

Jisc report against SFC – Jisc Outcome Agreement 2017-20

AY 2018 – 19

Contents

Executive summary.....	2
Introduction.....	3
Impact in Numbers	6
Jisc in Scotland.....	8
Jisc’s sectoral strategies.....	10
Higher education learning and teaching strategy and student experience strategy	10
Further education and skills strategy.....	14
Research strategy.....	16
International strategy	21
Operations.....	23
Shared infrastructure and services.....	23
Uptake and usage of Jisc key services by institutions.....	25
Brokerage (content and savings)	30
Practical advice and assistance, training, and consultancy	32
Research and development	37
Jisc KPIs.....	39
Jisc draft strategy 2019-22.....	39
Equality KPIs	40
Financial statement	42

Executive summary

In AY 2018-19 Jisc provided efficient and effective support to Scotland's colleges and universities, with the support of grant-in-aid from the Scottish Funding Council (SFC). Jisc's work contributes to **SFC's strategic priorities** and assists funded colleges and universities to meet their outcome agreement objectives and wider policy objectives in Scotland, including **Digital Scotland**. Through the three cornerstones of a world-class network, relevant digital content, and sector-specific advice and guidance, Jisc helped to ensure that universities and colleges were able to make the most of the digital opportunities available, while making substantial savings compared with doing so individually.

We ensured that all institutions eligible for, and requiring, a Janet network connection have benefitted from fit-for-purpose internet service provision. Institutions also continued to make good use of the content collections offered by Jisc Collections. The Jisc Collections negotiation and licensing team have enabled Scottish colleges and universities to save, on average, 51% on the commercial cost of their journals, e-books and online resources. Each college and university in Scotland has also benefited from a nominated Jisc account manager helping them to meet their strategic priorities. Jisc account managers held 84 face-to-face meetings with member organisations in Scotland out of 163 substantial interactions. In 57 instances, institutions took up a service. Wider engagement included webinars, training and the June **Connect More** event in Edinburgh.

The outputs of Jisc's research and development projects continue to make an impact. For example, the **2019 student Insights survey** represented the voice of 29,531 learners in UK HE and FE and 6,534 members of staff from 76 institutions (32 HE and 44 FE). In Scotland, this included one college and five universities with over 4,818 student responses and 497 staff responses. The findings will help Scottish institutions to better understand expectations and experiences of technology, and access and develop technology solutions for the challenges they face. We also set out our vision for Education 4.0, driven by the technological advances of artificial intelligence (AI), robotics, big data, Internet of Things and mixed reality and we launched our thought leadership campaign for **Research 4.0**, commissioning cross-party thinktank Demos to report ideas and predictions for how these emerging technologies will affect the UK's world-leading research sector.

Our network services supporting open access (eg **Sherpa RoMEO**) are being well-used by Scottish universities (see page 27) and colleges are making very good use of our network **e-books for FE** service (see page 29). We formally launched several R&D initiatives to service including our new suite of library services (**Library hub discover**, **Library hub compare** and **Library hub cataloguing** – formerly NBK), **Open research hub**, (helping universities to manage and reuse research data for data publication, archiving, preservation and storage) and **Analytics Labs** (a CPD service offering better ways to create and use institutional business intelligence).

Within our own operations, we continued to deliver on our strategic priorities, to perform highly and to deliver savings to our members. A review of our merger with Eduserv in January 2019 showed that the merger was successful in enabling us to deliver more for our members and the wider public sector.

Introduction

Our vision and aim

Jisc is the UK's digital agency for lifelong learning and research. Our vision¹ is for the UK to be the best place in the world to use technology to learn teach and research. Our aim is to power the UK's higher and further education's teaching, learning and research, inspiring its digital transformation, and building solutions that make it happen.

Our work is UK wide, providing services and support to all state-funded universities, the vast majority of colleges, many schools, research institutes and many other national institutions. We are a membership organisation, working to delivery considerable collective digital advantage, financial savings and efficiencies for our members, ensure these benefits are sustained and enhanced and to do all this as affordably, efficiently and as cost effectively as possible.

Our services

We provide a range of services to our members including:

- e-infrastructure services – Janet network, access and authentication, cyber security, cloud services, data centres
- Solutions to enable education and research – open science/research, data and analytics, library services, digital collections, learning resources
- Advice and guidance – guides, training, consultancy
- New solutions through research and development – intelligent campus, curriculum analytics, digital enablement, artificial intelligence (AI), edtech, Education and Research 4.0².

Funding

Jisc is an essential part of building both the capability and capacity of Scotland's further and higher education sectors, using the grant-in-aid from the Scottish Funding Council (SFC).

SFC funding allows us to support a wide range of UK-shared and Scotland-specific initiatives in order to meet **SFC's strategic priorities** and to assist funded colleges and universities meet their outcome agreement objectives and wider policy objectives in Scotland, including **Digital Scotland** and the **College and University Sector ICT Strategy 2019-21** among others.

¹ Jisc's draft vision and aim will be finalised in late September 2019.

² Education 4.0 and Research 4.0 are thought leadership campaigns relating to our R&D work.

We work in partnership with Scottish universities and colleges to ensure that they not only make the most of the digital opportunities available, but at the same time make substantial savings compared with doing so individually. Through Jisc providing centrally-funded services, institutions benefit from economies of scale and efficiencies that would not be possible under a disaggregated model. This is because Jisc, acting on behalf of its member institutions, can exercise considerably more market power in procuring technology than individual institutions acting alone, and can procure as a very intelligent buyer. This has been shown to result in significant cost savings, helping to improve the efficiency of the sector and deliver value for money to the taxpayer.

Securing Jisc's future in a challenging financial climate

We appreciate the pressures on funding, and on universities' and colleges' finances. We therefore continued to establish new processes and operating models to ensure the effective management of our products and portfolio. For example, in AY 2018-19:

- We secured agreement from 100% of our FE members in England to continue with their voluntary membership.
- We were named as a recognised supplier of cloud computing services to government bodies, meaning that central government, local council, NHS Trusts and other public sector bodies can now purchase Jisc cloud solutions as recommended by the government's Digital Marketplace.
- Together **Jisc Collections** and **Chest** generated £2m of income.
- For the year to 31 July 2019 our operational costs were £963k lower than budgeted, our net contract savings (where we have achieved a better price from a supplier) were estimated to be £531k and our net efficiency savings in year (from finding a more economical way of achieving the same result, for example, by bring more recruitment in-house) were £1,452k³.
- We commissioned and shared three further education case studies to demonstrate how we are helping our members to save and avoid costs:
 1. *Strode College*: a Jisc subscription saves £133.4k of costs in total per year and helps them to avoid £37.1k of costs.
 2. *Forth Valley College*: Jisc saves them £83k of costs in total per year and helps them to avoid £119k of costs (calculated as the proportion of Jisc's grant from the SFC).

³ We are currently finalising our financial close for the year to 31 July 2019 but we do not expect any material change to these figures.

3. *Grimsby Institute*: a Jisc subscription saves them £35.6k - £156k of costs in total per year and helps them to avoid £175k of costs, mainly relating to cyber security.
- A similar study at the University of Hertfordshire (a teaching-intensive university) showed that for a Jisc subscription costing £66k (excl. VAT), we enabled:
 - A cost savings of £1.26m per year (£380k for the Janet network and cyber protection vs an alternative provider and £882k for Jisc Collections)
 - £1.2m of one-off cost savings from the digital archive collections
 - £258k of costs avoided through preventing cyber attack outages and avoiding the costs of additional support staff and services.
 - The section *Impact in Numbers* (on page 6 of this report) outlines the quantitative savings and impact of some of our services in Scotland.

In order to better communicate the value of SFC's investment in Jisc, we have developed a public affairs engagement plan targeting key Scottish policy-makers. We will explain what Jisc does, how we support and underpin HE, FE and research in Scotland and explore potential opportunities to leverage our expertise and capabilities to support wider Scottish Government policy objectives. We held a wide-ranging initial meeting with Aileen McKechnie, Director of Advanced Learning and Science, Scottish Government in September 2018, covering cyber security, coordination with the Scottish Government Digital Team and support for the Glasgow colleges common applications system.

Limitations on data included in this report

Jisc's data comes from multiple sources. In relation to web-based resources such as practical guides, podcasts and blogs, web logs do not distinguish who has accessed a page and will only record usage if the person accesses from their ".ac.uk" account, with consequent underreporting of sector staff access. Event attendance, for training, online and face-to-face events, is taken from event registration. However, event feedback is anonymised to the level where it cannot be attributed, so we give general feedback from all attendees if there is insufficient numbers who attended from Scotland.

Impact in Numbers

We used to show 'Value, Savings and Efficiencies' (VSE) information in these reports, which demonstrated some of the costs saved and avoided by the sector through the use of Jisc's services. This has now been replaced by the Impact in Numbers information below. We have changed our approach because a number of the methodologies used to calculate the VSE figures are now out of date or no longer fit for purpose.

We are working across the Jisc service areas to expand the Impact in Numbers information for our funders and members and will be able to include more updates across the year and in our next report. On an annual basis we will be able to show comparative information, demonstrating how we are doing more with less for our members on a yearly basis.

Across HE and FE:

- Our commitment time to restore lost network service is **8 hours**, but since 2016, our mean time to restore lost service has actually been much lower, at **4 hours 52 minutes**.
- The average cost of an outage in a member organisation has been recognised at over **£3k per minute**⁴:
 - In AY 2018-19 Jisc mitigated over **65 hours** of attacks for Scottish members.
- For every security certificate purchased through Jisc, our members have saved, on average **£85**:
 - In AY 2018-19 Scottish organisations purchased over **1,500** certificates, saving **£129k** in total.
- Our Jisc Collections negotiation and licensing team have enabled Scottish colleges and universities to save, on average, **51%** on the commercial cost of their journals, e-books and online resources.
- Each separate resource that Scottish organisations use through Jisc Collections has taken, on average, **4 days** for Jisc experts to negotiate (with some taking up to a few weeks):
 - With more than **659** separate resource subscriptions held by Scottish members in AY 2018-19, this equates to over **2,500** days library and licensing staff time saved.

⁴ Based on [Home Office - Understanding the costs of cyber-crime 2018 report](#), independent consultations with member organisations across 2018 and 2019 and also considering the [Gartner cost of cyber-crime estimates](#).

FE only:

- Scottish colleges can currently access 14 free content agreements with a total commercial list price of **£35k**
- Scottish colleges save, on average, just over **£100** for every e-book their students and staff use, with unlimited access and use
- On average, college engagement with e-books for FE has increased by **13.9%** since AY 2017-18.

Indicator: Jisc internal overall reduction in cost

Internally we continued to make savings against budget. For the year to 31 July 2019, our operational costs were £963k lower than budgeted. Our net contract savings (where we have achieved a better price from a supplier) for the year to 31 July 2019 were estimated to be £531k and our net efficiency savings in year (from finding a more economical way of achieving the same result, for example by bring more recruitment in-house) were £1,452k. We are currently finalising our financial close for the year to 31 July 2019 but we do not expect any material change to these figures.

Jisc in Scotland

Jisc's funding allows it to support the SFC in its outcomes related to high quality teaching and learning, world-leading research and greater innovation in the economy, as outlined in the SFC-Jisc Outcome Agreement AY 2017-20.

Jisc's member engagement is delivered through a consistent and coherent regional model. The Jisc Scotland team comprises one Head of Nation (shared with Jisc Northern Ireland), and three full time account managers, working to ensure best take-up and use of Jisc's offer, to relay member feedback into Jisc, and to coordinate the breadth of Jisc's engagement with the institution. This team is backed by UK-wide support including subject specialists across a range of expertise, project experts and service managers. Colleges and universities in Scotland access Jisc's services and support through their designated account manager, through our helpdesks, and directly with relevant Jisc staff. Each organisation also has access to a self-service dashboard of service take-up and usage information ([My Jisc](#)).

Indicator: Number of interactions with supported institutions

In the reporting period, there were 84 recorded face-to-face meetings held with member institutions in Scotland, out of 163 substantial interactions.

Indicator: Number of additional take-ups of Jisc services

We recorded 57 instances where institutions took up a service. In terms of the most common (other than individual sign-ups to training):

- Six of these were take-up of the student digital experience [Insights](#) service (ie. Borders College, Royal Conservatoire of Scotland, University of Aberdeen, University of Glasgow, University of Stirling and University of West Scotland)
- Eleven were practical support and assistance, or consultancy
- Four were take-up of the [building digital capability](#) service (ie. Glasgow College, Dumfries and Galloway, UHI and University of Edinburgh)
- Three were Janet IP connections
- The rest were spread across 19 other services.
- Eleven universities and 14 colleges took up additional Jisc services in the reporting period.

Indicator: Qualitative examples of Jisc support for institutions, demonstrating engagement, delivery and impact

In addition to assisting the University of Edinburgh through a series of cyber-attacks in September 2018, Jisc's Enhanced **DDoS Protection service** was found to meet the university's ongoing needs in relation to reliance on specified services. Jisc was able to set up the enhanced service quickly, allowing the university to have confidence in its website provision, amongst other important services.

The University of Glasgow made use of Jisc's consultancy service in order to assist their review of their virtual learning environment. This involved liaison between different stakeholder groups in the university, in order to help progress the university's vision of what the VLE was to do, and how its procurement should be taken forward.

Responding to a common need, Jisc was able to organise hands-on Incident Response Training, held locally in Scotland, which was taken up by eight colleges. As well as being education-specific, the efficiency of delivery to multiple institutions allowed the charging of an affordable delegate rate for the colleges involved, as well as cutting down the amount of time staff needed to be out-of-office.

During the current reporting period, the University of Stirling continued to make strategic use of the evidence gathered through use of the Jisc Student Digital Experience Insights service. This has allowed it to pursue evidence-informed digital transformation, in keeping with the QAA enhancement theme *Evidence for Enhancement: Improving the Student Experience*. Further details are available at <https://digitalinsights.jisc.ac.uk/case-study-listing/university-stirling/>.

Jisc's sectoral strategies

Jisc's activity is guided by its key UK-wide strategies in the following areas adapted as appropriate to meet Scotland's particular context and priorities, as defined in the SFC - Jisc Outcome Agreement AY 2017-20.

Higher education learning and teaching strategy and student experience strategy

Indicator: Mapping of relevant Jisc activity in the higher education learning and teaching strategy against SFC's strategic outcomes and priorities

In order to support the SFC Strategic Plan 2015-18 outcome on high quality teaching and learning, Jisc continues to provide, without substantial change from the previous reporting period, the following services in support of SFC outcomes:

SFC outcome: Access to learning

Example Jisc activity:

Jisc's national infrastructure, including the [Janet network](#), supports social mobility by providing institutional connectivity and access to resources right across the UK irrespective of geographical location or social mobility. The Janet network ensures that rural or isolated communities are not unfairly disadvantaged due to higher costs for population size.

Online technologies can help students with disabilities by making learning opportunities more available. Using assisted technologies provides more equitable access to learning content and activities. Jisc also provides advice and guidance, consultancy and resources on how institutions can support learners with different needs, for example, [Good digital teaching practices support easier learning for disabled students](#) published in September 2018.

Through [Analytics Labs](#), we are working with institutions to co-design better ways to create and use business intelligence. For example, we can advise on using engagement analytics to support 'at risk' students and improve student retention. Analysing engagement data can help staff identify which students are likely to find university life difficult before it is too late. Data relating to some predisposing factors (eg declaration of disability) can be captured, but others (such as responsibility as a carer) are not generally held in any data systems.

SFC outcome: Success in learning

Example Jisc activity:

In 2018 we launched the world's first [national learning analytics service](#). So far, 24 universities and 8 colleges (2 HEIs in Scotland: Abertay and Stirling) have signed up to the paid-for service, which uses AI to harness the collective power of data in order to make informed decisions to enhance student satisfaction, retention and attainment. Jisc's service includes a Learning Data Hub, a suite of

products including Learning Analytics Predictor and Data Explorer, tool kit and guides, community forums and consultancy and training for service customers and Jisc members alike. A report on the impacts of the service will be available in late autumn 2019.

Related to this work, we are carrying out some early discovery work on aspects of student well-being, including suicide prevention/intervention and looking at the two recommendations that fell out of the Jisc [Horizons report](#) about emerging technologies and the mental health challenge. We are working closely with UUK, the OfS and other partners on developing policy in this area. We are also in the early stages of exploring the potential of using data for curriculum analytics, for example, to look at learning spaces and types of learning done within them in order to assess whether a room is fit for purpose.

Jisc's [student digital experience insights](#) service offers institutions a unique look at all aspects of the digital environment through the eyes of their students and staff. It provides practical mechanisms for engaging with staff and students, analysing their responses and planning and implementing changes to improve their experience of the digital environment. The total number of UK subscribers to the service for the 2019 survey was 76 institutions (32 HE and 44 FE) with over 29,531 student responses and 6,534 staff responses. In Scotland, one college and five universities participated with over 4,818 student responses and 497 staff responses. All findings are available on [Jisc's web-site](#), together with the 'At a glance' summaries for HE and FE students.

A new survey for professional services staff will launch in September 2019, and a pilot survey for research staff and research professionals will run in spring 2020. We are hoping to get a significant number of colleges from Scotland to participate in these as there is no cost to run the surveys.

Additionally, the following reports and resources are freely available on our web-site:

Exploring the student digital experience: student, staff and organisational factors - focuses on the outcomes of multivariate statistical analysis of student and teacher survey data from the Jisc insights service.

Jisc NUS roadmap for supporting students to improve their digital experience at university and college benchmarking tool.

Using persona analysis to compare student social behaviours with institutional digital provision: a pilot study

Senior leader briefings:

Further education - briefing based on the 2018 survey of 14,300 UK FE students, studying at 36 colleges across the UK.

Higher education - briefing based on the 2018 survey of 23,500 UK HE students, studying at 43 universities across the UK.

Intelligent campus: Universities and colleges spend billions on their campuses, yet they are frequently under-utilised and are often a frustrating experience for students. We are developing a service to help our members use data to make smarter use of their campus or estate. We will do this

by extending our learning analytics infrastructure to collect data from a wider range of institutional software and devices to deliver novel insights to institutional managers to help them to make their campuses more efficient, improve the student experience and deliver higher quality teaching. In AY 2018-19 we progressed from 'thought leadership' to 'product' stage. The 11 pilots (including CDN Fife College and Glasgow University) are now focused on improving room utilisation and ensuring the right space for right activity, and incorporating Internet of Things technologies.

We run a series of hackathons annually. Last year an **Intelligent Campus Hackathon** was held at Digifest, and in Milton Keynes running alongside the CAN conference. The 2019 Hackathon will be hosted by Glasgow University.

Student electoral registration service: At the end July 2019, 16 English universities and 42 local authorities had subscribed to this service intended to facilitate the electoral registration of students and drive democratic engagement. We actively promoted the service to the electoral administrator community in collaboration with the Association of Electoral Administrators and the Scottish Assessor Association, attending their regional branch meetings.

SFC outcome: Progression from learning

Example Jisc activity:

Digital capabilities/discovery tool: We worked with stakeholders and sector bodies to develop and launch this service providing clear guidance on the digital skills and capabilities that are required for a range of staff roles and to equip leaders and staff with the tools and resources they need to improve digital capability at a local or institutional level. This work involved a pilot of 83 institutions (including four Scottish colleges, the Scottish Courts and Tribunal Service and the Scottish Qualification Authority).

At present, the number of subscribers to the service stands at 41 UK institutions (28 HEIs – including Dumfries and Galloway, UHI and the University of Edinburgh, 12 colleges (City of Glasgow College) and one training provider). We had a total of 4,105 staff and 2,117 student completions of both free and subscribed versions of the discovery tool in the period between September 2018 and June 2019. We also had 213 feedback forms completed since the service launch for the full version of the tool; and 48 for the free version. Between mid-June and mid-July 2019, we had 126 digital badge requests from staff and students who had completed the question sets.

We launched a new question set in the discovery tool on accessibility and inclusion at ALT-C, as well as guidance on digital wellbeing. The next community of practice event will be held in Edinburgh on the 27 November 2019.

Innovating with the best edtech businesses: We are working with the flourishing edtech sector via educational technology R&D projects and activities, partnering with edtech start-ups to expedite the product development cycle and bring market-ready products into UK education and research. This provides a cost-effective mechanism for sharing the costs of innovation and ensures the sectors we serve can meet new technological requirements and are sustainable in the longer term. For example,

students taking part in our [edtech Launchpad](#) will have a valuable opportunity to develop entrepreneurial skills and make useful contacts as well as enriching their CV.

Further education and skills strategy

Indicator: Mapping of relevant Jisc activity in the Scottish further education and skills sector against SFC's strategic outcomes and priorities

In order to support the SFC Strategic Plan 2015-18 outcome on high quality teaching and learning, Jisc continues to provide, without substantial change from the previous reporting period, the following services in support of access to learning, success in learning and progression in learning in further education:

Janet network and components (used by 24 colleges)

The UK's high performance and reliable **Janet network** with high bandwidth and cutting-edge optical technology allows teachers and lecturers to push the boundaries of traditional education using the latest technology for enhanced student experience.

Jisc Collections (used by 14 colleges)

Jisc has negotiated and licensed high-quality **digital content** that meets the requirements of colleges to support, teaching and learning. This saves the colleges' time and resource by providing a trusted centralised service that reduces duplication of effort, complies with procurement regulations, and enables colleges to easily subscribe and manage their content agreements.

CSIRT (providing cyber security to all colleges, with 16 colleges actively reporting incidents)

Janet network **Computer Security Incident Response Team** (CSIRT) acts as a gatekeeper that proactively keeps all college network access secure, allowing staff and students to rely on internet access for teaching and learning for all organisations with a Janet network. CSIRT also responds to queries and incidents reported by colleges themselves, with 16 colleges raising tickets, or having tickets raised on their behalf, in the reporting period.

Eduroam (used by 22 colleges)

Eduroam creates secure and seamless internet access across locations and devices. Staff and learners can connect to the internet wherever they are including at a college, as well as when visiting the premises of another eduroam-enabled institution. Eduroam makes it easier for users to get online seamlessly and from multiple devices.

UK Access Management Federation (used by 21 colleges)

UK Access Management Federation provides teachers and learners with easy online access to their own college whether they are elsewhere in the UK or overseas.

e-books for FE (used by 15 colleges)

e-books for FE is a collection of current curriculum relevant e-books specially selected to meet the needs of the UK FE and skills sectors. The collection contains e-books from a variety of publishers, including Bloomsbury, Cengage, Hodder Education and Taylor & Francis, and covers subjects as

diverse as fashion, design, automotive engineering and hospitality. There is no charge to access the platform.

We launched four new vocational learning resource services: **Health and social care training** (because it is the subject that has the highest number of learners in FE); **Construction, Education and childcare**, and **Digital and IT** (which are major curriculum areas that will benefit from high-quality interactive learning resources). These resources will make it quick and easy to find interactive and engaging content that supports teaching, enabling learners to understand key concepts and spark fresh ideas. They complement our existing e-books for FE service, and are mapped to qualifications across England, Scotland, Wales and Northern Ireland, including T-Levels, VRQs, NVQs and SVQs at levels 2 and 3 and the National Occupational Standards.

In total we have received 67 orders across 25 organisations to take up free trial licences until the end of the academic year. Many organisations took up free trials for three or four vocational learning resource services. We ran a series of four webinar training events over June 2019 to launch the services and to showcase the learning resources to LRC and curriculum staff. These webinars were well attended, with positive feedback given via a webinar survey.

Practical support and assistance (training used by 8 colleges; consultancy by 2 colleges)

In addition to frequent, informal assistance, Jisc has a number of defined advice and guidance services to assist colleges in effectiveness, efficiency and compliance. These included accessibility snapshots to improve inclusion practice in certain key technology areas, GDPR compliance assistance, and review of IT infrastructure in order to ensure effective and efficient support for teaching, learning and other college activities. In addition, our **high-quality training** is designed to help our members develop in-house expertise and make the most of our services and solutions.

Research strategy

Indicator: Mapping of relevant Jisc research-related activity in the Scottish higher education sector against SFC's strategic outcomes and priorities

In order to support SFC Strategic Plan 2015-18 Outcome on world-leading research, Jisc continues to provide, without substantial change from the previous reporting period, the following services in support of SFC outcomes:

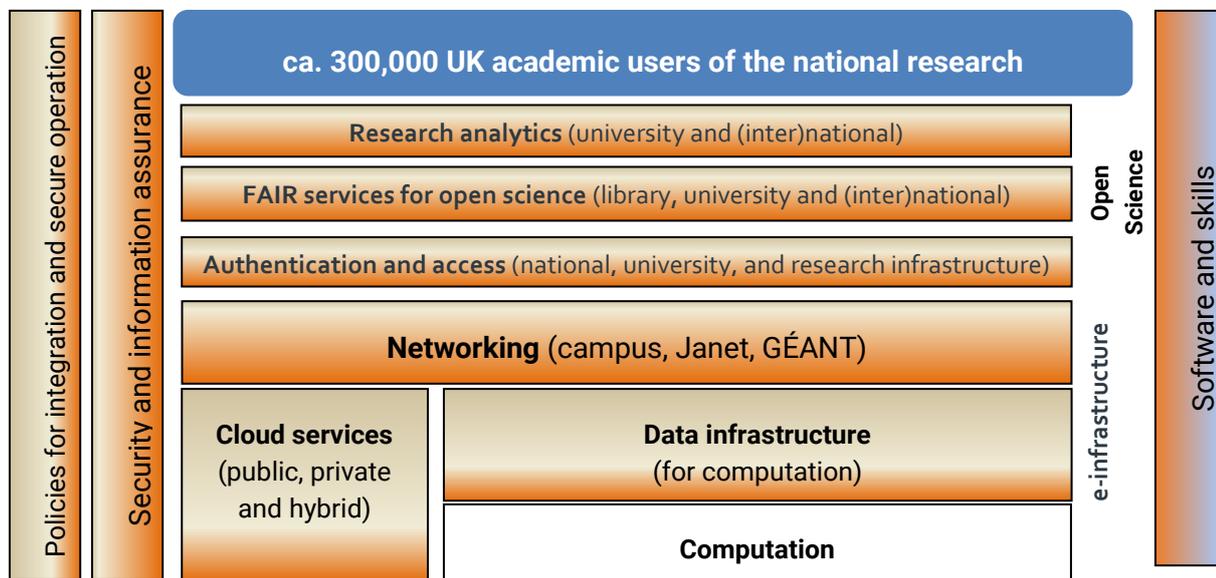
SFC Outcome: World-leading research- Research competitiveness

UK research is enabled by Jisc services such as the Janet Network, by the collective action we enable HEIs to take such as negotiations with journal publishers, and by the advice, guidance and thought leadership we provide, such as in Open Access since 2001. We provide this support at the levels of the network and cybersecurity, authentication and access, cloud and data infrastructure, open scholarship and research analytics, as shown in **Figure 1** below. In the case of national e-Infrastructure, these plans are in the context of the UKRI research and innovation infrastructure roadmap⁵.

We also act as a partner, thought leader and advocate for the interests of UK research. For example, we collaborate with other NRENs, with peer organisations through various networks, with partners in international projects, etc, to share expertise and developments, all of which ultimately benefit the sector. By taking active and often formal roles in groups such as the Global Research and Education Network (REN) CEO Forum, the High Level Expert Group on the European Open Science Cloud, the UK Forum for Responsible Metrics, the Open Research Data Taskforce, and many others, Jisc is able to shape policy and strategy in the sector's interests. By facilitating discussions within the sector, through its co-design methods, its events and communications, its advisory groups and forums, its relationships with professional bodies, and via its membership team, Jisc helps the sector develop clear understandings of how best to exploit technology in support of research.

⁵ See <https://www.ukri.org/research/infrastructure/>

Figure 1 Jisc’s contribution to open science and research e-infrastructure (in orange)



Example Jisc activity:

The Janet network: Jisc invests in the mission-critical UK e-Infrastructure required by the research base to be safeguarded for the long-term. We began work to transition to the new Janet Access structure which will give our members a more cost effective, flexible and agile set of connectivity services. The South and West regions are complete with the East Midlands, London, West Midlands and North East Scotland progressing on schedule with no member disruption. We also completed the £15m project to upgrade the Janet Network backbone, delivered on time and with no disruption to members, making Janet the largest and most technically advanced NREN in the world.

Cybersecurity: More than 300 UK members are now active users of Jisc’s [cyber security portal](#), reassuring members that they are protected from cyber-attacks. We continue to successfully mitigate DDoS attacks despite ever-increasing attack size and duration:

- The highest attack detected has increased from 55Gbps in 2017-18 to 176Gbps in 2018-19
- Total attack duration has increased from 490 hours in 2017-18 to 751 hours in 2018-19.

In total, we saw 128 inbound cyber attacks in 29 HE and FE member institutions in Scotland (compared to 114 the previous year). While the number of attacks and number of sites involved remained fairly static, it is notable that the largest attack came in at 46Gbps compared to 20Gbps in the previous year. This 100% increase (a pattern similar to what we have seen across all of our UK members) may show that attackers have more resources available to them and therefore Jisc will need to ensure that it has the capacity to continue to successfully mitigate attacks. We saw positive engagement with both colleges and universities about cyber security in Scotland including about services such as Penetration Testing to support Cyber Essentials Plus accreditation and take-up of Enhanced [DDoS Mitigation](#). 222 delegates attended the first day of our [cyber security conference](#) in

November 2018, and 177 on the second day. The event achieved a satisfaction rating of 80%, up 3% on the previous year's event.

Data infrastructure (for computation) and cloud services: For universities needing to save costs on computation and data storage, equipment can be housed more economically than on university or laboratory premises through our national shared datacentres. We provide high-capacity connectivity via Janet to the major public-cloud providers, as well as the frameworks for the purchase of cloud services by universities and national laboratories, and advice, guidance and consultancy.

Authentication and Access: Jisc provides national authentication and access infrastructure: the systems that provide for authentication of users of resources and for control of their access to them (including access to scholarly resources for research). For example, without the [access management federation](#), the research base would struggle to perform at its current level – there is no comparable alternative. Furthermore, the participation in [Assent](#) of facilities run by the STFC such as the Diamond Light Source, companies such as Genome Research Ltd, and HEIs such as Cambridge, Glasgow, Cardiff and Sheffield demonstrates the value of additional services for UK research. Our new [OpenAthens](#) service for library users has potential for empowering library users spanning a wide range of industries, whether they are a PhD student, a hospital clinician or a research assistant.

Research data/discovery shared services: Jisc's [open research hub](#) is a shared service using state-of-the-art multi-tenant cloud technology that enables universities to manage and reuse research data for data publication, archiving, preservation and storage. It enables a national response to interoperability and the meeting of funder mandates, while saving time and achieving efficiencies. Jisc work on a data discovery service is on hold, pending a review of the capabilities of new entrants to the market such as the Google dataset search.

Support for open access / the REF and moving towards Open Science: We are working very closely with UKRI as they conduct their review of open access policy in the context of the international [Plan S initiative](#). Jisc is temporarily directly supporting Plan S through providing programme management. In the UK, in particular, Jisc is planning how best to fulfil the role recommended in [independent advice to the UK minister in 2018](#). Our plan will build on its existing technical infrastructure to support the implementation of open access publishing, including [online resources and support for researchers](#) to help achieve compliance (eg [SHERPA](#)), a search engine ([CORE](#)), a statistics aggregation service ([IRUS-UK](#)), a service notifying HEIs when journals publish papers (eg [Publications Router](#)) and various [metadata profiles](#). Our planning also includes close working between these services and the negotiation of journal agreements promoting cost-effective open access, working closely with [SHEDL](#).

Equipment sharing: In the context of a UKRI review of sector efficiencies, we have reviewed the future of our pilot equipment sharing service, [Equipment.data](#). This review has made a series of recommendations, aimed at increasing uptake, though VAT issues remain a challenge for equipment sharing.

Research analytics: this new area of development work is intended to increase research excellence and integrity. We are identifying a coherent research analytics offer, enabling practical tests and experimentation with open metrics to develop new (more open) research indicators for research assessment. We have also successfully piloted a tool to enable universities to use prediction markets to prepare for the REF.

Digital resources: We support UK research and education with content procurement, management, discovery and use, with the following notable achievements in the reporting period:

- The 2019 merger of Jisc Collections and **Chest** has brought together the two largest UK consortia for the licensing of content and software. As a result, Jisc is now responsible for negotiations which cover over 50% of library subscriptions and the largest ADOBE educational licence agreement in the world, which will save the sector well over £100m per annum.
- **Jisc Collections** negotiates over 250 licences covering over 350 subscription offers. In AY 2018-19 Jisc Collections undertook 100 renegotiations, issued 4269 invoices, worth **£59.8m** (including VAT) so a slight increase of £800k in value over the previous year. The negotiations reduced increases for online agreements to 2%.
- We announced three new library services on 31 July 2019: **Library hub discover**, **Library hub compare** and **Library hub cataloguing** (formerly known as the National Bibliographic Knowledgebase). These next-generation services will help researchers and librarians locate and manage print and electronic books, journals, newspapers, maps and anything else listed in library catalogues.

SFC Outcome: World-leading research- Research training

Example Jisc activity:

Research skills: Jisc's research strategy 2018-21 outlines two relevant priorities: 1) "We will pilot more direct support for researchers undertaking data-driven, interdisciplinary research" and 2) "We will pilot the provision of digital skills for researchers and research professionals with the view to developing a sustainable product for our members". Examples of Jisc services under these priorities include 1) **Analytics Labs** providing a CPD experience for data scientists and research professionals and 2) **Archives Hub**, improving the value of archives and making them more discoverable and usable by humanities researchers. To date we have focused our efforts on thought leadership including public affairs / media articles, **open metrics lab** (fostering the use of more responsible metrics), support for **EOSC** and **open research data task forces**, **reproducibility** and 'what to keep' reports. For example, Jisc promotes greater understanding of the transition to open science and the implications for the research sector. Jisc guides on open access have been viewed over 20,000 times and those on research data management over 30,000 times. The open access good practice programme involved over 200 professionals from 90 HEIs between 2014 and 2016. Jisc's scholarly

communications blog has been viewed over 120,000 times in the last five years, and Jisc open science events have attracted over 1000 participants in the last two years.

SFC Outcome: World-leading research – international connections

Example Jisc activity:

Our research infrastructure seeks to support international research with seamless federation with global services across the whole research stack, from the network to active research tools.

International research services for UK members and customers include:

- Launch of Jisc's [Global Connect service](#)

New case studies with Edinburgh, Lancaster and Glasgow Universities in China; and QMUL in Malta. Further information is available via Jisc's [Transnational Education web pages](#). Related to this, the University of Edinburgh and Glasgow Caledonian University both use Jisc's [Transnational Education Licensing service](#).

Neil Jacobs, head of open science and research lifecycle at Jisc, was appointed as interim programme manager for the international consortium of research funders, [Coalition S](#). He will take forward the work of the consortium, Plan S, to help accelerate the transition to full and immediate open access.

International strategy

Indicator: Mapping of relevant Jisc international-related activity in the Scottish further and higher education sectors against SFC's strategic outcomes and priorities

In order to support SFC Strategic Plan 2015-18 outcomes on world-leading research and greater innovation in the economy, Jisc continues to carry out the following activity in support of international connections in HE generally and in support of promoting Scotland as source of innovation and creativity.

Example Jisc activity:

- GÉANT: Jisc is a member of the GÉANT board which is an important step to help ensure the UK continues to influence the European networking agenda in the context of BREXIT. There is a draft connectivity agreement in place with GÉANT ready to be signed should a no deal mean we have to re-join as an independent nation. Current peering arrangements ensure that there is no risk of 'switch off' or inability for data to be transferred across Europe, even for the largest projects such as CERN's Large Hadron Collider.
- Continued support for the **Knowledge Exchange** (alongside five European organisations)
- Jisc and EDUCAUSE hosted a session on the workforce of the future in Denver at EDUCAUSE annual conference, as part of a CIO taskforce involving five UK and five US university CIOs. We made recommendations and practical guidance available for CIOs in Spring 2019.
- The international digital experience Insights survey was launched at Ascilite Conference in Australia in November.
- Jisc **hosted the International Coalition of Library Consortia** in late 2018.
- A collaboration with the DLF at CLIR to develop IRUS-USA concluded at the end of 2018 after successful running of a pilot which made an IRUS-USA portal available to 11 US universities. Jisc and CLIR are reviewing budget and service support responsibilities with a view to delivering services in 2019.
- **The National Archives** and **Research Libraries UK** announced that Jisc would be joining them as a partner in the organisation and delivery of the **Discovering Collections, Discovering Communities (DCDC)** conference series in November 2019.
- **CRKN** and **JUSP**: Following discussions with the Canadian Research Knowledge Network, they decided to pursue a partnership agreement with JUSP with a view to offering JUSP to CRKN members in Canada.
- Meetings took place with the British Council and Department for International Trade to highlight Jisc's International work.
- Jisc attended UUKi's International Strategic Advisory Board during the reporting period.

Example Jisc activity in support of transnational education (TNE):

- During late 2018, we ran sessions looking at the challenges of authentication in the TNE context with a small number of experienced member institutions. The Jisc TNE licensing pilot was built on the licensed HESA data representing all UK HEIs delivering TNE; unusual in that universities have not entrusted their TNE data to a third party to streamline licensing agreements with publishers before. This led to a new transnational education licencing service creating sector insight and a platform to take this work forward with publishers. Universities making use of this centralised licensing service will no longer have to broker separate content access agreements with Wiley, or further agreements that follow it, saving both time and money. The unified and transparent approach creates a welcome level playing field for HEIs offering TNE students' access to scholarly publications. At the end of July 2019, there were libraries subscribed to the new service.
- Jisc presented at NREN conferences in the Middle East (e-Age) and South/East Africa (UbuntuNet Alliance) in late 2018, showcasing the Janet network and the range of products and services we offer including our support for TNE.

Operations

Shared infrastructure and services

Indicator: All universities and colleges in Scotland to have a robust and secure connection to the Janet network, and Institution connection to the Janet network (availability)

All universities and colleges in Scotland area provided with a robust, secure connection to the Janet network. The average availability across all Scottish Janet Network connections in AY 2018-19 was 99.97%.

Indicator: Cybersecurity incidents - Number of CSIRT (Computer Security Incident Response Team) tickets (Centralised coordination of reported security incidents)

The number of Janet Network CSIRT incidents has reduced for both FE and HE since the previous academic year though this is not indicative of a change in protection (which is always present) but indicates the greater number of incidents where a ticket was raised. In this year 219 tickets (compared to 263 tickets last academic year) relating to cyber security incidents in Scotland in AY 2018-19 were raised, predominantly relating to higher education, but with significant numbers of further education related tickets.

The CSIRT incident types for the entire UK in AY 2018-19 are shown in the table below:

Csirt Incident Type Name	2018-08	2018-09	2018-10	2018-11	2018-12	2019-01	2019-02	2019-03	2019-04	2019-05	2019-06	2019-07
Compromise	10	16	6	17	8	7	5	2	5	2	1	8
Copyright	46	52	238	387	149	157	152	166	61	68	131	85
Denial of Service	5	50	41	43	27	38	22	46	30	28	31	12
General Query	10	10	13	12	5	17	20	23	38	23	42	27
LEA Query	0	4	4	2	1	4	1	2	0	3	2	2
Legal/Policy Query	0	1	1	1	0	1	3	0	1	0	2	0
Malware	89	101	60	160	44	139	147	97	85	119	82	53
Misconfiguration	40	5	0	17	2	3	4	5	9	7	0	47
Net/Security Query	10	18	19	28	11	16	10	7	11	15	6	9
Other	9	8	12	4	1	3	3	4	4	6	4	3
Phishing	16	16	16	29	30	53	49	96	352	87	70	63
Scanning	8	10	14	20	9	9	9	2	3	10	11	22
Social Engineering	1	1	2	2	0	0	1	0	0	1	1	0
Unauthorised Use	2	2	2	17	3	7	7	10	10	7	9	7
Unclassified	0	0	2	2	0	0	0	0	2	1	0	0
Undetermined	0	0	0	1	0	1	0	1	0	2	1	1
Unknown	2	2	2	3	2	4	3	2	3	38	2	25
Unsolicited Bulk Email	19	13	4	9	13	10	5	10	5	8	4	3
Grand Total	267	309	436	754	305	469	441	473	619	425	399	367

Indicator: UK Access Management Federation (UKAMF) service – number of institutions using this service which enables secure access to digital resources.

Usage of the UKAMF service usage remained unchanged from the previous period, standing at 21 colleges (84% of total) and 18 universities (100% of total).

Indicator: Eduroam – number of institutions with operational instances of eduroam

During the reporting period, eduroam was operational at 22 colleges (88% of total), and at all 18 universities (100% of total).

Indicator: Cloud services - Average number of institutions using/having operational instances per month in the period

Since its merger with Eduserv, Jisc now offers **consultancy**, **professional** and **managed** cloud services, assisting institutions to understand Cloud and how it can bring value at the forefront of an education and research institution's digital strategy. Our team of Cloud solution consultants, engineers and architects are expert at moving from on-premises to Cloud solutions, with understanding of the cost implications. These new services replace the previously offered platform (which will not have an impact on Scotland's members).

Indicator: Managed router service - Average number of institutions using/having operational instances per month in the period

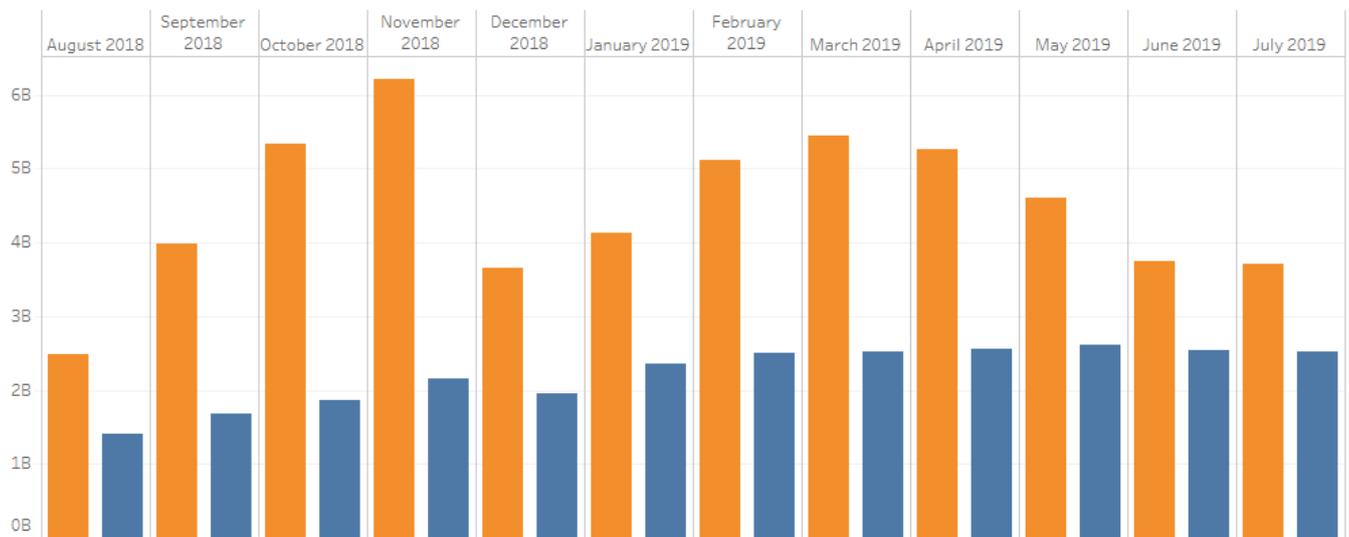
In AY 2018-19, the Managed router service was used by 13 colleges and 6 universities; Abertay University, Dundee has taken up the managed router service in the last year.

Uptake and usage of Jisc key services by institutions

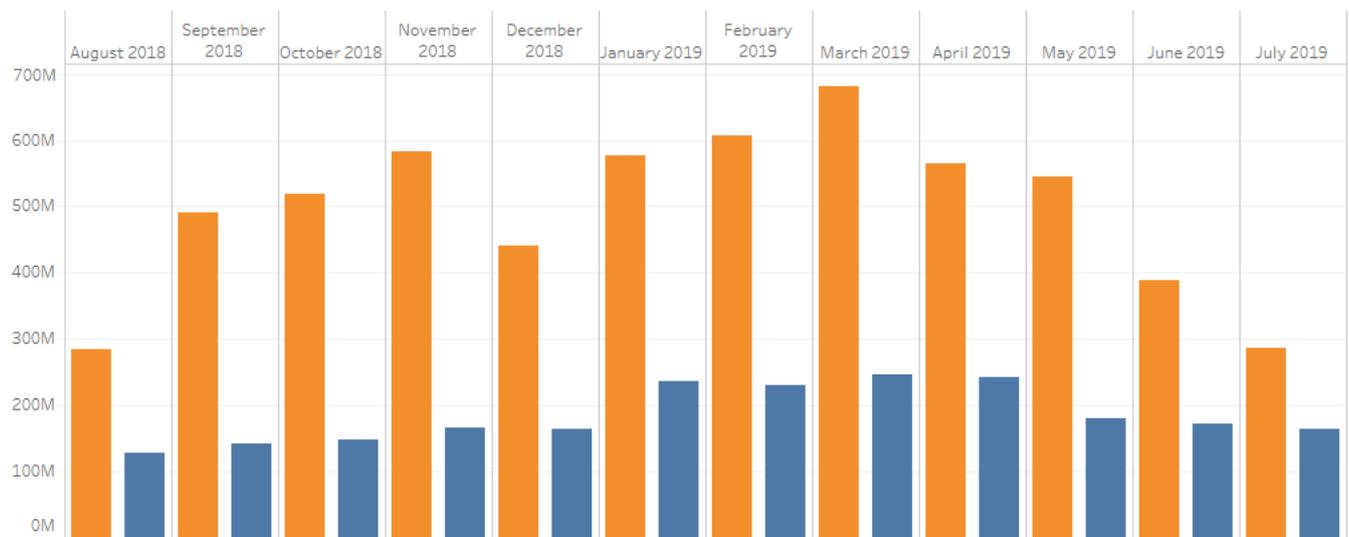
Indicator: Total traffic to and from the Janet network by higher and further education sectors over time

The graphs below show peaks in usage over the autumn and summer terms with drops over the summer.

Higher Education in Scotland



Further Education in Scotland



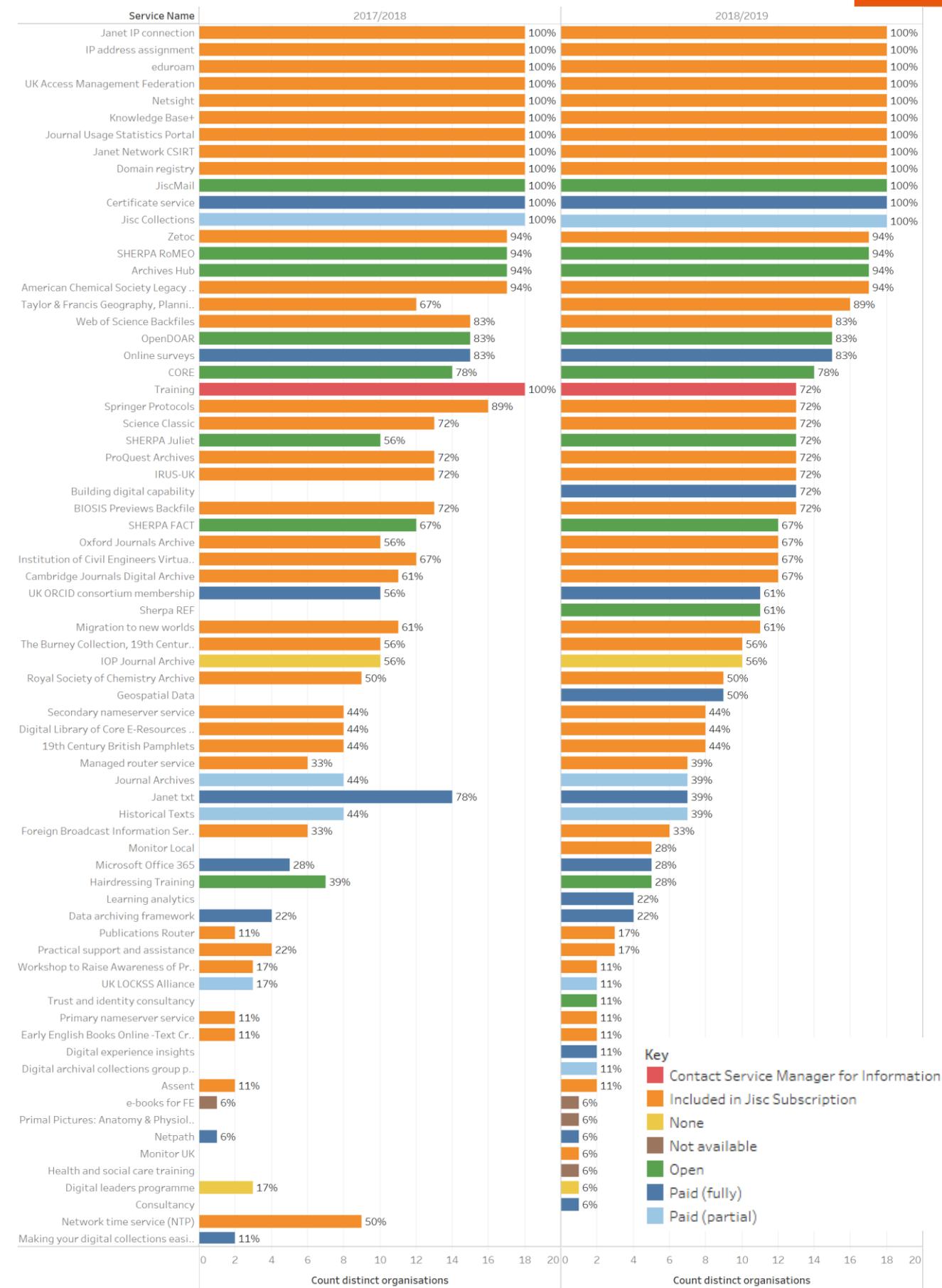
■ Traffic From Janet Mb
■ Traffic To Janet Mb

Indicator: Higher education comparison of subscriptions by Academic Year

The following table shows a comparison of HEI subscription to Jisc services between AY 2017-18, and AY 2018-19.

Notes

- **Geospatial Data** is the replacement for Digimap and hence no usage in the previous year.
- **Learning analytics**, **Building digital capability** and **Health and social care training** are new.
- **Network time service (NTP)** and **SHERPA REF** have had some issues around the collection of data hence as yet no figures for AY 2018-19.
- We are waiting for the **Digital archival collections group purchasing scheme** figures for AY 2018-19.
- Services with “not available” usually denote that they are services for FE and are included in FE core subscription, eg e-books and Primal Pictures.
- Copac and Copac Collection Management Tools were retired on 31 July 2019 hence not being included.
- No Scottish HE staff registered for the training “Making your digital collections easier to discover” in AY 2018-19.

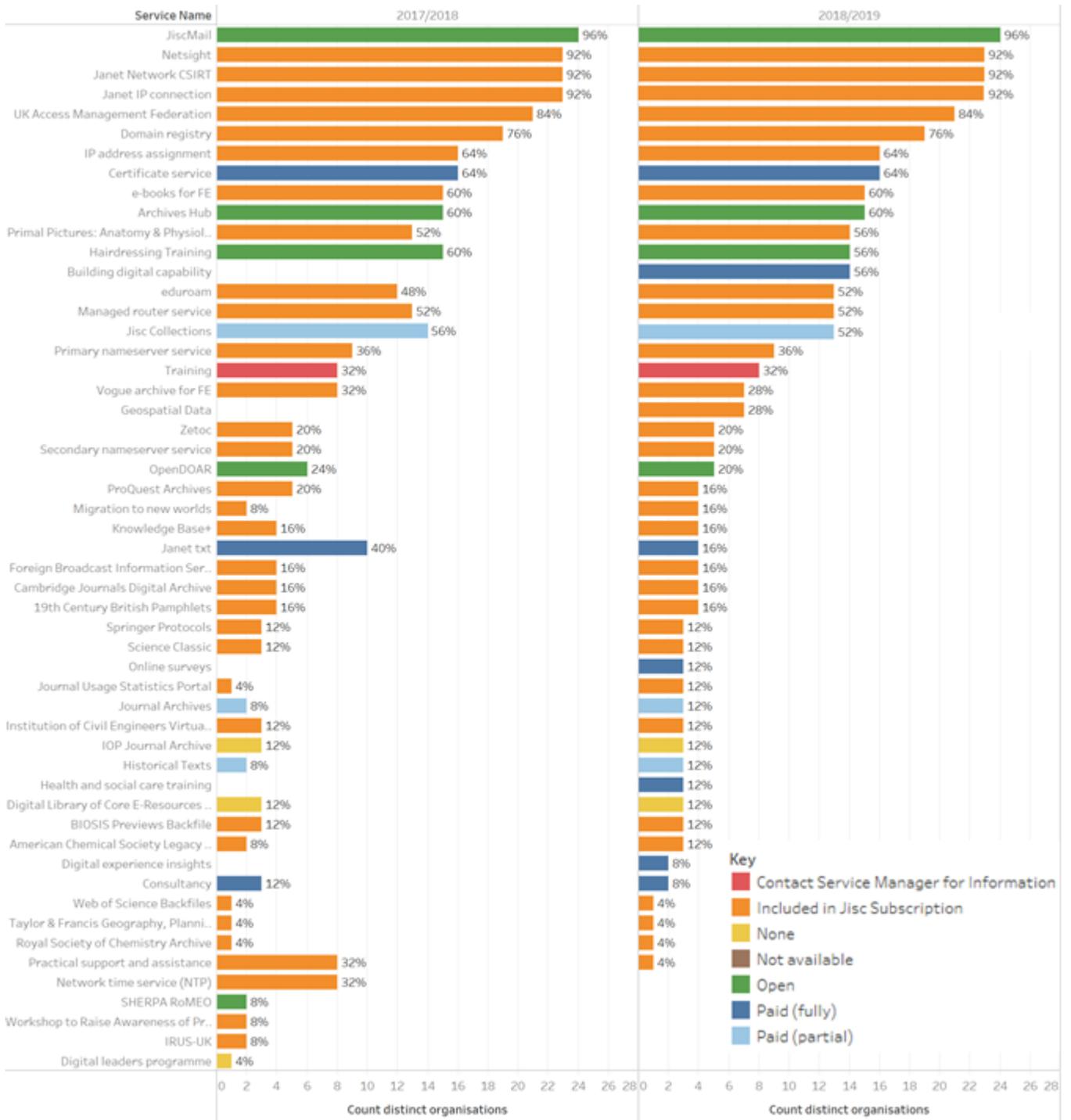


Indicator: Further education comparison of subscriptions by Academic Year

The following table shows a comparison of college subscriptions to Jisc services between AY 2017-18 and AY 2018-19.

Notes

- Nine UHI partner colleges also use eduroam, but their use is 'hidden' behind their connectivity through UHI; hence the number of organisations being quoted as 22 yet in the table only 13.
- West Highland College UHI does not yet have a Janet connection. Next year it will be included as it is now funded directly by SFC, so is eligible for a Janet connection.
- **Geospatial Data** is the replacement for Digimap and hence no usage in the previous year.
- **Learning analytics**, **Building digital capability** and **Health and social care training** are new.
- **Network time service (NTP)** and have had some issues around the collection of data hence as yet no figures for AY 2018-19.
- No Scottish college staff are registered for the training "Digital leaders programme" in AY 2018-19.



Brokerage (content and savings)

Indicator: Examples of key sector deals achieved in the period

In the reporting period, the Jisc Collections team negotiated around 80 journal, textbook, and database 'opt-in' agreements with publishers, including the Institute of Physics Publishing for IOP journals, Clarivate Analytics for Web of Science databases, American Institute of Physics, Oxford University Press Journals, BMJ journals, Bureau van Dijk Databases and the Royal Society of Chemistry, as well as continuing negotiations for improved open access and subscription agreements with Wiley and Taylor & Francis.

We will continue our work for groups within our membership, such as the London Medical Schools Library Group, SHEDL and WHEEL and we will continue to support the Digital archival collections group purchasing scheme.

Following the announcement by **Coalition S** and the release of the Wellcome Trust's OA policy, we will also renegotiate several existing open access agreements, including Sage, De Gruyter, and Cambridge University Press, to bring them in line with funder requirements. We also expect to negotiate a number of transformative OA agreements with smaller publishers and societies we have not dealt with previously, including Rockefeller University Press and the Microbiology Society. We will formally approach Elsevier to invite them to submit an open access proposal that will meet the **Requirements for Transformative agreements**.

As we do not yet know how many smaller sized publishers and societies will approach us for assistance in formulating and offering 'Plan S compliant' agreements, we will issue a Request for Proposals, via a multi-supplier framework agreement directed at smaller and society publishers. By operating under a framework agreement, we hope to encourage a diverse scholarly publishing ecosystem, streamline the negotiation process and provide greater clarity on the degree to which a publisher adheres to open access requirements.

Jisc Collections negotiates over 250 licences covering over 350 subscription offers. In AY 2018-19 Jisc Collections undertook 100 renegotiations, issued 4269 invoices, worth **£59.8m** (including VAT) so a slight increase of £800k in value over the previous year. The negotiations reduced increases for online agreements to 2%.

Key sector deals in AY 2018-2019 included:

- Wiley Online Library Journals + OA Offset
- SpringerCompact Journals Agreement
- Taylor & Francis Journals and OA Offset Agreement
- SAGE Premier Journals Agreement - all options
- American Chemical Society Web Editions Journals Agreement
- Nature Publishing Group Journals 2017 agreement (including RescoLinc)

- JSTOR - Archive Collections
- SHEDL Web of Knowledge
- Cambridge University Press (CUP) Journals agreement
- Literature Online LION
- Knovel
- IMechE SMP Agreement
- Cambridge Core Evidence-based Acquisition
- ORCID Premium Consortium Membership
- Royal Society of Chemistry Journals: Option 4 - Read and Publish
- Cambridge Companions Online (CCO) - Complete Collection
- ICE Virtual Library (including top up)
- RefWorks 2015-2018
- Embase (via the Ovid platform)
- Oxford Scholarship Online Evidence Based Acquisition (EBA) agreement

Practical advice and assistance, training, and consultancy

Indicator: Event satisfaction rating for delegates at Connect More Scotland

76 delegates attended the Scotland Connect More event held at the Carnegie Conference Centre in Dunfermline, Fife in **June 2018**. 15 delegates took part in the post event survey with satisfaction at 80% (12 delegates).

Overall, delegates felt that Jisc staff were friendly and helpful with the event offered a useful range of content and opportunities to network.

Delegates said:

- “The programme was excellent: addressing practical ways in which to review and integrate digital literacies within the curriculum.”
- “Lots of positive, practical information. I felt it was relevant to a huge number of people working in further and higher education.”
- “There was a good balance between the present and the future throughout. Engaging presenters helped deliver a view of the current learning technology landscape and what we are likely to experience in the future. The DIGILAB was a great way to really feel what the future could be like. Exciting stuff!”
- “Good range of relevant topics, nice group of participants.”
- “I definitely appreciate the work that Jisc does, and hope that it continues to support the sector through valuable networking and showcase events like these.”
- “As always it was a really beneficial event. It is always great to meet people from Jisc and hear about the great work that you do, it is also great to meet other people from different areas of the sector.”
- “The experience was enjoyable and I look forward to attending future Jisc events, if fortunate enough to do so. I connected with a few new people and also met in person Andrew Stalker our institution's contact. All your staff were very friendly and informative which always adds to the experience. Everything was well signposted as well, which is important when attending events in such large complexes, like the Heriot Watt campus. Thanks for a fascinating day and I look forward to connecting more next year!”

Indicator: Subject specific events (regular webinars, workshops and online events): eg 95% satisfaction from Scottish respondent delegates

The **FE leadership survey** in March 2019 had 16 respondents from 13 colleges out of 101 mailed contacts; 83% were satisfied with the services and support provided. The HE Leadership survey had 20 respondents (from 16 universities); 85% were satisfied or very satisfied with Jisc.

There were only ten respondents from Scotland to **Digifest 2019**; seven at **Tech 2 Tech**; ten at the Stakeholder Forum; and two at the **Security Conference**. We have feedback from 40 delegates who took part in post event surveys related to our smaller events, such as face to face workshops, meetings and online webinars. As discussed in **Limitations on data included in this report** these are insufficient to extrapolate from. However, the overall satisfaction for these events from all participants are: Digifest 2019 -90%; Tech 2 Tech -71%; Stakeholder Forum – 50%; Security Conference – 100%; and smaller events – 95%.

Indicator: Subject specialist satisfaction: 90% satisfaction rating from Scottish attendees

In AY 2018-19, we achieved 100% customer satisfaction score following delivery of practical support and assistance to Scottish members from those that completed the questionnaire.

Indicator: Highlights of events in Scotland, and UK events of interest to Scotland

There were 51 face-to-face events organised by Jisc with 338 registered attendees from Scottish universities and colleges, and from related organisations like the SFC. There were a further 40 online events with Scottish participation, having 247 attendees from these organisations. Overall 467 registrations were from HE, 125 from FE and 13 registered from other organisations.

Connect More (June 2019, Edinburgh)

Our annual teaching and learning focussed event, Connect More, was held in June in Edinburgh and attended by 51 delegates. This year's event themes included enhancing the student experience, embracing and embedding current and emerging technologies and encouraging collaboration and driving culture change.

Stakeholder Forum National Hub (March 2019, Edinburgh Napier University)

In order to provide a better, closer opportunity to feed into Jisc's ongoing direction, a Stakeholder Forum National Hub was held in Edinburgh, in parallel with the main UK-wide event in Birmingham. The format included live feed from the main Stakeholder Forum, Scotland-focused in-person discussion of strategic themes, and the opportunity for delegates at the Stirling hub to put forward questions to Jisc's leadership.

The top five face-to-face events by number of Scottish delegates attending were:

- [Connect More - Scotland](#) (Edinburgh, June 2019)
- [Tech 2 Tech Scotland](#) (Edinburgh, Jan 2019)
- [Digifest 2019](#) (Birmingham, March 2019)
- [NBK Community roadshow](#) (October 2018)
- Stakeholder forum 2019 (Edinburgh, March 2019)

The top five online events by number of Scottish delegates participating were:

- [EU 2018 directive](#) (November 2018)
- [Web accessibility for leaders](#)
- [Research analytics webinar](#) (July 2019)
- [R&D quarterly learnings meeting online briefing](#) (February 2019)
- Update on the Springer Compact negotiations (January 2019)

Indicator: Total number of Digital Leadership courses held and delegate feedback

No Digital Leadership courses were held in Scotland in AY 2017-18, and there were no Scottish delegates in the course run in Cardiff May 2019. However, there is a course in Edinburgh in October 2019 with almost half the delegates from Scotland as at the end of August.

Indicator: Total number of Workshop to Raise Awareness of Prevent (WRAP) training courses held, total number of Scottish delegates trained

Across the UK, there were 46 instances of the Workshop to Raise Awareness of Prevent (WRAP) training course with 695 staff attending. Of these 15 were from two Scottish HE institutions (Royal Conservatoire of Scotland and the University of the Highlands and Islands) and one from the College Development Network.

Indicator: Session numbers using key Jisc resources (blogs, guides, research and development pages) over time

The following table shows the visits from institutions from Scotland with domains ending in .ac.uk during the AY 2018-19. As said in the section [Limitations on data included in this report](#) these figures do not include accesses from home domains; nor does it include downloads which may be accessed frequently.

	All jisc.ac.uk	Blogs	Guides	R&D	Events
Sessions	24,815	1,681	4,467	1,993	2,047
Page views	58,422	3,051	12,062	4,144	5,444
Unique page views	33,943	1,962	7,348	2,488	2,907

Indicator: Page downloads and visits over time

The following individual pages were the most popular in AY18-19, excluding the home page (www.jisc.ac.uk), legacy pages, and the area home/search pages (eg www.jisc.ac.uk/guides, www.jisc.ac.uk/events):

• Online surveys	Service
• Eduroam⁶	Service
• Jisc collections	Service
• Building digital capability	R&D
• Geospatial data	Service
• Laws relevant to networking and computing	Guide
• Janet	Service
• Recording lectures: legal considerations	Guide
• Connect more in Scotland	Event
• Digifest	Event

⁶ The page jisc.ac.uk/eduroam/participating-organisations was also popular

Indicator: The ten most visited guides on the jisc.ac.uk website by those from a Scottish higher education and further education ac.uk domain

The following guides (in alphabetical order), were the most visited during AY 2018-19:

- Change management *
- Designing learning and assessment in a digital age *
- Developing organisational approaches to digital capability *
- Developing students' digital literacy
- Laws relevant to networking and computing*
- Meeting the requirements of learners with special educational needs *
- Project management *
- Recording lectures: legal considerations
- Transforming assessment and feedback with technology *
- UK Higher Education Learning Space Toolkit: case studies*

* refers to multipage guides

Jisc is still phasing out guides in PDF format and therefore the indicator of guide downloads will no longer be relevant. All multi-page guides have a **Print-ready version** option that collates the pages into one long article that can be printed.

Research and development

Indicator: The number, format and where relevant outcome of Scottish universities and colleges participation in Jisc R&D projects in AY 2018-19:

The **Building digital capability R&D project** was archived on 31 October 2018. It is now the service **Building digital capability**. Similarly the **Effective learning analytics R&D project** was archived 30 November 2018 and is now the **learning analytics service**. While the **Student Digital Experience Tracker** is the new **digital experience insights service**. The other recently closed R&D projects Scottish institutions were part of is **Equipment sharing made easy** (ended 31 July 2019) and which we are reviewing in light of VAT issues.

Project	Overview	AY 2018-19 activity
Research Data Shared Service (RDSS)	<p>The project was archived on 1 March 2019 and forms the basis for the Open research hub service.</p> <p>Its aim is to advance research data management through collaboration. The service allows researchers and institutions to meet their policy requirements for the deposit and curation of research data.</p>	<p>Meetings were held with Heriot-Watt University who did not participate in the alpha phase testing.</p> <p>The following Scottish organisations are interested in the Open research hub:</p> <ul style="list-style-type: none"> • University of Stirling • University of the Highlands and Islands • University of Dundee
Analytics Labs and Community Dashboards	<p>Our Analytics Labs service is a research environment within which we co-design new data derived products and services with our members and other customers. It is offered free to Jisc and HESA members and provides a unique continuing professional development (CPD) opportunity for higher education.</p> <p>Participants are supported in the further development of their competencies in data manipulation and visualisation, knowledge of the national data landscape and use of data for enhanced strategic decision-making, all in an educational setting.</p> <p>Participation culminates in a showcase event with participants demonstrating their</p>	<p>The following universities have been involved in the analytic labs and community dashboard project in AY 2018-19:</p> <ul style="list-style-type: none"> • University of Edinburgh (5 participants) • University of Glasgow (2 participants)

Project	Overview	AY 2018-19 activity
	<p>outputs to peers and a panel of experts. Participants are also invited onto our Analytics Labs alumni forum gaining early previews of product release.</p> <p>Accreditation via a digital credential is awarded to participants on successful completion.</p>	

Jisc KPIs

Jisc draft strategy 2019-22

During the reporting period, Jisc was led by its vision, aim and strategy as presented in the SFC-Jisc Outcome Agreement, which is now as follows:

Our vision⁷ is for the UK to be the best research and education nation in its use of digital technologies. Our purpose is to inspire and enable the UK to become a world leader in the use of technology in learning, teaching and research. Our mission is to power digitally confident communities with critical infrastructure, innovative solutions and expert advice.

We are driving Jisc so that by 2022 we will:

- i. Achieve financial sustainability and effectiveness, defined as progressing towards a four-year goal of generating 50% of income from non-grant sources, a surplus c£1m pa and acknowledged productivity improvements
- ii. Build and run added value products and services for our members, defined as each product line having a vibrant development pipeline that provides something different to the commercial market, at a beneficial price
- iii. Provide thought leadership that leads to our members transforming the way they do things
- iv. Deliver great member and customer experience as measured by their growing satisfaction, with a long term aim of +95%
- v. Maintain our funders' confidence so they continue to fund us, at least at today's levels
- vi. Transform ourselves so we recognised to be the best in our chosen fields

We also have a number of sector specific strategies, with associated priorities and targets for the period 2019-22. Against this strategic backdrop, we also recognise that the so-called 'Industry 4.0' technologies such as artificial intelligence (AI), the Internet of Things (IoT) and machine learning are changing industry and the workplace but are yet to be fully realised across tertiary education. We have therefore developed a 15 year vision to guide our R&D: 'Education 4.0' and 'Research 4.0' which will explore ways for education and research to take advantage of the new technologies.

⁷ Jisc's vision and strategic priorities for 2019-22 will be finalised in late September 2019.

Equality KPIs

Indicator: Events - 100% of all Jisc sector events will take place in a wheelchair accessible venue.

As part of Jisc's choice of venue for our events, we require all venues to provide wheelchair accessible access.

Indicator: Events: Consideration for the needs of the hearing impaired will be given for 100% of all Jisc sector events.

As part of Jisc's choice of venue for our events, consideration is given to the needs of the hearing impaired.

Indicator: Events: Female delegate attendance at Networkshop will to equate to 15% in order to promote the role of female professionals in the sectors Jisc serves.

Out of 258 commercial delegates and speakers at Networkshop47 (April 2019), 46 were female, which at 17.8%, meets the target set. Three of the 11 speakers were female. Jisc will continue working to promote the role of female professionals in the sectors we serve.

As an organisation, we believe that work should be somewhere that staff feel valued, respected and safe. In AY 2018-19 we continued to build on the work we began in AY 2017-18, for example:

- We continued to implement our plans to address the findings in our first gender-pay report 2017 and we published our second gender and bonus pay gap report. This showed that we have reduced our gender pay gap from 15.9% in the first year to 10.2% in the second year of reporting.
- We expanded our online training resources for unconscious bias on our staff learning platform and encouraged all staff to complete the training.
- We continued to run our Equality, Diversity and Inclusion network for all staff.
- We continued our commitment to the TechTalent Charter, which aims to deliver greater gender diversity in the tech workforce of the UK to better reflect the make-up of the population.
- We held our second annual "Bring your daughter to work" day.
- We continued our partnership with STEM Ambassadors to inspire a diverse pool of young people and females into STEM subjects and careers.
- We ran a calendar of events aimed at raising awareness and celebrating diversity, including International Women's day, June Pride month, Black History month, Dyslexia awareness month, Ada Lovelace day and International men's day.

- We continued to produce videos and blogs called #thisisme in which our people brought to life diversity and inclusion issues at work by sharing their experiences, widening our perspectives and celebrating difference.

Also in AY 2018-19, we undertook these new activities:

- We championed inclusion and diversity across the organisation using data driven insights to drive action and raise awareness.
- We held our first 'Women in Jisc' event so that women across the organisation could share their experiences and help guide any actions required.
- We trained and supported a pool of Mental Health First Aiders and held events to raise awareness of the importance of good mental health and steps to support this.
- We held two 'Hacker X' events to raise Jisc's profile and encourage more women to apply for our technical roles, with 1/3 of technical roles filled by women during the past year.

Financial statement

A financial statement accounting for Jisc's use of SFC's funding to date is provided as requested in the SFC grant letter to Jisc dated 9 July 2018.

The SFC's funding contribution to Jisc (a UK shared service) is based on a percentage agreed within the MOU between Jisc and all of its funders. In AY 2018-19, this equated to **£8.07m**. The breakdown of how the SFC's unrestricted income was spent in the financial year 2018-19 will be provided upon finalisation and approval of Jisc's audited accounts in December 2019.