b>Open LDAP</b>                                    | 3%            | 1%            |
| <b>Microsoft Identity Integration Server (MIIS)</b> | –             | –             |
| <b>Other</b>  | –             | –             |

Table 2-12: what technology does your institution use for enterprise directory services?

## 2.4 Awareness and understanding

### *In general*

2.4.1 Institutions were asked how aware they were of the JISC's timeline and activities in relation to federated access management, and about their understanding of federated access management in relation to the following aspects:

- the overall concept;
- the technical aspects;
- the strategic implications;
- the budget and resource requirements.

2.4.2 Awareness of JISC's Access Management agenda is moderate, with 50-60% of respondents reporting some or good awareness of JISC's activities and timeline.

<sup>8</sup> The majority of institutions which currently have a directory service do not intend to change their system in the future. As a result, the percentages for use in future do not add up to 100%, as not all institutions in this population gave an answer to this question. These numbers are normalised to those (49) respondents who answered this question.

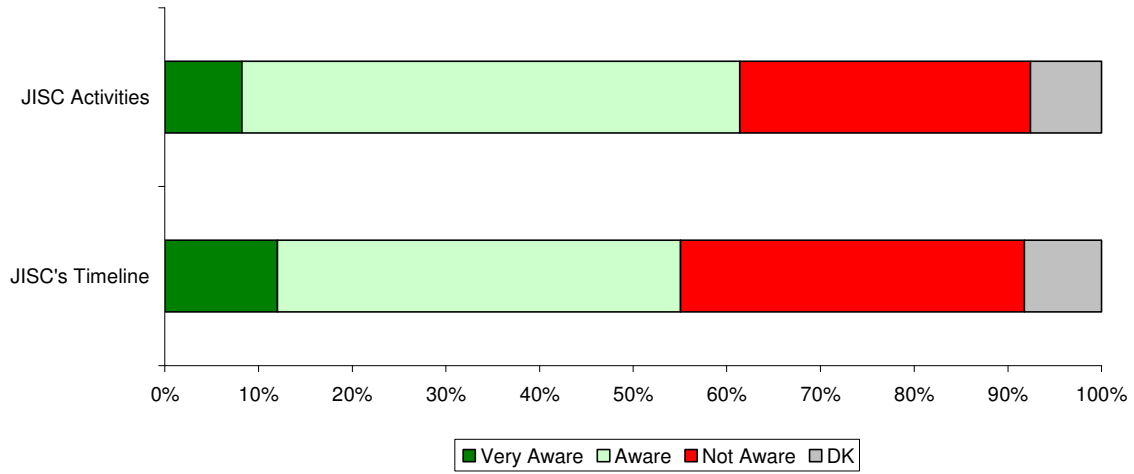


Figure 2-3: awareness of the JISC's Federated Access Management activities and timeline

2.4.3 The understanding of various aspects of federated access management is lower, with <10% reporting good understanding of the issues, and >50% reporting little or no understanding.

2.4.4 Understanding of the budget and resource requirements is particularly poor, with 36% of respondents reporting no understanding of that aspect.

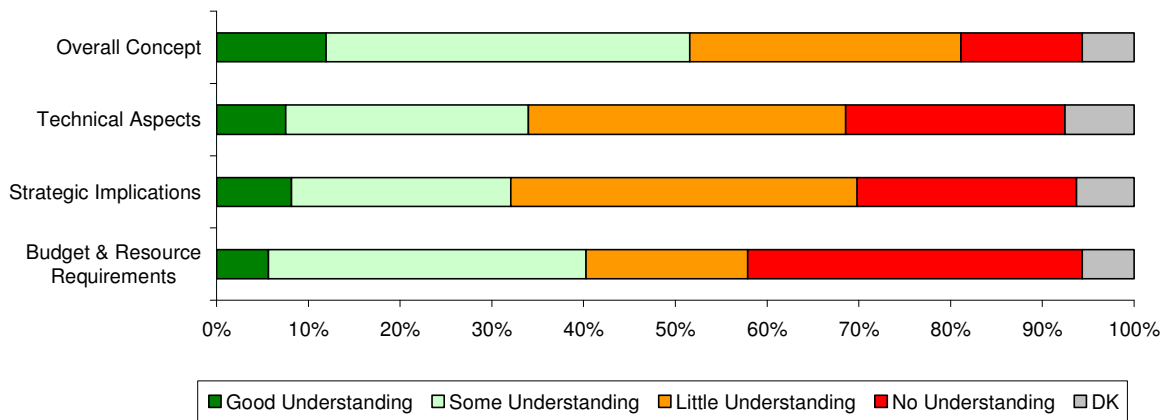


Figure 2-4: understanding of various aspects of Federated Access Management

**What sources of information have informed institutions**

2.4.5 Respondents were asked “how has your institution gained awareness and knowledge of federated access management?” It is clear that institutions’ knowledge has primarily been gained through the JISC’s activities – predominantly email lists and the RSCs.

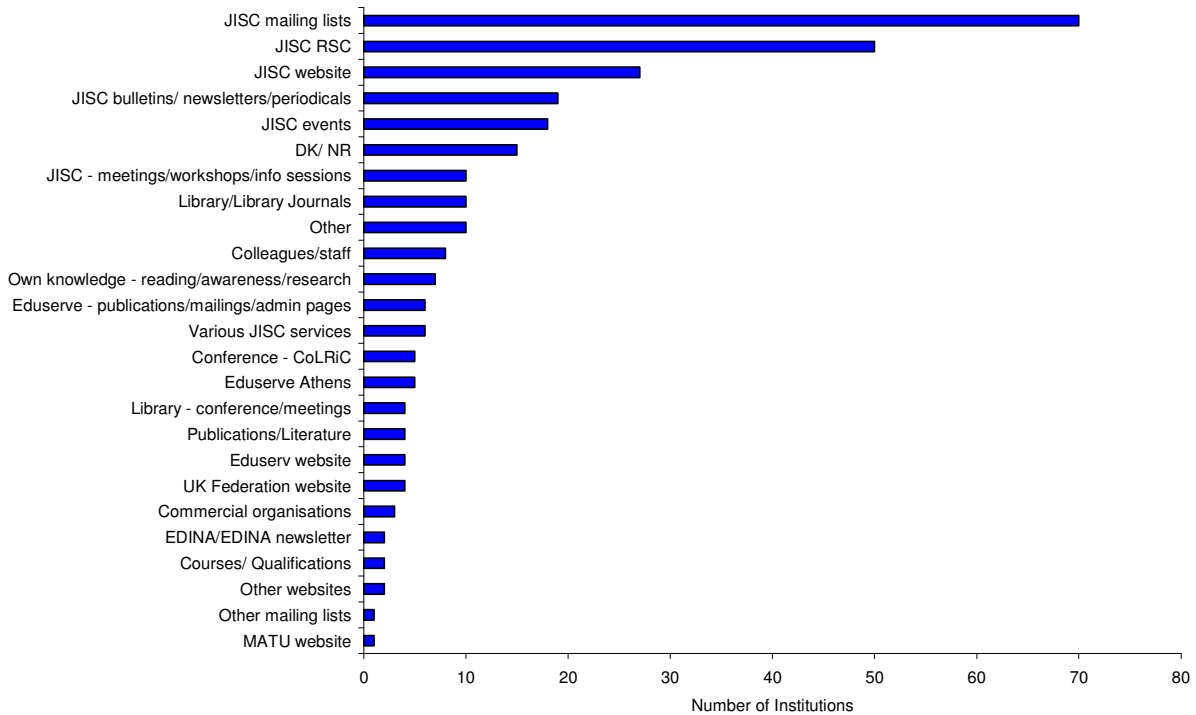


Figure 2-5: what sources of information have informed institutions?

**2.5 Likely uptake**

2.5.1 There is substantial uncertainty within the FE sector regarding federated access management initiative, the changes to the Athens service, and the options available to institutions. The level of awareness is low, and the adoption of federated access management is typically low on the agenda of the institutions.

2.5.2 These data should be seen as a snapshot of the situation at present, rather than a forecast for the situation in the future. Given the high level of uncertainty in institutions (see below), it is doubtful whether it is currently possible to make a reliable prediction for the future uptake. Much will depend on the decisions that institutions take over the coming year.

***What are institutional positions towards adoption?***

2.5.3 Institutions were questioned on their position with regards to the adoption of federated access management. A number of pre-coded options were given, though respondents were able to provide other responses if necessary. The majority of the respondents who chose the "other" option indicated that decision had not yet been taken, the rest could be classified within another category. There was no significant variation in the answer to this question across the JISC Collections charging bands.

|  |     |
|--|-----|
| <b>Have an interest in federated access management, but no plans to adopt</b>                    | 35% |
| <b>An existing user of federated access management</b>   | 2%  |
| <b>Firm plans made and resources available to adopt federated access management by July 2008</b> | 2%  |
| <b>Intend to adopt by July 2008, preliminary plans made</b>                                      | 12% |
| <b>Intend to adopt by July 2008, not sure if this is feasible</b>                                | 14% |
| <b>Intend to adopt at a later date</b>   | 6%  |
| <b>Do not intend to adopt federated access management</b>  | 4%  |
| <b>Other</b>   | 24% |
| <b>DK/no response</b>  | 1%  |

*Table 2-13: what best describes your institution's position with regards to the adoption of federated access management?*

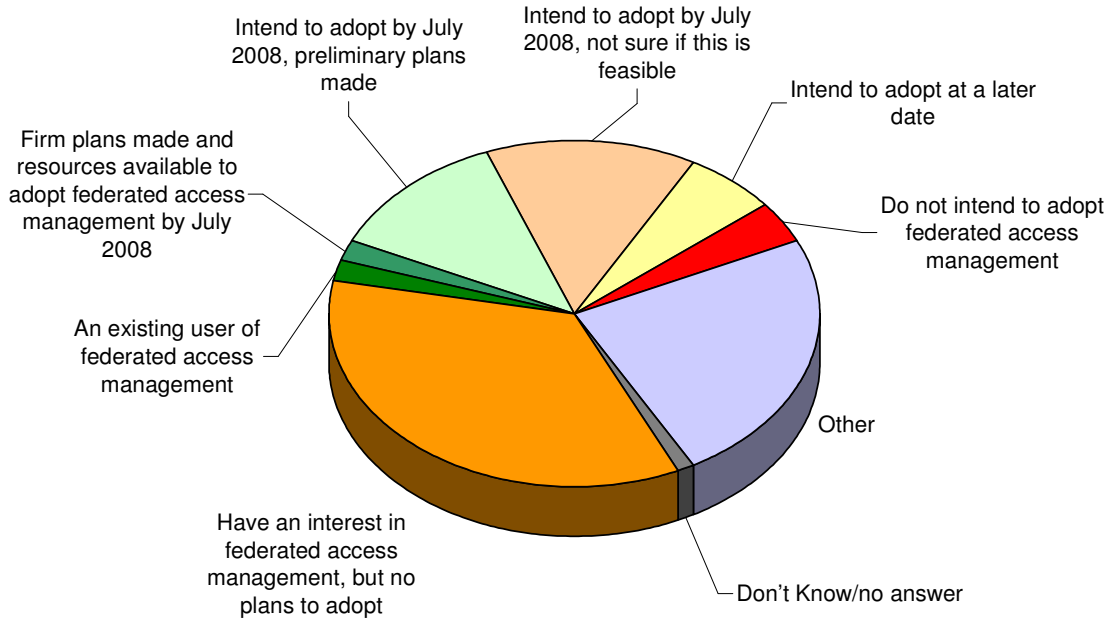


Figure 2-6: chart of institutional positions regarding adoption of federated access management

2.5.4 Respondents who indicated no current intent to adopt federated access management were asked when the position would be reviewed. Responses fell primarily into four groups:

- mid 2007 to early 2008;
- "when we know more about it";
- no date given, but as part of ongoing planning work;
- no plans to review.

2.5.5 Those 49 institutions which indicated that they had already adopted federated access management, or intended to, were asked how they achieved this, or how then intended to. Nearly half of the respondents did not know how they would implement federated access management. The institutions who chose "other" and "off-the-shelf" both stated an intention to use Microsoft Active, which does is not in itself compatible with the UK Federation.

|  |     |
|--|-----|
| <b>By running your own Identity Provider (IdP) service</b>   | 25% |
| <b>By subscribing to Eduserv's Athens service</b>            | 11% |
| <b>By buying another "off-the-shelf" solution or service</b> | 2%  |
| <b>Don't Know</b>  | 48% |
| <b>Other</b>   | 2%  |

Table 2-14: how have you adopted or how do you intend to adopt Federated Access Management?

How far have institutions progressed along the JISC "roadmap"?

- 2.5.6 Those 49 institutions which indicated that they had already adopted federated access management, or intended to, were asked how far they have progressed along the JISC roadmap.
- 2.5.7 Understanding of the roadmap amongst respondents is limited, with *circa* 50% reporting that they did not understand what the stages of the roadmap involved, or that they were not aware whether their institution had completed that stage.
- 2.5.8 Approximately 10% of respondents indicated no intention to complete each stage of the roadmap, including institutional rollout. These respondents stated their institutional positions as "intend to adopt by July 2008, not sure if this is feasible", or "intend to adopt by July 2008, preliminary plans made".

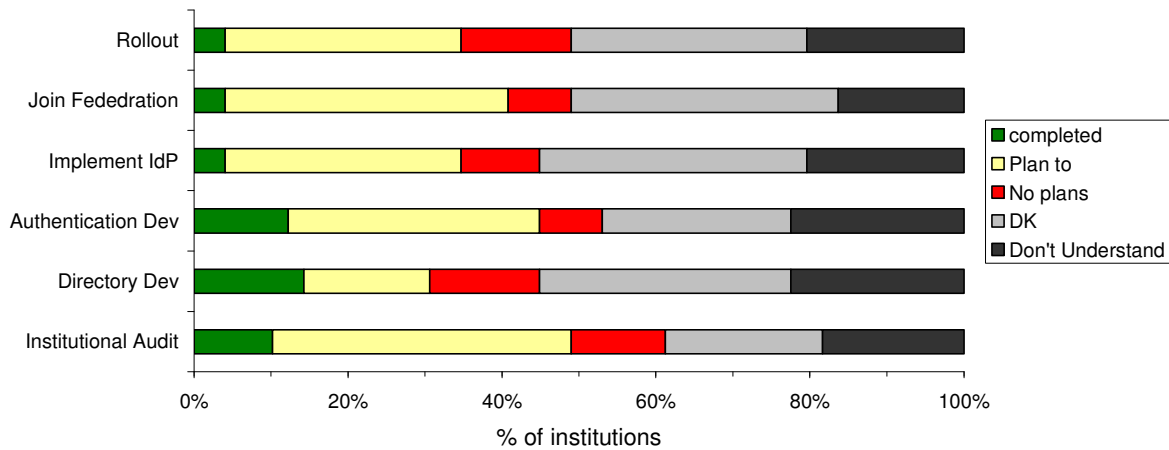


Figure 2-7: progress of institutions along JISC adoption roadmap

What are institutional positions regarding access to resources?

- 2.5.9 Respondents were asked whether they were aware that the JISC-endorsed content services would only be available to Federation members from July 2008. A third of respondents were not aware of this change.

|   |     |
|---|-----|
| <b>Yes</b>  | 65% |
| <b>No</b>   | 33% |
| <b>Don't use any JISC-endorsed content services</b> | 2%  |

Table 2-15: are you aware that from July 2008, institutions will need to join the UK Federation in order to access JISC-endorsed content services?

2.5.10 Institutions were asked whether they would continue to use the Athens service after July 2008. There is significant uncertainty in the responses here, with a majority reporting that no decision had yet been taken.

|                   |     |
|-------------------|-----|
| <b>Yes</b>        | 20% |
| <b>No</b>         | 9%  |
| <b>Don't know</b> | 70% |

*Table 2-16: will you subscribe to Athens services, post-July 2008?*

2.5.11 Respondents were asked whether they were aware that there would be a charge for Athens, after July 2008. Almost a quarter of respondents were not aware of the charge. Some respondents reported having "heard rumours".

|                   |     |
|-------------------|-----|
| <b>Yes</b>        | 74% |
| <b>No</b>         | 23% |
| <b>Don't know</b> | 3%  |

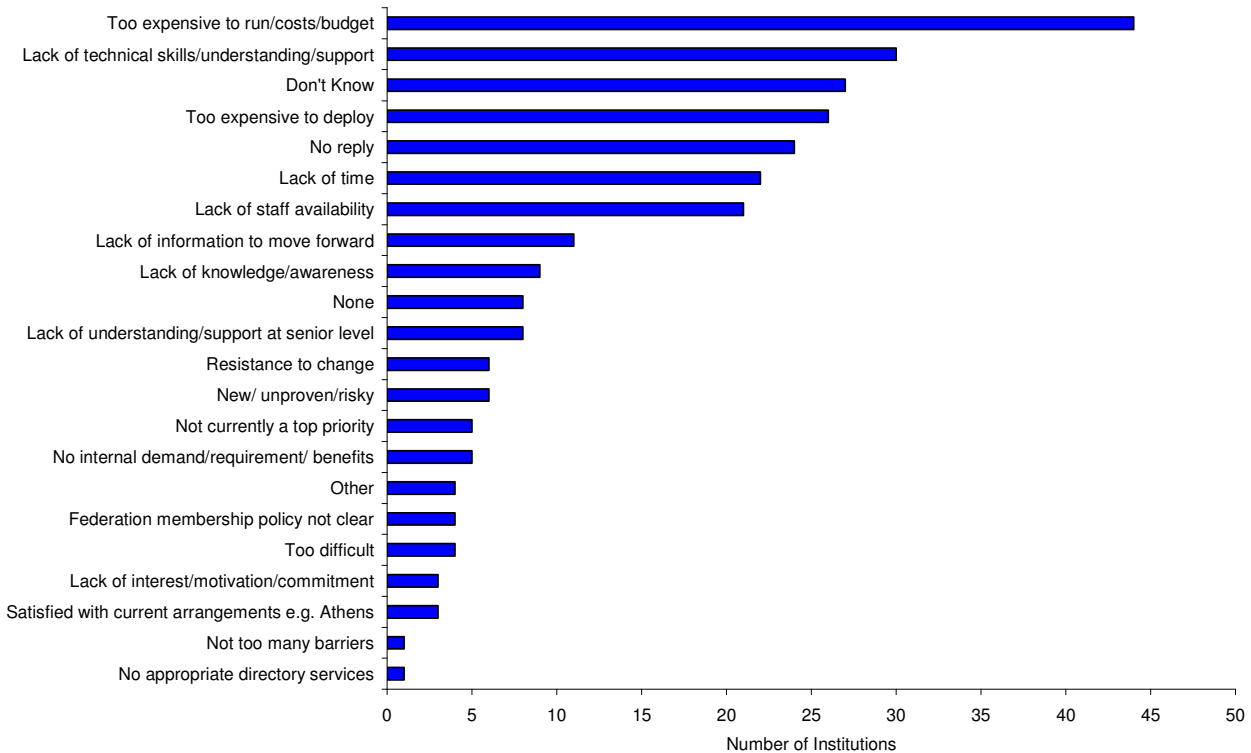
*Table 2-17: are you aware that there will be a charge made for Athens services, post-July 2008?*

***What barriers do institutions foresee?***

2.5.12 Respondents were asked what barriers they foresaw for their institutions' adoptions of federated access management. A key issue is the limited budget of many institutions' IT and library departments, who may not be able to afford any option.

2.5.13 Respondents were asked if they knew how much adoption would cost their institution. Responses fell into several categories:

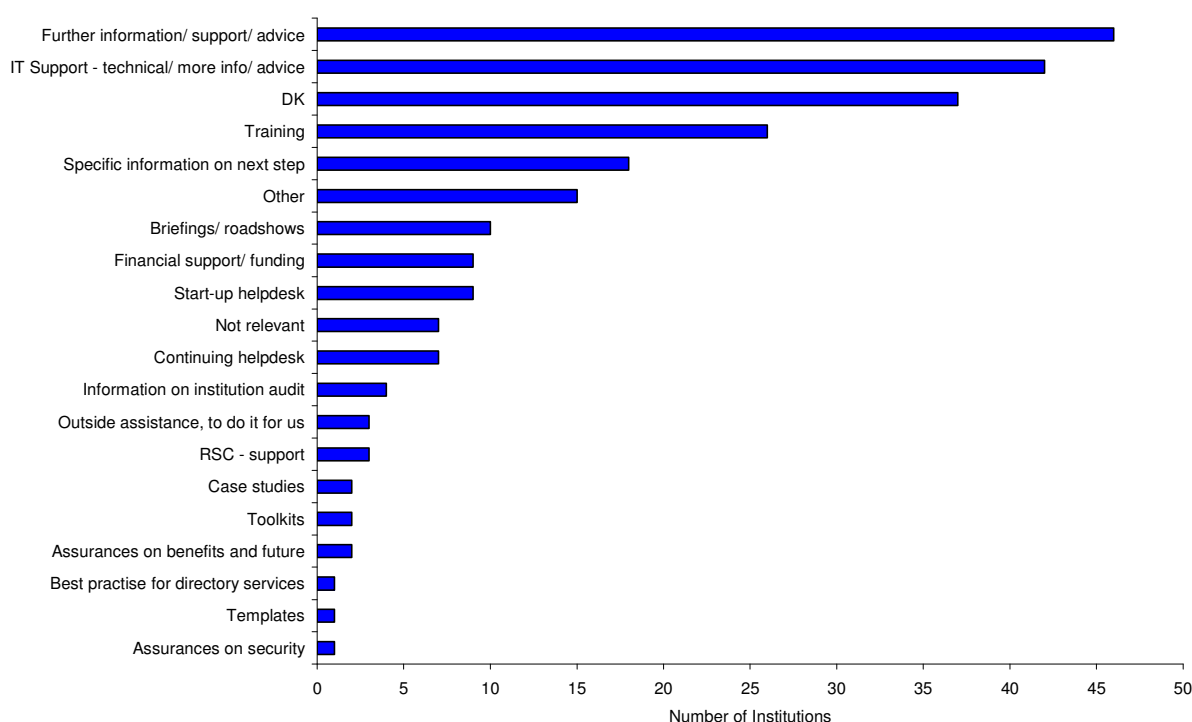
- a large majority of responses were "don't know" or "no idea";
- several respondents viewed the Eduserv prices as the cost of adoption, although were not aware of the exact cost for their institution;
- some quantitative estimates, ranging from "£100s, not £1000s", through "a couple of £k".



*Figure 2-8: what barriers do respondents foresee?*

***What support will institutions require?***

- 2.5.14 Respondents were asked what support their institutions would require to adopt federated access management. A wide range of responses were elicited, with further information being the main requirement. This again reflects a poor understanding of the impending changes within the sector.
- 2.5.15 Several respondents made comments along the lines of “take institution out of the equation and just get it sorted for us”. There is a demand for information regarding the choices available to institutions, how they might go about making these choices, and implementing the resulting decision.



*Figure 2-9: what support do respondents expect that their institution will require to adopt federated access management?*

**2.6 Comparison with previous survey**

- 2.6.1 Given the lack of regional variation demonstrated between the respondents to the earlier study, the results of this survey may to some extent be seen as a longitudinal data set, and be used to examine how the situation has changed in FE over the last 6 months.<sup>9</sup>
- 2.6.2 There is now slightly greater awareness by respondents of the JISC’s activities and timeline in relation to federated access management. Reported awareness of the JISC’s timeline rose

<sup>9</sup> The methodology was not designed to generate longitudinal data, so it is possible that using the data for this purpose may not be justified.

from 53% to 55% (which is probably not statistically significant), and awareness of the JISC's activities rose from 45% to 61%.

- 2.6.3 Comparison of stated institutional positions shows that these have changed little since the last survey. As the question was refined in this study to allow for a greater range of pre-coded responses, there is a greater granularity regarding intentions for adoption. The similarity between the two sets of responses gives further confirmation that the situation within English and non-English FE is similar.

| Current survey (England)   |     | Previous results (non-England) |   |
|--|-----|--------------------------------|---|
| <b>Have an interest in federated access management, but no plans to adopt</b>                            | 35% | 29%                            | <b>Have an interest in federated access management, but no plans to adopt</b> |
| <b>An existing user of federated access management</b>   | 2%  | 2%                             | <b>Existing early adopter</b>   |
| <b>Firm plans made and resources available to adopt federated access management by July 2008</b><br>(2%) |     |                                |   |
| <b>Intend to adopt by July 2008, preliminary plans made</b><br>(12%)                                     | 28% | 29%                            | <b>Plan to adopt by July 2008</b>   |
| <b>Intend to adopt by July 2008, not sure if this is feasible</b><br>(14%)                               |     |                                |   |
| <b>Intend to adopt at a later date</b>   | 6%  | 8%                             | <b>Plan to adopt at a later date</b>  |
| <b>Do not intend to adopt</b>  | 4%  | 3%                             | <b>Do not intend to adopt</b>   |
| <b>DK/no answer/other</b>  | 25% | 29%                            | <b>DK/no answer</b>   |

*Table 2-18: comparison with previous survey*

## 2.7 Qualitative findings

- 2.7.1 Following the conclusion of the interviews, the survey team was debriefed to build a picture of the attitudes and awareness of the interviewees which is difficult to capture in the survey response itself.
- 2.7.2 This subsection presents some of the common issues and perceptions, and is supported by selected quotes from the free-text fields within the survey responses where possible.
- 2.7.3 The comments received relate almost entirely to the direct replacement of the Athens service. There is very limited evidence of consideration of wider potential benefits – although this may reflect the focus of the questionnaire.

### ***Common misconceptions***

- 2.7.4 The concept of federated access management is poorly-understood, and a number of misconceptions are frequently encountered amongst respondents.

It is an index of resources

- “An index of available resources and links to those resources, hence a single portal.”

It will cost to join the federation

- "Where as JISC has funded Athens in the past Federations would need pay a subscription to Shibboleth."
- "... management of the access and authentication will cease to be available from 2008 and that a more comprehensive system using 'Shibboleth' will be available – at a cost. The alternative is organise your own!"

Federated access management is federated searching

- "Instead of having to access to separate resources can do a single search to return from all sources."

Shibboleth is a replacement service, equivalent to Athens

- "Shib - that's an updated version of Athens."
- "We understand it as a single sign on service that allows students and staff to access electronic resources remotely."
- "Shibboleth - heard of it, easier than Athens and works on IP address."
- "Son of Athens, same ballpark."

The Federation is a content provider

- "Given the content has an HE focus we have little need for it."

Federated access management will cover all resources

- "Would make it a good deal easier for our students as some of our online resources do not fall under Athens so require password access from home which can be confusing for staff and students."

### ***Concerns regarding costs***

2.7.5 Although few institutions have any concept of the costs involved in adopting federated access management, they are clear that their resources are very limited. Respondents were concerned that they would not be able to afford to pay for Athens, and did not have the technical capability to develop IdPs of their own:

- "If there is no way round the cost we will have to give up for the foreseeable future."
- "No idea - no info on this on the JISC website. To put it in context though the library in this institution only has 0.5% of the total institution budget."
- "No - general concern in sector about funding for things Athens just does. Things being withdrawn and not clear what is replacing them."

### ***Pockets of understanding***

- 2.7.6 There are still pockets of understanding within institutions, especially where the library is responsible for online resources and Athens, but does not have the technical expertise to understand federated access management. The IT departments may have a clearer understanding of the concepts and the technology, but have not prioritised adoption.
- "I have independently found out much about how we should move forward but no-one else in my organisation seems to know anything about these developments or think they are relevant to them."
  - "I don't think anyone else in the college has much awareness or understanding of our current use of Athens, let alone FAM."

### ***Perceptions toward the JISC and federated access management***

- 2.7.7 Many respondents have neutral or even negative perceptions of the JISC, and of the move to federated access management specifically. There is a general feeling that the JISC is HE-focussed, and that institutions are being forced towards adopting a complicated service which they neither want nor need, when they are currently happy with the Athens service.

### **Support**

- "Bewildered by it. 2 people went on RSC course in Oct came back thinking what is it and why?"
- "If its anything like most JISC resources its focused on Higher Education and will be subscription based."
- "JISC is very helpful in advising me."
- "Messages about Federated access seem to have been mixed leading to confusion."
- "JISC set up the training about shibboleth earlier but I felt Eduserv shut off debate and everyone left confused."
- "Documentation describing Shibboleth needs to be in English rather than tech speak. Will need an idiots guide to this for the non technical people."
- "I appreciate JISC are trying to provide advice on choices available, but I feel more and more confused! I think it is because a lot of information from different sources is being provided - one definitive informative document would be preferable."
- "A straightforward cookbook to indicate implementation steps required for shibboleth using ADFS and ongoing operations activities would be really useful."
- "Would like to simplify their promotion leaflets - they are difficult to understand. The language is not straightforward - too much jargon."
- "JISC are not good at promoting themselves. They just send emails. FAM is all coming out too late. Our budget now runs from 1st Aug to 31 July go to make decisions now about 2008 and don't have enough info on FAM. JISC is also cliqueish - don't help to inform managers of colleges who are not IT literate, Managers are not interested in it."
- "JISC doing a grand job but because of all this change it is quite confusing and in terms of the work and deadlines would be good if we could get more information on cost and what we have to do."
- "Letter from JISC sent to the Principal originally about DA and Shibboleth - have to say the language not very obvious to a principal about what it was. It was passed to technical people and only passed to Library late on - secretary didn't understand letter so it has been left so not sure if dealt with. Communications are not good!"

### Focus

- "I know it's a national thing but people like me (part time in small institution) seem to get lost in all this. It seems to be very geared towards the academics at the universities, and it's a bit intimidating and confusing to me. They should gear it down to our level. We need the support to be geared to this."
- "JISC have more of a job with FE than HE sector."

### Surveying

- "We do have other jobs to do other than answering questionnaires ;-)"
- "I think it is an excellent idea for JISC to get an overall picture of how are or not organisations are. The text boxes along with the tick boxes are likely to produce more accurate data so the design of the survey form is good."
- "I would like more information about the results of the survey and for someone from JISC to follow it up with me."

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## 3 Outreach planning

### 3.1 Introduction

3.1.1 The JISC aims to encourage substantial uptake of federated access management technology by July 2008, when the OpenAthens subscription service will be introduced.

3.1.2 In our previous report covering HE and non-English FE institutions,<sup>10</sup> we proposed an uptake model involving the dual requirements of technical capability and management commitment before adopting federated access management.

3.1.3 In the context of FE, this model is probably still valid, but with some important provisos:

- The technical challenges involved in adopting federated access management technology at an “average” FEI are likely to be significantly less serious than at an “average” HEI. On the other hand, FEIs typically have substantially more limited technical capability and are likely to find deploying software such as a Shibboleth IdP difficult.
- There is a limited understanding of the concept of federated access management within the FE sector, and very limited understanding of the options for joining the Federation. Institutions are not yet in a position to make decisions regarding the way ahead.
- FEIs are typically stretched for time and resources. There is a real concern that if an institution’s library has, for example, a £20k annual budget – including electronic resources – dedicating several thousands to subscribing to Athens or developing an IdP is likely to be impossible. These institutions may be so resource-constrained that they are unable to adopt federated access management, even if the desire exists.

### 3.2 Approach

#### *General*

3.2.1 The RSCs are a key support channel for FE institutions, with 75% of institutions engaged in this manner. The RSCs are also a leading support channel for federated access management, with 33% of institutions having gained information this way.

3.2.2 Given this level of engagement, it is appropriate to continue to use this channel as strongly as possible for connecting with institutions.

#### *Provide appropriate support materials*

3.2.3 It is clear that a significant number of respondents demonstrate limited awareness of the JISC access management agenda. There is a strong feeling that published material is aimed at IT staff rather than library staff, whereas it is often the library staff who are responsible for Athens, and for access to external resources.

3.2.4 A significant number of respondents expressed a desire for a simple “one page” document setting out the overall concept, and the options available to institutions. This should be aimed at library staff with limited technical expertise, and should avoid the use of jargon.

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<sup>10</sup>

*Federated access management: institutional preparedness study, CC273D001-1.0, 5 December 2006.*

***Ensure that the message conveyed by the JISC and Eduserv is consistent***

- 3.2.5 There is a sense that institutions are receiving mixed messages from the JISC and Eduserv. Although it is expected that the access-management landscape will become more heterogeneous over time, Eduserv is currently the *de facto* monopoly supplier of access management solutions to UK educational institutions, and has well-developed contacts with all institutions, which it is actively leveraging to develop a market for OpenAthens.
- 3.2.6 It is likely that Eduserv will have an important role to play in the access management requirements of a significant number of FEIs. Both the JISC and Eduserv must ensure that they have a clear view of the options available to institutions, and that these views are consistent.

***Support decision-making***

- 3.2.7 Given the limited use of external resources by many of the institutions surveyed, it is unlikely that replacing the current Athens service will prove to be beneficial enough to justify the adoption of federated access management, either by deploying an IdP or by subscribing to OpenAthens.
- 3.2.8 The JISC should acknowledge that for some institutions the appropriate solution will not involve operating an IdP of their own. With this in mind, the focus for outreach should be on supporting the decision-making process through provision of appropriate information and guidance, and by taking a broader approach to the possible benefits of federated access management, beyond replacing Athens. The aim should not be to persuade institutions to adopt federated access management.
- 3.2.9 For a significant fraction of FEIs, there may be no business case for the adoption of federated access management in the short term, and possibly not in the longer term, through any of the routes currently available to them. Given the significant cost of subscribing to OpenAthens, these institutions may be tempted to revert to using IP-address authentication, at least in the short term. This will have negative repercussions for the user experience.

## 4 Conclusions

### 4.1 Success of the study

- 4.1.1 This study has contacted *circa* 330 English FE institutions, and obtained responses from 158. It provides a quantitative analysis of the status of these institutions with regards to the adoption of federated access management, and provides a “flavour” of the attitudes and opinions of the respondents.
- 4.1.2 There is currently substantial uncertainty within the FE sector, with only a small number of institutions having understood the issues adequately to make a reasoned decision. Given the degree of uncertainty, the results should be seen as a measure of the current situation, and cannot reliably be used to predict uptake by in July 2008.
- 4.1.3 Although this study was not designed to provide a longitudinal dataset, the data is comparable with that generated for non-English FE in the previous study. It is probably valid to generalise results from this survey to all UK FE (see subsection 2.6).
- 4.1.4 The study has established contact with a large number of institutions who have typically felt that they are of minor concern to the JISC. The efforts of the JISC to understand the status of these institutions is generally appreciated, although some respondents are suffering “survey fatigue”, both from the JISC and from other sources.

### 4.2 Awareness, understanding and preparedness

- 4.2.1 There is currently poor understanding of both the technology supporting federated access management, and the arrangements surrounding the termination of the free Athens service, within some areas. There is generally very poor understanding of the options available, and the potential benefits and costs. There are pockets of understanding, but the information has not fully penetrated the sector.
- 4.2.2 There are pockets of understanding within institutions. This is especially significant where an institution’s library has responsibility for online resources and Athens, but does not have the technical expertise to understand federated access management. The IT departments may have a clearer understanding of the concepts and the technology, but have not prioritised adoption.
- 4.2.3 *Circa* 60% of respondents claim to be aware or very aware of the JISC’s activities and timeline in regards to federated access management. There are, however, a number of frequent misconceptions of the upcoming changes. A non-negligible number of institutions have a very poor understanding of the concept, and of the implications for them.
- 4.2.4 The reported understanding of the concepts and issues surrounding federated access management is low, however; 12% of respondents report having a good understanding of the overall concept of federated access management, with a further 40% reporting some understanding. 24% of respondents report having no understanding of the budget and resources requirements of federated access management.
- 4.2.5 Preparedness for the move to federated access management is currently low, with institutions unclear of what options are available to them, what these options may cost, and how to move forward.

### **4.3 Business case for small FEIs**

- 4.3.1 Athens is widely used within the FE community, with 75% of institutions using Athens or AthensDA to protect access resources to which they subscribe. However, the number of resources protected is typically low, with 53% of those institutions who subscribe to any electronic resources having fewer than 10 such resources, and a further 31% having fewer than 20. For these institutions, replacing Athens is unlikely to represent a significant driver for the substantial effort involved in the adoption of federated access management.
- 4.3.2 Many respondents consider federated access management as a replacement for Athens, or as a separate SSO system. There is a proportion who understand the concept of federated access management, but there is very limited evidence of thinking beyond the replacement of Athens – but this may reflect the focus of the questionnaire.
- 4.3.3 Given the potentially limited case for the adoption of federated access management by FEIs, the JISC should carefully consider how best to approach the sector. There is the possibility that forcing institutions toward federated access management technologies which they do not require and can not afford will have the unintended effect of pushing institutions back toward IP-address authentication, with the loss of functionality and user experience that that entails.

## **5 Recommendations**

### **5.1 Introduction**

5.1.1 This section collates the recommendations made elsewhere within this report, for ease of access.

### **5.2 General**

- 1) The JISC should accept that for a large number of FEIs, there is likely to be a limited desire to adopt federated access management. This must be factored into planning for access management within the sector.
- 2) The JISC should consider how best to support those institutions which require access to only a limited number of online electronic resources. In these cases, either the adoption of federated access management for the replacement of Athens, or subscribing to OpenAthens are both likely to present poor value for money. The debate should be broadened beyond the replacement of Athens, and extended benefits should be emphasised.
- 3) The JISC should consider defining and supporting alternative mechanisms by which small institutions with limited resources could adopt federated access management and achieve value for money.
- 4) The JISC should consider that some institutions are likely to adopt the easiest, or the cheapest solution, rather than making a strategic choice to select the optimum solution.

### **5.3 Outreach**

- 1) The JISC should consider whether the current approach to outreach activities in the FE sector is appropriate or adequate.
- 2) The RSCs should continue to take the lead in engaging FEIs with the federated access management agenda.
- 3) As a priority, the JISC should tackle the very poor understanding of the options available and the potential benefits and costs.
- 4) The JISC should focus outreach activities toward supporting decision-making rather than promoting the adoption of federated access management by operating an IdP service.
- 5) Supporting materials must be made accessible to less technically-focused staff. Specifically:
  - i) There is demand for a "one-page" introduction to federated access management, written for non-IT staff and avoiding jargon.
  - ii) The current training courses are considered to be inappropriate for library staff, who hold responsibility for Athens. This should be addressed.
  - iii) The website should be made more accessible for visitors who are not familiar with federated access management, or with the work of the JISC. For example, an easy

route to find information suitable to different roles (*eg* Librarian, IT Manager, Tutor) may be helpful.

- 6) The JISC should develop a clear and coherent view of the way ahead, and agree with Eduserv a consistent message between the two organisation.

## A Methodology

### A.1 Introduction

A.1.1 This annex sets out the methodology of the institutional preparedness study which encompassed the following stages:

- information requirements;
- survey design;
- telephone interviews;
- data processing;
- information analysis.

A.1.2 The results of the information analysis were presented to the JISC and are documented in this report.

### A.2 Data gathering

A.2.1 A questionnaire was developed, based on that used in the previous UK HE and non-English FE study,<sup>11</sup> and agreed with the JISC.

A.2.2 Contact details for approximately 330 institutional contacts were provided by the JISC.

A.2.3 Over a period of 5 weeks in March and April 2007, telephone interviews based on the agreed survey, were conducted. Where it was not possible to arrange a telephone interview, or when requested, respondents were emailed a copy of the survey for completion. This was the preferred method of response in many cases, as it gave the respondent the possibility to solicit information from a range of stakeholders within the institution.

A.2.4 Respondents were asked to consent to future processing of the data.<sup>12</sup>

A.2.5 The dataset from survey responses was entered directly into Snap software by Mindset, or automatically in the case of emailed surveys. This software permitted export of the dataset in a standard file format.<sup>13</sup>

A.2.6 In some instances, two responses were elicited from a single institution – often the first respondent suggested the second would be able to provide a better insight. In these cases, the less-informative response was discarded.

A.2.7 In total, 158 responses were collected. This represents approximately 40% of the total English FE sector. The statistical significance of samples from small populations depends largely on the degree to which the populations are segmented. In this survey, there are no instances of segmenting more than 8 ways, and the majority are 3-4 ways. For questions where only a subset of respondents was asked to respond, the statistical uncertainty in the percentage values will be higher. Given the comparative nature of the analysis in this document, the results remain significant.

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<sup>11</sup> *Federated access management: institutional preparedness study*, CC273D001-1.0, 5 December 2006.

<sup>12</sup> The standard HEFCE data protection wording is used within the survey script.

<sup>13</sup> The data is stored as comma separated values, each row representing one institution.

### **A.3 Data processing**

- A.3.1 The exported dataset was loaded into a MySQL database for analysis. The schema and data have been provided to the JISC separately to this report.
- A.3.2 The database was interrogated directly using an Structured Query Language (SQL) client or by importing to Microsoft Excel through an Open DataBase Connectivity (ODBC) connection, and results were analysed further in Excel.

### **A.4 Information analysis**

- A.4.1 Guided by the information requirements and the survey the results database has been interrogated to provide information on institutions' awareness of, and readiness and willingness for, federated access management. A range of examination strategies were employed to discover interesting and relevant correlations and issues.
- A.4.2 An understanding of the dataset's context, gained from relevant documentation and other activities, has been applied, where appropriate, to information analysis.