



THE UNIVERSITY *of* EDINBURGH



# Delivering and evaluating lecture recording

Digital transformation of learning and  
teaching at the University of Edinburgh

media hopper  
**REPLAY**

---

# Foreword

---

The University of Edinburgh has targeted an improved student digital experience by investing several million pounds in a state-of-the-art lecture recording system that has covered over 300 rooms in less than three years. Our approach is based on being widely flexible and enabling choices of formats and pedagogy.

The ability to watch lectures again as an aid to revision is immensely popular with our students and capturing video and audio recordings of lectures at scale will supplement the rich set of online resources that already exist to support learning.

There are many proven benefits to making recordings of lectures available including supporting students for whom English is not a first language and ensuring that our face-to-face lectures are available in an alternative format for students who require it. Not having to take notes at speed allows students to focus more on what is being said and use valuable contact time to ask questions, knowing that notes can be reviewed and improved later.

This brochure tells the story of the origin, procurement and successful roll-out of this Lecture Recording Programme and the launch of the new service, Media Hopper Replay. It encapsulates three years of intensive team effort, meticulous planning and interdisciplinary support. Our learning technology teams have shown themselves to be expert in the jobs they do. As an organisation we gained a huge amount from the process: academic insight, student satisfaction, new research fields, communications strategies, technical know-how and a field-tested working model of how to complete a project of this ambition. I sincerely hope it will be of interest to you.



**Melissa Highton**  
Director of Learning, Teaching and  
Web Services  
Assistant Principal Online Learning

media hopper  
**REPLAY**

---

# Contents



## 02

Executive summary

## 03

The benefits of large-scale lecture recording

## 04

Student-centred innovation

## 05

Governance and leadership

## 07

The challenges of delivering the project

## 08

Project timeline

## 11

The right people with the right skills and knowledge

## 12

Communications

## 15

Training

## 16

Policy

## 17

The right technology – Echo360 and Media Hopper Replay

## 21

Programme evaluation and research

## 22

The value of lecture recording at Edinburgh

## 23

Student voices, academic voices

## 26

Key statistics

## 28

A model of lecture recording delivery





THE UNIVERSITY OF EDINBURGH'S  
**STRATEGY IS TO BE**  
**A WORLD LEADER IN**  
**DIGITAL EDUCATION**

# Executive summary

## Project background

The University of Edinburgh's strategy is to be a world leader in digital education, and to offer an outstanding student experience to as diverse a group of students as possible. In 2017-19 the University delivered a comprehensive lecture recording service to enhance the student experience and bring extensive pedagogical and research benefits.

Edinburgh is not the first university to deliver large-scale lecture recording, but the scope of what was planned made it a challenging project which involved engagement and activity with all parts of the organisation. The programme covered over 300 teaching spaces and was one of the largest digital audio-visual upgrades to take place in the UK.

The delivery of the Lecture Recording Programme was divided into three phases to include replacement of old kit, expansion into new rooms, the development of an institution-wide opt-out policy, and integration with Timetabling and Virtual Learning Environment (VLE) systems. A number of strategic choices were made at each stage, with the aim of ensuring the 'best fit' for the institution.

We believe that by considering the widest possible range of technical, academic, policy, and social factors around lecture recording, we have achieved a model for lecture recording, and indeed other learning technology implementations that could be emulated elsewhere in part or whole. A large part of our ethos has also been to work as openly as we possibly can, sharing and reflecting on our practice at every stage of our work. With that in mind we have tried to make as many of our resources as possible available online, and where possible under open licenses.

# 02

As an example, we have made a useful collection of resources on copyright and open licensing for lecture recording available at:

<https://open.ed.ac.uk/copyright-and-open-licensing-for-lecture-recording/>

# The benefits of large-scale lecture recording



# Student-centred innovation

Many of our students have complex lives and are balancing study alongside caring responsibilities, or the need to work to fund their studies. Recordings of lectures can lessen anxiety about keeping on top of study and provide a safety net when life circumstances prevail.

Lecture recordings can support a wide range of accessibility and inclusivity needs including those:

- who are visually impaired
- who work with a scribe to create text notes from lectures
- who need support for neurodiversity
- who may find physical attendance overwhelming
- for whom English is not their first language
- who are learning complex technical terms
- who experience debilitating anxiety as a result of missing classes

Lecture recording offers all students an opportunity to watch again to deepen learning and understanding. Students can rewind and review material anywhere, anytime and catch up on points they may have missed to support exam preparation and aid learning.

Recorded lectures are a useful back-up for the 38% of students\* who admit that they do miss the occasional lecture. They are also popular because they allow the learning process to be reshaped and blended with other digital resources.

We identified many areas where lecture recording may benefit the wider university community, such as providing new opportunities for research, supporting pedagogical innovation, reducing the risk of lecturing as a 'high-stakes' activity, and better supporting students through stressful transitions.



The recordings have really helped. The ability to go over an idea slowly and listen to it being explained has been very useful. It has really revolutionised revision for not just me but many others on the course.

University of Edinburgh student



RECORDED LECTURES ARE A  
USEFUL BACK-UP FOR THE  
**38% OF**  
**STUDENTS**  
WHO ADMIT THAT THEY DO MISS THE  
OCCASIONAL LECTURE

\*The Sodexo University Lifestyle Survey, 2016

---

# Governance and leadership

---

## Transformation teams

Consultation and evaluation were embedded into the Lecture Recording Programme from the start. Media Hopper Replay is first and foremost a resource to enhance learning and teaching – academic colleagues are at the heart of implementation and students helped us to shape the service and support implementation.

We established a range of forums to support the rollout of Media Hopper Replay over the three years of the Programme, all of which involve academic and student representation. These covered technical, academic use, policy development and evaluation. Participants from all Colleges were represented on the following key strategic groups:

- Programme Board
- Implementation Steering Group
- Policy Task Group
- Academic User Group
- Technical Special Interest Group
- Engagement and Evaluation Group

The governance structure was designed to ensure colleagues across the University were able to participate in the creation of the new service.

## Remit of the Programme Board

The Programme Board was chaired by Melissa Highton, Assistant Principal Online Learning. The Board was responsible for the strategic oversight of the Programme and for ensuring that overall Programme goals were met. There was senior academic representation on this Board from the University's three Colleges: the College of Science and Engineering, the College of Medicine and Veterinary Medicine and the College of Arts, Humanities and Social Sciences as well as key stakeholders such as Estates, Timetabling and Edinburgh University Students' Association.

## Remit of the Implementation Steering Group

The Implementation Steering Group was chaired by Anne-Marie Scott, Deputy Director of Learning, Teaching and Web Services. The Steering Group provided oversight on the delivery of the Programme including software, integration, training, accessibility, scope, tolerances, service levels and completion of projects. There was Senior IT representation from the University's three Colleges along with Timetabling and academic staff input.

## Remit of the Policy Task Group

The Policy Task Group reported to the Senate Learning and Teaching Committee (LTC) and was chaired by Melissa Highton, Assistant Principal Online Learning. It made recommendations to LTC regarding policy for lecture recording, developing supporting guidelines, consultation and communication. The policy task group included representation from the Students Association and the University and Colleges Union (UCU). The resulting policy is owned by Senior Vice Principal of the University, Professor Charlie Jeffrey, chair of LTC. The policy development process conformed to rigorous guidelines, as set out by Academic Services, and continued throughout 2017-18.





## Remit of the Academic User Group

The Academic User Group was chaired by Professor Susan Rhind, Assistant Principal for Feedback and Assessment, and latterly Dr Michael Seery, Director of Teaching for the School of Chemistry. The group provided academic leadership and professional expertise on teaching and learning to champion the use of the Media Hopper Replay service within Schools and Colleges. Membership was drawn from academic colleagues within Schools and Colleges. The purpose of the group was to ensure the views and interests of future users of the service were represented on the Programme Board. They also provide pedagogical expertise on teaching and learning practice to support the work delivered by the Programme.

## Remit of the Technical Special Interest Group

The Technical Special Interest Group was chaired by Euan Murray, Head of Learning Spaces Technology, and included representatives from School-based learning technologists. It provided a place to discuss the many different technical requirements and challenges of working with performance spaces, labs, chalkboards and overflow halls and drew on a diverse range of experience to develop innovative implementation solutions.

## Remit of the Evaluation and Engagement Group

The Engagement and Evaluation Group was chaired by Professor Sarah Cunningham-Burley, Assistant Principal for Research-led Teaching. Its remit was to ensure that the opportunities offered by the introduction of lecture recording were exploited to maximise the benefit for learning and teaching at the University. This involved establishing and overseeing the implementation of a strategy for the effective evaluation of the benefits realised by the implementation of lecture recording. The group also received reports from research projects looking specifically at lecture recording in disciplines. This work was supported by the Benefits Realisation Project whose Project Board was chaired by Dr Sabine Rolle, Dean of Undergraduate studies for the College of Arts, Humanities and Social Sciences.

## A snapshot of our Phase 2 Governance Structure







## Staff and student engagement

Staff and students had some valid concerns about the introduction of lecture recording. We listened to these concerns and consulted with colleagues at every stage of the process. We decided to invest heavily in extensive training, support and communications resources to enable comprehensive and meaningful engagement with all of our 22 academic Schools. Engaging meaningfully with staff and students across multiple locations, navigating competing priorities, accommodating different levels of experience with lecture recording and managing a diverse range of interests, were some of the challenges to be addressed in our activities. The result of this investment in engagement has been the improved design and tailoring of the resulting service for users.

## The technology landscape

The technology landscape at the University of Edinburgh is complex but we make choices of technology based on standards for interoperability. It was essential that we leverage existing systems to deliver a comprehensive service. Our learning technology teams had already built a significant media asset management system and integrating these existing systems with large-scale lecture recording technology to create a seamless media management suite was a new challenge.

The new lecture recording service also now integrates with the University's Virtual Learning Environments and central Timetabling system.

## Managing data

We knew from the start that it would be important for the service to be able to provide useful reporting data. The University of Edinburgh is the eighth-largest university by enrolment in the UK with 41,000 students. Those students are on hundreds of courses and attend thousands of lectures a week. We took a planned approach to networking technology, digital storage and media access and to providing reports on usage, uptake, microphone failures and levels of opt-out across Schools.

# The challenges of delivering the project

**Our Programme faced significant challenges over the three years of its delivery including tight timescales, a period of sustained industrial action, the implementation of GDPR, and a student occupation of one of our largest buildings. Our AV fit-out plan was designed to work around limited access to teaching venues during the Edinburgh Festival Fringe which is a key part of the University's civic and public engagement.**

## Our physical estate

One of the largest challenges was the size and shape of our physical estate. Our plan had to work for buildings of all sizes, ages, locations and conditions.

The 300+ lecture spaces to be equipped with recording technology were spread across five main campuses. They varied greatly in size, from seminar rooms with a handful of desks to 300-seat lecture theatres.

Many of our buildings, such as our Easter Bush Vet School are new and have been built with modern technology in mind. Old College, however, was designed by Robert Adam in 1789 and Old Moray House was built in 1618. Many University buildings are an integral part of Edinburgh's Old and New towns which are recognised with UNESCO World Heritage status.

MANY OF OUR BUILDINGS, SUCH AS OUR  
EASTER BUSH VET SCHOOL  
ARE NEW AND HAVE BEEN BUILT WITH  
**MODERN**  
**TECHNOLOGY**  
IN MIND

# Lecture Recording Programme Project Timeline

2016

## PROCUREMENT

2017

All 3 rounds of competitive dialogue completed

Invitation to Tender finalised and released for the final bids

Scoring completed and contract discussions start

Preferred supplier chosen, contract concluded, access to platform granted for service

Implementation preparations begin in earnest

3-year programme to install lecture recording technology in over  
**300** teaching spaces launches

Vote held to name lecture recording service  
**REPLAY**  
media hopper

Jan

Feb

Mar

Apr

May

June

## Phase 2 ... EXPANSION

2018

**500** courses now linked to the service  
Consultation on a new University policy to support lecture recording begins

Pop-up video booth launches - gathering views from staff and students

Learning Technology Showcase focuses on lecture recording.

Consultation responses analysed and revised lecture recording policy drafted

**47.5%** of students accessing the service and **43%** of lectures being recorded

**475,238** lecture views

Presentation on student involvement in lecture recording at QAA Enhancement Themes Conference

## Phase 3... TRANSFORMATION

2019

New lecture recording policy starts  
Recording now opt-out  
Symposium on getting the most out of lecture recording

Drop-in sessions on the new Replay Scheduler

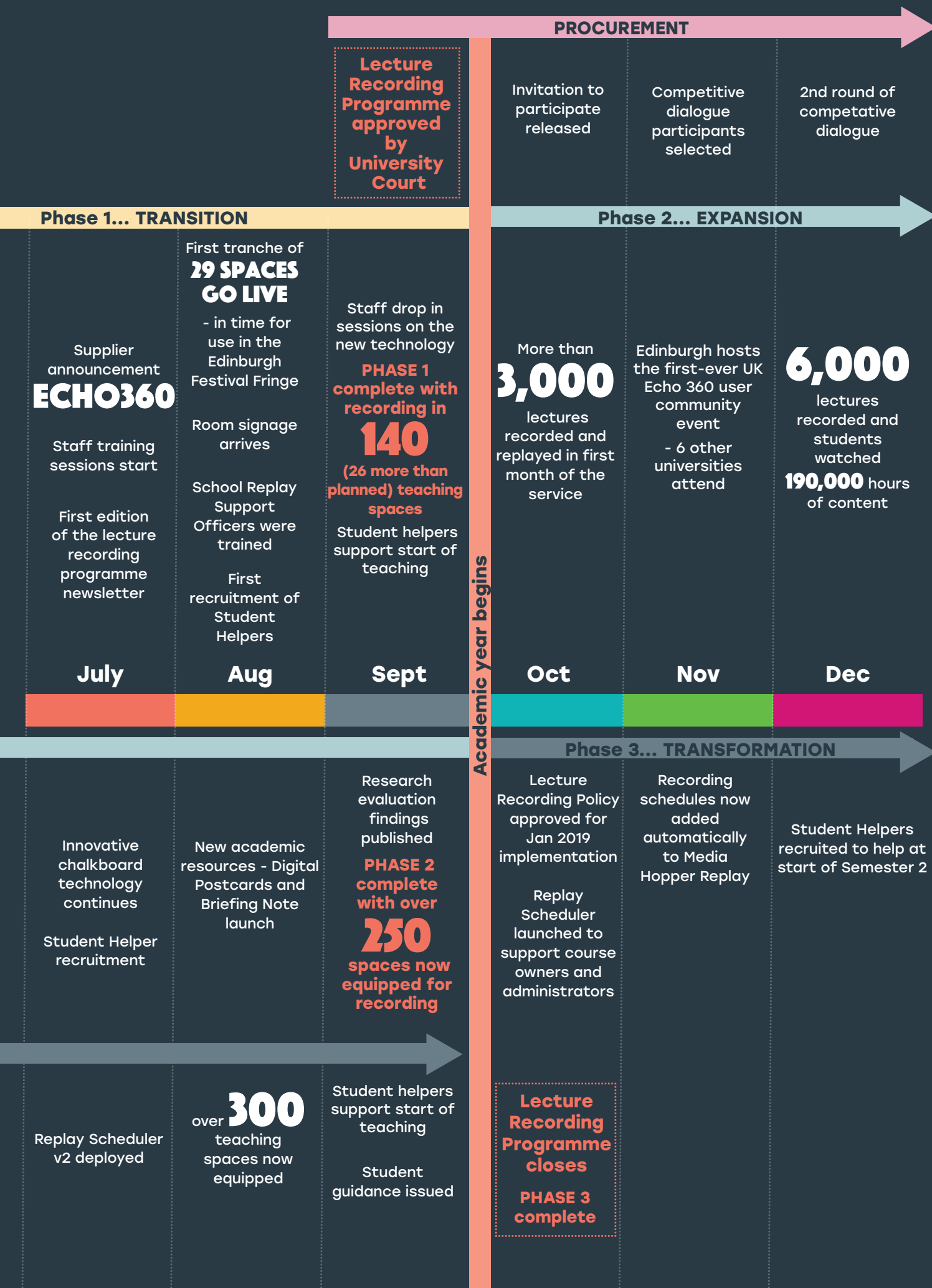
Academic user group workshop sessions begin to help establish local student guidance

Academic user group workshop sessions completed

Replay Scheduler v2 specification agreed

The University of Edinburgh hosts the 2019 Echo360 European Community Conference

Student Helper recruitment begins









The right people  
with the right skills  
and knowledge



## The project team

The success of this programme was rooted in our commitment to build a team of the best people with the right skills. The team was drawn from across the professional services areas of the University and included learning technologists, AV specialists, project management, academic research, policy expertise, communications expertise and expertise in timetabling and student systems. Delivering a digital transformation change programme like lecture recording at scale required the team to consider the wider contexts in which the technology will be used and to address all of these as well as delivering technology on the ground.

# Communications

## Let's talk about lecture recording

Our Communications team was strategically involved from the inception of the lecture recording project. Engagement strands reached out to academic colleagues and students throughout the delivery of the communications programme to define key messages. The team also engaged with Edinburgh University Students' Association to connect with students and led a programme to understand the local context and address concerns. We knew that demand for lecture recordings was high amongst students and even before the first piece of equipment was installed in a lecture space, the team had published communications to students heralding the project and had launched a poll to name the service.

We conducted a detailed stakeholder analysis to target our messages and developed the concept of the 'user journey' through a communications lens. We visited each of our academic schools on several occasions to listen to feedback on the roll-out, training and policy. Our team produced monthly newsletters and worked with graphic designers on collateral for an institution-wide campaign to inform and enable academic colleagues to opt-out of lecture recording ensuring that they felt in control at all times.

To spread the messages about how lecture recordings contribute to teaching we published a weekly lecture recording mini-series on the University of Edinburgh 'Teaching Matters' blog for three months. The series shared the findings from the Edinburgh evaluation of lecture recording, heard opinions from staff and student users, and analysed the research base.



You can read the lecture recording Teaching Matters mini-series at:

**[www.teaching-matters-blog.ed.ac.uk/tag/mini-series-lecture-recording/](http://www.teaching-matters-blog.ed.ac.uk/tag/mini-series-lecture-recording/)**

You can see the full communications plan, now included as part of the UCISA comms toolkit:

**[www.ucisa-comms-toolkit.org/library/downloadables/Lecture\\_Recording\\_Communications\\_Plan\\_V1.01\\_University\\_of\\_Edinburgh\\_-\\_dated\\_June\\_2018\\_-\\_PDF\\_.pdf](http://www.ucisa-comms-toolkit.org/library/downloadables/Lecture_Recording_Communications_Plan_V1.01_University_of_Edinburgh_-_dated_June_2018_-_PDF_.pdf)**



## Clear identity, clear purpose

The identity branding of our lecture recording service was a vital consideration as it would help reinforce the service offer for users and identify this new service as part of a larger set of tools which support the use of media in learning and teaching.

Our existing media service is named Media Hopper, after Grace Hopper, the pioneering computer programmer who famously said “the most dangerous phrase in the language is ‘we’ve always done it this way’”. Media Hopper gathers together a multitude of video and audio material from all over the University, brings it into one place and channels it into our Virtual Learning Environments (VLEs), websites, portals and blogs. It also applies standards and metadata.

We put a great deal of thought into how to build lecture recording into the Media Hopper family of services. We initiated a poll to find a new short name for the new service and branded the virtual home of lecture recording as ‘Media Hopper Replay’ to emphasise the use of recordings as a back-up resource to watch and listen again. With Replay, learners can view all of the lecture recordings for their course anytime and anywhere via computer, laptop or mobile device. They can pause, rewind and skip the recorded content.

### Key Choices:

- Communications were embedded as a strategic function from inception.
- We use the word ‘record’ rather than ‘capture’.
- We called the service ‘Replay’ to highlight that it is an enhancement resource rather than a replacement for lecture attendance.
- We chose not to feature images of video cameras – we always use images of students in lecture theatres or watching videos to reinforce the learning and teaching benefits over the technical aspects.

OUR EXISTING MEDIA SERVICE IS NAMED  
**MEDIA HOPPER**  
AFTER **GRACE HOPPER**,  
**THE PIONEERING**  
**COMPUTER PROGRAMMER**

## Student collaboration

Students have been at the heart of the Lecture Recording Programme, from procurement through to delivery and support, providing a unique insight into students' needs and wants from a lecture recording service. Through the University's internship programme, students have delivered:

- advice on choice of supplier as part of the procurement process
- training sessions for staff
- information and marketing tools
- front-line help and support for new users
- updates and reports in Programme meetings

We knew we would need a lot of hands on deck for the start of the 2017/18 and 2018/19 teaching years as well as support for the use of the new system at the start of lectures. A group of students were trained to provide on the spot support to lecturers new to recording and signpost to other sources of support to ensure the smooth running of the service with the focus firmly on making it as easy as possible for academic colleagues to use Media Hopper Replay.

### Key Choices:

- Our student helpers visited teaching spaces across the campuses during the first week of teaching in each Semester.
- They were able to provide immediate advice on use of the pause button in the room and could quickly direct academic colleagues to sources of further help and guidance on use of AV equipment.
- They worked as visible champions for the service and helped to ensure colleagues felt supported. A number of colleagues were encouraged to give the service a try as a result of this support.

### Key Choices:

- In addition to the 'pause while live' functionality, once a recording has been processed lecturers can review, edit, and even change when it becomes available for students to view.
- Signage in rooms complements the recording light/ buttons ensuring that it is always clear whether recording is taking place.
- As well as scheduled recordings, Media Hopper Replay also allows lecturers to perform ad hoc and live-streamed recordings.

## Flexibility and control

In order to address the concerns we had heard from academic colleagues, we designed a system and policy to make sure that academic colleagues were in control of their own materials. Unlike some other lecture recording systems elsewhere, we provided 'pause recording' lights/buttons on the desks in teaching spaces so that lecturers could pause and re-start a lecture according to their teaching requirements and pedagogical style.





# Training

Our training provision goes beyond how to use the software technically and covers issues such as copyright and licensing of resources used in teaching. We delivered a comprehensive 16-month programme of training and resources to help users of the service prepare for, deliver and enhance recorded lectures using Media Hopper Replay. The programme accommodated online, face-to-face and on-demand materials as well as providing drop-in clinics. Interactive sessions helped lecturers maximise use of the new tools provided, using lecture recording to enhance teaching. This all contributed to our academic colleagues feeling safe, in control and well-supported. The training resources continue to be available after the launch phase of the programme on a 'business as usual' basis.

## Key Choices:

- To link the training and support to our wider provision in digital skills training programme to highlight the new areas of knowledge colleagues need to make informed choices about how their recordings are made and used.
- To highlight the copyright and Intellectual Property issues inherent in lecturing and support colleagues in making choices about the materials they use in their teaching.
- To explicitly promote re-use of materials in line with our open educational resources (OER) policy.
- To make training in multiple formats available whenever and however colleagues wanted it.

You can read more about the training programme at:

[www.ed.ac.uk/information-services/  
learning-technology/media-hopper-  
replay/training](http://www.ed.ac.uk/information-services/learning-technology/media-hopper-replay/training)



Very helpful and user-friendly system which made the training session nice and straightforward.

**Carry Arnold**

**The University of Edinburgh  
Business School**



This was an excellent session - extremely informative and interesting.

**Katja Robinson**

**Edinburgh College of Art  
(ECA)**



---

# Policy

---

**The scale of the Lecture Recording Programme and the profound changes it brought to the practice of learning and teaching meant that a new and robust lecture recording policy had to be developed.**

The University Senate's Learning and Teaching Committee (LTC) established a policy task group with representation from academic and professional staff, students and trades unions. The task group developed a draft policy that was released for wide consultation around the University between 11 January and 19 February 2018. There was excellent involvement in the consultation with 80 responses received from a wide range of stakeholders, representing the views of 27 Schools, committees or organisations and around 150 individuals.

The consultation overlapped with a period of industrial action by the UCU trade union over pensions, and the use of recordings during strike action became a live and contentious area for senior management. Events during this time highlighted the potential for using recordings in ways that staff may not have hitherto anticipated and we adapted and improved the policy as a result. The outcome was even greater clarity in the final policy in regard to permitted and prohibited uses of the recordings.

The final policy includes a range of significant changes from the consultation draft in response to feedback received during the consultation. This work considered carefully areas such as IP and performance rights and retention and reuse.

The new opt-out lecture recording policy was introduced on 1st January 2019.

The policy supports staff in delivering an improved, consistent student experience, and provides clarity on the rights of those involved in each recording and the conditions under which lectures should and should not be recorded, released to students or released publicly.

## Key Choices:

- To develop the policy as a task group of LTC.
- To consider privacy and data issues while waiting for certainty on the then-imminent GDPR changes.
- To involve the UCU in the task group from the start.

You can read the new lecture policy here:

**[www.ed.ac.uk/information-services/learning-technology/media-hopper-replay/help-and-support/frequently-asked-questions/lecture-recording-policy](http://www.ed.ac.uk/information-services/learning-technology/media-hopper-replay/help-and-support/frequently-asked-questions/lecture-recording-policy)**

The new lecture recording policy demonstrates a real commitment from the University to supporting the learning and welfare of all students. We know how much students value the availability of lecture recordings to support their learning, especially those who have additional learning needs or don't have English as a first language.

**Divya Mukherji**  
EUSA VP Education

---

# The right technology – Echo360 and Media Hopper Replay

---

## Selecting our supplier partners

Knowing that lecture recording is a fast-moving market, we used competitive dialogue for the tender process. There was a huge amount of fact-finding to be done and we knew that standard procurement processes would not enable us to dig down into the details of a potential supplier's solutions and services. We were looking for a progressive, long-term partnership, so we wanted to get beyond the superficial as quickly as possible. We also had a very tight time schedule, with a target of less than twelve months to procure and get up and running.

We had comprehensive professional support from colleagues in Procurement and following a rigorous evaluation and selection process, we selected Echo360 as our university-wide academic video platform. Echo360 were the best supplier on a combination of technical capability, implementation capability, service support, and long-term innovation commitment. Echo360 is used by over three million students in 30 countries and focused entirely on supporting the needs of education.

“ Each company in the competitive dialogue was separately invited on site three times. We ensured the day had exactly the same structure, with suppliers meeting exactly the same people within the University, including the same student representative.

**Colin Forrest**  
Project Manager

“ Every day our students and academic colleagues engage in world-class teaching and cutting-edge research. Similarly, we seek to constantly evolve and support an excellent academic experience for our students. Echo360's approach to lecture recording allows us to pair sound teaching practice with robust, high quality video and analytics, and is creating new opportunities for meaningful learning experiences.

**Anne-Marie Scott**  
Deputy Director of  
Learning, Teaching and Web Services





## In-house development of Replay Scheduler

A great deal of thought, planning and technical ingenuity went into making a very complex area of data integration highly usable and apparently simple. The Replay Scheduler built at University of Edinburgh is an online tool for the management of lecture recording scheduling preferences. It combines data from our Timetabling system and Echo360 and course leaders use it to take control of their lecture recording and make it as easy as possible to opt-out.

Service managers of the Echo360 system, our development team, plus representatives from timetabling and student systems worked closely with colleagues in Schools to develop and deliver software that is robust, reliable and simple for colleagues to use. Users were consulted throughout the development process, and the solution was designed to meet their needs.

It is important to lower any technical barriers to usage of learning technology systems. In the case of Media Hopper Replay, if lecturers are happy for their lecture to be recorded, they don't need to do anything, Media Hopper Replay will automatically record all lectures. If they do not want the lecture to be recorded there are only three simple steps to follow:

1. Inform their School that they will not be recording a lecture/s
2. Record an opt-out in Replay Scheduler, noting the reason for opting-out (pedagogical reasons, privacy/legal/ethical reasons, personal reasons)
3. Let students know which lectures are recorded and which are not



In collaboration with colleagues across the campus we designed a simple-to-use web application which allows nominated users to opt-out of lecture recording. Behind the scenes the system is a feat of data integration taking feeds from multiple university systems and data from Echo360 to create automatic recording schedules for all lectures in centrally bookable rooms.

**Marc Jennings**  
Service Operations Manager

### Key Choices:

- To make opting-out of recording lectures as simple as possible.
- Build in-house software that is simple for colleagues to use.
- Record reasons for opt-out to build a data profile which can be used as the basis for further research, reporting and review.

A GREAT DEAL OF THOUGHT,  
PLANNING AND TECHNICAL  
**INGENUITY**  
WENT INTO MAKING A  
VERY COMPLEX AREA  
OF DATA INTEGRATION USABLE



## Improvements to teaching spaces

Integrating this work with a larger and challenging Estates programme, we wanted to build the technology around the needs of our lecturers. We wanted a system that they could learn to use with a modicum of training and that wouldn't put any more demands on their time. We wanted them to be able to simply arrive and get on with delivering their lecture as they normally would. They can just turn up, turn on the system, and switch off from thinking about the recording.

### Key Choices:

- Each lecture space has a Delcom recording light/button on the teaching desk which goes red when recording starts. Lecturers can pause a recording which is useful for short group discussions which the lecturer may not want included as part of the main lecture recording.
- Lecturers use a lapel microphone which recharges in its dock between lectures. In many of our teaching spaces we installed a second microphone as backup, as they are critical to lecture recording working effectively.
- We also provide Catchbox 'throwable' padded microphones. These are very helpful in large lecture spaces as they ensure that students' questions are included in the audio recording.
- We developed innovative and sector-leading solutions for recording chalkboards and other writing surfaces.

**We wanted to be able to capture absolutely everything that takes place during a lecture and for our students to be able to access the content when and where they need to.**

**Euan Murray**  
Head of Learning Spaces Technology

**I can honestly say this is the best lecture capture chalkboard solution I have seen anywhere.**

**Ross Galloway**  
Senior Teaching Development Officer,  
School of Physics and Astronomy

## Chalkboards – an ingenious technical solution

As you might expect from the institution that brought us the discovery of the Higgs Boson and the creation of Dolly the Sheep, Edinburgh leads the way in cutting-edge scientific research. Many game-changing innovations such as these started life as handwritten equations, diagrams and calculations. Academic colleagues often find that the best way to communicate complex concepts to their students is by writing or drawing them using the traditional chalkboard method of teaching. Successfully capturing chalkboard surfaces in lecture

recording was one of the toughest technological nuts to crack for our teams.

When faced with a lecture hall full of students, tutors don't want to have to spend time tweaking the recording technology or adjusting camera angles before they start. We created a system that lecturers can just walk up and use. When the projectors are switched off, it automatically goes to chalkboard recording mode, and the cameras point at the writing space being used. A lecturer can just walk into the lecture theatre, pick up the

microphone and start writing on the chalkboard straight away, and everything that's written there will be recorded.

Each lecturer has a different way of working, and uses multiple resources at different times. The system automatically accommodates this by recording from two sources, which might be a combination of the teaching desk PC, lecturer's laptop, document camera, or the chalkboard.





# Programme evaluation and research



## Measuring the success of the programme

It was important to the University that we learn as much as possible from this project, not just in terms of a technical roll-out but also as a learning technology which changes the way we teach and learn.

We funded research into the institutional impact of lecture recording as well as a range of smaller discipline-specific projects. The programme team supported these research projects through helping to source data from Echo360, facilitating dissemination of findings, and identifying overlaps between projects and future opportunities for collaborative research.

### Key Choices:

- To do our own, local research to explore and compare the differences between disciplinary cultures and their impact on the roll-out.
- Talk to and be clear with our students about how, in their own particular area of study, they can make best use of recordings of lectures.
- Actively involve student voices as participants in their education.

## The value of lecture recording at Edinburgh

The University-wide evaluation of the lecture recording roll-out ran from January–June of 2018 and asked: ‘what is the value of lecture recording at the University of Edinburgh?’. We found that staff and students have concerns encompassing the role of a lecture in wider learning. Generally, students conceived of lectures as a tool that could be used to advance their learning, and they highly valued recordings because of their ability to help students cope with unexpected events. Students were keen to point out that they see more value to attending a lecture than watching it, but when all else fails, the recordings were a great safety net and study aid.

For staff, there was a conflict between the ‘performance’ aspects of a lecture, which incorporated copyright, class management, and staff self-consciousness as well as concerns that recordings made lectures ‘canonical’, creating a definitive version of the material in the student’s eye.

You can read the full report ‘The Value of Lecture Recording at the University of Edinburgh’ at:

[www.ed.ac.uk/files/atoms/files/report\\_lecreced\\_0.pdf](http://www.ed.ac.uk/files/atoms/files/report_lecreced_0.pdf)





# Student voices, academic voices



# Student voices

We have placed a high value on the student voice as part of this programme. The roll-out of lecture recording is designed to enhance and transform the student experience. Students have had representation on most of our strategic groups and boards. Edinburgh University Students' Association also asked for students' feedback on lecture recording, asking students to write mini-blogs detailing why they used lecture recording, or how they used lecture recording. Here are some of their responses which were, overall, very positive.



I have mostly used lecture recording as a safety net [...]. This was very useful to me, since I unexpectedly had to go home, and the recordings spared me some of the stress of leaving university because I could catch up from home at my leisure. I approached [the recordings] the same way as a normal lecture, so I took notes while watching/hearing it. In addition, I plan to use the recordings as a means of revision and consolidation for exams, and, if I in the future need to write an essay on something from one of my previous lectures, I think I would see it again in order to get my thoughts flowing on the subject.

Marta Christiansen



As a student, it can sometimes be challenging to listen, understand, engage and type (or write down) everything being taught or discussed throughout a lecture. In my experience, professors want their students to engage with them in a lecture. Recording the lecture enables students to be more present and interact with the professor, rather than worrying about capturing everything being said. [...] Debates can sometimes arise in lectures, which lecture slides may not cover, that could be invaluable in developing critical analysis. I often find that I learn a topic much more effectively through such discussions.

Joan-Sophie Horsu



# Academic voices

The most influential group for shaping and testing our services has been the Academic User Group which includes Directors of Learning and Teaching and School academic champions.

Lecture recording has also become an area of academic research in its own right, with our popular Teaching Matters blog providing a platform to share research findings with the wider institution. Discipline-specific research projects, run through our Principal's Teaching Award Scheme (PTAS), which are providing new insights into lecture recording include:

## Lecture recording in mathematics and physics

This project investigates the effect of lecture recording on student learning in Undergraduate Mathematics and Physics. Combining data about use of recorded lectures with information about attitudes and attainment, it seeks to discover if underlying study beliefs and strategies are a factor in students' approaches to using the lecture recordings.

## Enriching recording lectures through linking and creation of rich media content

This project brings together, integrates and enhances several activities including a series of student projects, the development of an experimental lightweight platform for working with video materials, and the use of a wiki for coursework and assessment.

## QualRec: Qualitative exploration of staff and student engagement, experience and behaviour with lecture recording

This project aims to understand how lecture recording is taken up by staff and students alike over a longer period of time to inform ongoing educational debate, staff development and ultimately promote best practice as the technology becomes embedded across the institution.

## Enhancing Engagement with Media Hopper Replay – A Comparative Study

This project tests whether students are more likely to use the advanced facilities of Replay if they are demonstrated to them than by learning the capabilities through experimentation. The importance of sectioning lecture content is also examined through providing summaries and segmentation of video content.

## Classroom practices and lecture recording

This project brings together researchers from three different disciplines to address questions of common concern around characterising classroom practices and the interaction of classroom pedagogy with students' use of lecture recordings. It will support ongoing work on specific questions in each discipline, such as investigation of the effectiveness of flipped classrooms.

## Lecture recording for inclusive education

This project is devising ways of utilising lecture recording to facilitate inclusivity in teaching and learning, in response to increasing student demand. Data from this project will inform the development of guidelines to: support University strategies in excellent teaching and student support; develop the ways technologies are used to widen access; and cultivate a sense of community and belonging for all students.

You can read about all the PTAS projects at:

[www.ed.ac.uk/institute-academic-development/learning-teaching/funding/funding](http://www.ed.ac.uk/institute-academic-development/learning-teaching/funding/funding)

You can read the Teaching Matters lecture recording mini-series at:

[www.teaching-matters-blog.ed.ac.uk/tag/mini-series-lecture-recording/](http://www.teaching-matters-blog.ed.ac.uk/tag/mini-series-lecture-recording/)



# Key Statistics

## RECORDINGS MADE

13,000+ ●

2017/2018 academic year

25,000+ ●

2018/2019 academic year

## STUDENT VIEWS

470,000+ ●

2017/2018 Full academic year

750,000+ ●

2018/2019 academic year  
(up to April)



OVER 300  
TEACHING SPACES  
equipped in 3  
years

Edinburgh is the  
8th-largest  
university by  
enrolment in the  
UK with

41,000 STUDENTS



Competitive  
Dialogue process  
in a compressed  
6-month timeline

Over  
**500 COURSES**  
linked to the  
service in its 1st  
Semester

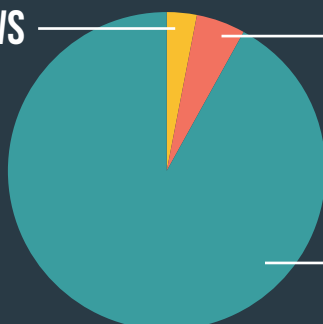


## INTERACTION BY TYPE 2018/19

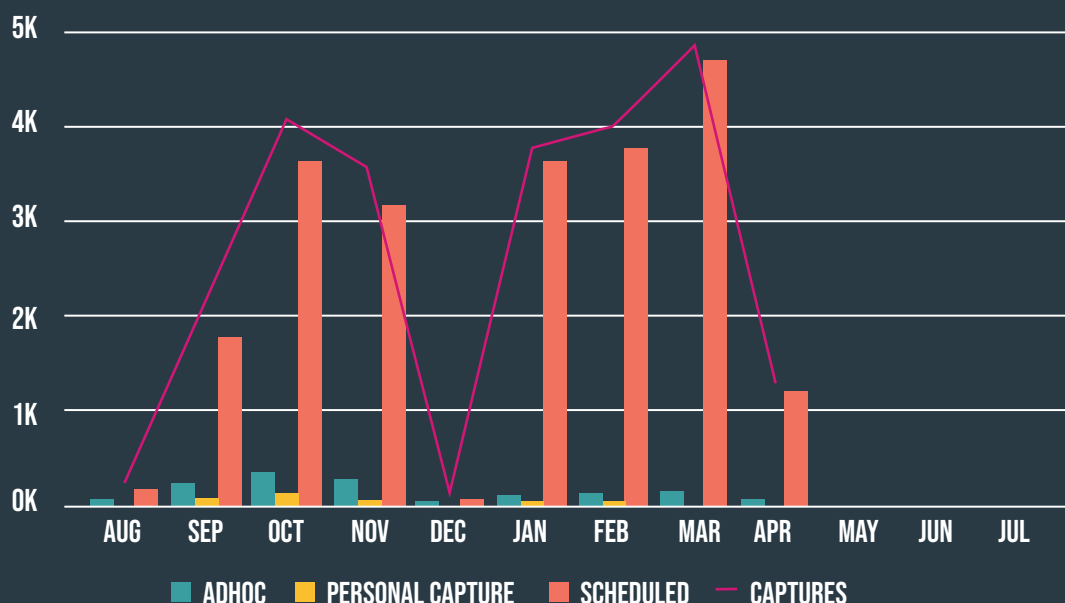
SLIDE DECK VIEWS

NOTES

VIDEO VIEWS



## CAPTURES PER MONTH 2018/19



**13,779** recordings  
or events in year 1,  
representing 43%  
of all timetabled  
lectures



**18,812**  
student logins  
during the first  
year

**3,000** LECTURES  
recorded and  
replayed in first  
month of service



**£2.25 MILLION**  
capital  
investment



**100%**  
increase in lecture  
recording views  
year on year

# A model of lecture recording delivery

## Key Choices that deliver Key Outcomes

At every stage of the lecture programme we made deliberate and definitive Key Choices. Looking back on the success of the programme, we can see the key areas where these choices delivered Key Outcomes. We hope these milestones in our lecture recording journey will provide a useful model for the delivery of such a programme.

## Key Outcomes

### Governance

- We established a range of forums drawing together colleagues across the University to strategically guide the programme: Programme Board, Implementation Steering Group, Policy Task Group, Academic User Group, Technical Special Interest Group, Evaluation and Engagement Group.

### Communications

- Communications delivered strategic results from inception of the project through delivery and beyond.

### Training

- Our training programme went beyond system usage instruction to include wider topics and new areas of knowledge.
- Training was available whenever and however colleagues wanted it.

### Flexibility

- Lecturers can pause, review, edit and change lectures.
- Lectures can share content with students before lectures, and make ad hoc recordings.

### Policy

- Our policy was created by a task group of the Senate's Learning and Teaching Committee.
- The unions were involved in policy negotiations from the outset.

### Technology

- We used competitive dialogue to choose a supplier that has proven ideal for the programme.
- We have software and hardware that puts the users' needs first.
- Our system uses opt-out recording for lectures.

### Evaluation and research

- We have gathered feedback from students and staff.
- We have funded new research into lecture recording and its impact on learning.





---

Visit: [www.ed.ac.uk/information-services/  
learning-technology/media-hopper-replay](http://www.ed.ac.uk/information-services/learning-technology/media-hopper-replay)

Email: [media@ed.ac.uk](mailto:media@ed.ac.uk)

 [@media\\_hopper](https://twitter.com/media_hopper)

