

## 1. Introduction

JISC has been awarded additional funding of £81 million by HEFCE and HEFCW over the next three years (April 2006 – March 2009) and has launched a range of new programmes to support the work of the higher education and research community. Collectively the initiative is referred to as 'The JISC Capital Programme' and has six strategic strands:

- Network infrastructure
- Digital resources
- e-Learning
- e-Infrastructure and security
- Users and innovation
- Digital repositories and preservation

The programme has a Governance Framework and is overseen at a strategic level by the JISC Board and at strand level by the relevant JISC committee. An internal Capital Planning Group has been established to ensure a coherent approach across the capital-funded programme strands. This includes the development of an overarching evaluation framework with the following terms of reference:

1. To consider the evaluation options for the capital programme and how the overall programme and its individual strands might be evaluated;
2. To devise a way to measure the benefits of each of the programme strands and the capital programme as a whole;
3. To develop and recommend an evaluation schema for the programme and its strands, incorporating both formative and summative evaluation, for consideration by the JISC Executive.

This report outlines the strategic context for the development of an evaluation framework for the Capital Programme. It summarises the historical context of JISC evaluation activities and the methodological approaches used in developing this framework and proposed approaches. It also presents an evaluation schema for the programme and its strands, with recommendations for implementation.

## 2. Context

### 2.1 JISC Strategy

The timeframe for the Capital Programme spans two JISC Strategies; the current 2004 – 2006 Strategy and the consultation draft for 2007 – 2009. The vision of '*ubiquitous and reliable access to an information and communication environment, so that users are able to enjoy world-class technologies in support of their work and study*', and JISC mission '*to provide world-class leadership in the innovative use of information and communications technology to support education and research*' remain largely unchanged. However, there are some subtle differences in emphasis and priority to the aims for each of the two strategies as shown in the table below:

JISC Strategy 2004 – 2006	JISC Strategy 2007 – 2009 (consultation draft)
To develop solutions that help enable the UK education and research communities to keep their activities world class through the innovative use of ICT	To deliver innovative and sustainable ICT infrastructure, services and practice that support institutions in meeting their mission
To provide advice to institutions to enable them to make economic, efficient and legally compliant use of ICT, respecting both the individual's and corporate rights and responsibilities	To enhance its activities to support the management of institutions
To help the sector provide positive, personalised user learning experiences and to aid student progression	To promote the development, uptake and effective use of ICT to support learning and teaching
To develop mutually advantageous partnerships with organisations in the UK and abroad	To develop and implement a programme to support institutions' engagement with the wider community
To advise, inform and help implement the strategies of government, funding councils and research councils	To support the uptake and effective use of e-research
	To continue to improve its own working practices

On this analysis there is a clear progression between the two strategies. The accompanying details in both documents elaborate on the specific measures that are required to realise both the JISC vision and mission.

## 2.2 Evaluation Context

JISC was established in 1993 to deal with networking and specialist information services for the HE sector. Since then it has grown considerably to provide services across the four nations at all levels of post-16 education. Its activities are designed to represent value for money, collaboration and partnership with other relevant bodies to share best practice and effort, and establish needs within the community for new services and development. JISC funds development programmes within the community to test innovative uses of ICT which involve action research.

To support this development activity, JISC has in the past undertaken traditional formative and summative evaluations for its programmes, with vary degrees of success. For Phase 2 of the MLEs for Lifelong Learning Programme an evaluation framework<sup>1</sup> was developed based on the Kellogg Foundation's cluster model<sup>2</sup> which used a layered approach to combine evaluation evidence from projects with the overarching programme objectives. Phase 1 of the same programme had attempted to use a logical framework approach as has the evaluation of the e-Learning Programme. In both situations while the logical framework approach can be a useful tool for planning and evaluation purposes, logframes can be difficult to understand and this, combined with a certain inherent rigidity, can result in the simplification of complex social processes<sup>3</sup>. Therefore the logical framework approach has not been adopted for this evaluation framework but the need for an awareness of social networks is addressed<sup>4</sup>.

In 2003 the JISC e-Learning programme proposed a new approach to evaluation which, if successful, would be used as a model for future programmes. The reasons given for this new approach were:

<sup>1</sup> [http://www.jisc.ac.uk/index.cfm?name=project\\_mllell\\_evaluation](http://www.jisc.ac.uk/index.cfm?name=project_mllell_evaluation)

<sup>2</sup> <http://www.wkkf.org/default.aspx?tabid=75&CID=281&NID=61&LanguageID=0>

<sup>3</sup> Earle, L (2003) Lost in the Matrix: The Logframe and the Local Picture. Paper for INTRAC's 5th Evaluation Conference: Measurement, Management and Accountability? 31st March – 4th April 2003 The Netherlands Available from: <http://www.intrac.org/Intrac/docs/LEarle.pdf>

<sup>4</sup> <http://www.mande.co.uk/docs/MMA.htm>

- The typical three-year programme lifecycle does not take account of the rapidly changing environment and factors like new technologies developed, evolving technical standards, new or more evident user needs, or changing priorities of institutions. A development programme can be overtaken by events if it lacks the flexibility to respond to changing circumstances.
- The overall e-Learning Programme is a group of programmes that need to operate as a coherent whole. Their objectives and plans need to be aligned and will need to be re-aligned as the programme progresses and responds to changes in the environment.
- Traditional formative and summative evaluations tend to review a programme in depth at one point in time, resulting in a single report. Continuous evaluation with regular and timely outputs will be more suitable for the dynamic nature of the e-Learning programme.<sup>5</sup>

The approach proposed was one of continuous evaluation based on a development cycle of plan, do, evaluate, review. Audiences identified as key recipients of evaluation outputs were all largely internal: the responsible committee, programme steering committees and the programme teams. Other potential stakeholders such as funding councils and the JISC community were also identified who would have a secondary interest. The evaluation would be structured as a series of levels: programme, strand and project. Two years on, this approach has only been partially successful and possibly in ways that were not originally intended.

### **2.3 Management of the Capital Programme**

JISC has introduced a formal approach to its planning and management of development programmes through the introduction of the Managing Successful Programmes (MSP) methodology. The MSP method does not have a specific approach to evaluation but it does emphasise some important elements relating to evaluation which include the identification of stakeholders, understanding intended outcomes, programme performance and quality. The relationship between key elements from MSP and the evaluation framework will be identified below.

### **2.4 Parallel Core Development Activities**

The Capital Programme is not an isolated development in JISC's activities but is part of a bigger, ongoing series of developments. A key challenge for JISC to avoid the creation of false divisions in development areas, not simply to gather data required for reporting purposes but to have a coherent approach to monitoring and evaluation that can satisfy different audiences at different levels with very different needs. The thematic strands of the capital programme do map directly to other JISC developments and there is a firm commitment within JISC to have a unified approach to monitoring and evaluation that is applicable to all development activity whatever the funding package.

### **2.5 Current Evaluation Activities**

As part of the investigation to support the development of this evaluation framework, a brief analysis of evaluation approaches across all current development programmes was undertaken. In addition an internal JISC study has recently been done to review evaluation approaches in the e-Learning Programme. The picture is a patchy one with no consistent approach to the procurement, use and management of evaluation initiatives. There is also some 'baggage' and negativity around some earlier attempts to make use of formative evaluation approaches and findings. Related issues concern the role of support projects, synthesis of outputs and dissemination. The following table summarises current evaluation approaches:

<sup>5</sup> JISC Evaluation Strategy for E-Learning Programme (2004) Committee Paper Annex B JCLT(04)18

Programme	Evaluation Activities
Network infrastructure	Internal processes only. Previous attempts at external evaluation were unsuccessful through lack of suitable evaluators
Digitisation	Phase 1 Digitisation Programme Formative Evaluation Evidence Base: Research & Evaluation Services UCE Library Services, University of Central England No documentation available
e-Learning	Previous evaluation framework for e-Learning Programme has now ended Logframe and draft final report reviewed
e-Infrastructure and security	No evaluation in place
Users and innovation	Virtual Research Environments (VRE) Programme Formative Evaluation – Tavistock Institute No documentation available
Digital repositories and preservation	Previous evaluations include the FAIR Evaluation – Study on Lessons Learned and LinkER: Formative Evaluation of the JISC Linking Digital Libraries with Virtual Learning Environments' (DiVLE) Programme

### 3. Methodological Approaches

Evaluators will tell you that there are many approaches to evaluation but imply that their's is best. Having worked with JISC development programmes for some years we have adapted various approaches based initially on earlier work undertaken by the Tavistock Institute for the eLib Programme<sup>6</sup> and by CERLIM for the DNER programme<sup>7</sup>. JISC was keen to introduce more formative approaches having found summative approaches to be too late and inflexible to be adapted during the lifetime of a programme when changes could have been beneficial to both the programme and its outcomes. Other approaches have included providing evaluation support to projects and then combining summative evaluation with the synthesis of key findings as with the FAIR programme<sup>8</sup>. However, observation and anecdotal evidence leads us to believe that there is confusion, which is not unique to JISC, about the purpose of evaluation and its relationship to monitoring. In addition the role of project and programme support, communication, dissemination and synthesis adds further layers of potential confusion and complexity.

For the capital programme we thought a fresh approach might be needed, partly since a modified version of MSP was now in use as the programme management methodology but also because of the level of funding. As previously mentioned, there is no specific approach to evaluation identified in MSP. It is part of a range of approaches from the Office of Government Commerce (OGC) where efficiency, delivery and value for money are the key drivers. In the civil service, MSP is used as part of the OGC Gateway Process and is reviewed through an OGC Gateway Review. Specifically, the OGC Gateway Review 5 focuses on ensuring that the project delivers the benefits and value for money identified in the business case and benefits plans. It is normally done 6 – 12 months after project completion when evidence of the benefits is available. Outwith OGC this approach would probably be known as an impact study and while this is relevant to the capital programme it is beyond the immediate scope of this evaluation framework. However, whatever evaluation activities are undertaken during the life of the capital programme, the real benefits can only be evaluated post-programme.

<sup>6</sup> <http://www.ukoln.ac.uk/services/elib/papers/tavistock/evaluation-guide/intro.html>

<sup>7</sup> <http://www.cerlim.ac.uk/edner/>

<sup>8</sup> [http://www.jisc.ac.uk/uploaded\\_documents/FAIR\\_Lessons\\_Learned.doc](http://www.jisc.ac.uk/uploaded_documents/FAIR_Lessons_Learned.doc)

Having been unable to identify an evaluation approach within MSP, the search was broadened first to other government initiatives and then to development programmes, usually either community or developing country initiatives. Ten Steps to a Results-based Monitoring and Evaluation System<sup>9</sup> was developed by the World Bank to support its development programmes. It is intended as an approach that can be used to help policy makers and decision makers track progress and demonstrate the impact of a given project, program, or policy. However, whilst the emphasis on results and the relationship between evaluation and monitoring was helpful, this approach was too heavily focused on quantifiable targets to be directly relevant to the Capital Programme.

Considerable efforts were made to identify an appropriate evaluation methodology that was essentially 'off the shelf' in a similar vein to MSP. These efforts have revealed, tellingly, that organisations which are engaged in any significant development programmes have their own tailored approaches to evaluation, usually supported by a dedicated evaluation team with documentary resources such as an evaluation handbook. These organisations include the World Bank, the Kellogg Foundation, various Canadian government departments and the UK Department for International Development.

These development organisations all take a broadly similar approach to monitoring and evaluation with variations in the emphasis on certain elements and the documentation required. Their evaluation models are based around logic modelling approaches with some requiring detailed logical frameworks and others being more pragmatic and less theoretical. However, they all recognise and emphasise the need for a co-ordinated, coherent approach that is focused on outcomes and stakeholders. The close relationship between the design of the development programme and the design of the monitoring and evaluation requirements is an essential feature of overall success for the programme.

The most pragmatic and least fussy implementation of all these models is that developed and well documented by the University of Wisconsin-Extension (UWEX)<sup>10</sup>. Here an approach to logic modelling has been developed that takes staff through a series of steps to first design and then evaluate education programmes. In the JISC context, programme design and management has been undertaken using MSP. However, a key product from that process is the development of outcomes and benefits, and these form an essential basis for the evaluation plan. Using techniques primarily derived from UWEX, a logic model of the capital programme has been developed (see Appendix 1). This model has then been used to develop the evaluation plan which is the core of the evaluation framework.

#### 4. Evaluation Framework

The evaluation framework outlined below and in the appendices is only a starting point for the more detailed planning that will need to be undertaken within each strategic area and development programme. Given both the complexity of the capital programme and the opportunities for synergy across strategic areas, the need for co-ordination of evaluation activities is essential. Issues of ownership and control are recurring themes in previous evaluation activities for JISC development programmes. Whilst responsibility for evaluation rests at the various levels shown in the table below, the terms and conditions of grant letters to projects do not stretch to control over who does what and JISC has no contractual relationship with individuals involved in projects.

Area	Level	Actors	Purpose
Policy	Strategic	SROs	Goals
Programme	Tactical	Programme Managers	Outcomes
Project	Operational	Project Managers	Objectives

<sup>9</sup>[http://www.wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/08/27/000160016\\_20040827154900/Rendered/PDF/296720PAPER0100steps.pdf](http://www.wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/08/27/000160016_20040827154900/Rendered/PDF/296720PAPER0100steps.pdf)

<sup>10</sup> <http://www.uwex.edu/ces/pdande/index.html>

#### 4.1 Evaluation Principles

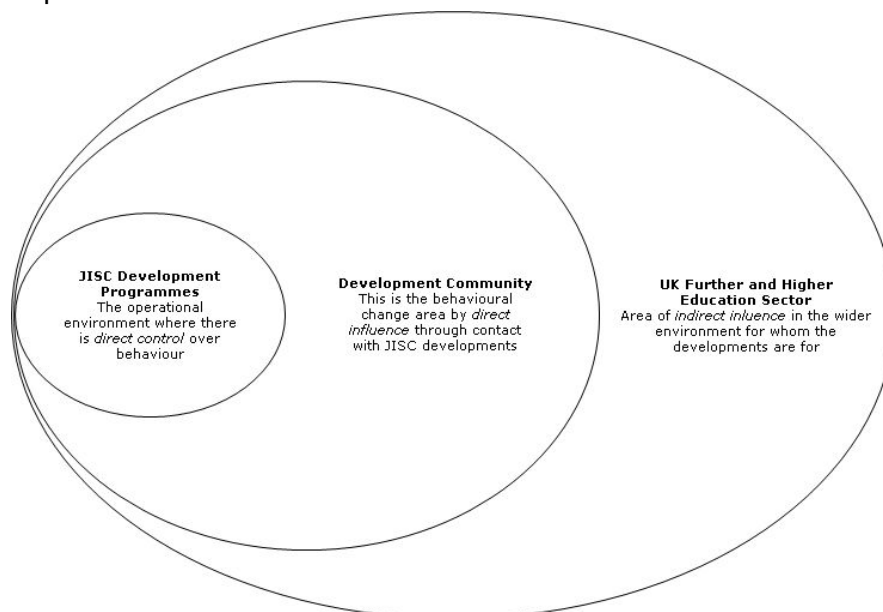
The following evaluation principles for the Capital Programme were derived from a detailed process of consultation and discussion with senior responsible owners for the strategic programme areas and other key representatives from the Capital Planning Group:

- There should be a co-ordinated and consistent approach to evaluation across all strands and strategic areas of the programme whilst acknowledging the wider context and complexity of each strand
- Each programme strand should have its own evaluation plan with clearly defined and articulated outcomes with a focus on changes in state and behaviour
- Synergies between strategic areas should be identified and exploited to enhance evaluation outcomes
- The baseline position should be documented at the start of programmes and projects where appropriate
- Greater value and emphasis should be placed on encouraging projects and programmes to articulate what they have learned rather than report what they did
- Information generated through monitoring and reporting activities should also be analysed from an evaluative perspective where appropriate
- Practitioners should seek continuous improvement in the quality of development processes, outputs and outcomes
- Evaluation should be an asset for those being evaluated

#### 4.2 Stakeholders, Boundaries and Responsibilities

JISC works with and for many stakeholders. Managing these differing interests and expectations is a major challenge particularly when the role and work of JISC is not always clearly and consistently understood by its constituents. Much of the success of evaluation depends on engagement with stakeholders and managing relationships with them. Each programme definition document includes some analysis of stakeholders but in evaluation terms there will also be key informants, that is someone who can tell you something about the area under development but who does not necessarily have a vested interest in it as a stakeholder does.

Each of the strategic development areas has its own set of users or community. This group is 'development savvy' and not necessarily engaged with the wider practitioner or end-user community. The relationship with this wider and much bigger group is best managed through the JISC Communications Team who have the skills and expertise to distil key messages and communicate them to the UK further and higher education sector at large. This arrangement is depicted below:



Analysing and understanding the constituent communities in this way facilitates both the implementation of the evaluation plan and the dissemination of project and programme findings. There is a direct mapping between the three spheres and the impact of development programmes. Change in the wider community will only be seen comprehensively after some time. More immediate changes will be discernable in those areas over which the JISC development teams have direct influence.

Responsibility for evaluation activities was outlined in the section 4.1 table. However, much of the work will be done by the project teams and it is the analysis, synthesis and articulation of key outcomes that will rest with JISC programme managers. This does not need to be an onerous task as the benefits of effort at the evaluation planning stage should be realisable.

### 4.3 Evaluation Plan

To facilitate and assist in these efforts the formulation of evaluation plans for each strategic development area are proposed. In turn these will contribute to the over-arching plan for the programme. This plan, Appendix 2, has been developed from information in the programme definition documents and expert consultation with senior responsible owners for the programme strategic areas. The model used is again drawn from UWEX approaches and is based on the idea of a performance framework where achievement of outcomes can be reviewed and understood in terms of key indicators and the starting position where relevant.

Outcomes	Indicators	Baseline	Source of information	Collection method
Changes in the behaviour, relationships, activities, or actions of the people, groups, and organisations with whom a programme works directly	How will success or achievement be known?	What is the current situation prior to development activity?	Where can this data be obtained?	How will the data be gathered?

The key challenge in developing an evaluation plan lies in the identification of appropriate indicators or evidence that an outcome has been achieved. Multiple indicators for individual outcomes are often needed. They need to be culturally appropriate and can be quantitative or qualitative. Sometimes it can help to formulate outcomes as questions based on what you want to know as a result of the evaluation.

The following are types of change that can help to identify indicators:

- *Presence* of something (the number of something)
- *Type of access* to an innovation or new service (is the situation better or worse)
- *Level* of use (the frequency which something is used)
- *Extent* of activity or coverage (numbers involved in the use of something)
- *Relevance* of the innovation (does the innovation resolve the underlying issue)
- *Quality* of the innovation (how well the change is done)
- *Effort required* to achieve change (how hard is it to make the change)

Sometimes direct measures are not appropriate or unavailable. In these instances proxy indicators can help. These are approximations based on other evidence that is symbolic.

### 4.4 Project Typology and Evaluation Types

To assist in understanding and identifying the most relevant types of evaluation approach that could be used in specific activity areas, an analysis of the capital programme road map<sup>11</sup> was undertaken and a summarised version produced (see Appendix 3). A typology was then developed where projects (as a subset of a programme or call) are categorised in terms of what

<sup>11</sup> [http://www.jisc.ac.uk/capital\\_roadmap.html](http://www.jisc.ac.uk/capital_roadmap.html)

they are trying to do, and the proposed methods. Attributes and key words are derived from summary information in the Capital Programme road map. Types of evaluation are derived from the key focus of each type of project/programme (see Appendix 4).

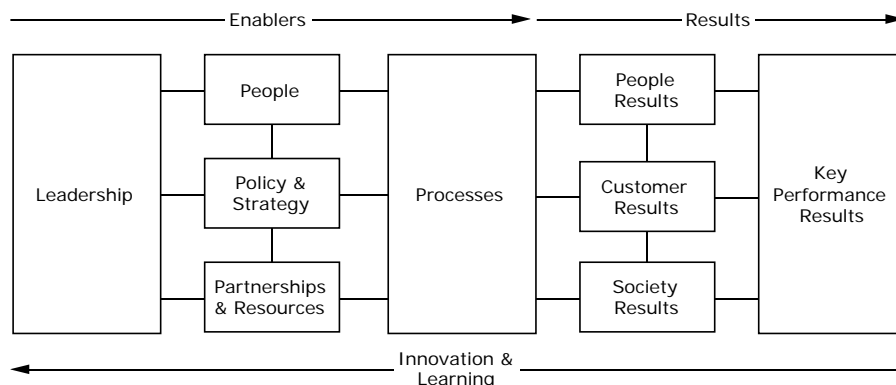
#### 4.5 Quality Issues

In any appraisal of performance there will be some consideration of the quality of what has been achieved. How well a product or service is developed, implemented or used is a key component of user acceptance and usability. Yet quality is something we all think we know when we see it, rarely think applies to us as individuals but will be ready to make a fuss if something is not good enough. Applying quality approaches to development programmes can be a difficult exercise as organisational quality mechanisms are sometimes not seen to apply to development, and issues regarding roles and responsibilities further complicate matters for projects and programmes.

In evaluation terms, we need to consider quality both as an evaluation element and as aspect of the performance of the evaluation plan. Currently, JISC does not make specific use of any particular quality approach. However, through its distributed organisational structure some quality mechanisms apply to some aspects of its work. For example human resource matters are undertaken through the respective employing institutions. Therefore it might be helpful to have a quality model underlying the capital programme and its evaluation framework.

The EFQM Excellence Model<sup>12</sup> is a practical tool consisting of nine related elements that is used by organisations on a number of ways: as a tool for self-assessment, as a common vocabulary, as a framework for reviewing current position and as a structure for the organisation's management system. It could also be used to provide a quality framework for development programmes.

The EFQM Excellence Model



Each of the elements can be used to review current practice and identify areas for improvement.

#### 5. Implementation

It is suggested that there are three possible options for the implementation of the evaluation framework. There may be others, but given the time constraints of a development programme that has already started and is the process of a further round of substantive calls, time is of the essence. The implementation options are:

1. Continue to contract with external organisations and consultants to provide formative evaluation projects and support for individual programme strands
2. Commission an external formative evaluation project for the whole of the capital programme
3. An internal evaluation team that co-ordinates evaluation activity across the capital programme strands, provides advice and guidance regarding evaluation to programme

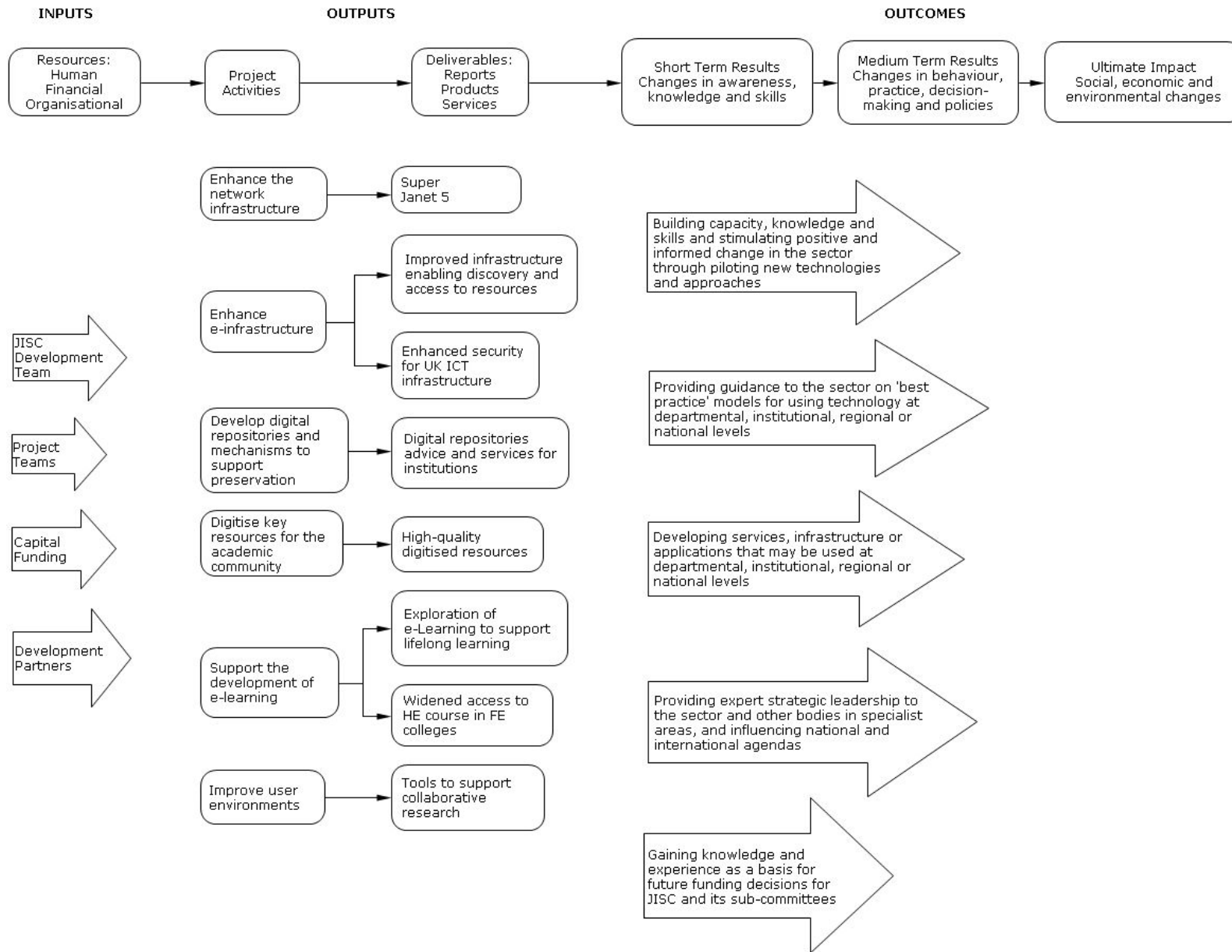
<sup>12</sup> <http://www.efqm.org/Default.aspx?tabid=1>

managers and ensures evaluation synergy with other development areas outwith the capital programme

Options 1 and 2 will require other summative evaluations and specialist studies, and there some impact studies are anticipated through the JISC Monitoring and Evaluation Unit.

Option 3 is our firm recommendation, to be managed through the JISC Monitoring and Evaluation Unit thereby facilitating a seamless and integrated approach to evaluation across all development work. Furthermore impact studies and selective reviews by subject specialists can be commissioned as required and as appropriate.

# Appendix 1 – JISC Capital Programme Logic Model



## Appendix 2: JISC Capital Programme Evaluation Plan

<b>Outcomes/Benefits</b>	<b>Baseline</b>	<b>Indicators</b>	<b>Source</b>	<b>Method</b>
<b>e-Infrastructure</b>				
Broader and more effective use of the e-infrastructure	Current usage	Increased usage New uses	Network logs	Record review
Enhanced security for the UK infrastructure	Current security levels Current intrusion levels	New security levels Reduced intrusions	Intrusion logs	Record review
Increased capability, expertise and effective use of the National Grid Service, the UK's core production, computational and data grid	Current user base Usage levels	New users New uses Increased usage	Users	Survey Focus groups
Production level capabilities for the UK e-infrastructure	Current capabilities	New capabilities	Users	Survey
New ways of retrieving and processing data, opening up new areas of research and expanding existing ones	Current retrieval and processing practices Current usage	New approaches	Users	Focus groups
Integration with other key initiatives both within JISC and the wider research community e-Infrastructure programme	Current integration	Increased integration	Programme teams Users	Team meetings Key informants
<b>Users &amp; Innovation</b>	<b>Baseline</b>	<b>Indicators</b>	<b>Source</b>	<b>Method</b>
Piloted new technologies and approaches to the use of virtual research environments, the adoption of next-generation and personal technologies, and the use of e-administration systems to support teachers and researchers	Existing usage of these technologies Current e-administration practice	Adoption of personal technologies Increased use of e-administration by teachers	Users	Survey Focus groups
Developed and demonstrated technical and practice models of personal and collaborative environments for learners and researchers		Availability, applicability and appropriateness of technical and practice models	Software testing logs Users	Record review Satisfaction survey
Gaining knowledge to inform future JISC activities through eliciting real-user (learner, teacher and researcher) and institutional requirements, scenario-building and synthesis of cross-programme outputs	Current user requirements	Predicted user requirements Synthesised outputs	User requirement reports	Report review

## Appendix 2: JISC Capital Programme Evaluation Plan

<b>Repositories and Preservation</b>	<b>Baseline</b>	<b>Indicators</b>	<b>Source</b>	<b>Method</b>
Institutional and repository services will be further developed and populated	Status of current services		Status report User consultation	Report review
A richer search infrastructure for UK digital repositories	Current search infrastructure	Improved search infrastructure	User requirements analysis Users	Report review Satisfaction survey
Further refinement of the application of standards and specifications for digital repositories and preservation	Current standards and specifications	Revised standards and specifications	Standards issues	Report review
New software and tools for both digital repository use and digital preservation		New software and tools created	Software testing logs	Record review
Increased understanding of how repositories can be used and embedded to support education and research	Current understanding of repository usage Number of users	New usage of repositories New users	Users	Survey Focus groups
Pilot implementations and models for resource discovery and preservation shared infrastructure		Models developed New implementations	Users	Survey Focus groups
Clarification of roles and responsibilities across digital preservation services	Current roles and responsibilities	Revised roles and responsibilities	Digital preservation service reports	Report review
<b>e-Learning</b>	<b>Baseline</b>	<b>Indicators</b>	<b>Source</b>	<b>Method</b>
Piloting new e-learning technologies to support lifelong learners, including support for HE courses in FE, widening participation, work-based learning, flexible delivery and personalised learning experiences	Current support for HE courses in FE Current participation rates Current extent of work-based learning Current approaches to personalised learning and flexible delivery	New technology-based supports for lifelong learners Increased participation Increased numbers undertaking work-based learning New approaches to personalised learning	Project teams Institutional records	Project reports Record review

## Appendix 2: JISC Capital Programme Evaluation Plan

Building capacity, knowledge and skills in the use of e-learning to support lifelong learning through institutional and collaborative cross sector projects; working with subject communities, and knowledge exchange activities	Current use of e-learning Current engagement with subject communities	Increased capacity, knowledge and skills Increased engagement with subject communities	Landscape studies Agency reports Institutional data	Report and study review
Developing, piloting and implementing technical models that support the flexible, affordable and pedagogically diverse implementation of e-learning		Technical models developed	Software testing logs Users	Record review Satisfaction survey
Providing guidance to practitioners, institutions and subject communities on the use of e-learning, in partnership with the Higher Education Academy		E-learning guidance developed	Higher Education Academy	Consultation
Gaining knowledge to inform future JISC e-learning developments, through engagement with the ICT industry and through a collaborative e-learning research programme	Current engagement with ICT industry Current collaboration with e-learning research	New developments with ICT industry New collaborative research	Sector reports Strategic reviews	Report review
<b>Digitisation</b>	<b>Baseline</b>	<b>Indicators</b>	<b>Source</b>	<b>Method</b>
Online access for all users, regardless of location and time, to a range of authoritative digitised e-resources of broad disciplinary interest which form a coherent theme or themes from previously difficult or impossible to access material	Current access status and issues	Access for all Access from new locations Access to new materials	Access logs Usage scenarios	Record review Scenario analysis
A small number of large-scale and sustainable collections and/or improved existing ones for the benefit of learning, teaching and research	Number and type of existing collections Current user profile Current access issues	New collections Improved access Revised user profile	Community consultation Users	Consultation review Survey Focus groups
Learners, teachers and researchers enabled to use and re-use the e-resources within the Virtual Learning and Research Environments (and where possible share through national repositories, such as JORUM)	Current users Current usage	New users New usage	Users Case studies	Survey Focus groups
Enhanced resource discovery of new e-resources through the use of standards and the exposure of metadata to Internet Search Engines	Existing resource discovery practice	Improved resource discovery	Usage logs Users	Record review Survey

## Appendix 2: JISC Capital Programme Evaluation Plan

The long-term sustainability and preservation of the new e-resources through innovative collaboration and cooperation between the profit and not-for-profit sectors in the UK and abroad		Collaboration with other sectors Sustainability plan	Strategic reports Sector intelligence	Report review
Assistance in the preservation of rare or fragile collections by the provision of digital surrogate, which represent the originals as near as possible, where viable		Assistance provided	Users	Satisfaction survey
<b>Network Infrastructure</b>	<b>Baseline</b>	<b>Indicators</b>	<b>Source</b>	<b>Method</b>
Scalability: initially a 10Gbit/s backbone, SuperJANET5 is upgradeable to 40Gbit/s and beyond. This will ensure that the network will meet education and research needs for the next 5-7 years	Current backbone speed	10Gbits achieved 40Gbs possible	Network logs	Record review
Reliability: through the reduction of single points of failure	Number of single failure points	Reduction in single failure points	Failure reports	Report review
Separability: purpose built parallel networks can be configured to serve multiple requirements		Parallel networks configured	Users	Satisfaction survey
Flexibility: through the ability to change the configuration of the network on demand		Network configuration changed on demand	Users	Satisfaction survey
Visibility: provide end-user access to monitoring and measurement information		User information available	Users	Satisfaction survey

### Appendix 3: JISC Capital Programme Outline (Roadmap)

Programme Area	Description	Call – April 2006	Call – September 2006	Call – April 2007
Digitisation	Small number of large scale projects to support the development of UK learning, teaching and research through the provision of new and sustainable e-resources	Digitisation Phase 2		
e-Infrastructure	Easy to use user identity management is required to make it practical for users to transport their credentials between applications and end-systems	Identity Management and Levels of Authority		
e-Infrastructure	Proposals to examine and/or develop: 1. Simplified tools for collaborative development of unambiguous semantic models describing services and content 2. Demonstrations of social computing and personalised computing including folksonomies and web mining		Knowledge Organisation Systems and Tools	
e-Learning	Regional and collaborative projects to pilot the use of e-learning to support lifelong learning, workplace learning, and the provision of flexible delivery and personalised learning experiences	Regional and collaborative projects		Phase 2: Regional and collaborative projects
e-Learning	Projects within FE colleges on the use of e-learning technologies, especially e-portfolios, e-assessment, e-administration and personal learning environments, to support the delivery of HE courses		Enhancing HE courses in FE Colleges	
e-Learning	Domain and technical model development, building on existing technical modelling work in e-portfolio, e-assessment and PLEs		Domain and technical model development	
e-Learning	Demonstrator projects implementing the domain and technical models, working with key sector partners such as UCAS		Domain model demonstrators	
e-Learning	Additional funded activities within regional and collaborative projects to support the adoption of e-Framework technologies			Institutional implementation for regional projects

### Appendix 3: JISC Capital Programme Outline (Roadmap)

Programme Area	Description	Call – April 2006	Call – September 2006	Call – April 2007
Repositories & Preservation	A project to provide help and advice to HE Institutions in England and Wales on establishing and developing repositories	Repositories Support Project		
Repositories & Preservation	Projects to help to explore, define and develop solutions to allow a richer searching	Discovery to Delivery #1	Discovery to Delivery #2	Discovery to Delivery #3
Repositories & Preservation	Proposals for tools/test-beds to assist/explore use of repositories in all aspects of work e.g. ingest, migration, preservation, visualisation, personalisation, folksonomies	Tools and Innovations #1	Tools and Innovations #2	
Repositories & Preservation	Projects to define and support technical and organisational roles and responsibilities for digital preservation		Preservation Agreements #1	Preservation Agreements #2
Repositories & Preservation	New work in the shared infrastructure machine-to-machine area		Shared Infrastructure services #1	Shared Infrastructure services #2
Repositories & Preservation	Projects to help institutions to increase repository use and improve effectiveness		Repositories matched funding #1	Repositories matched funding #2
Repositories & Preservation	Exemplars of repositories and institutional systems integration			Repositories in an institutional context
Users & Innovation	Circular for VRE Pilot Preparation and ITT for Research Community Engagement Support		Virtual Research Environments 2	Virtual Research Environments 2
Users & Innovation	Build and develop tools and integration platforms Develop web-service enabled tools		Next generation environments for learning, teaching and research	
Users & Innovation	Demonstrator projects Large scale pilots across many institutions clustered by region (for e-learning), across sectors (to demonstrate applicability system-wide for e-learning), between collaborating institutions (for e-research)		Next generation environments for learning, teaching and research	
Users & Innovation	Build and develop tools and integration Adapt existing tools across other programme strands to expand e-Administration		e-Administration environments	

## Appendix 4: Typology of Projects and Evaluation Approaches

Type of project		Context	Attributes/key words	Type of evaluation
1	Discovery	Discovery to Delivery Shared infrastructure	Explore, define, develop solutions, investigation, lessons learned, new work	Outcomes
2	Models	Domain and technical model development	Exemplars, e-portfolios, e-assessment, PLEs	Outcomes
3	Support	Repositories support Digital preservation	Sustainable e-resources, help and advice, skills, guidelines, define and support organisational roles and responsibilities	Outcomes
4	Tools	Tools and Innovations, Identity management e-Administration	Test beds, platforms, transport, applications, end systems Build and develop, innovation, ease of use, unambiguous, integration Ingest, migration, preservation, visualisation, personalisation, folksonomies, web-service enabled	Product Cost/benefit
5	Demonstrator	Demonstration, scenarios Knowledge organisation Domain model demonstrators	Demonstrations of technologies in specific contexts, social computing, folksonomies, personalised computing, web mining	Outcomes
6	Implementation	Use in context, embedding Enhancing HE in FE Institutional implementation	Use of e-learning technologies, e-portfolios, e-assessment, PLEs, adoption of e-Framework technologies Increase repository use, improve effectiveness	Outcomes
7	Large scale	Digitisation SuperJanet 5	Large scale, small number Provision of new and sustainable e-resources	Product Cost/benefit
8	Collaborative	Regional and collaborative	Cross-institutional, cross-sectoral, support lifelong learning, progression, workplace learning, flexible delivery, personalised learning Working with sector partners Next generation environments for learning, teaching and research	Process Outcomes