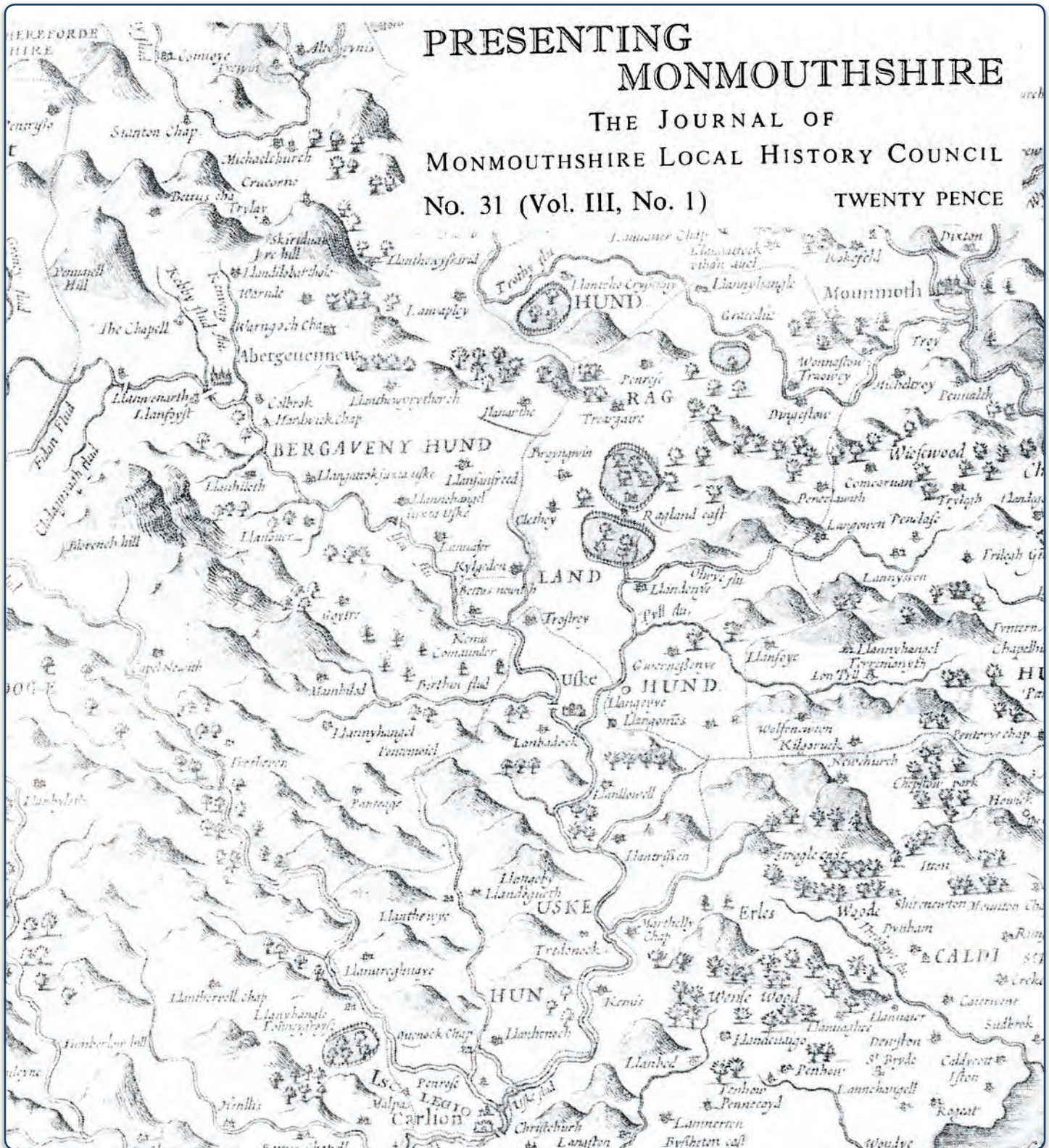


Enabling Innovation 2006 – 2009
Galluogi Arloesedd 2006 – 2009

PRESENTING
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About JISC

Ynglŷn â JISC

JISC enables UK colleges and universities in the innovative use of digital technologies.

JISC invests heavily in research and development, offering over 18 million users access to quality assured resources through our secure network. We provide expert advice, help to save money through national content license agreements and work with colleges and universities to realise the potential of their existing technologies.

Mae JISC yn galluogi colegau a phrifysgolion y DU i ddefnyddio technolegau digidol arloesol.

Mae JISC yn buddsoddi llawer mewn ymchwil a datblygiad, gan gynnig mynediad at ffynonellau â sicrwydd ansawdd i dros 18 miliwn o ddefnyddwyr drwy ein rhwydwaith diogel. Rydym yn darparu cyngor arbenigol, yn helpu arbed arian drwy gytundebau trwydded cynnwys cenedlaethol a gweithio gyda cholegau a phrifysgolion i sylweddoli potensial y technolegau sydd ganddynt.

Everything we do has one aim – to maintain the UK's position as a global leader in education and research.

JISC provides:

- A world-class network - JANET
- Access to electronic resources
- New approaches to learning, teaching and research
- Guidance on institutional change
- Advisory and consultancy services
- Regional support for further education colleges

Un nod sydd i bopeth a wnawn – sef cynnal safle'r DU fel arweinydd byd eang ym addysg ac ymchwil.

Mae JISC yn darparu:

- Rhwydwaith o safon fyd-eang, sef JANET
- Mynediad at adnoddau electronig
- Ymagweddau newydd at ddysgu, addysgu ac ymchwilio
- Arweiniad ar newid sefydliadol
- Gwasanaethau ymgynghorol a chynghorol
- Cymorth rhanbarthol ar gyfer colegau addysg bellach

In 2006 JISC received additional capital funding from HEFCW to invest in:

- Networking/SuperJANET 5
- Digitisation
- E-learning
- E-infrastructure/E-research
- User environments
- Repositories, shared services and preservation.

'Enabling Innovation 2006 – 2009' shows how universities and colleges in Wales have benefited from this investment.

Yn 2006 derbyniodd JISC gyllid ychwanegol gan CCAUC i'w fuddsoddi mewn:

- Rhwydweithio/SuperJANET 5
- Digiddeiddio
- E-ddysgu
- E-isadeiledd/E-ymchwil
- Amgylcheddau defnyddwyr
- Cadwrfeydd, gwasanaethau a rennir a chadwraeth.

Mae 'Galluogi Arloesedd 2006 – 2009' yn dangos sut mae prifysgolion a cholegau yng Nghymru wedi elwa ar y buddsoddiad hwn.

Introduction

Cyflwyniad

The UK higher education sector faces huge challenges in the coming years. Changing student expectations, increased research competition and financial pressures are all pressing concerns. The Higher Education Funding Council for England (HEFCE) recognises the strategic importance of technology in helping universities to adapt to the new environment of education and research. In 2006 it made a generous investment to help universities to adopt technology in areas that are of key importance to the future success of higher education – support for the changing needs of learning and teaching, keeping the UK at the forefront of research, and responding to new challenges such as employer engagement and widening participation.

JISC has an international reputation for taking the lead in making the most effective and innovation use of technology in education and research. The funding provided by HEFCE has meant that JISC has been able to engage with many more institutions and develop their capacity and capability to use technology strategically and tactically.

Widening participation, employer engagement and flexible lifelong learning are all new challenges that are facing universities, bringing changing learner expectations and requirements for extra support. Programme funding has been used to demonstrate how technology can provide a range of learners with a rich and balanced educational experience.

JISC has continued to develop its national infrastructure to make sure that it keeps pace with the growing requirements for fast, reliable access to high quality resources. By funding the JANET network we can be sure that UK researchers have the kind of network access that they need, now and in the future.

Researchers are using new technologies to help them to save time in conducting their research and to research in new ways. JISC has invested extensively to open up resources and special collections. This has led to the creation of a substantial new set of digital collections



that will be used in research and education by many generations to come.

Projects funded under the JISC Capital programme are enabling institutions to innovate in the way that they support learners, teach, research, engage employers and use technology to support change. The learning from the projects is being shared with the entire sector to help the UK as a whole. This funding has enabled the sector to further develop its capacity to understand innovation and make decisions about its future strategy – to adapt in order to deliver success.

Sarah Porter
Head of Innovation, JISC

Mae sector addysg uwch y DU yn wynebu heriau mawr yn y blynyddoedd i ddod. Mae newid yn nisgwyladau myfyrwyr, cynnydd yng nghystadleuaeth ymchwil a phwysau ariannol bob un yn bryderon enbyd. Mae Cyngor Cyllido Addysg Uwch Lloegr (CCAULL) yn cydnabod pwysigrwydd strategol technoleg o ran cynorthwyo prifysgolion i addasu i amgylchedd newydd addysg ac ymchwil. Yn 2006 fe wnaeth fuddsoddiad hael i gynorthwyo prifysgolion i fabwysiadau technoleg mewn meysydd sydd o bwys allweddol i lwyddiant addysg uwch yn y dyfodol - cefnogaeth ar gyfer anghenion newidiol dysgu ac addysgu, cadw'r DU ar flaen y gad o ran ymchwil, ac ymateb i heriau newydd fel ymrwymiad cyflogwyr ac ehangu cyfranogiad.

Mae gan JISC enw da rhyngwladol am gymryd y blaen mewn gwneud y

defnydd mwyaf effeithiol ac arloesol o dechnoleg mewn addysg ac ymchwil. Mae'r arian a ddarparwyd gan CCAULL yn golygu bod JISC wedi llwyddo i gysylltu â llawer mwy o sefydliadau a datblygu eu gallu a'u medd i ddefnyddio technoleg yn strategol a thactegol.

Mae ehangu cyfranogiad, ymrwymiad cyflogwyr a dysgu gydol oes hyblyg i gyd yn heriau newydd sy'n wynebu prifysgolion, gan ddod â newid o ran disgwyladau dysgwyr a'r gofynion am gymorth ychwanegol. Defnyddiwyd cyllid rhaglen i ddangos sut y gall technoleg ddarparu profiad addysgol gyfoethog a chytbwys ar gyfer ystod o ddysgwyr.

Mae JISC wedi parhau i ddatblygu ei isadeiledd cenedlaethol er mwyn sicrhau ei fod yn cadw i fyny â gofynion cynyddol am fynediad dibynadwy a chyflym at adnoddau o ansawdd uchel. Drwy ariannu'r rhwydwaith JANET gallwn fod yn siŵr bod gan ymchwilwyr y DU y fath o fynediad sydd eu hangen arnynt at y rhwydwaith, yn awr ac yn y dyfodol.

Mae ymchwilwyr yn defnyddio technolegau newydd i'w cynorthwyo er mwyn arbed amser wrth iddynt gynnal eu gwaith ymchwil ac i ddefnyddio ffyrdd newydd o ymchwilio. Mae JISC wedi buddsoddi yn helaeth er mwyn creu mynediad at adnoddau a chasgliadau arbennig. Mae hyn wedi arwain at greu cyfres newydd sylweddol o gasgliadau digidol i'w defnyddio mewn ymchwil ac addysg gan sawl cenedlaeth i ddod.

Mae prosiectau a ariannwyd dan raglen Cyfalaf JISC yn galluogi sefydliadau i arloesi yn y modd maent yn cefnogi dysgwyr, yn addysgu, yn ymchwilio, yn ymrwymo cyflogwyr ac yn defnyddio technoleg er mwyn cefnogi newid. Mae'r dysgu o'r prosiectau'n cael ei rannu â'r holl sector er mwyn helpu'r DU i gyd. Mae'r cyllid hwn wedi galluogi'r sector i ddatblygu ymhellach ei allu i ddeall arloesi a gwneud penderfyniadau ynglŷn â'u strategaeth yn y dyfodol - i addasu er mwyn darparu llwyddiant.

Sarah Porter
Pennaeth Arloesedd, JISC

Investing across Wales

Buddsoddi ar draws Cymru

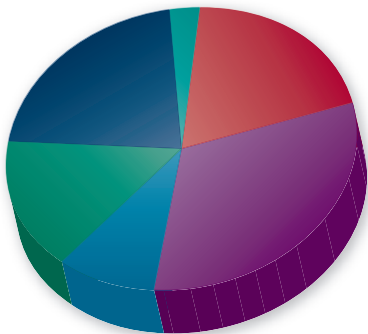
With £2,625,000 funding from HEFCW over three years, JISC has invested in more than 15 projects in six organisations across Wales. These diverse and innovative capital-funded initiatives support a range of HEFCW's objectives noticeably:

- High quality learning
- Wider participation and access
- Improved research performance

Gyda £2,625,000 o gyllid gan CCAUC dros dair blynedd, mae JISC wedi buddsoddi mewn dros 15 prosiect mewn chwe sefydliad ledled Cymru. Mae'r mentrau amrywiol ac arloesol hyn, a ariannwyd gan gronfa cyfalaf, yn cefnogi ystod o amcanion CCAUC, sef yn bennaf:

- Dysgu o ansawdd uchel
- Cyfranogiad a mynediad ehangach
- Perfformiad ymchwil gwell

£2,625,000 over three years...
£2,625,000 dros dair blynedd...



Enhancing excellence in learning and teaching
Gwella rhagoriaeth mewn dysgu ac addysgu

■ Digitisation Digeiddio
 £605,066

Enhancing excellence in research
Gwella rhagoriaeth mewn ymchwil

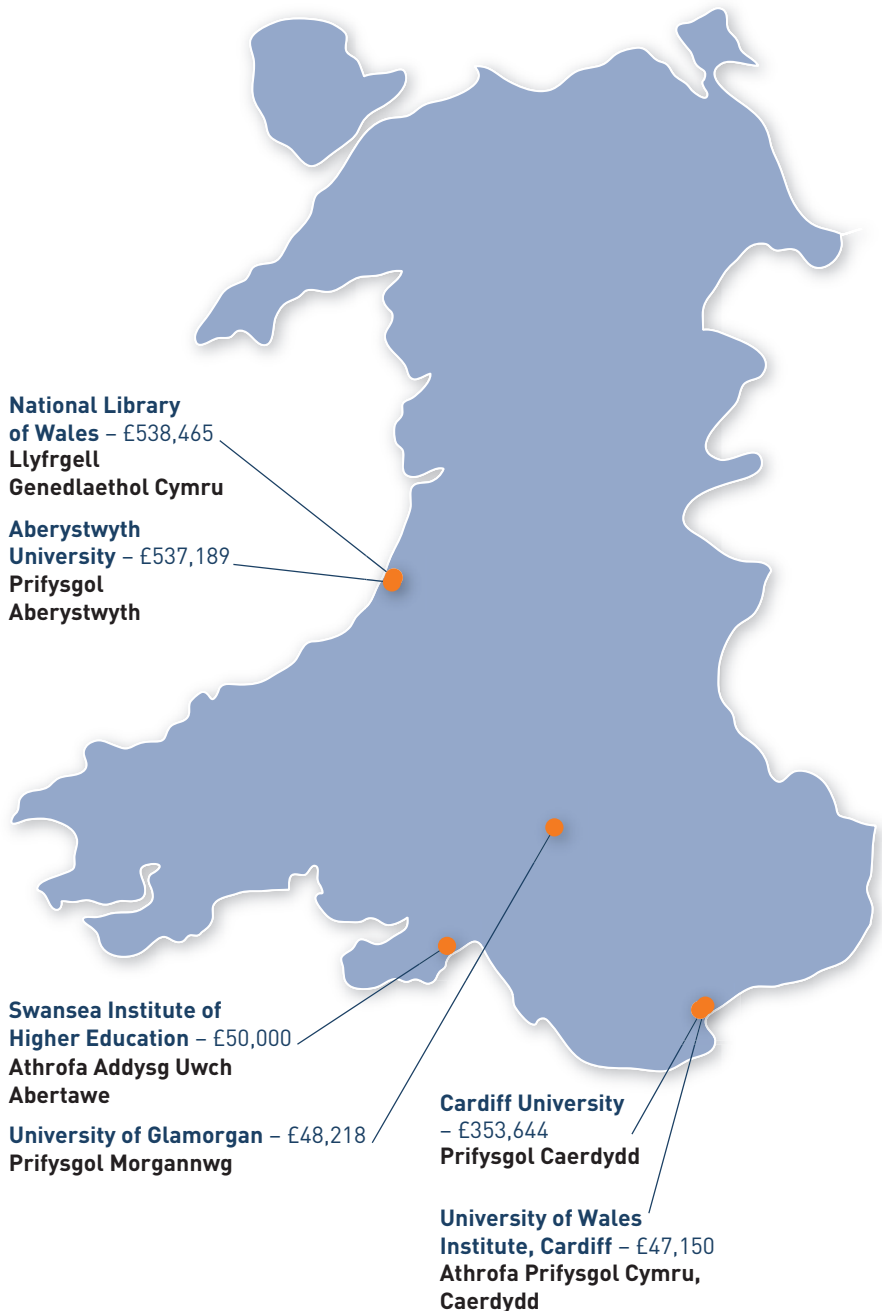
- Super JANET 5
£945,000
- e-Research: e-Infrastructure
e-Ymchwil: e-Isadeiledd
£287,043
- Institutional Repositories
Storfeydd Sefydliadol
£479,131

Widening employer engagement and skills
Lledaenu ymrwymiad cyflogwr a sgiliau

- e-Learning e-Ddysgu
£649,499
- Project Management Rheolaeth Prosiect
£80,334

The universities and colleges that have led projects and been awarded funding

Mae'r prifysgolion a'r colegau sydd wedi arwain prosiectau wedi derbyn cyllid



Enhancing excellence in research Gwella rhagoriaeth mewn ymchwil

Networks that work

SuperJANET 5 now provides the 40gb high speed computer network to support more than 18 million users including research institutes, universities, further education, primary and secondary schools. The development of SuperJANET 5 is crucial for the future of education in maintaining and building on high speed networks, enabling communication speeds which are the envy of the world.

This achievement was recognised in January 2008 when JANET won the Shared Services category of the eGovernment awards, followed in April by a Government Computing Award for Innovation.

The JANET Lightpath service launched in November 2007 to meet the growing needs of the UK research community. It provides segregation of research traffic from normal JANET service traffic and

enables the UK's research communities to transmit large volumes of data and delay-sensitive data across the network.

It has been joined by JANET Aurora, a high quality fibre network that provides a platform for Photonics and Optical Systems research. With approximately 350km of dedicated fibre, this is amongst the largest test-beds for optical networking research in Europe and enables a wide range of projects that hitherto have been impossible on existing research network infrastructures.

Internationally, JANET is playing a part in the research taking place in Cern, Switzerland with the Large Hadron Collider. When work resumes on the 'big bang' project, JANET will help to transmit worldwide the five gigabytes per second of data that will be pumped out of the site.

"The JANET team provides services which are internationally competitive and really serve the UK academic community. In such a fast moving field, they are always looking to innovate and have a proven track record in doing so."

Sir David Wallace, Director of the Newton Institute at Cambridge and formerly chair of the UK e-Science Programme



Rhwydweithiau sy'n gweithio

Bellach, mae SuperJANET 5 yn darparu'r rhwydwaith cyfrifiadurol cyflymder uchel 40gb i gefnogi dros 18 miliwn o ddefnyddwyr sy'n cynnwys sefydliadau ymchwil, prifysgolion, addysg bellach, ysgolion cynradd ac uwchradd. Mae datblygiad SuperJANET 5 yn hanfodol ar gyfer cynnal ac adeiladu at rwydweithiau cyflymder uchel sy'n ennyn cenfigen fyd-eang.

Cydnabuwyd y llwyddiant hwn ym mis Ionawr 2008 pan enillodd JANET Gategori Gwasanaethau Cyfrannol y gwobrau e-Lywodraeth, ac ym mis Ebrill enillodd Wobr Gyfirfiadura'r Llywodraeth am Arloesedd.

Lansiwyd Llwybrgolau JANET ym mis Tachwedd 2007 er mwyn cwrrdd â gofynion cynyddol y gymuned ymchwil yn y DU. Mae'n didoli traffig ymchwil gan ei gyfeirio oddi wrth draffig gwasanaeth arferol JANET ac yn galluogi cymunedau ymchwil y DU i drosglwyddo swmp sylweddol o ddata a data sy'n sensitif o ran oediad ar draws y rhwydwaith.

Ymunodd JANET Aurora, sef rhwydwaith ffibr o ansawdd uchel sy'n darparu llwyfan ar gyfer gwaith ymchwil Systemau Ffotonig ac Optegol. Gydag oddeutu 350km o ffibr un-pwrpas, mae ymhlith y gwelyau prafw mwyaf o ran ymchwil rhwydwaith optegol yn Ewrop ac yn galluogi ystod eang o brosiectau sydd hyd yn hyn wedi bod yn amhosibl ar isadeileddau rhwydweithiau ymchwil sydd eisoes mewn bodolaeth.

Yn rhyngwladol, mae JANET yn chwarae rhan yn yr ymchwil sy'n cael ei gynnal yng Nghern, yn Y Swistir gyda'r Peiriant Gwrthdaro Hadron Mawr. Pan fydd y gwaith yn aildechrau ar brosiect y 'big bang' bydd JANET yn helpu trosglwyddo'r data, a fydd yn cael ei wthio allan o'r safle ar gyflymdra o bum gigabeit yr eiliad, i bedwar ban byd.

Enhancing excellence in research

Gwella rhagoriaeth mewn ymchwil

Opening up access to resources for research is at the heart of JISC's pioneering work in e-infrastructure and digitisation is leading the way in opening up educational resources:

- Unlocking hard-to-access material
- Preserving fragile resources
- Creating a critical mass of digital content
- Bringing together scattered resources
- Opening up new areas for research
- Supporting repositories and preservation
- Developing a national e-infrastructure

Agor mynediad at adnoddau ymchwil yw'r hyn sydd yng nghalon gwaith arloesol JISC mewn e-isadeiledd ac mae digideiddio yn arwain y ffordd mewn agor adnoddau addysgol:

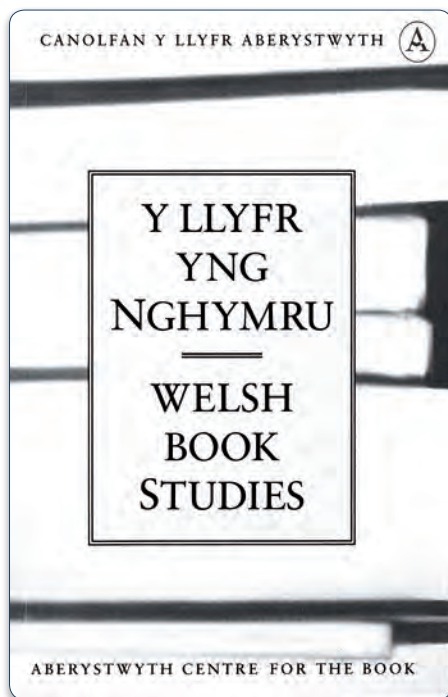
- Datgloi deunydd sy'n anodd i fynd ato
- Cadw adnoddau bregus yn ddiogel
- Creu màs critigol o gynnwys digidol
- Dod ag adnoddau ar wasgar at ei gilydd
- Agor i fyny meysydd newydd ar gyfer ymchwil
- Cefnogi Cadwrfeydd a chadwraeth
- Datblygu E-Isadeiledd Cenedlaethol

Case studies

Astudiaethau achos

Welsh Journals Online

With a selection of over 50 journals, in Welsh and English, from the 19th, 20th and 21st centuries, Welsh Journals Online is the largest collection of content about Wales and its culture available on the internet. This resource provides students, teachers and researchers with free online, searchable open access to important source materials that were previously only available by going to the National Library of Wales or partner institutions.



Reflecting Wales's rich literary heritage, poetry and literary journals are a key feature of the collection. But the archive ALSO covers a wide range of subject areas, from history and the social sciences to engineering and technology. It also presents the biggest single corpus of Welsh language content on the web.

Cylchgronau Cymru ar-lein

Gyda dros 50 o gylchgronau, yn Gymraeg a Saesneg, o'r 19eg, 20fed a'r 21ain canrif, Cylchgronau Cymru ar-lein yw un o'r casgliadau mwyaf am Gymru a'i diwylliant sydd ar gael ar y rhyngwrld. Mae'r adnodd hwn i fyfyrwyr, athrawon ac ymchwilwyr, yn cynnig mynediad agored, chwiliadwy, yn rhad ac am ddim ar-lein, at ddeunydd gwreiddiol pwysig a oedd ar gael, yn flaenorol, drwy fynd i Lyfrgell Genedlaethol Cymru neu sefydliadau partner yn unig. Nodwedd allweddol y casgliad yw'r Cylchgronau barddoniaeth a llenyddiaeth sy'n adlewyrchu treftadaeth lenyddol gyfoethog Cymru. Ond, mae'r archif HEFYD yn ymdrin ag ystod eang o feysydd pwnc, o hanes a'r gwyddorau cymdeithasol i beirianeg a thechnoleg.

Yn ogystal, mae'n cynrychioli'r corff unigol mwyaf o gynnwys yr iaith Gymraeg ar y we.

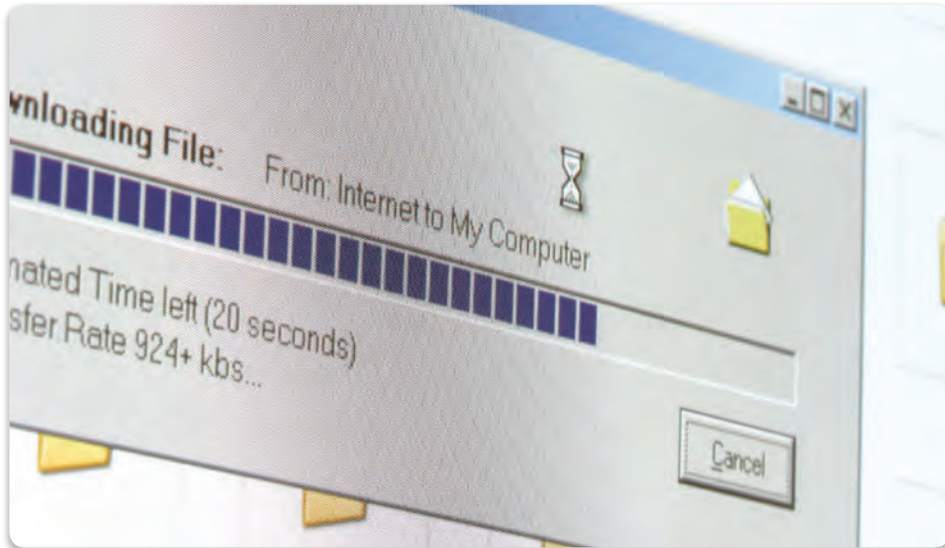
<http://welshjournals.llgc.org.uk>

“These journals really have become part of our history in Wales so rather than being secondary material, they are primary material for the study of how ideas, politics, society, industry has developed in Wales over the 20th century.”

Lyn Lewis Dafis, Head of the Digitisation Unit at the National Library of Wales

Welsh Repository Network

Repositories (a virtual facility for storing of academic publications such as academic journals and articles) have been identified by UK and European bodies as vital to an educational infrastructure that is able to make research and other outputs accessible. A good repository system also encourages the sharing, reuse and repurposing of teaching and learning materials. In 2006, just two of the 12 higher education institutions in Wales had open access digital repositories, and these were lightly populated pilots. Now, thanks to this project, every Welsh higher education institution has its own operational open access digital repository that forms an integral part of the learning, teaching, research and administrative fabric of its host institution. The repositories are based on open standards, feature bilingual interfaces and also provide access



to a national resource discovery and search service, which offers access to collected material of Welsh interest.

Rhwydwaith Cadwrfeydd Cymru

Canfu cyrff yn y DU ac yn Ewrop fod cadwrfeydd (sef cyfleuster rhithwir ar gyfer cadw cyhoeddiadau ac erthyglau academaidd) yn hanfodol i isadeiledd academaidd sy'n gallu gwneud ymchwil ac allbynnau eraill yn fwy hygyrch. Yn ogystal, mae system cadwrfeydd da yn annog rhannu, aildddefnyddio ac ail-fwriadu deunyddiau addysgu a dysgu. Yn 2006, dim ond dau allan o'r 12 sefydliad addysg uwch yng Nghymru oedd â chadwrfeydd digidol mynediad agored, a chynlluniau peilot prin eu poblogaeth oedd y rhain. Bellach, diolch i'r prosiect hwn, mae gan bob sefydliad addysg uwch yng Nghymru ei gadwrfa ddigidol mynediad agored ei hun sy'n ffurfio rhan anhepgor o ffabrig dysgu, addysgu, ymchwil a gweinyddol y sefydliad sy'n ei letya. Mae'r cadwrfeydd yn seiliedig ar safonau agored, yn nodweddu rhyngwynebau dwyieithog ac yn darparu mynediad yn ogystal i wasanaeth adnoddau cenedlaethol o ganfyddiadau a chwiliadau, sy'n cynnig mynediad at gasgliad o ddeunydd o ddi-ddordeb i Gymru.

www.jisc.ac.uk/whatwedo/programmes/reppres/sue/welshrepositorynetwork

“Institutional repositories are an important element in an emerging infrastructure that will underpin new ways of doing research and scholarship...JISC is at the forefront of these developments and is ensuring that UK research has the infrastructure it needs to maintain its global position.”

Professor Keith Jeffery, Science and Technology Facilities Council

Cardiff University: Lean Enterprise Architecture

Enterprise Architecture is a management technique that helps different aspects of an organisation,

such as people, activities, tools, resources and data, to work more effectively together to achieve the organisation's goals. It has been widely adopted in the commercial world and public sector but has been largely unknown within the education sphere. Cardiff University was chosen as one of three early adopter universities to pilot a 12-month evaluation of Enterprise Architecture to see how it would work within the context of their education environment. Staff were trained in the techniques, roadtested the tools and shared the lessons learned from the cutting edge to the wider community.

Prifysgol Caerdydd: Pensaerniaeth Arloesedd Main

Techneg rheoli yw Pensaerniaeth Arloesedd, sy'n helpu gwahanol agweddau sefydliad, fel pobl, gweithgareddau, offer, adnoddau a data, i gydweithio'n fwy effeithiol er mwyn cyflawni nodau'r sefydliad. Cafodd ei fabwysiadu'n eang yn y byd masnach a'r sector cyhoeddus ond nid oedd fawr sôn amdano o fewn y cylch addysg. Dewiswyd Prifysgol Caerdydd fel un o'r tair prifysgol gyntaf oedd i'w fabwysiadu er mwyn cynnal peilot dros 12 mis i werthuso Pensaerniaeth Arloesedd er mwyn gweld a fyddai'n gweithio o fewn cyd-destun eu hamgylchedd addysgol. Hyfforddwyd staff yn y technegau, treialwyd yr offer a'r pecynnau, a rhanwyd y gwersi a ddysgwyd gan yr arloeswyr hyn gyda'r gymuned ehangach.

www.jisc.ac.uk/whatwedo/programmes/elearningcapital/enterprisearchitectures/lean

“It has been a steep, challenging, but ultimately rewarding learning curve”

Paul Hobson, Associate Director and Deputy CTO, Cardiff University Information Services

Enhancing excellence in learning and teaching

Gwella rhagoriaeth mewn dysgu ac addysgu

There has been a profound shift in the way that learners are working. JISC-funded research has shown that learners lead complex lives and require sophisticated technology-based strategies in which personal technologies, control and choice play a central role. JISC is exploring and supporting today's digital learners and their diverse experiences of learning.

Cafwyd newid sylfaenol yn y modd mae dysgwyr yn gweithio. Mae ymchwil, a gafodd ei ariannu gan JISC, wedi dangos bod dysgwyr yn byw bywydau cymhleth a bod angen strategaethau wedi'i seilio ar dechnoleg soffistigedig arnynt lle mae technoleg, rheoli a dewis personol yn chwarae rhan ganolog. Mae JISC yn archwilio ac yn cefnogi dysgwyr digidol heddiw a'u profiadau dysgu amrywiol.

CUCKOO (Cardiff University Collaboration with KC-ROLO Organisational Objects)

Shibboleth is a technology that allows universities and colleges to build single sign-on environments. This means that users can access a wide range of web-based resources using just one

institutional ID and password. CUCKOO has been looking at how Shibboleth can work within institutional collaborations, so that students and researchers who work within more than one 'real' institution – such as in the higher and further education sector – can also share resources and collaborate across different virtual organisations.

CUCKOO (Cydwethio Prifysgol Caerdydd gyda Gwrthrychau Cyfundrefnol KCRLO)

Technoleg sy'n caniatáu i brifysgolion a cholegau adeiladu amgylcheddau cofrestru unigol yw Shibboleth. Mae hyn yn golygu y gall defnyddwyr gael mynediad at ystod eang o adnoddau ar y we drwy ddefnyddio dim ond un ID a chyfrinair sefydliadol. Mae CUCKOO wedi bod yn edrych ar y ffordd y gall Shibboleth weithio o fewn cydwethio sefydliadol, fel y gall myfyrwyr ac ymchwilwyr sy'n gweithio o fewn mwy nag un sefydliad 'gwirioneddol' – fel y sector addysg uwch ac addysg bellach – hefyd rannu adnoddau a chydweithio ar draws rhith-sefydliadau.

www.jisc.ac.uk/whatwedo/programmes/einfrastructure/cuckoo

WALES (Work-based access to Learning through E-Services)

WALES used mobile phones and social networking sites such as Facebook to enhance the learning experience of online work-based learners in higher education courses. This was achieved by helping them to interact more easily with their tutors, fellow learners and virtual learning environment. The intention was to integrate the institutional technologies, such as Moodle, with the personal technologies used by the learners and with web-based services in a way that added value to the learner experience. Students found that using the phone software brought a valuable flexibility and immediacy to the learning process by alerting them to events on Moodle and by significantly increasing the speed with which tutors responded to help requests. Where social networking software was successfully integrated into the course delivery, it was welcomed enthusiastically by the learners and proved very effective, especially for group work.





JISC-funded research has shown that learners lead complex lives and require sophisticated technology-based strategies in which personal technologies, control and choice play a central role.

WALES (Mynediad yn y gwaith at Ddysgu drwy E-Wasanaethau)

Defnyddiodd WALES ffonau symudol a safleoedd rhwydweithio cymdeithasol, fel Facebook, i wella profiad dysgu'r rhai hynny ar-lein sy'n ddysgwyr ar gyrsiau addysg uwch. Cyflawnwyd hyn drwy eu helpu i ryngweithio yn haws gyda'u tiwtoriaid, cyd-ddysgwyr a'u hamgylchedd rhith-ddysgu. Y bwriad oedd integreiddio'r dechnoleg sefydliadol, fel Moodle, gyda'r dechnoleg bersonol a ddefnyddiwyd gan y dysgwyr a chyda gwasanaethau ar y we mewn modd a ychwanegodd werth at brofiad y dysgwr. Darganfyddodd y myfyrwyr fod defnyddio meddalwedd ffôn yn dod â hyblygrwydd gwerthfawr a disyfydrwydd i'r broses ddysgu drwy eu rhybuddio am ddigwyddiadau ar Moodle a thrwy gyflymu yn arwyddocaol ymateb y tiwtoriaid i geisiadau am gymorth. Lle llwyddwyd i integreiddio meddalwedd rhwydweithio cymdeithasol i ddarpariaeth y cwrs, cafodd groeso brwd gan y dysgwyr a phrofodd yn effeithiol, yn enwedig ar gyfer gwaith grŵp.

[www.jisc.ac.uk/whatwedo/
programmes/elearningcapital/
heife/wales](http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/heife/wales)

“Anyone feel like going over some stuff on-line tonight... Be on Facebook about 6pm... Could have a look at lectures that we should have had Monday and today. If any thoughts on them why not share them?”

A mobile message from a student taking part in the WALES project

Widening participation, employer engagement and flexible lifelong learning

Ehangu cyfranogiad, ymrwymiad cyflogwr a dysgu gydol oes hyblyg

Wider participation in education in the UK means that an increasingly diverse range of learners need to be supported in their path through education, from employees on day release schemes to part-time and distance learners. Lifelong learning brings diverse experiences, skills and needs to the education system and adds value to employers and society. Through technology, JISC helps organisations support these learners.

Mae ehangu cyfranogiad mewn addysg yn y DU yn golygu bod angen cymorth ar ystod gynyddol amrywiol o ddysgwyr ar eu llwybr drwy addysg, o weithwyr ar gynlluniau rhyddhau undydd i ddysgwyr rhan-amser a dysgwyr o bell. Mae dysgu gydol oes yn dod â phrofiadau, sgiliau ac anghenion amrywiol i'r system addysg ac yn ychwanegu gwerth i gyflogwyr a chymdeithas. Drwy dechnoleg, mae JISC yn helpu sefydliadau i gefnogi'r dysgwyr hyn.

eTutor (Education Through Ubiquitous Technologies and On-line Resources)

In the context of the growing, global open educational resource movement, eTutor explored how to develop and deliver education and training online

using commonly available social networking and open source software and online resources. It took two existing work-based skills modules and created a learning environment using freely available software tools. It was based on user needs and was worked on collaboratively by learners and their online tutors: the learners were guided by an online tutor to access resources from the web using search engines and they then used these resources to complete a series of activities intended to develop knowledge and skills.

e-Diwtor (Addysg drwy dechnoleg hollbresennol ac adnoddau ar-lein)

Yng nghyd-destun y symud mewn adnoddau addysgol agored bydeang, mae e-Diwtor wedi archwilio sut i ddatblygu a chyflwyno addysg a hyfforddiant ar-lein gan ddefnyddio rhwydweithio cymdeithasol sydd ar gael yn gyffredinol a meddalwedd ffynhonnell agored ac adnoddau ar-lein. Cymerodd ddau fodiwl sgiliau yn y gweithle a chreu amgylchedd dysgu gan ddefnyddio pecynnau meddalwedd a oedd ar gael yn rhydd. Cafodd ei seilio ar anghenion defnyddwyr ac fe weithiwyd arno ar y cyd gan ddysgwyr a'u tiwtoriaid ar-

lein: arweiniwyd y dysgwyr gan diwtor ar-lein i gyrchu adnoddau o'r we gan ddefnyddio peiriannau chwilio ac wedyn defnyddiwyd yr adnoddau hyn i gwblhau cyfres o weithgareddau a fwriadwyd i ddatblygu gwybodaeth a sgiliau.

www.jisc.ac.uk/whatwedo/programmes/usersandinnovation/etutor

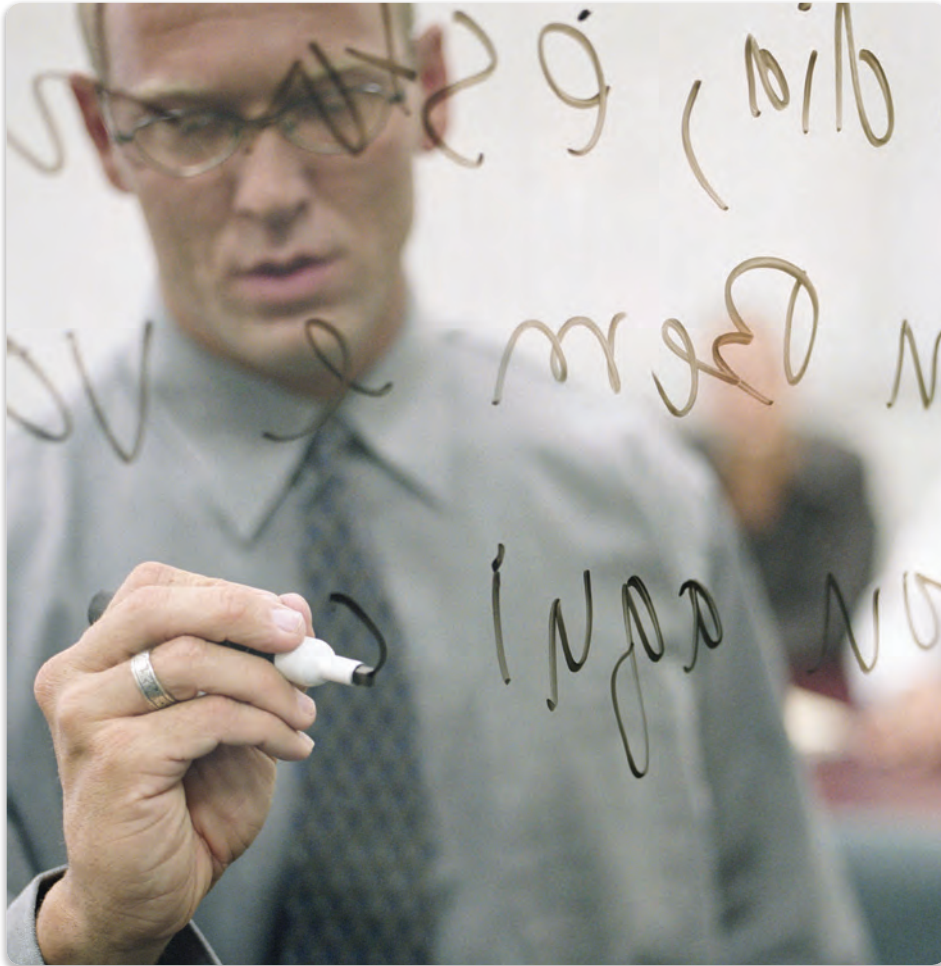
“I think that resources like this are vital in not only holding content that can be accessed from home but creating a learning community environment, since if you're all learning together you're more motivated and less likely to procrastinate.”

A Swansea student who took part in the trial



ReCITE (Re-usable Content for IT Education)

Swansea Metropolitan University has been exploring how educational materials from one course can be re-purposed and re-used in other curriculum areas and in different institutions. One area in particular where this is useful is where the resources can be delivered through online work-based learning to address the training needs of small businesses. The resources used in the project were originally created by the Wales e-Training Network as part of an on-line Foundation Degree in e-Commerce, and were re-purposed for three other study programmes to include both campus-based and distance learning online delivery.



“It’s good to have notes online where I can access them whenever I need. I could be working at home in the evening or weekend and know that I can look up what I want.”

Student taking part in the ReCITE project

“I like the idea of sending in work to the tutor online, I’d like to use it for other modules and for assignments.”

Student taking part in the ReCITE project

The work of the ReCITE project has shown that online content from one curriculum area can be successfully repurposed for use in another and was well-liked by users, easy to navigate and effective in supporting and enhancing individual IT skills.

ReCITE (Ailadrodd – Cynnwys y gellir ei aildefnyddio ar gyfer Addysg TG)

Mae Prifysgol Fetropolitan Abertawe wedi bod yn archwilio sut y gellir aildefnyddio defnyddiau un cwrs drwy ei ail-fwriadu mewn man arall o'r cwricwlwm ac mewn sefydliadau gwahanol. Un maes yn benodol lle mae hyn yn ddefnyddiol yw lle y gellir cyflwyno'r adnoddau drwy ddysgu ar-lein yn y gweithle er mwyn mynd i'r afael ag anghenion hyfforddi cwmnïau bach. Yn y lle cyntaf, crëwyd yr

adnoddau a ddefnyddiwyd yn y prosiect gan Rwydwaith e-Hyfforddi Cymru fel rhan o Radd Sylfaenol ar-lein mewn e-Fasnach, ac fe'u hail-fwriadwyd ar gyfer tair rhaglen astudio arall er mwyn cyflwyno dysgu ar-lein ar y campws ac o bellter. Mae gwaith prosiect ReCITE wedi dangos y gellir ail-fwriadu cynnwys ar-lein o un maes cwricwlwm i un arall yn llwyddiannus ac roedd yn boblogaidd gan y defnyddwyr, yn hawdd i'w flywio ac yn effeithiol mewn cefnogi a gwella sgiliau TG unigol.

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Hawlfraint

Mae Cyngor Cyllido Addysg Uwch Lloegr (HEFCE), ar ran JISC, yn caniatáu aildddefnyddio'r cyhoeddiadau hon a'i chynnwys o dan delerau Priodoli Gwaith Creadigol Cyffredinol Nad yw'n Fasnachol Nac yn Ddeilliadol 2.0 DU: Trwydded 2 Cymru a Lloegr. Rhaid i bob atgynhyrchiad gydnabod ffynhonnell ac awdur y gwaith a rhaid cydymffurfio â thelerau'r Drwydded. Mae aildddefnyddio cynnwys trydydd parti yn amodol ar ganiatâd ysgrifenedig o flaen llaw oddi wrth y dalwyr trydydd parti fel y bo'n briodol.

