

Research Information Management Support and Synthesis

Document History

Initiating

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Revision History

Date	Version	Description	Changed by
09-Feb-2010	D1.0	Analysis of on-line survey	SNB
09-Mar-2010	D2.1	Revisions requested by SJB	SNB
24-Mar-2010	D2.3	Revisions by SJB	SJB
31-Mar-2010	D2.4	Minor wording revisions by SNB and addition of Executive Summary	SNB
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Executive Summary

Government initiatives to increase transparency and accountability while cutting the cost of research funding have led to the replacement of the Research Assessment Exercise with the Research Excellence Framework and a series of projects and systems such the Research Councils UK Joint Electronic Submission Systems (JE-S). These in turn have led to institutions throughout the sector critically assessing the systems and processes which underpin Research Information Management.

Research suggests that only twenty-two percent of institutions have end-to-end ICT system coverage of the research life cycle (funding alert/grant application through to comprehensive listings of research outputs) and where systems do exist; the integration between them is very often weak or non-existent.

Seventy percent of institutions are planning to develop their RIM systems within the current financial year (2009/2010). Given the recent and continuing publicity about the REF it is not surprising that institutions cite it as the major tactical and strategic driver in their development of RIM systems. This is followed by the intention to provide a better service to end users (In this context an 'end user' could be a researcher, another institution or a member of the public.) The preoccupation with the REF is understandable but not completely justified; as was previously reported (<http://www.jiscinfonet.ac.uk/research/ref>) the main ICT requirement of the REF is to maintain an accurate and complete record of research outputs and eighty nine percent of institutions are addressing this by deploying Institutional Repositories or comprehensive output catalogues and sixty-nine percent of institutions are deploying both. A greater challenge is to provide systems that are fit for purpose, will support cost effective research management and will better support the emerging need to link research outputs to income streams.

Awareness of HEFCE, Research funding councils and JISC initiatives in this area is relatively low in institutions. While most institutions are aware of the operational Joint Electronic Submission Service (JE-S) far fewer are aware of the Research Outcomes Project which is intended to collect research outputs for a minimum of five years after the end of the project funding. Seventy nine percent of institutions are somewhat aware of the HEFCE funded project RMAS, which is intended to produce a standard template for research administration standards but only twenty nine percent are aware of the detail of the proposals. Enthusiasm for a common format for exchanging research data between institutions and agencies is very high but the awareness of CERIF (the European standard for research information exchange and the leading candidate for a UK standard) is very limited with only twelve percent on institutions being very aware of it.

As is to be expected in a sector as diverse as UK Higher Education there is no clear model for Research Information Management governance. The most common model is for RIM strategy to be defined by the university's Research Committee. However relatively few Research Committees have a budget for RIM development and securing funding for a development project is often a complex process involving a variety of senior managers and committees with differing priorities and authorities.

1 Introduction

Research activity is a fundamental activity within the UK HE sector and for many institutions is a major revenue income stream. In common with all other areas of endeavour, research is becoming increasingly dependent on information systems to manage the complex information flows that it creates. It is probable that in the medium term future there will be an increased need for institutions to be able to demonstrate how their research funds were utilised and the value for money they provided. Well designed, fully utilised information systems will be key in cost effectively managing the increased information and reporting load.

While there are numerous examples of good practice and sophisticated system interaction, it is a widely held belief in the Higher Education sector that information systems to support Research Management have grown piecemeal in most institutions. These systems are now struggling to meet the increased demands being placed upon them by statutory and internal reporting requirements.

As one part of a string of initiatives by JISC and JISC infoNet this project seeks to develop a better understanding of the processes of Research Information Management systems within institutions and the processes for building a business case for justifying the development of such systems. To achieve this, the project has gathered information from an on-line survey of institutions. This document provides an initial analysis of the survey results and will form a major part of a more extensive web resource covering the survey and a series of more detailed case studies.

2 The On-line Survey

The survey was hosted by JISC infoNet and ran from 6th January 2010 to 13th February 2010. It was divided into several sections covering:

- Systems
- Plans
- Strategy
- Organisation and Financing of Research Information Management

The final analysis was carried out on forty two submissions.

2.1 Systems

This section sought information on which areas of Research Information Management were covered by computer systems and the degree of sophistication of the systems and their inter-relationships.

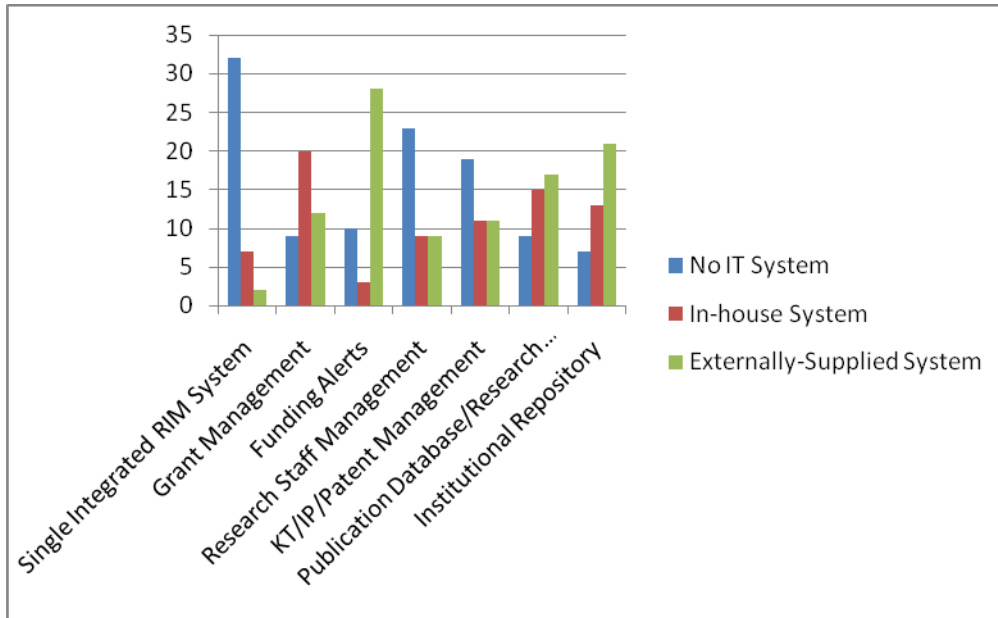
2.1.1 Question 3

Which systems do you have in place for managing research information?

This question provided respondents with a grid of research related activities and options for their type of system support:

- No IT System
- In-house System
- Externally Supplied System

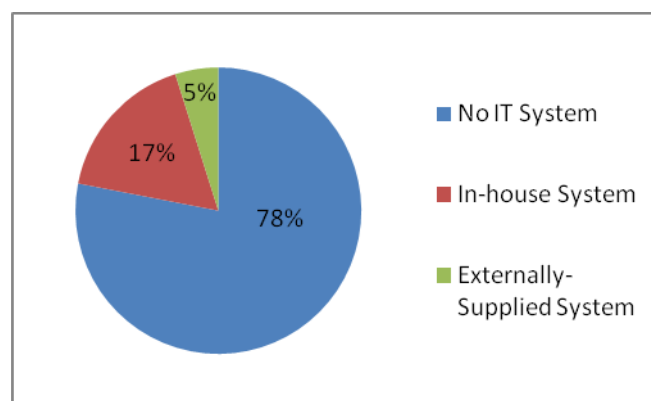
There were a total of forty one replies to this question with the following answers.



The following sections give a detailed analysis of the responses for each application/system type.

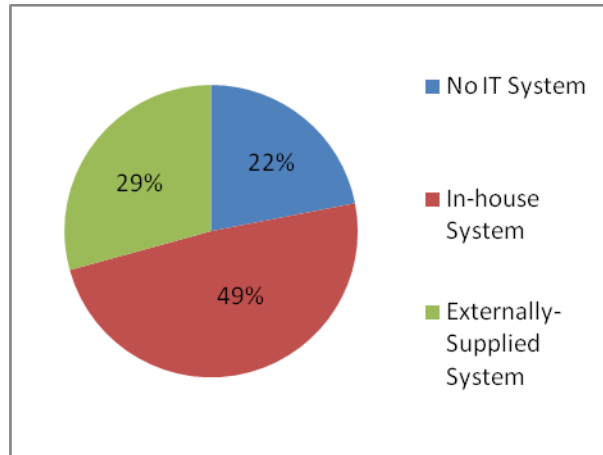
2.1.1.1 Single integrated RIM System

The results for this were broadly as expected and showed that a minority, twenty two percent, of the respondents had a single integrated system. This figure was somewhat higher than anticipated and was made more puzzling by the responses to question 4 (see below).



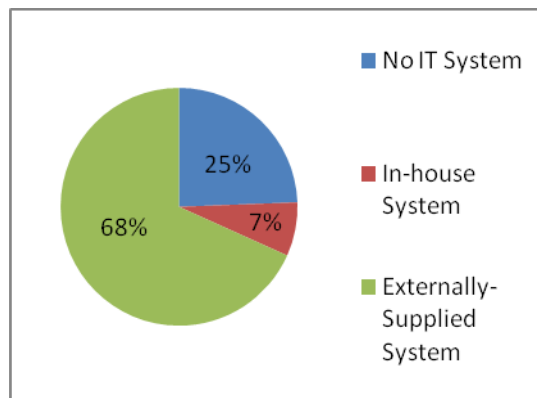
2.1.1.2 Grant management System

Almost eighty percent of institutions have software for managing grants and grant income. Of these a large majority were in-house systems.



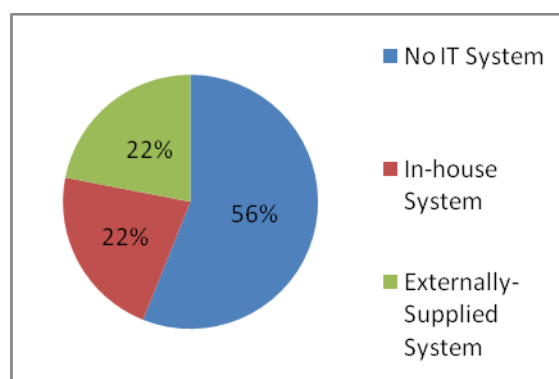
2.1.1.3 Funding Alerts

Over seventy percent of institutions have funding alerts software. Unsurprisingly a very large majority of these (68%) are proprietary systems.



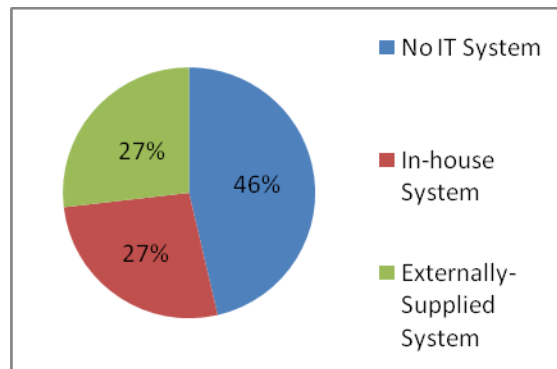
2.1.1.4 Research Staff management

Fewer than half the sample institutions have systems for explicitly managing research staff. Of those that have systems, the split between in-house and externally supplied is exactly equal (22%)



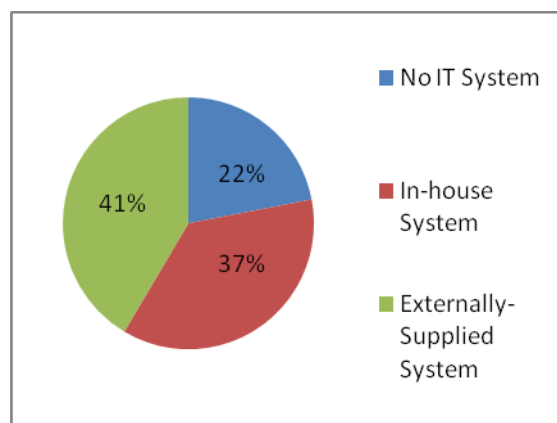
2.1.1.5 *KT/IP/Patent Management*

A relatively small majority of institutions (54%) have software to manage KT/IP/Patents. Of those with systems there is no difference in the numbers of in-house versus bought-in systems.



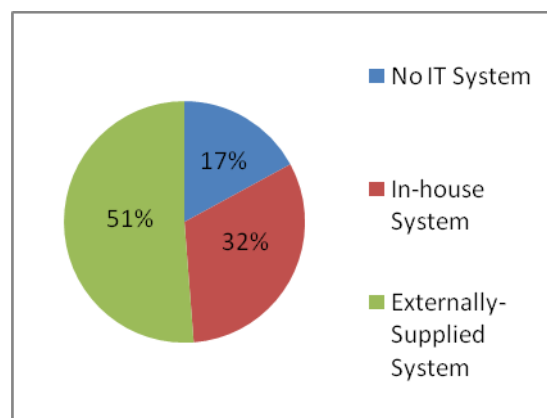
2.1.1.6 *Publications Database/Research Outputs Catalogue*

A clear majority of institutions, seventy eight percent, have some form of publications DB etc. Again the split between in-house and proprietary is very nearly even (37% against 41%).



2.1.1.7 *Institutional Repository*

Only seventeen percent of the institutions in the sample do not have an institutional repository. Given the large footprint of open source repositories, it is unsurprising that of the institutions with a repository a large majority (51% of the total sample) are externally sourced.



2.1.1.8 Commentary

Given the degree to which an Institutional Repository provides a superset of the functionality of a Publications DB/Research Outputs Catalogue it is perhaps surprising that a significant number of institutions have both a publications DB/research output catalogue and an institutional repository. This could be explained by a desire on the part of institutions to separate their public and internal operations. Eleven percent of respondents had neither an IR nor publications DB, while sixty nine percent claimed to have both.

In other systems there is a similar split between proprietary and in-house solutions. Compared with other administrative systems, such as HR and Student Record, the percentage of in-house development is high which suggests that either the commercial market is still somewhat immature in this area or that funding for system purchases has been difficult to secure.

Other RIM systems that respondents identified were:

- Expertise (3)
- PGR student management (2)
- CRM (1)
- Project management (1)

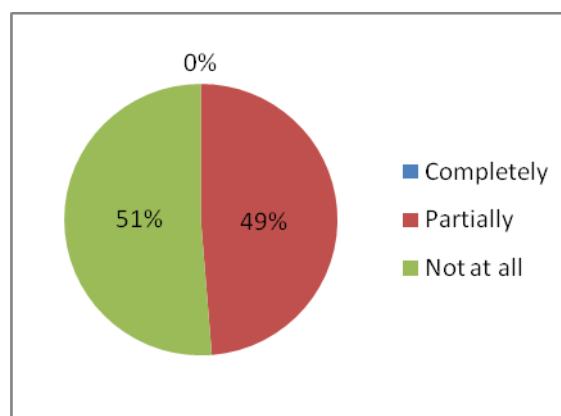
2.1.2 Question 4

Are the above systems integrated?

This question provided respondents with three options for their level of system integration at their institution:

- Completely
- Partially
- Not at all

There were a total of thirty nine replies to this question with the following answers.



2.1.2.1 Commentary

Given that twenty two percent of the respondents to question 3 had replied that they had a single integrated system the zero return for 'completely' integrated was somewhat unexpected and

difficult to explain. One possible explanation is that the institutions in question have systems that span more than one application area but not the entire scope of RIM systems. However the fifty one percent of respondents whose institutions had no integration between their RIM systems confirmed earlier work that suggested that system development in RIM had been piecemeal.

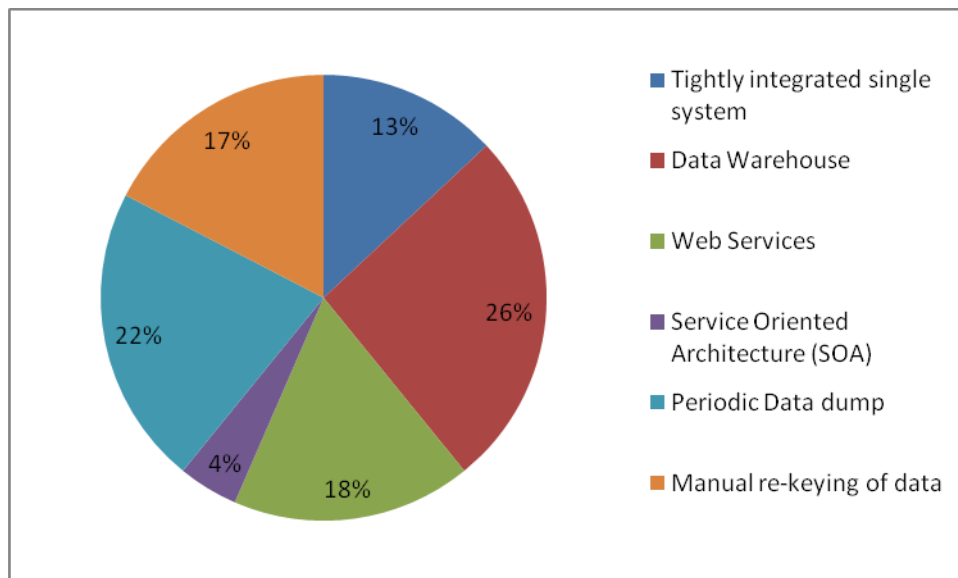
There was no clear pattern as to which systems are integrated, however Grant Management systems seem to be linked to a variety of other systems in six different institutions.

2.1.3 Question 5.

If 'completely' or 'partially', how is the integration managed?

This question was designed to gauge the sophistication and completeness of the integration for those respondents who had replied positively to question 4.

There were eighteen responses to this question. The total number of responses was greater than the number of respondents indicating that in some institutions more than one method of integration is in use.



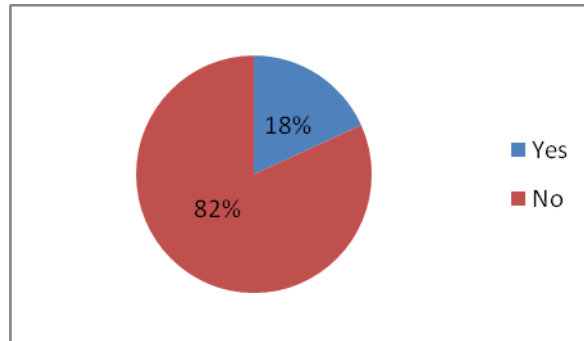
2.1.3.1 Commentary

With the exception of Service Oriented Architecture (SOA) all other approaches are well represented with no obvious favoured solution. No other significant methods were highlighted by respondents.

2.1.4 Question 6

Are any of your systems based on the CERIF standard?

There were thirty two responses to this question which was a simple yes/no.



2.1.4.1 Commentary

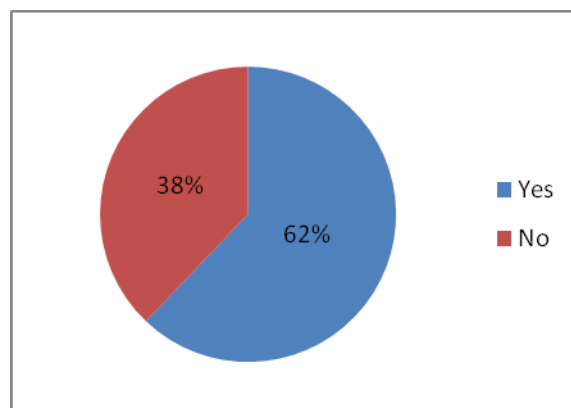
Of the six institutions which responded 'yes', one is currently implementing the PURE system, the others all cited their institutional repositories.

2.1.5 Question 7

Do your current systems provide a range of regular or on-demand management information such as grant income and research outputs by various groupings?

The degree to which Management Information can be retrieved from a system is a reasonably good guide to the versatility and value added elements of a system.

There were thirty seven responses to this question



2.1.5.1 Commentary

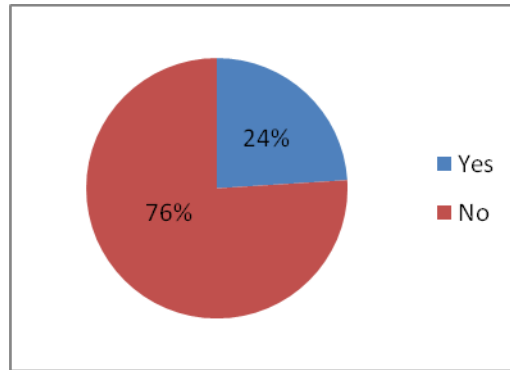
There was a significant majority of respondents, sixty two percent, whose systems did provide MI.

2.1.6 Question 8

If 'Yes' to the previous question, do you use a Business Intelligence tool(s)?

The question was designed to gain an insight into how flexibly and responsively can data be retrieved and modelled from the RIM systems?

There were twenty five responses to the question.



2.1.6.1 Commentary

Only twenty four percent of respondents used a BI tool to access information in their RIM systems. Of those the two most common tools were ‘SQL Server Reporting Services’ and Cognos with two each.

2.1.7 Summary of Findings for ‘Systems’

As expected all institutions have some level of system support for their research activity. The bulk of the systems seem to be either financially facing (grant management) or output facing (Institutional Repository and Publication Database).

The level of integration is very variable with no institutions claiming complete integration and a minority claiming some integration. Methods of integration are very mixed which may reflect on both the age of the systems and their relative sophistication.

Very few systems are CERIF based and those that are, are overwhelmingly IRs.

Very few of the institutions make full and dynamic use of their systems to provide Management Information and Performance Indicator data.

Generally there is a low level of integration between the various elements of RIM systems which will tend to cause inefficient and error prone planning and reporting.

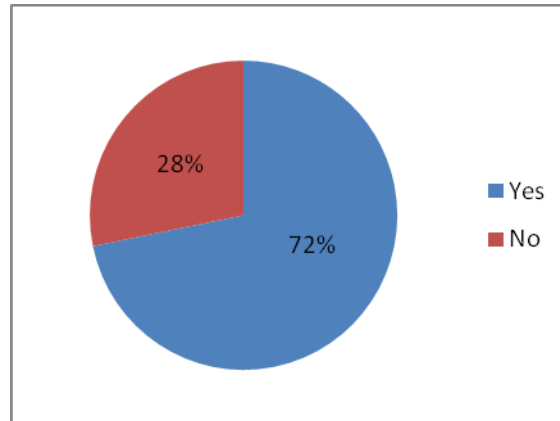
2.2 PLANS

This section was intended to discover what institutions were planning for the foreseeable future and which factors are driving the plans.

2.2.1 Question 9

Are you planning to implement/enhance/replace your Research Information Management facilities within your current budgeting cycle?

There were thirty nine responses to this question.



2.2.1.1 Commentary

As anticipated this is an area of considerable activity. Seventy two percent of the responding institutions are currently planning some development to their RIM systems.

2.2.2 Question 10

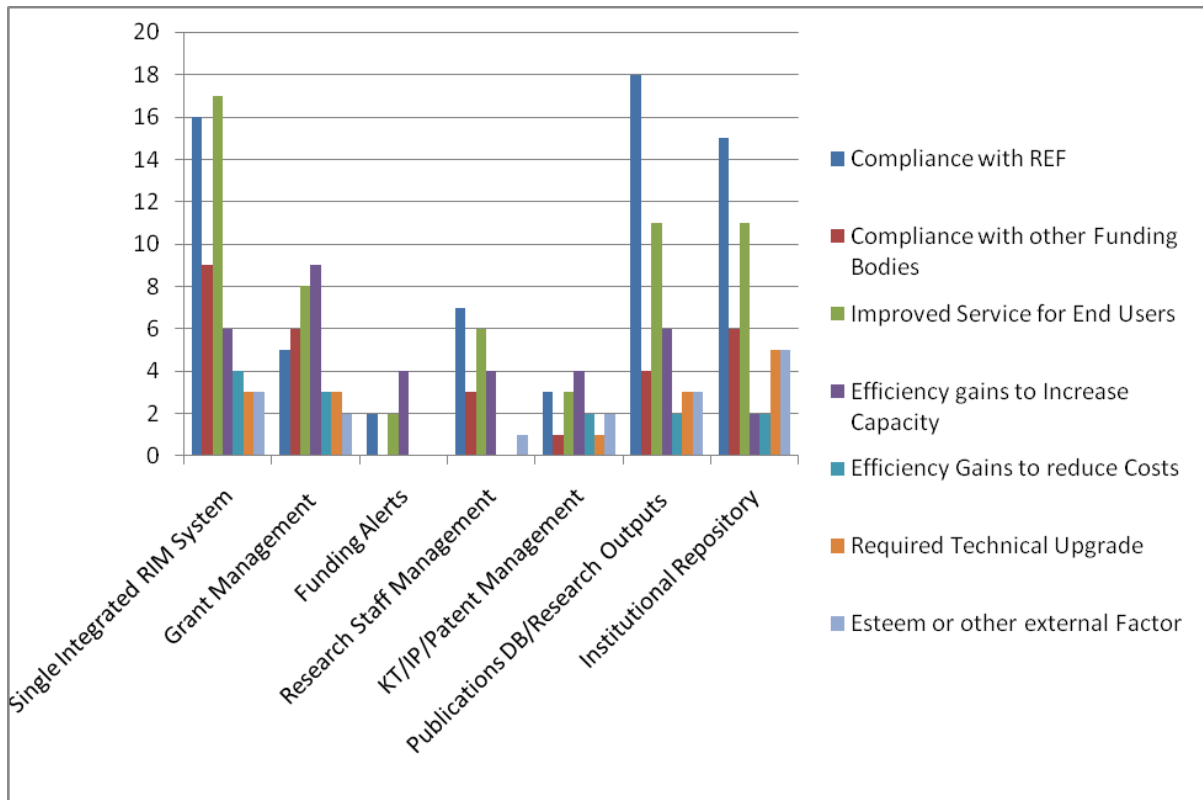
Of the systems you are planning to implement/enhance/replace, please indicate the main factors influencing your decision to carry out this development

This was one of the most complex questions in the survey and asked the respondents to select those business factors that are driving the decision to invest for those systems that are being updated etc. The list of factors was:

- Anticipated implications of the REF
- Compliance with other funding body requirements
- Improved service delivery for end users
- Efficiency gains to increase capacity
- Efficiency gains to reduce costs
- Required technical upgrade
- Esteem or other external factors

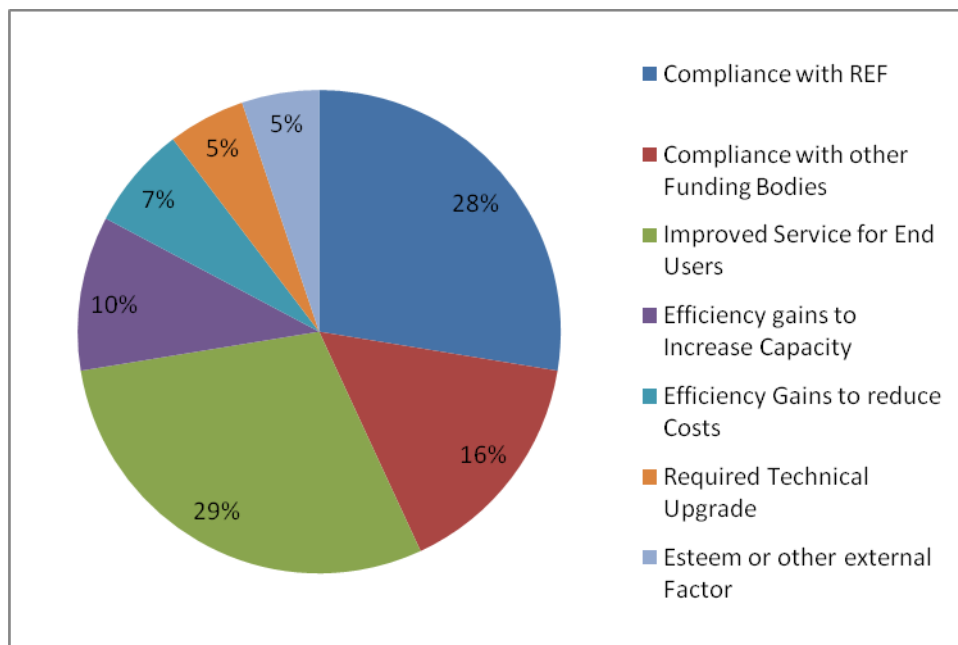
There were twenty eight responses to this question and respondents were allowed to select all factors that they viewed as relevant. Consequently the results for this question are somewhat complex and can be viewed both vertically and horizontally.

A composite view of the data shows clearly that the main drivers for change are 'compliance with the REF' and 'Improving Service to end users' while the principal areas of activity are Publications databases, Institutional Repositories and Integrated single RIM systems.



2.2.3 Single Integrated RIM System

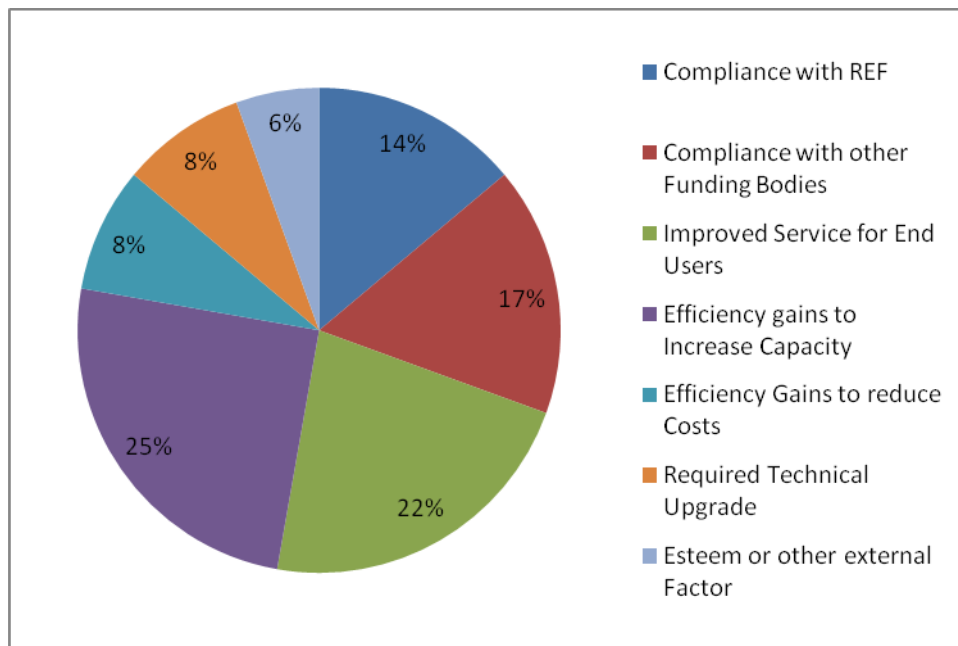
There were twenty one responses to this category.



A large majority of respondents cited the REF and improved service delivery to users as factors in selecting this development. A significant number also cited other funding body requirements.

2.2.4 Grant Management

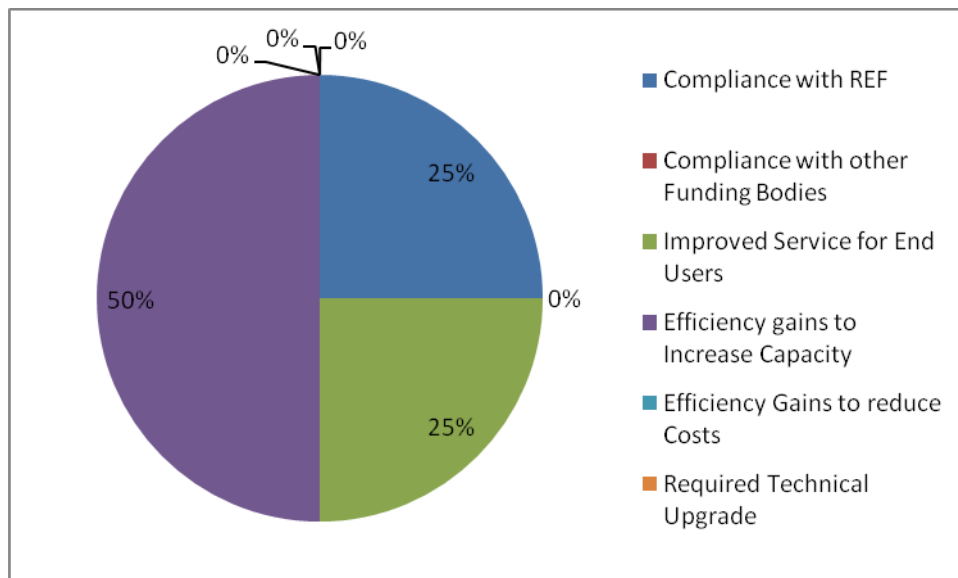
There were fourteen responses to this category.



Again improved service delivery was a significant factor with efficiency gains as the other major factor. A significant number also cited other funding body requirements.

2.2.5 Funding Alerts

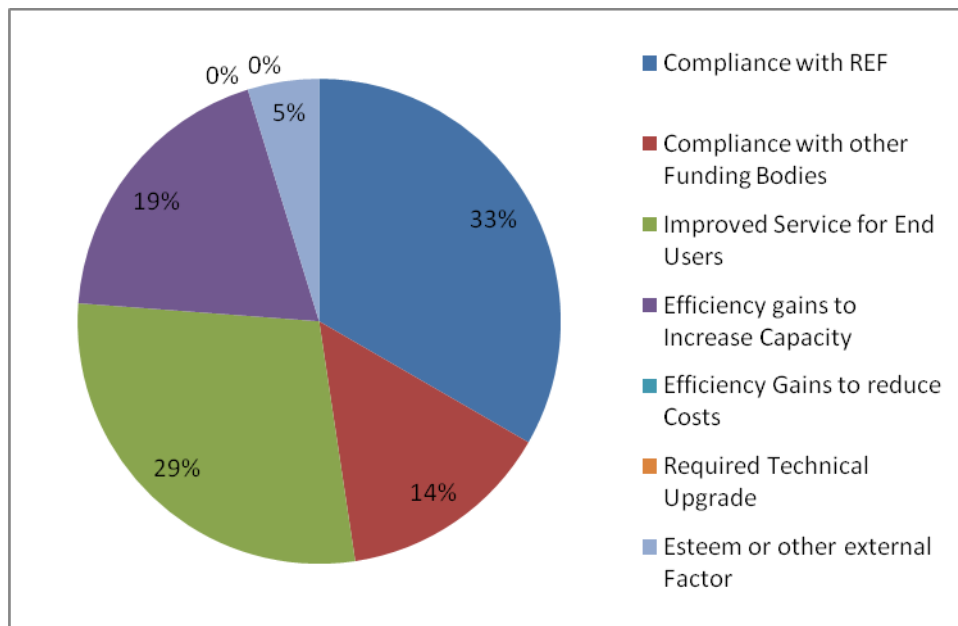
Only seven institutions of the sample are planning any activity on funding alerts.



Perhaps unsurprisingly the same factors are common here as for Grant Management. The relatively low level of responses is probably an indication of a high level of confidence within institutions that relevant calls can be identified without systemic support.

2.2.6 Research Staff Management

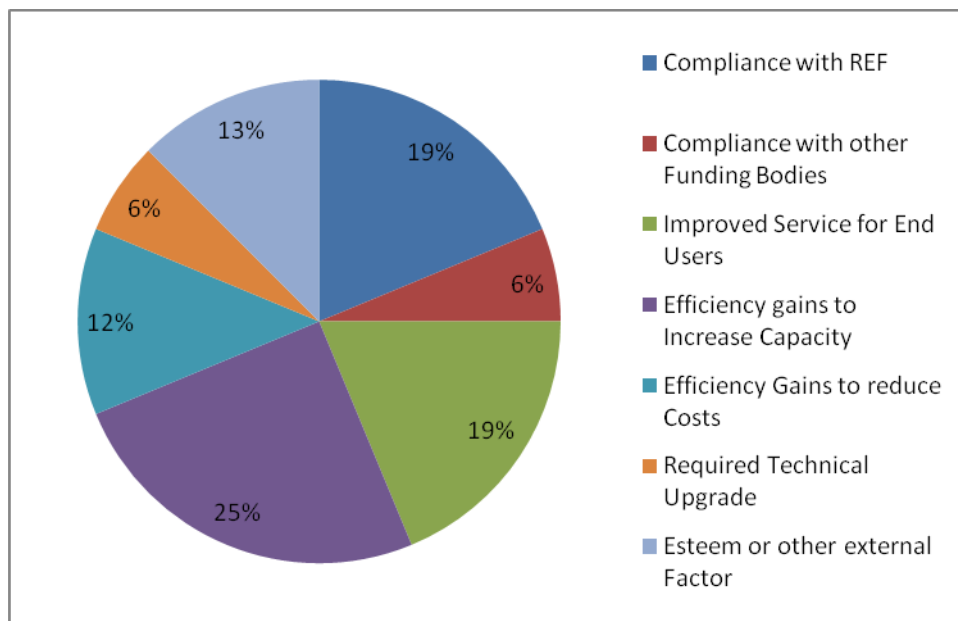
Eleven institutions from the sample are planning activity for research staff management.



The requirements of the REF and other funding body requirements along with improved service delivery were the major drivers for this system development.

2.2.7 KT/IP/Patent Management

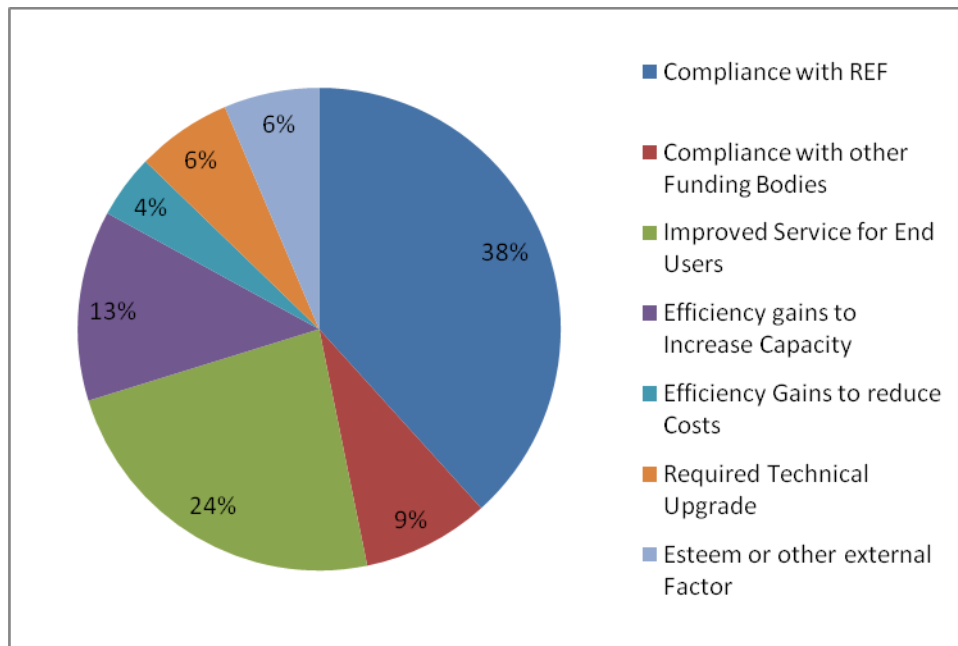
Nine institutions of the sample are planning activity for KT/IP/Patent Management



For this system there are no clear common drivers with all factors being cited.

2.2.8 Publication Database/Research Outputs Catalogue

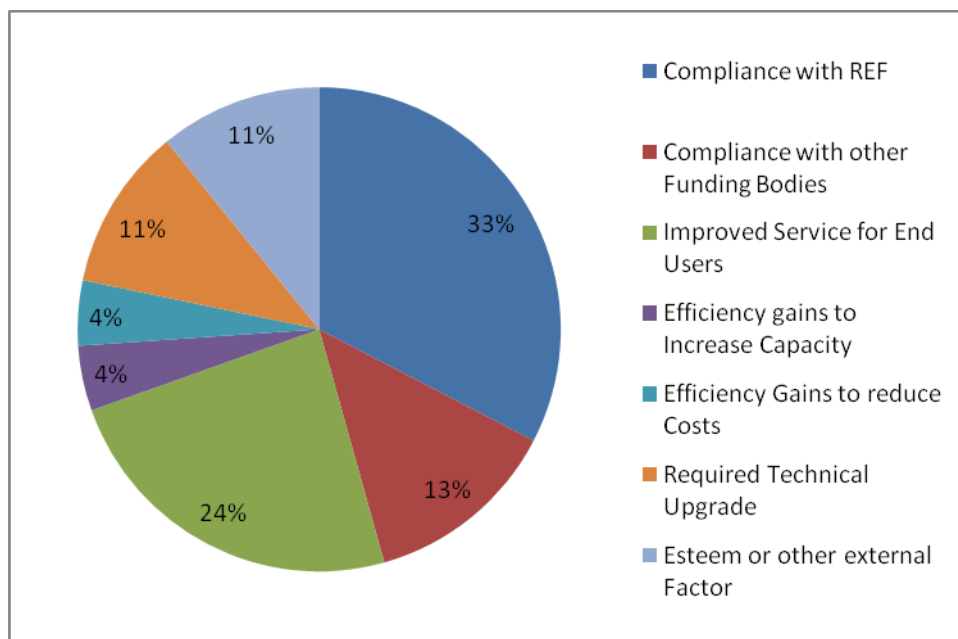
Eighteen institutions (forty five percent of the total sample) are planning developments for their Publication DB.



One hundred percent of those institutions in the sample are planning to develop their Publications DB as a result of the REF. Another major factor is to improve service delivery.

2.2.9 Institutional Repository

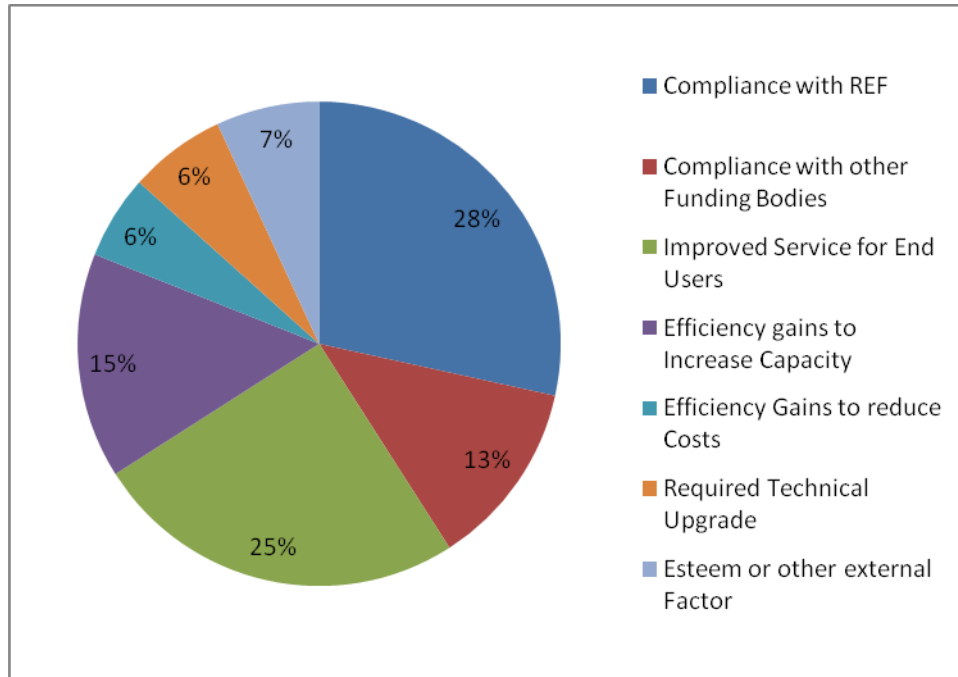
Eighteen institutions (forty five percent of the total sample) are planning developments for their Institutional repository.



As for Publication DBs the REF and Improved service delivery are the major drivers for development with IRs.

2.2.10 Horizontal Analysis

To determine the major factors driving change each factor is totalled across the various applications.



Overall the major drivers for change are clearly the REF and improved service delivery which between them account for fifty three percent. Esteem, technical upgrades and cost reduction are all relatively minor drivers.

2.2.10.1 Commentary

It seems clear that the REF is driving development in the research output aspects of RIM systems. Other statutory requirements are driving other aspects such as grant management. Across the whole range of applications there is a general requirement to improve service delivery to end users.

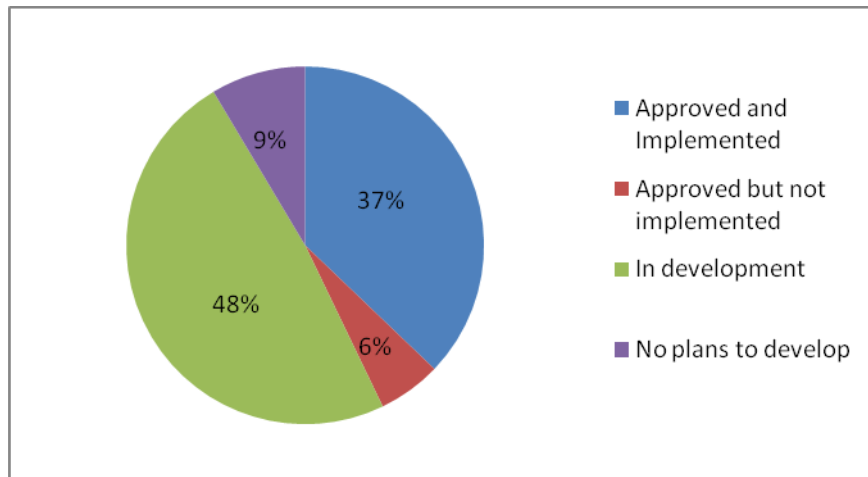
2.3 Strategy

This section was designed to establish how coherent the institutions' approach to RIM is and the degree to which they are aware of external factors and the weight these factors are given in defining the RIM strategy.

2.3.1 Question 11

Which of the following statements most accurately reflects your current position on a Research Information strategy?

This question was designed to highlight the state of development of a RIM strategy within the institutions. There were thirty five responses to this question.



2.3.1.1 Commentary

The fact that forty eight percent of institutions in the sample are currently developing a strategy is probably an indication of the relatively recent realisation in much of the sector that a ‘joined up’ approach to RIM is needed in order to respond to external drivers and improve internal processes.

2.3.2 Question 12

Which University body (or bodies) is responsible for such a strategy?

This was a free text question and was completed by twenty seven institutions. As might be expected there were a variety of answers. Six institutions identified their Research Committee, eight identified multiple groups (often including the Research Committee) and two had specific Research Systems Strategy groups. Only one institution identified the Executive Board as setting the RIM strategy.

2.4 Question 13

How aware are you of the following sector projects and initiatives?

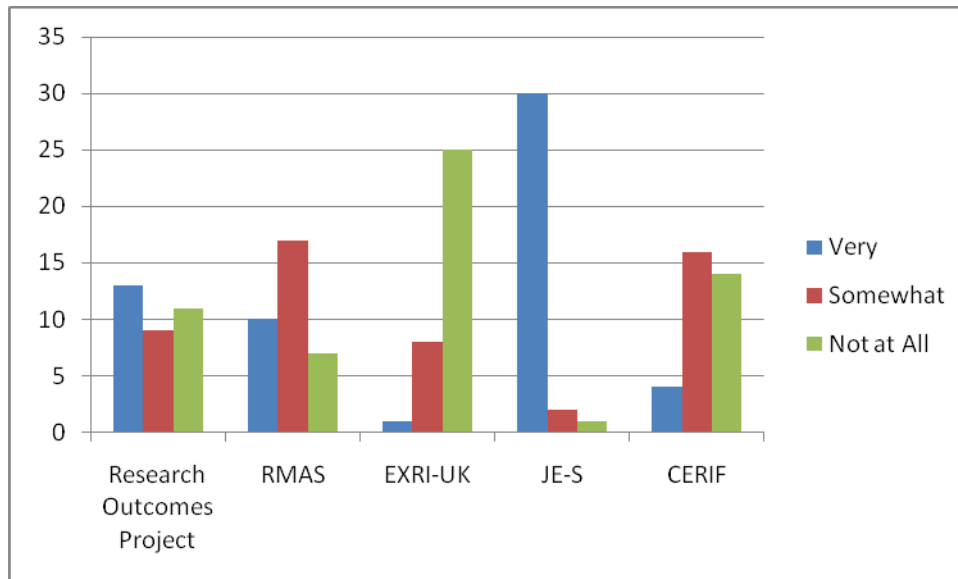
This question was designed to assess the degree to which various JISC, Research Council and funding council initiatives are influencing the strategy within institutions.

The projects identified were:

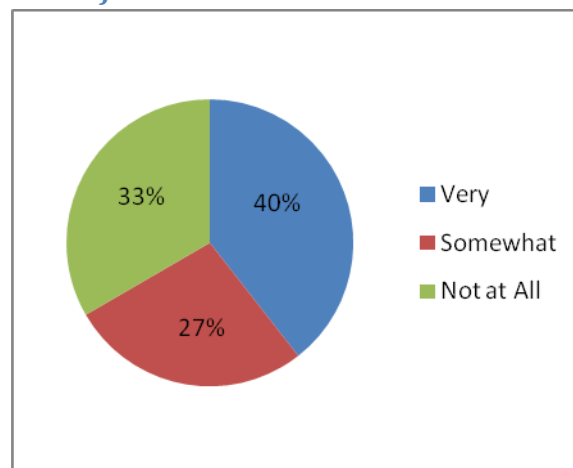
- Research Outcomes Project (formally OOCS)
- RMAS
- EXRI-UK
- JE-S
- CERIF

(Strictly speaking CERIF is a standard rather than a project).

There were thirty three/thirty four answers to this question. As for question 10 some horizontal analysis is revealing.

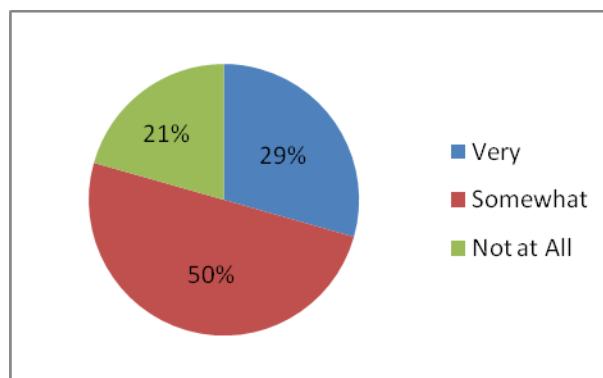


2.4.1.1 Research Outcomes Project



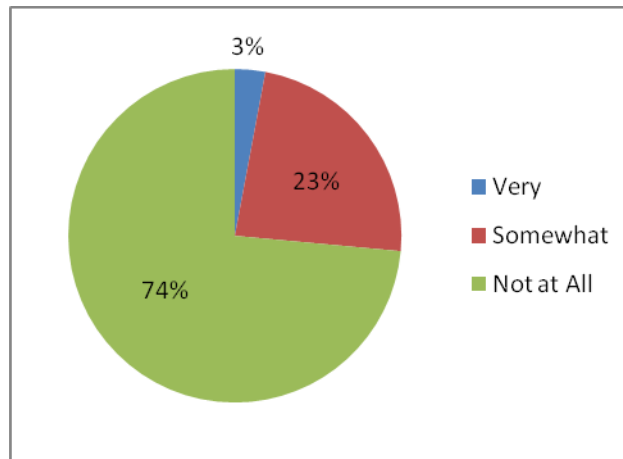
Forty percent of the institutions were 'very aware' of the ROP but one third were 'not at all aware'. Of those that were not aware a clear majority were modern (post '92) universities.

2.4.1.2 RMAS



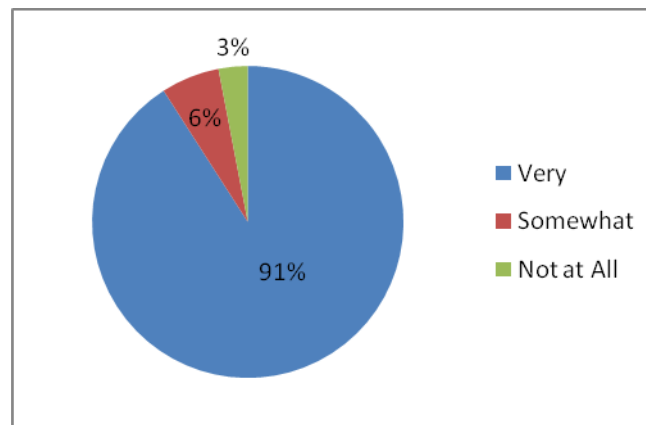
Exactly half the sample was 'somewhat aware' of RMAS and thirty percent were very aware. There was no obvious pattern amongst the institutions as to who was, and who was not aware of the project.

2.4.1.3 EXRI-UK



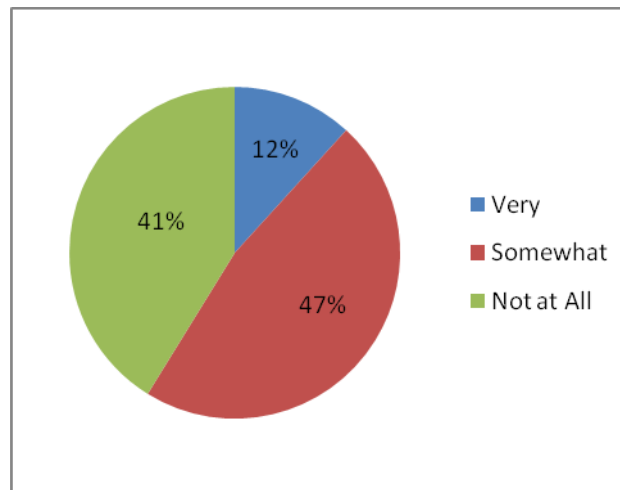
As anticipated by the project team awareness of the EXRI project is limited.

2.4.1.4 JE-S



As JE-S is now in full operation it is not surprising that awareness of this project is very high.

2.4.1.5 CERIF



Only twelve percent of institutions were very aware of the CERIF standard.

2.4.1.6 Horizontal Analysis

The three initiatives that institutions are most aware of are:

1. JE-S
2. ROP
3. RMAS

While the three attracting least attention are:

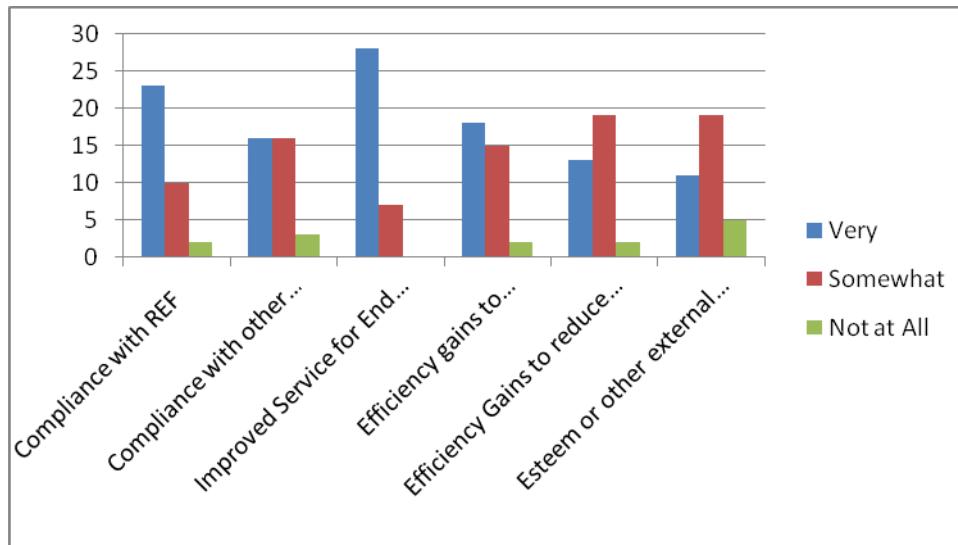
1. EXRI-UK
2. CERIF
3. ROP

2.5 Question 14

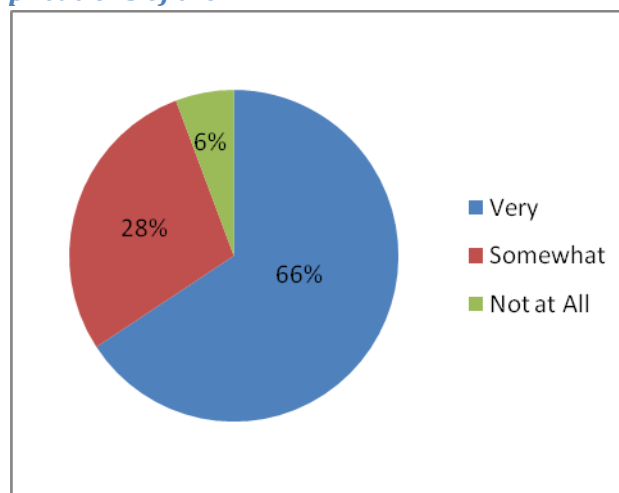
What are the main drivers behind your institutions strategic interest in Research Information Management?

This question attempted to separate the strategic and tactical drivers in RIM development.

There were thirty five responses to the question.

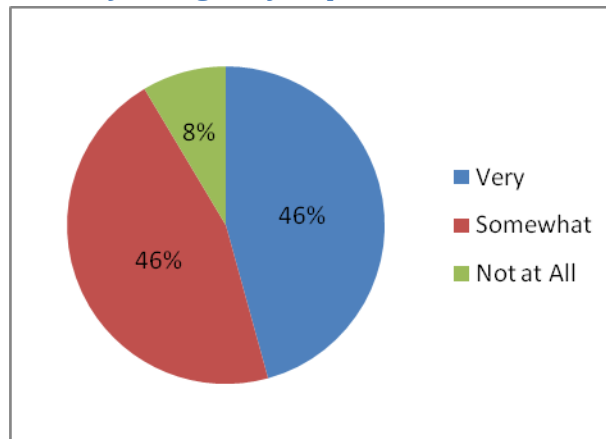


2.5.1.1 Anticipated implications of the REF



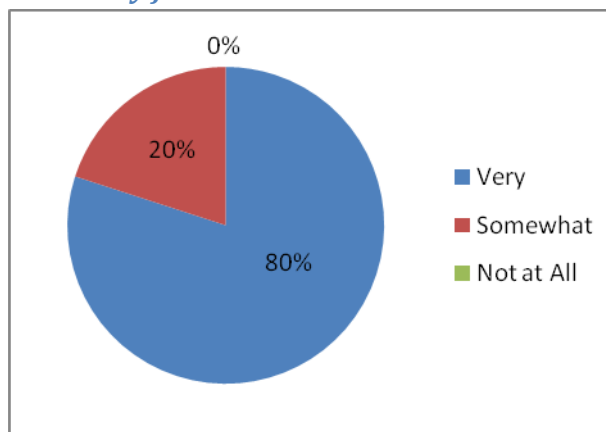
Unsurprisingly sixty six percent of the answers were that the REF was a strong strategic driver for RIM in their institution. Only six percent thought that the REF was not a factor.

2.5.1.2 Compliance with other funding body requirements



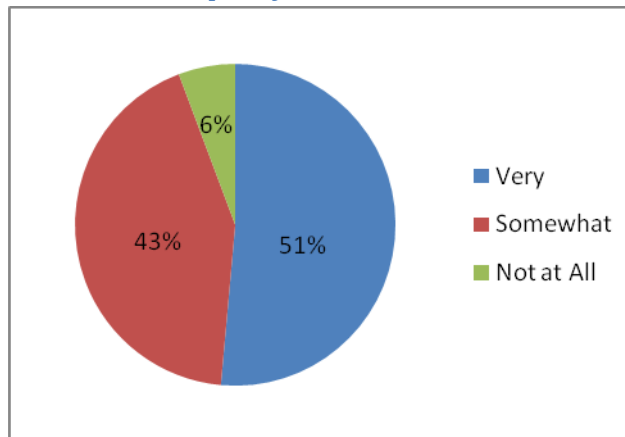
While not as strong as the REF forty six percent of the respondents thought that other funding requirements was a very strong strategic driver and a further forty six percent thought is was somewhat important.

2.5.1.3 Improved service delivery for end users



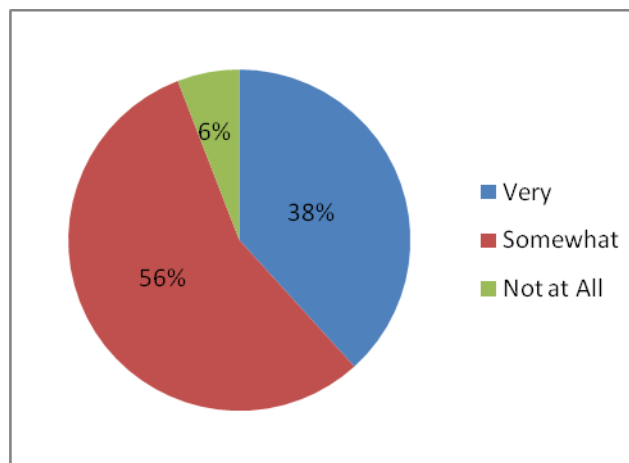
A massive eighty percent of respondents ranked improved service delivery as a very strong strategic driver with a further twenty percent thinking that it was somewhat important. Significantly no-one rated this as not a strong driver.

2.5.1.4 Efficiency gains to increase capacity



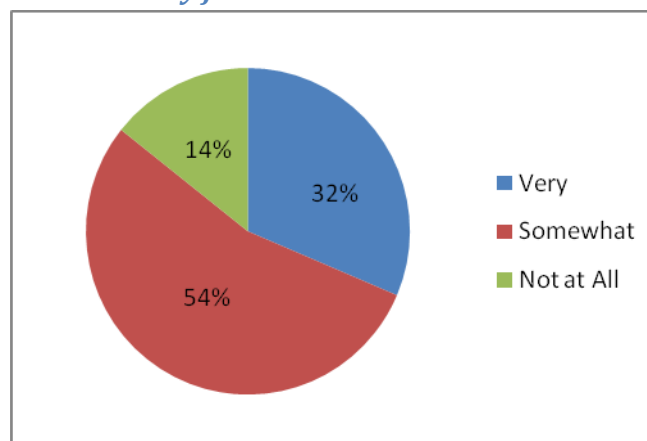
Fifty one percent of the sample ranked increasing capacity as a strong strategic driver while a modest five percent thought it was not a strong driver.

2.5.1.5 Efficiency gains to reduce costs



In keeping with earlier questions a relatively small number of institutions (thirty seven percent) regard cost savings as a major strategic driver.

2.5.1.6 Esteem or external visibility factors



Perhaps surprisingly esteem does not seem to be a particularly strong driver with only thirty one percent of institutions seeing it as a very strong driver.

2.5.1.7 Horizontal Analysis

The three strongest strategic drivers from the survey were:

1. Improved service delivery for end users
2. Expected implications of the REF
3. Efficiency gains to increase capacity

The weakest strategic drivers were:

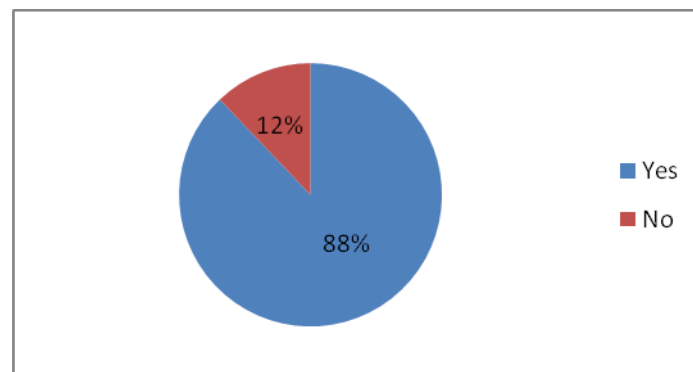
1. Esteem or external visibility factors
2. Efficiency gains to reduce costs
3. Compliance with other funding body requirements

2.5.2 Question 15

Would you welcome an initiative to ensure that a standard data format was used by agencies requiring Research Activity information from you, such as the REF, the Research Councils and HESA?

This question was intended to gauge the likely level of support for the findings of the EXRI-UK project.

There were thirty three responses to this question.



Unsurprisingly there was a huge majority (eighty eight percent) in favour of a single common format. The reasons given for this mainly centred on the saving in effort in producing returns though two replies did focus on the advantages of reducing ambiguity in the returns. One reply specifically suggested CERIF as the way forward.

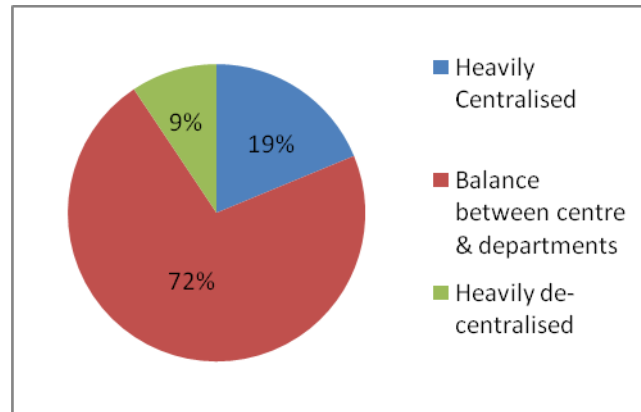
2.6 Organisation and Financing Research Information Management

2.6.1 Question 16

Which of the following statements most closely reflects the organisation of Research Information Management in your institution?

This question was designed to discover to what extent the central administration of institutions are able to monitor the research activity within an institution and therefore manage it.

There were thirty two responses to this question.



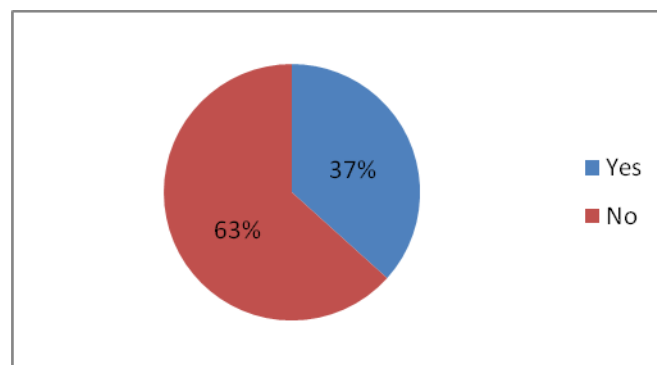
Seventy two percent of the responses were for a balanced approach. The heavily centralised responses (nineteen percent) were either smaller institutions or 'new' universities. The heavily de-centralised response (nine percent) was too small for any pattern to be discernable.

2.6.2 Question 17

Does the body responsible for Research Information Management strategy have a specific budget for such development?

This question and the following two questions were intended to discover how development for RIM is funded and how high the level of activity currently is.

There were thirty responses to this question.



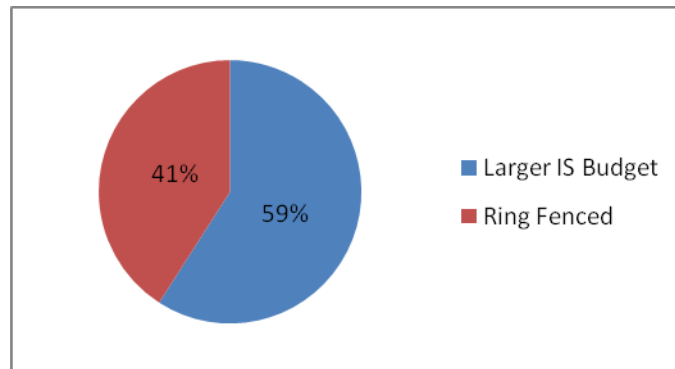
Thirty seven percent of the sample is institutions where the body responsible for RIM strategy also had control of the budget.

For those institutions which replied 'No' and provided additional data the principal method of allocating funds is by some form of competitive bidding and project evaluation.

2.6.3 Question 18

Is the Research Information Management budget part of a larger Information Systems budget or ring-fenced?

There were twenty two responses to this question.



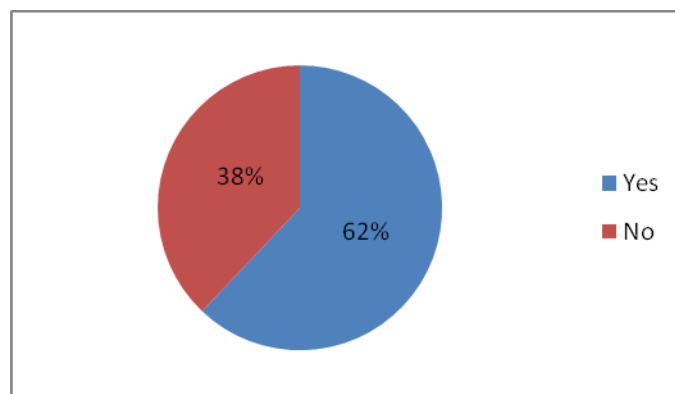
Predictably most of the ring fenced budgets were in those institutions where the RIM strategy body also had control of the budget but three were not. From this we can deduce that nearly fifty percent of institutions have a dedicated RIM development budget.

2.6.4 Question 19

Is there a budget for Research Information Management system development in the current financial year?

This question was an attempt to gauge the level of current activity within the RIM set of applications.

There were twenty nine responses to the question.



Sixty two percent of the institutions have a current RIM development budget. The survey did not ask what the budgets were being spent on and it may be worth following up this question with a sample of the institutions.

3 Conclusions

The survey covered a range of topics and while it confirmed some existing ideas it also brought to light several new trends.

Very few institutions have an installed and functional end-to-end system of the sort envisaged by RMAS. As already known, there are a large number of installed systems and a definite upsurge in the number of installed publications databases and Institutional Repositories. Integration between the different systems is widely variable and there is no clear preferred integration method.

While the REF figures very highly in the thoughts of institutions there is also a very significant drive to improve the service offered to end users and increase capacity.

Awareness of the various initiatives in this area was variable. The RCUK projects JE-S and ROP are both reasonably well known but EXRI-UK has attracted little attention.

While many institutions are working on developing a RIM strategy less than half have an implemented strategy and a small number of institutions see no need to develop one.