



## Quick Reference

**Please note that you must read the full Call document (pages 2-12) for guidance before submitting your proposal**

# Content Creation and Consumption in the Digital Economy

**Call type: Invitation for Outlines**

**Closing date: 16:00 on 12 July 2016**

**Funding Available:** We have made up to £5 million available for this call to support around four to eight interdisciplinary and problem-driven projects.

**How to apply:** We are inviting outline proposals

**Assessment Process:** Outlines will be shortlisted by an expert panel and invited full proposals will undergo postal peer review, followed by an expert panel, who will make funding recommendations to the Digital Economy Theme.

### Key Dates:

Activity	Date
Closing Date – Outline Proposals	12 July 2016
Short-listing Panel– Outline Proposals	Mid-August 2016
Closing Date – Full Proposals	Mid October 2016
Postal Peer Review	Mid October 2016
Assessment Panel – Full Proposals	Mid-February 2017

### Contacts:

Jerome Ma, Digital Economy Theme  
Tel: 01793 444117; [jerome.ma@epsrc.ac.uk](mailto:jerome.ma@epsrc.ac.uk)

Tracy Keys, Digital Economy Theme  
Tel: 01793 444306; [tracy.keys@epsrc.ac.uk](mailto:tracy.keys@epsrc.ac.uk)



# Content Creation and Consumption in the Digital Economy

**Call type: Invitation for Outlines**

**Closing date: 16:00 on 12 July 2016**

**Related Themes: Digital Economy**

## Summary

The EPSRC and AHRC, under the Research Councils UK Digital Economy (DE) Theme (an interdisciplinary partnership between the EPSRC, AHRC and ESRC) want to invest up to £5 million to support interdisciplinary and problem-driven research in the area of digital content creation and consumption.

We are inviting outline proposals to be submitted by **16:00 on 12 July 2016**. An external expert panel will shortlist outlines to invite to submit full proposals. Full proposals will be assessed initially by anonymous expert reviewers and then, for proposals receiving sufficient support, by a panel who will make funding recommendations to the DE Theme.

## Aim of Call

The UK is internationally recognised for the quality of its creative achievements, its rich cultural heritage and the creation of outstanding digital resources. We want to build on these existing achievements and resources, developing the UK's internationally leading cohort of interdisciplinary researchers in areas of content creation and consumption in order to make a demonstrable contribution to the UK digital and creative economy.

## Scope

As a cross-Research Council Theme, we are seeking [interdisciplinary](#) and [problem-driven](#) research in any of the five research themes below. The themes were identified through workshops in 2014 and 2016 with a broad cross section of the academic and user communities. Your proposal must have a clear statement of its relevance to at least one of the five research themes below. We encourage a broad interpretation of each research theme; no specific areas are excluded.

### 1. Enabling and facilitating content creation

The creative industries are a key part of the UK economy, estimated to be the fastest growing sector within the UK. The sector is a broad and diverse one, ranging from single amateurs and freelancers, community groups and civil society actors, through micro companies and SMEs, up to multinational organisations. Internationally renowned cultural heritage and memory

institutions including galleries, libraries, theatres and museums, also play a significant role. Innovation and creativity are key to this sector's success, and increasingly it is using intelligent tools, platforms and technologies to create, disseminate, refashion and link content in innovative ways. Possible research problems include: facilitating collaboration across the creative process; translating ideas and concepts across the production chain, from designer to engineer, from inspiration to final piece, director to audience; the creation of intelligent tools to make it easier for expert and non-expert users to generate useful content; the expansion of existing tools or design of new ones to support co-creation involving non-experts and community groups on an equal footing; archiving and enabling the cost-effective linking and reworking of content; enhancing long-term storage and retrieval of content and tools. This theme should build on UK research strengths in the creative process, in areas such as vision, graphics, audio, artificial intelligence, machine learning, HCI, electronic publishing, music technology, film making. Stakeholders and beneficiaries include (but are not limited to) creators of games, film, television, art, literature and mixed media pieces, producers, designers, publishers, storytellers, community and civil society groups, and cultural heritage institutions. Cross-sector beneficiaries of technology and knowledge spillover from the creative industries could include tourism, construction, urban planning, education and retail.

## **2. Immersion in new forms of experiences**

The UK has the potential to become a world leader in using new technologies (including mixed, augmented and virtual reality, audio, non-screen based, immersive, transmedial and new forms of as yet unimagined multisensory content) to provide meaningful new experiences in a variety of contexts from popular entertainment to cultural heritage to connected and/or high risk environments. Work in this area will not be driven solely by advances in technology, but will also require a critical view of the human-machine interface in order to understand how and why these new experiences engage with their intended (and unintended) audiences. Performativity and an understanding of engaging approaches to narrative are key to building meaningful immersive experiences.

The kind of immersive experiences which might be researched could include (but are not limited to) those in the visual arts, performance, curation of exhibitions in museums and galleries, storytelling, interactive media, presentations of cultural heritage buildings, game or game-like experiences. Immersive experiences could also be researched in training and learning environments, in extreme environments (for example that are dangerous for human access, remote or difficult to access) or connected environments enabled by Smart Cities and Internet of Things technologies. Research could consider the design of experiences; the use of immersive experiences to create empathy across and between social groups; interaction mechanisms between audience, experience, and designer/creator; the use of experiences for education and to enhance access to cultural heritage objects. Research problems include: how to create sustainable, scalable, shareable, meaningful and engaging forms of experiences; improved understanding of audience motivation and immersion and the tools to measure this; examining how experiences can be co-created with, or adapt to, its audiences; what are the bases of virtual reconstructions; what role could immersion play in data visualisation; how can a better understanding of our cognitive processes and affective responses increase immersion and inform

design of immersive devices; the critical, epistemological and ethical questions raised by the use of such immersive experiences.

### **3. Big data in content creation and consumption**

Insights from data, about data practices and how data are managed have the potential to inform the creation of a new generation of content. Content creators need better tools to visualise, analyse and extract value from data about audiences and the content they consume. Gameplay and clickstream data provide huge quantities of data which can be used to understand consumer behaviour, and inform design. Issues surrounding large datasets which are “messy”, incomplete, and which sit wholly or partially outside alphanumeric (i.e. sound, video, image, mixed) are particularly difficult and offer research potential. However, there are a number of significant barriers to drawing on experience of big data to create new forms of content. Ethical questions of trust, consent, privacy issues, and individual liberty loom very large in this sphere. A greater understanding of how new tools for data analysis impact on and integrate with human editorial decision is also needed.

Potential research queries include: how can “big” data practices and analytics transform content creation? Can data be used by content producers to make them more responsive to user practices and to tailor their content to audience requirements? What can be learned from content creators such as games studios who already collect and analyse large data sets, and can these lessons change how other content creators work? Where content creators make use of user data, what can be done to improve the confidence in the trustworthiness of the storage and processing of this data? How can the value of the outputs derived from data be tracked, and distributed to those who produced the data in the first place? What are the issues around intellectual property and copyright, within content produced using big data practices? Where data is generated collectively within communities, what new forms of intellectual property are required? Can algorithms be made transparent to audiences, and if so what effect does this have on trust and consent, and what effect does this have on the creation process? Even if data owners consent to their data being captured and exploited, can consent survive data re-use and/or aggregation? There is a general requirement for greater understanding among both experts and non-experts of organisational and user data practices and perceptions, but what specific gains can be made in the fields of content creation by increasing data literacy for example using environments such as eSports and other live events.

Stakeholders include audiences, participants who have contributed their data, organisations holding datasets (for example broadcasters, publishers, museums, libraries, games studios, ESRC Big Data networks<sup>1</sup>) as well as those with expertise in analysing and generating behavioural insight from data including social media and analytics organisations, sociologists and behavioural psychologists.

### **4. Sustainable creative ecosystems**

In response to the digital revolution, economic models and ecosystems in the creative industries are in a state of transition. There has been a transformation

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<sup>1</sup> <http://www.esrc.ac.uk/research/our-research/big-data-network/>

into a world where loosely-coupled flatter organisations collaborate and compete in a more fluid market place. Organisations and teams benefit from the work of freelancers and tighter interaction between fused skillsets<sup>2</sup> covering creative and technical skills. This is partly due to greater understanding of the social and communication skills necessary to collaborate across traditional disciplines, and partly due to the role of platforms that enable the interchange of skills and products as a service. With their low barriers to entry and perceived resilience to technological disruption, platforms can enable new entrants to participate and multiple parties, from individuals and social enterprises to global providers, to collaboratively and rapidly innovate, design, develop and distribute creative content and services. As a result of these changes, our understanding of the economic models and creative process that make up the creative ecosystem is having to be re-written.

Research topics for rapidly realising more sustainable creative ecosystems could include: new organisational models and approaches for co-creation and capture of value; the comparative affordances and effects of place and external reach for content creation; appropriate infrastructure for microbusinesses and freelancers; the role of interstitial creative ecosystems between the established centres; the range of temporary to semi-permanent contracts in content development, such as project and retainer models; the links between creative ecosystems and the manufacturing economy; models for automating analytics-driven outcomes; prosumer and participatory models enabling creation, reworking and mixing of content; open and creative commons models. Such models could lead to, for example, new approaches for disbursement of value to creators and collaborators across an asset's lifetime, development of dynamic content creation platforms for better user journeys; improved understanding of social and cultural impacts, and tools for measuring them; development of common (by sector and region) copyright and licensing systems that reflect collaborative creative processes. Addressing this will require research expertise in software engineering, legal, economics, policy, tax, accounting, organisation, innovation management, service design and e-copyright systems expertise. Stakeholders include among others publishers, creators, intermediaries and media organisations.

## **5. Content creation: inclusion and exclusion**

Communities and groups often crystallise around creation. There are however many different drivers and challenges which face communities in producing and sharing content – from coming together as a group, to issues of creation, to inequalities in access to resources and skills, to passing the content onto the wider world. The making of objects, media, performances, and more brings people together, and joint activity in content creation has the potential to empower communities, drawing different social and cultural groups together, enabling different voices to be heard, and facilitating joint approaches to shared social challenges.

Research questions could include: how can the assets, talents and skills of the UK's diverse communities be made visible and enhanced by the creation of digital content? How can the landscape of digital content best be enriched and diversified by the participation of communities historically marginalised on

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<sup>2</sup> [www.brightonfuse.com](http://www.brightonfuse.com)

grounds of ethnicity, gender, class and disability? What new technologies might be developed by learning from the needs and assets of groups who are rarely involved in content development? What sorts of creative methods technologies (including low cost resources, gamification, visualisation or internet of things) are required to facilitate diverse groups' participation in digital content creation? How can groups who are excluded from creating content be supported and empowered to challenge existing content production practices and create new content; generate new forms of digital content which address exclusion; what issues of sustainability, discovery and preservation for community-produced content have to be addressed; what are the historic and contemporary barriers to sharing of content for community-produced resources; how does digital content inform community self-perception and identity; how might creative content, new forms of data and new technologies extend the range of social and community engagement, particularly for groups with specific emotional, educational or physiological needs or aspirations? What new skills and knowledge are required to enable historically marginalised groups to actively exploit the potential of new content creation platforms, and how can these best be developed?

This theme will build on research expertise in a variety of disciplines which may include (but is not restricted to) cultural and media studies, geography, history, sociology, economics, philosophy, education, disability studies, computational creativity, psychology, artificial intelligence and data science. It is expected that research in this theme will exhibit a wide social engagement with organisations currently under-represented in community, grassroots and disability organisations as well as relevant content organisations.

## **Funding available**

We have up to £5 million available for this call to support around four to eight proposals, subject to the quality of the submissions received. This includes a contribution of up to £1 million from The Arts and Humanities Research Council (AHRC) towards successful projects that fall within the AHRC's subject remit on a project-by-project basis. There is no upper limit to the amount of funds that can be requested per project (beyond the total funds available for the call) and it is up to the applicants to put a justifiable case forward for the value for money and appropriateness of funds and resources requested.

We expect research proposals to be both:

- **Interdisciplinary**

A successful approach to address the research themes outlined above is likely to require collaboration across disciplines. Research proposals should seek to assemble an appropriate blend and balance of disciplines to address the research problems described. We strongly encourage proposals with breadth of perspective and a diversity of research approaches and methodologies spanning the remits of EPSRC and one or more of the DE Theme partners (AHRC and ESRC).

In support of this, proposals should request resources to allow all academic partners to pro-actively communicate and collaborate for the duration of the project. This might include staff exchanges, training, travel and subsistence, workshop-type meetings to bring people together to co-create research programmes, develop and enhance communication networks and disseminate interim findings.

- **Problem-driven**

Proposals should aim to address clearly defined real-world problems and aspirations, either in the long or short-term. Research problems and aspirations should be co-identified with problem owners, non-academic experts or potential beneficiaries. Applicants should look to co-create potential solutions to posed research questions with their partners. We encourage practice-led research that partners with the UK's internationally leading media, publishing, games studios, creative practitioners, community and cultural heritage sectors. Careful thought should be given to the needs of partners within these sectors to ensure that the partnership can deliver. We also encourage an inclusive approach to designing potential solutions that enable diverse users to participate equally, confidently and independently. Information on possible approaches to designing collaborative projects with partners can be found here [https://connected-communities.org/wp-content/uploads/2016/04/Creating-Living-Knowledge.Final\\_.pdf](https://connected-communities.org/wp-content/uploads/2016/04/Creating-Living-Knowledge.Final_.pdf)

In support of this, proposals should request resources for continual engagement with business, policy makers, users and/or the third sector, to support genuine co-creation of research programmes, implementations, prototyping, testbeds and pilots and dissemination of interim findings. Where clearly justifiable, collaborators may be sub-contracted from the grant. Applicants must ensure that expenditure on sub-contracts is subject to robust controls to ensure value for money and propriety. Letters of support are an indication of initial intent, but they should be seen only as the first step and are not sufficient on their own. The Digital Catapult wish to explore opportunities to collaborate with researchers applying to this call, with potential access to a games development use-case for exploring aspects of the "Sustainable creative ecosystems" theme. Applicants are encouraged to discuss opportunities with Paul Durrant [paul.durrant@digicatapult.org.uk](mailto:paul.durrant@digicatapult.org.uk). Finally, we expect collaborative projects to have a collaboration agreement acceptable to all parties to exist before the project begins, to make sure that any IP arising from the research can be managed effectively. We will not become involved in negotiating agreements. Guidance on collaboration agreements and managing intellectual property, including EPSRC requirements, links to Lambert model collaboration agreements and information about sub-contractor agreements for company-funded research can be found here <https://www.epsrc.ac.uk/funding/managing/collabagreements/>.

## **Responsible Innovation**

Research has the ability to not only produce understanding, knowledge and value, but also unintended impacts, questions, ethical dilemmas and, at times, unexpected transformations in social life. We recognise that we have a duty of care to promote approaches to 'responsible innovation' which will initiate on-going reflection about the potential ethical and societal implications of the research that we sponsor on behalf of the taxpayer and to encourage our research community to do likewise. As a research investor, our aim is to build capacity within our research community to discuss and consider social and ethical questions. Therefore we expect applicants to adhere to the Framework for Responsible Innovation (<http://www.epsrc.ac.uk/research/framework/>).

For further information on ethical requirements applicants are referred to the following guidance documents:

<http://www.esrc.ac.uk/about-esrc/information/framework-for-research-ethics/index.aspx>  
<http://www.mrc.ac.uk/research/research-policy-ethics/>

## Equipment

Funding for equipment, as defined here

<https://www.epsrc.ac.uk/research/facilities/equipment/>, cannot be requested through this call.

## Eligibility

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide:

<https://www.epsrc.ac.uk/funding/howtoapply/fundingguide/>

As this call is a targeted funding opportunity provided by EPSRC, higher education institutions, and some research council institutes and independent research organisations are eligible to apply. A list of eligible organisations to apply to EPSRC is provided at: <http://www.rcuk.ac.uk/funding/eligibilityforrcs/>

## How to apply

### Submitting application

You should prepare and submit your outline proposal (and full proposal, if invited) using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should select:

- Council 'EPSRC'
- Document type 'Outline Proposal'
- Scheme 'EPSRC Outline'
- On the Project Details page you should select the [Content Creation and Consumption in the Digital Economy] call.

Note that clicking 'submit document' on your proposal form in Je-S initially submits the proposal to your host organisation's administration, not to EPSRC. Please allow sufficient time for your organisation's submission process between submitting your proposal to them and the call closing date. We must receive your application by **16:00 on 12 July 2016**.

Guidance on the types of support that may be sought and advice on the completion of the research proposal forms are given on the EPSRC website (<https://www.epsrc.ac.uk/funding/howtoapply/preparing/>) which should be consulted when preparing all proposals.

### Guidance on writing the outline application

Your outline proposal should consist of the Outline Je-S application form and up to 4-page Case for Support document. All proposals including multi-institutional bids must be submitted on one common Je-S proposal form by the lead organisation.



The Outline documents should:

- Give an overview of the project, clearly articulating the real-world problem(s) being tackled
- Describe the novel and interdisciplinary research proposed, including a description of the proposed approaches and methodologies and the team involved including any collaborators or project partners and their contributions
- Describe how the proposed research relates to the research themes of the call
- Explain how the outline addresses the assessment criteria
- Give an indication of the total funds sought should a full proposal be invited

We recommend that all documents are converted to PDF files before uploading.

### **Guidance on writing full application**

We will invite outline proposals shortlisted by the panel to prepare and submit full proposals. The closing date for full proposals will be in **mid-October 2016**. Multi-institutional projects should be submitted as a single proposal submitted by the lead organisation on behalf of all partners. We do not accept multiple forms for this call.

As well as the Je-S form, the following documents should be submitted:

- **Case for support (up to eight pages) including**

Two-page track record, which should detail the relevant expertise that each investigator will bring to the research

Six-page description of the proposed research focus and people-based activity streams. This should include a clear statement of the proposal's vision, and how each strand of activity complements this vision

- **Pathways to Impact (up to two pages):**

Primarily for detailing the activities which will help develop potential economic and societal impacts. Please detail how the proposed research project will be managed to engage beneficiaries and increase the likelihood of impacts. You can request any eligible project-specific resources but not general activities funded centrally (for example intellectual property costs, technology transfer office costs). More information on preparing the impact plan and on impact can be found on the EPSRC website at:

- <https://www.epsrc.ac.uk/funding/howtoapply/preparing/impactguidance/>
- <https://www.epsrc.ac.uk/funding/howtoapply/preparing/writing/resourcesimpact/>
- <https://www.epsrc.ac.uk/innovation/publicengagement/innovativeexamplesofpathwaystoimpact/>
- **Justification of resources (up to two pages):**

This should be a narrative description of the need for the resources requested.

- **Work plan (one page):**

It is not expected that this will be a Gantt chart for the whole time of the project, but should include a comprehensive plan for the start of the project and then refer to the management strategy to give appropriate milestones for when important decisions on the direction of the research will be taken.

For advice on writing proposals see:

<https://www.epsrc.ac.uk/funding/howtoapply/preparing/>

## **Assessment**

### **Assessment process**

#### **Outline Proposal – external peer review panel**

An external panel of cross-disciplinary researchers and users from relevant communities will shortlist outline proposals to invite to submit full proposals at the end of August 2016 based on the assessment criteria below.

#### **Full proposals – postal peer review and panel**

Full proposals will initially be assessed by anonymous postal peer review, and if reviews are sufficiently supportive, by an external panel of cross-disciplinary researchers and users from relevant communities in February 2017, who will use the reviewers' comments and the applicant response to make funding recommendations to the DE Theme based on the assessment criteria below.

Applicants are asked to **nominate three potential reviewers (including at least one international or user reviewer)**. Please do not suggest reviewers that may have a conflict of interest. Our policy on what constitutes a conflict of interest can be found here

<https://www.epsrc.ac.uk/funding/assessmentprocess/coi/>

### **Assessment Criteria (outline and full proposals)**

At Outline stage, proposals will be assessed for:

- **Fit to call:**
  - Relevance to the research themes and overarching aim of the call
  - Demonstration of genuine interdisciplinarity. Peer review will assess the balance and appropriateness of disciplines and approaches described
  - Demonstration of genuinely problem-driven research
- **Quality of research, including:**
  - Novelty and timeliness
  - The ambition, adventure and transformative aspects identified
  - Appropriateness of proposed methodology
  - Synergy and added value of proposed research strands

- **National importance over a 10 to 50 year time frame including:**
  - Contribution of proposal to other research areas, societal challenges, success of UK economy, emerging industry. For more information about EPSRC's portfolio and strategies, see our website: <https://www.epsrc.ac.uk/research/ourportfolio/>
- **Potential research impact, including:**
  - Relevance and appropriateness of any beneficiaries or collaborators (e.g. upstream engagement/co-creation)
  - Plans for co-creation, dissemination and knowledge exchange
  - Plans for promoting cross-disciplinary culture

Full proposals will be additionally assessed against the following two criteria:

- **Ability of applicant team to deliver the research, including:**
  - Track record of the team, the leadership quality of the Principal Investigator
  - Balance of skills of the project team and integration of different methodologies and approaches
- **Resources and management, including:**
  - Effectiveness of planning and resource management strategy
  - Appropriateness of resources requested

## Guidance

### Guidance for reviewers

Information about the EPSRC peer review process and guidance for reviewers can be found at: <http://www.epsrc.ac.uk/funding/assessmentprocess/review/>

### Key dates

<b>Activity</b>	<b>Date</b>
Call Launched	26 May 2016
Closing Date – Outline Proposals	12 July 2016
Short-listing Panel– Outline Proposals	Mid-August 2016
Closing Date – Full Proposals	Mid October 2016
Postal Peer Review	November 2016 – January 2017
Assessment Panel – Full Proposals	Mid-February 2017
Funding Decision	March 2016

## Contacts

Jerome Ma, Digital Economy Theme  
Tel: 01793 444117; [jerome.ma@epsrc.ac.uk](mailto:jerome.ma@epsrc.ac.uk)

Tracy Keys, Digital Economy Theme  
Tel: 01793 444306; [tracy.keys@epsrc.ac.uk](mailto:tracy.keys@epsrc.ac.uk)

Claire Tansley, Digital Economy Theme  
Tel: 01793 444540; [claire.tansley@epsrc.ac.uk](mailto:claire.tansley@epsrc.ac.uk)

John Baird, Digital Economy Theme  
Tel: 01793 444047; [john.baird@epsrc.ac.uk](mailto:john.baird@epsrc.ac.uk)

If you experience any problems submitting the proposal through Joint Electronic Submission (Je-S) System please contact the Je-S System Helpdesk, [JeSHelp@rcuk.ac.uk](mailto:JeSHelp@rcuk.ac.uk), 01793 444164.

We would also suggest applicants contact their University Research Office for advice and guidance on writing their proposals, and would remind applicants that clicking 'submit document' on your proposal form in Je-S initially submits the proposal to your host organisation's administration, not to EPSRC. Please allow sufficient time for your organisation's submission process between submitting your proposal to them and the call closing date.

## Change log

Name	Date	Version	Change
Jerome Ma	25 May 2016	1	