In 2016 and 2017 Jisc, Cardiff University and UCL commissioned Hadfield Consultants to investigate the value of Jisc services.

Background

Following a Russell Group IT directors forum (RUGIT) meeting in early 2016, Jisc and UCL agreed to embark on an exercise to determine how Jisc compares to alternative providers. An independent consultancy, Hadfield Consultants, worked with both parties.

UCL pays Jisc an annual subscription for the provision of a wide range of technology and infrastructure and digital resources. These are used by UCL’s Information Services division, students, teaching and learning staff, researchers, partner organisations and library services.

The same consultancy agreed to undertake a broader comparison study with Cardiff University in late 2016. Cardiff University pays the full charge for Jisc services via the annual Jisc subscription as the Higher Education Funding Council for Wales (HEFCW) contribution is deducted from its grant.

The nature of the two studies therefore differed in scope, leading to a range of conclusions. The scope, methodologies, findings and conclusions were agreed with both participating institutions.
What we did

In these exercises a range of internet service providers were approached, including BT, Chess telecom, Lynchpin and Virgin Media.

Cardiff University

Cardiff University was keen to analyse the broader (technology and infrastructure and digital resources) Jisc portfolio from three perspectives:

1. The cost comparison of services delivered by Jisc versus an alternative provider or another identified form of cost saving.
2. The costs avoided by Cardiff University through the use of Jisc services, solutions and/or products.
3. The additional value of Jisc services for Cardiff University, its collaborations and for the sector as a whole.

For this study we used Jisc’s cost of service model to provide a baseline for cost comparison purposes. All costs were based on 2015/16 when Cardiff University paid £876,000 for Jisc’s services (this figure was £905,000 when various additional charges were included).

Data and information was gathered via alternative provider quotations, workshops (with 25 technology, library, teaching and learning and research staff), university and college strategy documents and the latest REF submission. We also used existing Jisc Value Savings and Efficiency (VSE) information to help prioritise areas for further analysis.

Cardiff University requested connectivity and cyber security quotations from four providers. Only one responded positively, though it took 11 months to gather the information. One stated that it could not provide 10Gbit/s and no responses at all were received from the remaining providers. We used the longest (either three or five years) quoted terms for comparison purposes.

Jisc’s digital resources portfolio was analysed by using various ‘lifecycles’ relevant to library services, research, open access and teaching and learning resources. Each lifecycle contains various Jisc tools, resources and content (eg via Jisc Collection agreements).

UCL

The UCL exercise focused on the comparison of areas of ‘significant spend’ that are part of the Jisc subscription and allow some form of comparability with an alternative provider. A decision was made to focus on a connectivity and cyber security comparison.

UCL approached two providers for alternative connectivity quotations. Only one could cater for UCL’s requirements. We then compared the alternative products with the cost of Jisc’s total subscription. The Jisc subscription figure includes the provision of all Jisc technology, infrastructure and digital resources fully funded products.

The analysis included the impact of lost UCL income derived from onward connectivity to various partner organisations. Costs of transition (away from the Janet network), the digital resources portfolio and many technology and infrastructure products were not compared.
What we learned

There are four broad findings from the analysis:

The alternatives to Jisc are often sub optimal
The Cardiff University study identified that the alternatives, to a Jisc capability, are sub optimal.

This theme extended to Jisc Collections where alternatives include the British Library, open access to a subset of all publications, a ‘black economy’, or separate journal negotiations. The additional value of this Jisc service lies in it encouraging more use of more resources, fulfilling student e-access expectations and building their employability skills. The same conclusions were evidenced for Jisc’s geospatial resources, open access portfolio (eg Sherpa Services, IRUS, Publication Router), bibliographic and discovery services (which help to attract staff and research funds, release space and enable new school planning and the management of publishers) and library support and analytics services (including, because of the National Bibliographic Knowledgebase, the avoidance of around £100,000 of development costs across Welsh libraries).

Both studies illustrated that connectivity and cyber security comparison are not like-for-like. For example:

> The alternative provider connectivity quotes for Cardiff were for ‘internet only’ bandwidth. Cardiff would require additional connections, at additional cost, to collaborate with other institutions (eg GW4).

> The Janet network caters for sector-relevant peerings (eg with international research networks) while the alternative provider does not, though the SLA regimes of Janet and the alternative provider were broadly similar.

> If UCL were to move away from the Janet network a number of substantive issues would require consideration such as IP address space re-numbering.

> The alternative provider stated, in relation to Cardiff University, that it cannot provide its denial of service protection for its quoted 20Gbit/s main link connection – this would put Cardiff University at risk or would require investment in its own cyber security capability. Furthermore, the majority of cyber security-related tickets are not denial of service related – Jisc’s cyber security portfolio caters for a very wide range of cyber-related risks (in addition to denial of service).

> We also noted that Jisc cyber security services are not directly comparable to the alternative cyber security service. For example, there is no limit on the number of times Jisc customers can contact the cyber security team.

> The alternative provider does not include an alternative to the Jisc eduroam service within the connectivity services it quoted for. Jisc does.

All university stakeholders benefit from Jisc services - particularly from the depth and richness of learning and research resources.
The Cardiff University study found that Jisc resources and tools help researchers from all disciplines meet its REF and compliance requirements, with open access, research comparison (eg IRUS) and credibility and an improved student experience (eg from access to a rich range of resources, 24/7).

“Sherpa Romeo affects 100% of active researchers and provides the university with assurance regards how it can meet its REF and funder compliance mandates.”
Sonja Haerkoenen, scholarly publications manager, Cardiff University
The same study reinforced, through discussion, the importance, trust and relevance of Jisc services to library and IT staff.

Critically, we discovered that, because of Jisc, students and teaching staff have access to a depth and richness of digital resources that the university may otherwise not be able to afford. This line of thinking formed part of our financial analysis (below).

We found it was not possible to find a direct link between Jisc (or Jisc enabled) resources and Cardiff University’s REF submission. This reflects the nature of REF rather than the importance of the resources. At the same time we gathered qualitative feedback regarding these resources.

“\textit{We can't function without these resources so it'd be a bit like mentioning I'd been given an office.}”

Professor Ian Knight  
(School of Architecture), Cardiff University

The resources Professor Knight was referring to include British Standards Online, Geospatial, JSTOR, Springer, Taylor and Francis - resources enabled by Jisc Collections agreements and tools.

Jisc champions the interests of the sector and helps co-design new services with and for the sector

The Cardiff University study participants reflected, on a number of occasions, the value of Jisc lobbying government and publishers on their behalf. This saves time and effort but, more importantly, helps create a level playing field – the investment in, security of and access to the Janet network being a case in point.

We found that Jisc protects Cardiff University and UCL from connectivity market failure based upon a lack of provider responsiveness and service relevance.

Jisc digital resources and tools clearly support sector and intra-sector (eg Welsh institutions and GW4) collaborations. Cardiff University is also involved in co-designing future institutional services such as the Research Data Shared Service and Jisc’s Tiered Storage Service.

Cardiff University and UCL also benefit financially from being part of the Jisc VAT-exempt cost sharing group.

Jisc provides cost savings and helps avoid costs – for both Cardiff University and UCL. These savings apply to Jisc’s technology and infrastructure and digital resources services.

Cardiff University

Financial finding 1

Cardiff University has upgraded its main links from 10Gbit/s to 20Gbits/s. The savings are substantially more when considering the latter scenario.

We found that Jisc provides a wide range of connectivity (including eduroam) and cyber security (CSIRT/DDoS) services for £7,000 less (per annum) than the alternative provider would provide Cardiff University’s connections and DDoS service only. This figure increases to a £312,000 (per annum) saving (over the alternative provider) for the 20Gbit/s main link scenario.

“\textit{If all RCUK policy needs were catered by for by a pre-agreed Jisc shared service, then life would be a lot easier.}”

Cardiff University workshop attendee

Both studies make conservative comparisons using the longest quoted terms and not including future bandwidth predictions for non-main links (eg the cost of upgrading Cardiff University’s Software Academy from 1 to 2Gbit/s would cost the same as upgrading it to 10Gbit/s. Likewise, point to point, for research project purposes, alternative circuits would incur £100,000+ connection charges alone). Figures exclude VAT.
Financial finding 1 summary
20Gb main link scenario: connectivity only

Per annum costs
Connectivity & cyber comparator line

Additional connectivity
Connectivity: eduroam & cyber security
Jisc 10Gb or 20Gb main links
£540,000

Connectivity: No DDoS
Park Place
20Gb = £336,000
Trevithick
20Gb = £275,000
£1,195,000

+ £312,000

Alternative provider
20Gb main links
£852,000

Financial finding 2
We also found that Jisc’s technology and infrastructure services help Cardiff University avoid £343,000 of cost per annum.

> Cyber security costs avoided of £300,000 – this figure represents the average of two methodologies (incident avoidance and Cardiff building and operating its own cyber security function)

> Additional IT staffing costs avoided of £43,000 – the additional staff required to manage alternative connectivity providers

The connectivity and cyber-related cost savings and costs avoided equate to a saving of £655,000 per annum (for the 20Gbit/s scenario).

Financial finding 2 summary
20Gb main link scenario: connectivity and cyber security

Per annum costs
Connectivity & cyber comparator line

Additional connectivity
Connectivity: eduroam & cyber security
Jisc 10Gb or 20Gb main links
£540,000

Connectivity & cyber security
Alternative provider
20Gb main links
£852,000

Costs avoided/would be incurred
Cyber: £300,000
IT staff: £43,000
£195,000

+ £655,000

Financial finding 3
The next stage of financial analysis focused upon Jisc’s digital resources. We concluded Jisc digital resources enable £909,000 of cost savings as well as £117,000 of costs avoided. The savings are particularly pertinent to the theme of...
Jisc providing access to high quality resources that Cardiff would otherwise not be able to afford.

The £909,000 per annum saving is made of three elements:

1. Geospatial savings of £300,000 per annum - this figure was agreed using the VSE baseline saving figure and methodology and reducing to reflect 25% usage of geospatial by researchers.

2. Article processing charge (APC) savings (applied across the top nine publishers that Cardiff University uses) of £309,000 based upon the impact of additional discounts Jisc has negotiated.

3. Conservative Jisc Collection savings of £300,000 - this figure reflects three separate methods applied to three publishers (Elsevier, BSI and Taylor and Francis) all reflecting the additional discounts and savings derived via Jisc’s sector-wide negotiations when compared to what a university would pay directly.

The £117,000 (per annum) of costs avoided centre upon the avoidance of creating a publisher-focused negotiation team (with senior and more junior staff). We also calculated (by applying an eight-minute saving across 3400 publication searches a year) that library staff saves 113 days a year through the use of Sherpa Romeo.

Financial finding 3 summary
Digital resources differ in nature but enable substantial savings and avoided costs

Financial finding 4
These savings are based upon the addition of both cost savings and costs avoided and represent a worst-case picture.
The value of Jisc / Cardiff University and UCL

Financial finding 4 summary
Overall comparison between Jisc ‘full charge’ and all agreed cost savings and costs avoided

UCL
We compared two scenarios. Firstly, the delivery of 10Gbit/s connections (as is currently the case) to UCL’s two main campus connections and additional UCL connections at various bandwidths. The second scenario analysed 20Gbit/s connections to the two main UCL sites and the same additional connections as mentioned above.

For the 10Gbit/s scenario, Jisc year one installation and recurrent costs are less than the alternative provider’s (by £58,000) and £37,000 more from year two onwards. By including lost Janet connectivity-related UCL income, Jisc provides all connections and fully funded services for £220,000 less than the alternative provider (for connectivity/cyber provision only) in year one and for £125,000 less from year two onwards.

More relevantly, UCL has now upgraded its main campus connections to 20Gbit/s. Jisc provides these connections and all fully funded services for £271,000 less than the alternative provider from year two onwards.

Summary
The analysis above illustrates that Jisc does deliver value for money for Cardiff University and UCL. Cost savings and costs avoided are relevant to connectivity and cyber security services, the technology and infrastructure and digital resources portfolios.

The additional value of Jisc underpins the breath and quality of resources, delivering optimised services reflective of the sector’s needs and avoiding market failure or sub optimal alternative provision. All university staff and students benefit from Jisc’s services.

This value is underpinned by the co-design approach Jisc and the sector have developed. The breadth of the Cardiff University study also highlights the trust that staff, from across the university, have in Jisc to operate and develop sector-specific services, agreements and resources.

The Cardiff University also raised a different question – what if Jisc didn’t exist? Cardiff staff told us:
"Create a Jisc for Wales"  "Pay more for less"  "Have to employ more staff"

In summary, for the 20Gbit/s scenario, Jisc enables a £776,000 per annum saving against a full charge of £905,000 (£876,000 full charge plus additional charges). For the 10Gbit/s scenario this figure is £471,000 per annum saving.

What next
The Cardiff University and UCL studies powerfully illustrate the value of Jisc. At the same time, Jisc must continue to co-design future services, represent the importance and impact of its services to funding stakeholders and continue to communicate openly with its members about how it will become ever more efficient.

We urge university technology, teaching and learning, library and research leadership to engage with Jisc to understand and utilise the breadth of its portfolio and champion Jisc engagement across the university – for the benefit of students and staff alike.

We urge universities to engage with co-design activity. Jisc will only develop highly relevant services with institutional input.

To find out more please contact your account manager. Visit jisc.ac.uk/contact/your-account-manager. If you’d like more information about Jisc’s full range of products and services please visit jisc.ac.uk.

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