In this issue we’re featuring KMi’s Stadium Live project, which is investigating how live webcasts can be made more interactive through the use of audience participation widgets. This is the latest in a series of KMi projects, including Lyceum, FlashMeeting and Stadium that have been exploiting the Web as a communication platform.

Stadium Live

What is webcasting?

Webcasting differs from video conferencing applications in that it is intended to broadcast video or audio content to large online audiences, rather than support conversation between two or more individuals. The distinction is an important one, to enable free-flowing conversations conferencing applications like FlashMeeting, OU Live and Skype prioritise speed, so that the data is passed quickly between people without any delay.

Webcasting, especially for video, takes a different approach as, it introduces a short delay (referred to as a buffer), so that the data can be compressed, sent, decompressed and played. This buffer enables broadcasting technology to provide high quality video and audio to audiences of hundreds or thousands of people, rather than the smaller numbers involved in conferencing. So, while conferencing applications are suitable for OU student tutorials involving around twenty people, they are not scalable to larger groups like a complete cohort of students on an OU module.

Other articles in this issue

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Petr Knoth featured in free ebook on Text Analytics

http://kmi.open.ac.uk/
How does it work?

Through the Stadium project, KMi has introduced scalable webcasting technology for OU events that supports both live broadcasts and recorded replays. In Stadium Live, interactive widgets appear alongside the live video stream, to provide opportunities for the audience to have a more active role, responding to questions and completing activities set by the presenter. The widgets are provided through an event-driven web server (Node.JS) and use a flexible data structure (JSON) for managing interactions.

As each person interacts with a widget on a web page, everyone’s actions are collated and shared. For example, a ‘map widget’ allows everyone to mark their location on a shared map; a ‘multiple choice widget’ enables each person to choose an option in response to a question and then displays the distribution of everyone’s choices; and a ‘wordle widget’ asks people to enter words or phrases in response to a question and displays the resulting word cloud. Used effectively, the presenter is able to draw upon the responses and adapt their presentation to better match the level and interest of the participating students.

Who is involved?

We have been developing the use of this technology in collaboration with module teams and support units across the university.

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With the Science Faculty we have been using webcasting as a way of involving students in practical science that they are unable to do at home, explaining and demonstrating core concepts on a module - an approach which we’ve called ‘labcasts’. Our labcasting trials in Science Faculty modules have been led by Nicholas Braithwaite. The use of webcasting as a public engagement platform was also trialled recently in a labcast involving colleagues in the Schools University Partnership Initiative. With the support of a recent HEFCE capital equipment grant the Science Faculty are creating a studio-lab for future labcasts. Working with colleagues in Social Sciences, LTS and IT, KMi has been supporting the Student Connections conferences and the Student Hub Live events. These have included the use of interactive widgets to engage the audience in instant messaging, polls and quizzes. Karen Foley has led the Student Connections conferences and OU Hub Live events since 2014.

What next?

Stadium Live has been a KMi supported project, which has developed a proof of concept prototype and worked with other units and module teams to run trials in 2014 (i.e. Student Connections Conference and S288 Practical Science labcasts). Building on the success of these trials, the system was redesigned in 2015 to enable staff to create and manage their own events. LTS staff and module teams have since used this system to select and configure the widgets in several Student Connections Conferences, Student Hub Live events, and labcasts in Science modules and MOOCs.

“The student’s really appreciate the way Labcasts let them join me in the lab ‘round the front bench’. They can read the instruments and suggest what we do next in the experiment. The Labcasts have also opened up an element of social learning in the post Labcast forum discussions and given a pedagogic edge to the ‘wow’ of a lab demonstration.”

Nicholas Braithwaite
Professor of Engineering Physics

“I am the principle technical developer for Stadium Live, creating the event management and widget architecture. My previous experience includes being the original developer of the Stadium webcast system and of FlashMeeting. What is key to me about Stadium Live is the ability of a large scale, remote audience to be able to participate in events and thereby get a richer learning experience and a sense of being part of a community to which they can contribute. From a presenter’s perspective it is key to receive feedback and be able to invite participation and react to what the audience say and do.”

Dr Kevin Quick
Project Officer

“The Student Hub Live and Student Connections online interactive events are a unique way to engage students and create a meaningful dialogue in real time. Students are able to watch discussion, ask questions, interact with the variety of widgets and select to participate in specific chat discussions. With between 2,000 and 4,000 students engaging in each event they offer scale as well as the opportunity for students to individually interact with others in the OU community.”

Karen Foley
Academic Consultant

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As the system has now moved beyond the prototype stage and demand is increasing for a sustainable service, this work has exceeded the scope of a KMi pilot. To deploy this technology further, we are currently seeking support to: extend the uptake of this technology across more OU departments; embed its use where appropriate within module production and presentation processes; and evaluate the subsequent impact on course teams, associate lectures and students.

Contacts and further information

KMi project team
- Academic lead: Trevor Collins (trevor.collins@open.ac.uk)
- Widget development: Kevin Quick and Jon Linney
- Webcasting: Ben Hawkridge and Chris Valentine

Collaborators
- Labcasts for modules: Nicholas Braithwaite (Science)
- Labcasts for public engagement: Rick Holliman (Science)
- Student Live and Student Connections: Karen Foley and Alison Kirkbright (Social Sciences)
- Audio and video support: Christopher French (LTS)

Further information
- Labcasts: http://weblab.open.ac.uk/labcasts
- Student Connections: http://connections.kmi.open.ac.uk
- Student Hub Live: http://studenthublive.kmi.open.ac.uk

Bibliography


http://kmi.open.ac.uk/
And in other news…

**KMi welcomed back Lady Kitty Chisholm**

On the 10th February KMi welcomed back one of our co-founders, Lady Kitty Chisholm. Kitty is the Director of Boardwalk, a professional coach and facilitator supporting women in achieving their full leadership potential.

Kitty has also recently co-authored a new book (published Nov, 2015) ‘Championing Women Leaders, Beyond Sponsorship’.

Kitty delivered an insightful and inspirational talk entitled ‘Women in Leadership: what really gets in the way and how to overcome the barriers’. In her talk Kitty presented studies, which suggest that gender diversity can be beneficial to organisations by boosting creativity and innovation. However, while the benefit to organisations is apparent, gender diversity in the workplace is still a challenge.

She presented statistics showing that a high percentage of women in some sectors (e.g., IT) dropout from senior management positions. Some of these statistics suggest that the problem is not about recruitment but instead related to the retention of women in the workforce. She mentioned that some of the factors that get on the way of women careers are deeply related to the organisational culture and the lack of assertiveness in women. She introduced a set of recommendations on how women can overcome such barriers. She suggested reinforcing women self-confidence by embodying a set of values, having a set of clear goals and by owning your career. Her talk led onto an interesting discussion and share of experiences. Some of the comments’ discussions included personal branding and social media; and issues related to the perception of women at work.

Tracie Farrell-Frey, a post grad student in KMi enjoyed the session, saying “this meeting was about helping women to feel empowered to pursue whatever professional goals they might have, which is a great first step. The next step, recognising that context also plays a huge role in advancing or limiting women’s careers, would be to deal with some of the elements of organisational culture that impact the success of women employees”.

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KMi Director Quotes in the Guardian

Following input into a report compiled by the Higher Education Commission, *From Bricks to Clicks: The Potential of Data and Analytics in Higher Education* Prof John Domingue spoke to the Guardian about how the comprehensive use of learning analytics could transform the sector. John will also attend the launch event at the House of Lords at the end of January.

The report foresees a system in which students at risk of failing can be identified early on in their studies, in a similar vein one of KMi’s flagship projects, OU Analyse looks at the online behaviour of OU students to highlight those ‘at-risk’ of failing and to alert module teams who may then judge whether or not to intervene.

I think in 10 years there will be data for everything, these technologies are changing everything and I am sure they will change higher education” says Domingue.

KMi Host Technical Talk on Blockchain Technology

On 24 Feb. John Domingue, the Director of KMi, hosted a technical talk titled ‘Ethereum - A Blockchain Platform’ by Konstantin Kudryavtsev (Head of Technical Relations – Ethcore Ltd.) at the KMi Podium. It was well attended with representatives from several OU departments (i.e. Business School, MCT, Law etc.).

The highlight of this talk was Ethereum (www.ethereum.org) – an open source crowd-funded blockchain technology platform that has recently gained a lot of attention in the industry and media. Blockchain technology in particular is interesting because it offers an alternative model of network computing platform that is decentralised and trustless, the underlying properties that made Bitcoin popular.

Unofficially branded as Bitcoin 2.0, Ethereum claims to have overcome several deficiencies of the earlier Bitcoin technology so that it can be used for purposes other than just transferring currency. Recently, IBM and Samsung demonstrated how smart Internet of Things (IoT) devices based on decentralised platforms such as Ethereum can become autonomous and perform transactions by themselves. In this talk Konstantin presented an overview of Ethereum’s ecosystem, delved deeper into demystifying the platform with regards to what worked and what didn’t and finally provided some guidance on using ‘smart contracts’.

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OU Analyse the UK’s only significant headway in Predictive Analytics - says Higher Ed Commission

The Higher Education Commission is an independent body made up of leaders from the education sector, the business community and the major political parties.

On the 26th January the Commission published their fourth report “From Bricks to Clicks - The Potential of Data and Analytics in Higher Education”. The publication event was held at the House of Lords and KMi Director, Professor John Domingue was there.

“This significant report on the value of data analytics in education is something that will help shape the way universities support students” said Professor Domingue “and I am proud that the OU is seen as a leading light in this domain.”

The report offers 12 Recommendations for the HE sector on how to exploit big data in education and presents in detail two case studies: the Student Dashboard implemented at Nottingham Trent University and the OU Analyse predictive analytics project developed and deployed by the OU’s Knowledge Media Institute.

The report acknowledges that whilst Learning Analytics is in relative infancy it is a powerful way for Universities to achieve their strategic goals, as well as provide real benefits for students and recommends that all HEIs should consider appropriate systems to improve student support and performance.

The Commission points out that the wealth of data generated and potentially processed in education will significantly change the landscape of the HE sector. If properly handled, the benefactors will be both the HE institutions and individual students. In the conclusion, the report states:

“For example, predictive analytics can identify which students may not complete their degree on time or even hand in individual assignments, which is already being seen in the UK through the OU Analyse tool. Apart from the OU the Commission does not believe that any UK institution has made significant headway in this area.”

OU Analyse utilises machine-learning based methods for the early identification of students at risk of failing. Student demographic data and fine-grained dynamic data taken from their VLE activity are modelled against data from previous students. This is used to build and validate predictive models, which are then applied to the current student cohort, identifying students at risk of failure on a weekly basis and prompting appropriate tutor interventions.
The SlideWiki project has kicked off!

On January 18-19, the kick-off meeting of the SlideWiki project took place in Sankt Augustin, Germany hosted by the project coordinator Fraunhofer Institute for Intelligent Analysis and Information Systems. KMi and the Open University were represented by Alexander Mikroyannidis.

SlideWiki is a new Horizon 2020 project, aiming at increasing the efficiency, effectiveness and quality of education in Europe via widely available, accessible, multilingual, timely, engaging and high-quality educational material (i.e. OpenCourseWare). In this large-scale trial project, we will further mature the SlideWiki technology platform (available at SlideWiki.org), integrate it with a state-of-the-art MOOC delivery platform and perform four large-scale trials in:

- secondary education,
- vocational and professional training,
- higher education and
- community-driven open-education.

The Open University is a key partner in this project, as it is leading two work packages: the integration of SlideWiki with multiple educational platforms, such as Learning Management Systems, and the coordination of large-scale pilots with informal learners via Open Educational Resources (OERs) and Massive Open Online Courses (MOOCs).

Petr Knoth is featured in a free eBook on Text Analytics

The eBook "Text Analytics: 28 Experts Share How to Achieve Business Value" gives insights into how large industries are exploiting big unstructured data to drive business value. The free eBook was created to demonstrate the benefits of text analytics to a vast array of companies, customer intelligence professionals, and marketers. In this eBook Dr. Petr Knoth discusses how text mining of scientific literature can help reveal meaningful connections, which are hard to discover otherwise. From his experience as a Senior Data Scientist in Mendeley and founder of COmnecting REpositories (CORE), a database that aggregates open access scientific papers, he gives three recommendations for how to successfully apply and derive value from text analytics: 1. the need for an evaluation framework with well-defined metrics, 2. the necessity to collect representative ground truth data and 3. realistic and clear communication with the customer. Knoth states that "text mining has so many application domains, it is absolutely incredible".
The AFEL project Kicks Off

In December, the AFEL project had its first plenary meeting in the beautiful Museo Lázaro Galdiano in Madrid. The goal of AFEL (Analytics for Everyday Learning) is to develop methods and tools to understand informal/collective learning as it surfaces implicitly in online social environments. To achieve this, the project gathers a range of skills in a consortium funded by the EU Horizon 2020 programme including experts in data analytics, interaction with data, cognitive models of learning and collaboration, as well as the developers of online social platforms.

The objective of the meeting was for this team, including people from 5 different organisations in 4 different countries, to start working together and plan the work to do. The first planned deliverable of the project is due early and regards dissemination and communication channels, but it will be quickly followed by key work on what is at the heart of any project on learning analytics: Data. Setting up the data platform, tools to obtain and import data from online social environments and checking what is available under the hood of the GNOSS platform will be amongst our first tasks, to prepare for the more sophisticated aspects of analysis and modelling.

EDV feature kicks off global Rethinking Debates report series

Earlier in February, the Election Debate Visualisation (EDV) project was the subject of a full-length feature as part of the Rethinking Debates project. This is the first of a series of reports on the impact of technology on electoral processes around the world, launched by Civic Hall, a US-based community centre for the world’s civic innovators.

After interviewing KMi’s Brian Plüss and Anna De Liddo, and EDV’s PI Prof Stephen Coleman from the University of Leeds, Civic Hall’s Civic Engagement Fellow, Christine Cupaiuolo, captured the spirit of the project and discussed in detail EDV’s research and tools in a great, passionate story.

The series will continue with stories on debate and technology projects around the world, and published in a comprehensive report to be released at a conference later this year.
Collective Platform for Community Resilience & Social Innovation During Crises

COMRADES is €2M project, funded by the European Commission under the CAPS (Collective Awareness Platforms for Sustainability and Social Innovation) call had its project kick off meeting on 13 Jan in Camden, London. Project partners are OU, University of Sheffield, University of Agder, iHub, and Gov2u. COMRADES will run for three years, under the co-ordination of Professor Harith Alani from KMi.

Response to crises often reveals organisational and technological shortcomings, which threaten community recovery and sustainability. Even though some technological solutions exist, challenges of communication, interoperability, and data analytics remain. The rise of social media as an information channel during crises has become key to community resilience and response. This project will build an intelligent collective resilience platform to help communities to reconnect, respond, and recover from crisis situations. The COMRADES will achieve this through an interdisciplinary, socio-technical approach, which will draw on the latest advances in computational social science, social computing, real-time analytics, text and social media analysis, and Linked Open Data.

The open source COMRADES platform will extend the now standard data collection, mapping, and manual analysis functions provided by the underpinning, widely used Ushahidi crisis mapping tool, to include new intelligent algorithms aimed at helping communities, citizens, and humanitarian services with analysing, verifying, monitoring, and responding to emergency events. The COMRADES platform will be deployed and evaluated with multiple, local and distributed, communities, using collective multilingual crisis information.
Make My City Smarter!

MK:Smart project was part of a select range of Open University projects showcased to parliamentarians, in the Atlee Suite of Portcullis House in Westminster on 9th March 2016.

The team comprising of Jaisha Bruce, Jane Whild and Mathieu d’Aquin from Knowledge Media Institute (KMi) and Daniel Gooch and Annika Wolff from the University’s Maths Computing and Technology Faculty (MCT), presented an overview of the MK:Smart project with a focus on the data, education and citizen engagement work to MPs, parliamentary figures, committee clerks, representatives from the HE sector, civil servants and third party companies.

As part of the showcase, the team ran a competition for MPs and Parliamentarians offering two half day consultations; draw one offered half a day with Mathieu d’Aquin on the MK Data Hub and draw two offered half a day with Annika Wolff on the Urban Data School Initiative. In order to join the prize draw, MPs were asked to write their constituency area on a flag declaring they would like to make their city smarter and pin this to their location on a UK map. “Every MP will think their city or area is the best” mentioned Peter Horrocks, Vice Chancellor of the Open University, during his speech “however, now you can start on your path for smartness with the MK:Smart competition”.

Responsible Research Metrics

At this year’s Jisc DigiFest Dr. Petr Knoth was invited to sit on a panel discussing Responsible Research Metrics. This panel was organised in the context of the recently published Metrics Tide report commissioned by HEFCE, which looked into issues surrounding the use of quantitative research metrics in REF. The other two panelists were Prof. Stephen Curry of Imperial College and Prof. Cameron Neylon of Curtin University.

In his talk, Petr argued for the need to develop a range of new research metrics that make use of article full-texts. We call these semantometrics. Petr also stressed that we need to move away from performance measures established axiomatically or ad-hoc without demonstrating their ability to capture aspects of research performance on data. These measures include especially the widely used higher-level metrics, such as the h-index. “We need to move towards data driven approaches to the development of research evaluation metrics“ he reiterated.
KMi is pleased to announce, just before Christmas another PhD award - making a total of five in 2015!

Congratulations to Dr Simon Knight!

On 17th December Simon Knight successfully defended his PhD. Simon’s thesis entitled ‘Developing Learning Analytics for Epistemic Commitments in a Collaborative Information Seeking Environment’ used socio-cultural theory to develop an analytical framework for mapping student’s epistemic beliefs, which he applied to investigate students behaviours while undertaking collaborative information seeking tasks.

Simon’s doctoral research built on work he had completed during has Master’s degree at Cambridge University, under the supervision of Professor Neil Mercer. When Simon joined the OU, he was able to continue that strand of research under the supervision of Neil’s close collaborator Karen Littleton (Professor of Education) and KMi’s Simon Buckingham Shum (Professor of Learning Informatics).

Simon’s thesis investigated the processes people go through when evaluating claims on the internet and seeing how different bits of information are connected. For example, whether people corroborate information across multiple sources or use ‘authoritative’ websites when they look for information. By exploring these processes, Simon’s research has contributed to the broader understanding of different ways of working, and how student’s research skills can be supported through the use of new tools.

Professor Sten Ludvigsen (University of Oslo) and Professor Allison Littlejohn (Institute of Educational Technology) commended that the work is ‘very innovative’ and makes ‘very important contributions’ to the field of Learning Analytics. Simon is now a Research Fellow in the Connected Intelligence Centre at the University of Technology Sydney, where he is extending his analytics research into the area of student writing practices, to develop Writing Analytics.
KMi's World Stage and Closer to Home

Ale Okada attended the RRI meeting in Brussels (13-15 Jan).

Alex Mikroyannidis travelled to Sankt Augustin, Germany for the SlideWiki Kick off meeting. (17-19 Jan).

John Domingue was invited to the e-Leadership Skills Workshop in Brussels. (21-22 Jan).

John Domingue travelled to Zurich, Switzerland to attend the eHealth and Semantics (3-4 Feb).

Dasha Herrmannova attended the Web Search and Data Mining Conference in San Francisco, USA to present a paper. (20-29 Feb).

Allan Third travelled to Vilnius, Lithuania to attend the CARRE technical meeting. (4-7 Feb).

Aba-Sah Dadzie travelled to Ljubjana, Slovenia to attend the EDSA Dashboard Developers meeting. (7-11 March).

John Domingue, Aneta Tumilowiz & Aitor Gomez-Gori travelled to Ghent, Belgium to attend the FORGE plenary meeting (14-15 March).

KMi Future

Events Coming Soon...

• Harith Alani and Aba-Sah Dadzie are among the KMi’ers travelling to Montreal, Canada to attend World Wide Web Conference (WWW2016). (11-15 April)

• Zdenek Zdrahal, Martin Hlosta & Jakub Kulizek are running a workshop ‘Data literacy for Learning Analytics’ at LAK 16 (Learning Analytics & Knowledge Conference), being held in Edinburgh, UK. (25-29 April).

• John Domingue, Alessandro Adamou are a few of the KMi’er who will attend ESWC annual conference in Heraklion, Crete. (29 May - 2 June)

In the NEXT Issue - MK:Smart - what going on in projects final year.