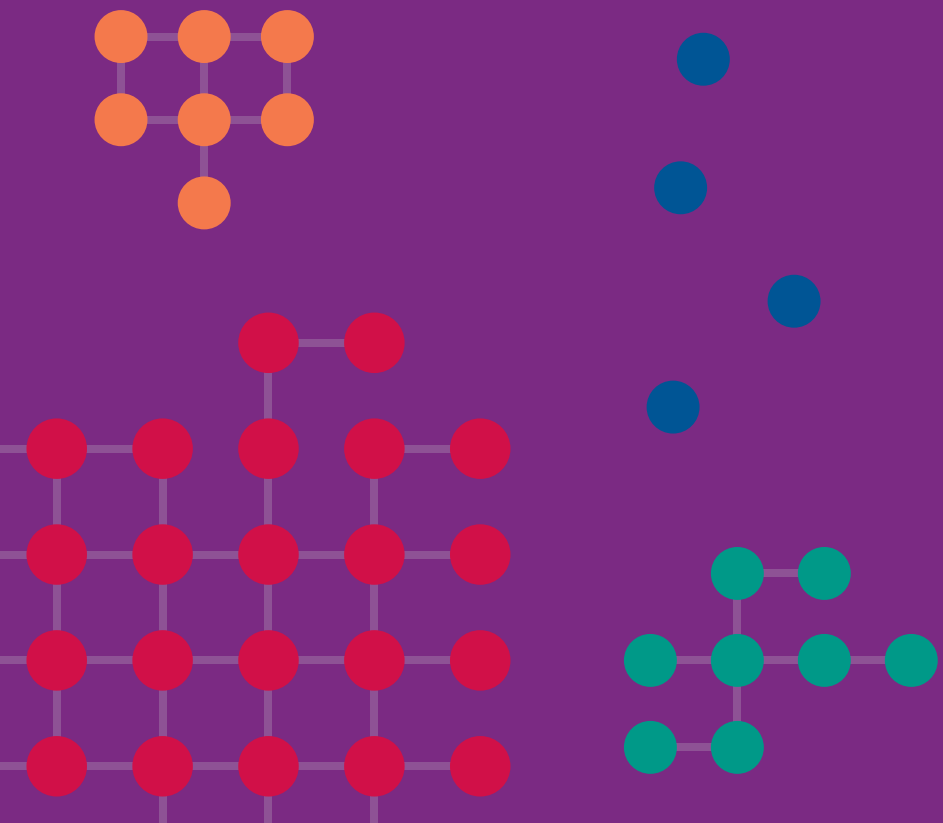
Technology Strategy Board
Driving Innovation

Collaboration nation

Digital Britain feasibility projects



Disclaimer

The entries in this directory were provided by the individual companies. The Technology Strategy Board cannot guarantee the accuracy or completeness of any of the information about the winning projects.

The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life.

Technology Strategy Board

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Introduction

Nearly two-thirds of commercial innovation stems from small companies and they are a vital source of wealth-generating new products.

This directory of feasibility projects we helped to fund provides an overview of the opportunities highly innovative small companies can offer across the UK through their developing technologies. It can also be used to help link those companies to the wider funding community to develop their ideas into new products, processes and services.

Digital Britain feasibility studies

We funded 84 projects across four areas within *Our Strategy for Digital Britain:* access to public services information, applications and services for Digital Britain, enabling technologies, and cost-effective deployment and operation of infrastructure. We invested up to £25k in each project, lasting up to three months.

This directory provides a snapshot of the winning projects and companies so that potential future collaborators, investors and companies interested in open innovation can get to know the companies involved.

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Ambient Performance

Ambient Performance is the one-stop organisation for 'ambient services', offering: ambient mobile – mobile-based interactive services including geo-services, augmented reality applications, optical flow, social networking, mobile games, and ambient performance support; and ambient worlds – virtual world technology based on the SAIC's Forterra OLIVE virtual world platform for simulation and modeling, performance rehearsal and scenario planning.

What is the problem your project is trying to solve?

The public sector has a mission to widen participation in the UK. Mobile phone penetration in the UK and other developed markets is more than 100%, and this is a potential platform through which to deliver public information.

Until now the limitations of mobile devices has meant they were unable to deliver rich and engaging experiences. The arrival of the smartphone means that the public sector now has the platform to deliver information to citizens where they are, when they want it and how they want it. Viz*It (Visualize It) seeks to develop media rich, personalised experiences to enable the public sector to engage with its citizens.

What is the study aiming to achieve?

Viz*It is a generic proof-of-concept study for the deployment of visual mobile services into the public sector. The public heritage market was chosen as an exemplar as it allows Viz*It to demonstrate innovative mobile services in the public space through the use of engaging media – audio, video and in situ augmented reality.

What are the potential benefits?

The market opportunity is to provide a personal mobile visual experience to the heritage visitor market – in the first instance – to enable them to deliver mobile personalized visitor experiences.

In 2005 the UK domestic tourism expenditure for day trips was £44bn. There are 1214 heritage sites in the UK (source: VisitBritain). Today there is now one mobile phone to every two people on the planet. As consumers migrate, so too will the market available to deliver Viz*It experiences. We can expand mobile AR technology into related activities and markets where people carry mobile phones with them.

What do you need to do next – to get closer to a marketable product, service or usage?

We need to build a large-scale proof of concept across a wide range of public sector services in a local authority. While authorities are prepared to part-fund such developments we need further funding – public or private – to scale the existing successful Viz*It project. Funding is needed in the range of £100k to £200k.

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Epimorphics Ltd

The last few years have seen the web evolve towards linking and processing structured information. This web of data enables companies to link their services to sources of information. Epimorphics is a small company, founded in 2009, which provides consultancy, software and services to power and enable the data web.

What is the problem your project is trying to solve?

There is a widely held expectation that opening public data and making it available for use by companies and individual developers will bring significant benefits to UK citizens and the wider economy. However, few significant example applications have been developed, or even proposed. In particular, few of the proposed applications rely on linking together information from multiple sources. We want to explore example applications which more fully articulate the value of linked open data, by designing example services that are only possible through the linking of previously hidden datasets.

What is the study aiming to achieve?

The study aims to refine an initial vision of a service that would exploit linked open public data to help citizens to gain insight into their community, personalized to their interests. One key goal of the study is to gain understanding into potential requirements by interviewing a range of stakeholders. A second goal is to develop a software prototype that puts some of the learning from the exploratory study into a more tangible form, so that we can better understand the core design problems and opportunities.

What are the potential benefits?

Our study will provide a tangible demonstration of the potential benefits from linked open public data. We hope this will accelerate the participation of innovators and developers in providing similar services, with benefits both commercially and for the public good, as well as enabling our own future products.

What do you need to do next – to get closer to a marketable product, service or usage?

Our next steps are to build on this study to investigate and pilot more complete services. Further investigation is needed into both the business models and application domains for such services.

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What is the problem your project is trying to solve?

The UK Government has a vision of providing public access to interlinked sets of data to enable a thriving ecosystem of commercial and public information services. Yet early experience indicates that the linked data, needed to enable such data services to move beyond simple 'mashups', is difficult for typical web development houses to work with. We seek to break down these barriers and unlock the potential of the data for commercial and public benefit.

What is the study aiming to achieve?

Our vision is of a semantic data exchange: an information broker that can enable developers more easily to discover, combine and exploit linked data sets. The study aims to develop an approach, architecture and early phase prototype of such a service. Our approach is based on a way of building web APIs over linked data, developed in partnership with other groups.

What are the potential benefits?

The goal of this project is to enable the UK Government's vision of an ecosystem of commercial and public information services. The benefits of this ecosystem are significant both in terms of commercial activity and public good. Epimorphics will also exploit this work in our future products.

What do you need to do next – to get closer to a marketable product, service or usage?

The next stage is to define a subset of the exchange functionality that can be taken through to piloting. Further investigation is needed into both business models and promising application domains to guide this subset.

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Focus Innovation Ltd

Focus Innovation is a digital media consultancy with experience in identifying, developing and managing R&D collaborations across universities, SMEs and corporate organisations. Our strength rests in the converged media space, and we have over 30 years' combined experience of working with businesses developing content and services across web, TV, mobile and game consoles.

What is the problem your project is trying to solve?

At present if you are watching TV and see some information relevant to you there is no way of easily requesting further information. PBS-Tagger will enable a viewer to tag the moment in the broadcast by pressing the yellow button on their remote control. Information could then be delivered to a viewer's TV home page, email account or mobile.

This would allow public service information to be accessed in concert with commercial services, and would make broadcasters more aware of viewers' information requirements. This could change news broadcasting to have a personalised aspect as future set-top boxes have IP capabilities.

What is the study aiming to achieve?

We are exploring all problems that are faced in trying to deliver a multiple delivery live tagging TV experience. We have explored the user experience through focus groups to assess service demands and user feature sets. We then took these findings to our technology partners, most notably BBC's TV Platforms group, to assess technical difficulties and industry issues in delivering this prototype. This helped us to explore a product development plan and the roadmap for the required technologies, i.e. web-connected set-top boxes. We have attempted to detail user demand and service feature sets, and create a prototype development plan and technology roadmap.

What are the potential benefits?

At present a live TV tagging service could run on the Project Canvas set-top boxes. As the project is set around tagging public service TV, it would meet the requirements of the public service broadcasts within the Canvas Consortia. There are also possible commercial elements to a tagging TV service.

What do you need to do next – to get closer to a marketable product, service or usage?

We are close to specifying the technical plan and are keen to develop a working prototype. If we can secure around £100k in funding, we will be able to have a beta test working across a Canvas set-top box to present to the project consortia partners. BBC's TV Platforms group has expressed an interest in assisting in the development of this service.

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Hypertag

Hypertag is an award-winning global proximity marketing technology and service provider connecting consumers' mobile phones to content based on their proximity to a location. Hypertag delivers essential information where it is needed most, including vouchers, applications and useful information.

What is the problem your project is trying to solve?

We want to investigate a better way to provide context-relevant audio or visual public information messaging on users' mobile devices. We have a potential solution that can provide information that is personal to the user, relevant to their exact location and personal circumstances, and requires very low investment in network infrastructure by exploiting readily available technologies.

For example, a blind person's every-day mobile phone might be used to deliver messages about information that is directly relevant – such as obstacles and hazards that are nearby, and where the toilet is – by linking the person's location to information that might be relevant. It would overcome many of the problems with current systems, and would be suitable for more widespread deployment.

What is the study aiming to achieve?

A detailed report analysing the needs of disadvantaged communities, what products and services are already available with their benefits and limitations, key stakeholders and decision makers, broader market potential and revenue generation opportunities, global market potential, new technology innovations, analysis of technology concepts to meet the identified needs, and a roadmap to realisation. In addition to this report it would be expected to deliver a prototype, and to have identified a consortium of key industry players to drive this concept to initial deployment within 18 months.

What are the potential benefits?

As an example of one disadvantaged group that would benefit: there are 1.7 million blind or partially sighted people in the UK and 180 million worldwide. Systems exist which cost upwards of £2,000 per location. We expect this system to cost substantially less, and even if we were to charge the user for the improvement in their life, we could reasonably charge a few pounds per month for the service, which could translate into a £1bn plus global industry.

What do you need to do next – to get closer to a marketable product, service or usage?

We would like to create a working prototype to trial with real users in Norwich, to enable us to refine it for commercial launch. The cost to produce the prototype will be about £300k, mainly to write the software.

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Overlay Media Ltd

Overlay Media was formed to enable the creation of next-generation, mobile applications. These applications are context-aware – they can automatically determine qualities characterising their operating environment and can thus provide a richer mobile experience. One of the most important forms of context is location, which opens up a vast expanse of possibilities for services.

What is the problem your project is trying to solve?

Whilst mobile phones have become a pervasive technology for citizens, Government and local authorities have yet to seize the potential of mobile access to provide real-time, interactive, location-aware information and services to customers. Our idea is to develop a location-aware framework for the provision of two-way mobile access to public services, which can demonstrate potential for efficiency savings, inclusion and improved service delivery, and has the potential to be scaled up to meet the needs of all local authorities.

What is the study aiming to achieve?

In the feasibility study, our focus will be on gaining a better understanding of the following: public perception, barriers and acceptance; drivers and incentives to encourage take-up and sustained use; advantages and disadvantages of the mobile platform, e.g. use of location-based services; implementation processes – interfacing with common LA CRM systems such as Lagon; potential for local authority efficiency savings through eradicating duplicate reporting of incidents, automated response and update alerts; likely impact on citizen satisfaction; potential for digital inclusion through use of low-cost (non-GPS based) locative technology; scope for broader implementation – for example, with GP catchment areas to be ended within a year this type of application could enable a user to find GPs close to their current location and book an appointment. Equally, access to live public transport information could be made freely available.

What are the potential benefits?

The primary benefit relates to cost and efficiency savings.

What do you need to do next – to get closer to a marketable product, service or usage?

We will require further funding (amount to be decided) to enable us to move towards a production release.

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Sidekick Studios Ltd

Sidekick Studios is a social innovation company. We have seven staff and an annual turnover of £350k+. We were set up in 2009. We mix the internet, design thinking and creativity, in modest attempts to save the world. We put a writing robot in Parliament. We developed tech to combat censorship.

What is the problem your project is trying to solve?

Our aim with 'the social library' project was to provide a toolkit to communities which allowed them to construct usable services from local council data without programming knowledge, in the form of a type of community noticeboard, aggregating information from the local area, community groups, organisations and groups and the local authority.

This noticeboard would become a hub and central point for anyone who wished to see what was taking place in their local area, and be open to both the local authority and grass roots groups. It would increase access to, and the use of, local council data, to build and strengthen local communities.

What is the study aiming to achieve?

We started looking at what services were available from local authorities – what was digitally available in the way of forms, websites and online services, and what was available in the way of web services or APIs – which would allow us to connect to these data streams automatically to start reformatting information. We examined their position on making that data freely available for reading by other machines and the formats in which that data was provided.

We also worked with users to identify their requirements. Finally, we investigated what was happening as part of the broader data.gov.uk initiative and connected with the community working in this area.

What are the potential benefits?

Several research studies have put the decline of social capital and fractured communities at the heart of the costs of street crime, vandalism and insecure lives. It is impossible to put a number against the cost of dysfunctional communities, or conversely the benefit of increased social cohesion, but plenty of studies have linked strong communities with happiness, security and levels of trust.

What do you need to do next – to get closer to a marketable product, service or usage?

With £50k we can build the API required for our local community service. We have found a potential partner in London Rebuilding Society, which is a social enterprise that would potentially match-fund the development of the service.

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AIDC (UK) Ltd

AIDC is a not-for-profit technical consultancy focused on technology innovation. We help organisations benefit from the application of innovative technology. We have a particular focus on the application of digital technologies in areas such as intelligent communities and smart cities.

What is the problem your project is trying to solve?

The problem is one of applying smartcard technology to deliver improved accessibility to public service information for users with various physical, cognitive or learning disabilities. It is significant that many age-related disabilities can affect vision, hearing, hand–eye co-ordination, mobility and cognition, all of which can affect a citizen's ability to interact with ICT systems.

Disability and cognitive impairment show increasing frequency with ageing. Various studies have shown that some 20-25% of people aged 70 years plus will suffer cognitive impairment without dementia. This presents a major cost to UK health and social services.

What is the study aiming to achieve?

The study is to test the feasibility of developing a system to deliver information in different formats, (principally screen-based) depending on the needs of the user. For example, if the system recognises that the user has a visual impairment, it might present the information in an audible or large-screen format.

A smartcard will hold details of the disability and user adjustments required, and the client-side or server-side disability aware applications will repurpose the content to better suit the needs of the user. So that when a smartcard which has been programmed with specific user requirements is presented to the user interface, the system recognises both the information needs of each user (e.g. whether they want travel information or benefits information) and any communications restraints they might have (e.g. visual impairments or learning disabilities). The system then presents the information in the most appropriate manner.

What are the potential benefits?

If successful, the impact could be considerable in bringing enhanced social inclusion to cities within the UK. We are working with Barnsley MBC to ensure that user needs are central to the system for public information systems and the like.

What do you need to do next – to get closer to a marketable product, service or usage?

We would want to contact the RIEP and/or other UK local authorities to harness additional funds to test the system in a real live environment.

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AIMES Grid Services CIC Ltd

We are a spin-out company from the University of Liverpool with a turnover of £1m and employing 16 people in the UK. We develop and operate highly efficient and cost-effective data centres. In addition we develop, in the UK and in China, complex applications delivered as SAAS.

What is the problem your project is trying to solve?

We are an asset-locked not for profit distribution company and we have developed a robust digital inclusion model which uses our data centre capacity to deliver internet access and computing via a managed service with a thin client interface (and appropriate 'last mile' technology) into areas with a high index of multiple deprivation.

The problem is to develop income streams which cover the ongoing revenue expenses of delivering the service. The challenge is to create an effective interface which lowers barriers to usage, integrated with billing and payment methodologies which are acceptable and workable.

What is the study aiming to achieve?

The study is addressing the feasibility of developing a business model which will allow the ongoing revenue cost element of the service to be free at the point of delivery. AIMES is studying the feasibility of developing a non-text-based, simple pictorial interface to the home-computing service which will reduce digital exclusion by lowering the IT/literacy skills barriers, currently evident in areas with high indices of multiple deprivation, provide cost savings to service providers and end users, and contribute to ongoing sustainability and expansion of the service by integrating asynchronous and bespoke (service provider/client) micro billing.

What are the potential benefits?

The current national digital inclusion strategy does not adequately address the needs of the elderly, housebound and other digitally excluded groups. Providing managed services removes the technical barriers to entry by eliminating the problems of connectivity, security and complexity, thus enabling enhanced communication with public, private and third-sector providers of goods and services. Current estimates, based on an average of 5000 homes per council area, give a potential market size of £95m.

What do you need to do next – to get closer to a marketable product, service or usage?

We are in the process of producing a high-level product definition and costed project plan for the development and beta testing of a prototype interface. Initial indications are that this will result in an additional external funding requirement which will be quantified when the feasibility study is completed.

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Apollo Mobile Ltd

Apollo Mobile is a UK-based mobile technology company that has developed its own proprietary software, RE4CTOR, providing full real-time interactivity on most of the world's 4.5 billion mobile handsets, enabling a consistent experience across all platforms, and empowering rich handset functionality, easy-to-manage content delivery, full user metrics, and secure mCommerce.

What is the problem your project is trying to solve?

Just as the internet brought the retail revolution of eCommerce, so too will mobile application systems extend its scope and functionality. The opportunity is significant – last year in the UK the eCommerce market generated sales of £60bn. However, the high cost of operator-led mCommerce (premium SMS solutions with transaction fees up to 50-60%), and the unreliability of WAP payment systems (including Mobile PayPal), has severely stunted growth.

What's missing now is a simple, secure and low-cost system that can work both as an mCommerce platform and as an easy-to-use mobile payment service. Apollo intends to provide this solution.

What is the study aiming to achieve?

Apollo is determining the feasibility of developing a secure pay-as-you-go mobile payment platform for users with and without credit cards – i.e. an mCommerce system to directly address the obstacles as described above. Because the Apollo system will be based on our own proprietary RE4CTOR technology, it will be able to run cross-platform – i.e. on all types of mobile handset (iPhone, Blackberry, Symbian, Windows Mobile, Android, Java etc). The envisaged system architecture will also allow us to entirely circumvent the need for the customer to pay via premium SMS.

What are the potential benefits?

If the Apollo Payment Platform is successfully brought to market, it has the potential to enable users to pay for services using cash paid into pay points located throughout the UK, transforming the mobile phone into a payment platform that can serve a wide range of constituencies, even including the unbanked.

What do you need to do next – to get closer to a marketable product, service or usage?

We have built a pilot version of the platform that has already been used by EMI to generate revenues from live concert audiences. With a further £50k we could develop a fully-working beta version; we are particularly interested in building relationships with enterprises and/or public service organisations who could become customers.

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Avanti Communications Ltd

Avanti is a young and dynamic UK company with 70 staff. We have 14 years' experience in the satellite industry and provide broadband services across Europe. Listed on the London Stock Exchange (AVN), our first satellite, HYLAS 1, will launch in the second quarter of 2010. HYLAS 2 will follow in 2012.

What is the problem your project is trying to solve?

New generations of mobile networks capable of supporting ever-higher data rates generally result in smaller and smaller cell sizes and increasing problems of in-building penetration. Since 50% of mobile usage is based either at home or at work, coverage problems will become increasingly common.

Femtocells have been developed to provide localised network via a low-cost device which provides in-building coverage. In rural/remote areas users often suffer from lack of DSL, and such regions are increasingly serviced by a new generation of bidirectional satellite broadband. The challenge of the IRONS project (Integrated Rural brOadband NetworkS) is to deploy femtocells, making use of the satellite broadband network as its backhaul.

What is the study aiming to achieve?

According to the Digital Britain report, more than 2 million homes in the UK cannot readily receive a 2 Mbps USC through fixed-wire line technologies. If IRONS is successful it will enable provisioning of mobile 3G connectivity and high-speed internet to UK consumers and businesses using a single broadband infrastructure. Our initial analysis shows 6 million addressable households in the UK today are without access to 2 Mbps broadband or decent mobile coverage, where about 1 million households are potentially 2 Mbps satellite broadband customers.

What are the potential benefits?

Three consumer segments and SMEs identified will benefit from this service, which accounts for half of the addressable market. This is justified given the survey conducted by UK Consumer Market Survey – 33% of UK home and business users have regular mobile problems where approximately 18% have mobile 'not-spot' problems.

What do you need to do next – to get closer to a marketable product, service or usage?

Femtocell hasn't been tested for deployment in rural areas, and a pre-operational trial will help de-risk commercial roll-out. The project will require the following partners: ISPs, mobile vendors and operators, customer support and regional development agencies. The project trials shall run for a year and will require a total project cost of £1m.

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Backbone IT Group

We are an internet marketing and web development company. We have 30 staff in Lancaster, UK, and Nanjing, China. Through our expertise in online marketing and web software development, in addition to existing business, we look to penetrate Western and Chinese business and retail markets with targeted online services.

What is the problem your project is trying to solve?

In the theatre and performance industry, take up of digital technologies to create new revenue possibilities can be slow due to predominance of traditional methods, lack of general knowledge within the industry to tackle issues needed, and lack of any leading organisation to front change and overcome barriers inherent within the industry as a whole. Our study is to investigate the barriers to adopting digital technology for performance streaming within the theatre industry and the technological barriers and investment needed to enable a take up of a digital streaming system.

What is the study aiming to achieve?

We are developing a prototype system to enable theatres to stream content digitally to online audiences once a live venue's seated capacity has been exceeded. The system is to protect artists' rights in providing a secure platform for content delivery and a unique ticket code system to maximise revenue generation. The study also aims to provide answers from within the theatre industry as to desirability of features of such a system and the commercial viability of the project beyond the study.

What are the potential benefits?

Presuming an online price of 50% the live performance, capturing 20% additional sales of the total theatre market online would equate to £260m in additional revenue. This figure does not include performances in stadia or outdoor events. Our intended company take of any system would be 10% to include payment processing.

What do you need to do next – to get closer to a marketable product, service or usage?

Partners with bandwidth and content delivery network skills and capabilities will be needed along with those with performance industry contacts. An additional £100k would enable the development of a scalable, deployable system capable of undergoing full testing and, if successful, taken to market.

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BAFTA

The British Academy of Film and Television Arts (BAFTA) supports, develops and promotes the art forms of the moving image by identifying and rewarding excellence, inspiring practitioners and benefiting the public. Our R&D initiative, Digital Gold, is focused on innovating technologies and business models to drive digital media archive excellence.

What is the problem your project is trying to solve?

Project RIGHT SOURCE tackles the dual problems of content owner rights and source media quality. Today, analogue media passes through many hands to reach the market: post-production facilities, remote sales representatives, distributors, web aggregators and broadcasters – each representing risk of loss of quality and uncertain rights handling.

The impact of the project will be to increase confidence in the digitisation process, and reduce the cost of digital asset management substantially, with the result that more content owners will make their entertainment assets available for licensing and access. The focus is initially on 'back catalogue' content, and providing a new service to content owners.

What is the study aiming to achieve?

The feasibility study is investigating key technical and business model issues in support of the future planned service. These include: prototyping a 'collection manager' application for collaborative, networked media management; exploring the technical design and business potential for a collective registry, delineating rights and quality for media titles; and investigations of the financial and computing performance of digital mastering technologies, in order to establish a trusted and reliable set of metrics.

What are the potential benefits?

In the long run it is envisioned that the new service will be able to act as a licensing and media management hub for content owners, aggregation partners and audiences directly. It is aimed at worldwide markets, reducing the burden of navigating the 50 million+ unique hours of professionally produced back catalogue content currently held in analogue form in vaults, and allowing this to reach audiences.

What do you need to do next – to get closer to a marketable product, service or usage?

We plan to roll out the project through a series of organic and investment-supported growth stages. Both financial and industry partnerships will be valuable in this process.

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What is the problem your project is trying to solve?

Project TRACTION addresses a problem shared by content owners and audiences alike: powering the discovery and consumption of content from the 'long tail' of back catalogue film and television titles.

Today, audiences face a daunting prospect of navigating the millions of hours of professionally produced titles to reach beyond current 'hits' to discover back catalogue content of genuine interest. This means that an extremely low percentage of media and entertainment industry revenues accrue to back catalogue content, and this lack of traction puts valuable content at risk, and limits investment in digital preservation and access.

What is the study aiming to achieve?

Information and knowledge about back catalogue film and television titles is spread among many sources beyond the present content owner: original production teams, industry insiders, reviewers, researchers and past audiences. The project aims to bring together an industry community in a collaborative social network, in the long term, creating a 'kinetic engine' in which the energy and information generated by the social network can fuel audience traction for content.

The study aims to test our hypotheses for the project, creating a prototype and gathering initial user feedback, and to develop a business plan for commercial development.

What are the potential benefits?

We aim to make a direct impact on market share and size for back catalogue titles, providing an incremental revenue stream to rights holders, supporting further investment in content. It is envisioned that these activities will take the form of a social enterprise, contributing to the BAFTA charitable remit.

What do you need to do next – to get closer to a marketable product, service or usage?

We plan to roll out the project through a series of organic and investment-supported growth stages. Both financial and industry partnerships will be valuable in this process.

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Calvium

Calvium is a start-up formed in 2009 that is developing a platform and tools for publishing mobile applications based on sensors and context. The platform, scheduled for release in summer 2010, is designed to allow creative but not necessarily technical people to create rich media experiences for mobile devices like the iPhone.

What is the problem your project is trying to solve?

The problem with location-based information is that different voices such as public information, community interests, historical facts and events are all published through different organisations and different media, making it difficult to find relevant information about where you currently are when you want it.

The study is significant because it researches and prototypes a practical and achievable means for solving this problem by creating a platform to allow diverse groups and individuals to easily contribute location-specific stories, facts, events or news into a nationwide aggregation template and distribution service. This service is called Joined Up Britain.

What is the study aiming to achieve?

The study will deliver: a blueprint for a nationwide location-based tourist authoring, publishing and aggregation service that could be rolled out in time for the 2012 Olympics; an understanding of the problems that would need to be overcome to succeed; and a consortium of principal players in the value chain who could deliver the idea. The study will engage with stakeholder representatives to understand their needs and opinions, design and prototype elements of the platform in particular the aggregation mechanics and authoring templates, investigate business models, and outline a roll-out and development plan.

What are the potential benefits?

The service should appeal to tourists, who will be the initial market sector. Whilst the basic service might be established as a not-for-profit free public service there are opportunities to add premium layers, which users can pay for. The platform would facilitate inclusion of community or company-authored content, opening up opportunities for wider markets such as the arts, retail, environment, sports and leisure.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £50k we can build a pilot in Bristol. With a further £250k we can build a scalable nationwide platform – we would also need a partner or further funding to run a nationwide community engagement campaign to ensure we reach our vision of ‘a voice in every village, a tale on every street and a nationwide experience’.

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Cartezia Cambridge Ltd

We build technology businesses, with a particular emphasis on early-stage ventures. Most of these businesses lack the resources to monitor and evaluate markets, technologies and the processes crucial to the development of early-stage businesses, which our Catalyzt service is aimed at addressing.

What is the problem your project is trying to solve?

Our project: a semantic approach for handling unstructured data for continuous integrated b-to-b publishing. Identifying, classifying and packaging this knowledge in a simplified format for use by technology companies is a hard thing to do, given the volume and types of relevant information. The cost-effectiveness of this would be dramatically enhanced if automated tagging techniques were available, which can handle different content formats, including digital video streams.

What is the study aiming to achieve?

The study is aiming to identify and test automated tagging technologies based on semantic approaches to data classification.

What are the potential benefits?

Significant new revenues could be generated by creating knowledge-based services which enable real-time contextual information capture, packaging and delivery.

What do you need to do next – to get closer to a marketable product, service or usage?

We are building a practical test-bed based on additional investment. We are looking to identify partners who can provide additional relevant content that could be packaged in this way. We are also looking at potential distribution partners for the service when it is ready to launch.

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CherryPath Systems Ltd

We are a technology business developing mobile applications. We have four members of staff. We were established in September 2009 and are a pre-revenue business – however, we aim to have a turnover of more than $50m within five years.

What is the problem your project is trying to solve?

There are limitations to customer experiences due to the level of user-centric and bespoke content which can be delivered to the customer. We want to develop a platform which will enable companies to engage with their customers and deliver customer-centric content, based on the customer's location, demographics, interests etc.

What is the study aiming to achieve?

We are developing a prototype technology for the tourism market, called a visitor management system, which will track a visitor's location and correlate their location with pre-collected interest and demographic data, to provide customer-centric content to them. The study is aimed at establishing the technical and commercial feasibility of this technology.

What are the potential benefits?

We have calculated a market opportunity in excess of 21 million individuals in the UK alone who would be in the market for our technology. We have also identified significant environmental benefits through reduction in printing and paper waste, and considerable employment opportunities for the UK workforce, as we will be looking to employ a team of diverse abilities and skill-sets.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £250k we will be able to build the technical team to develop the finished product and beta-test it in a live environment. We also need to build a relationship with a tourist attraction – such as a large theme park, zoo or museum – where we can conduct the beta-test to establish the genuine commercial opportunity and technical deliverability.

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Clever Plugs Ltd

We are a start-up company that makes software for TV and film production. We make it easier for production teams to create broadcast graphics, particularly in 3D and real time.

What is the problem your project is trying to solve?

Our project: an open web and software platform for collaborative communication during television post-production (save-to-web). This presents many possible benefits but presents logistical and workflow difficulties to current practitioners. We believe that TV and film production could take up these benefits through relying on a future web-based lightweight file-management backbone.

What is the study aiming to achieve?

We are working on developing a web-based file-management system for broadcast production. Our study aims to understand the problems and fears that are discouraging current TV producers from moving to 'fully tapeless acquisition' and what initial tool would help their way, and to prototype and test this.

What are the potential benefits?

Remove redundant file management and security activities, by sharing knowledge of digital media across multiple locations. Enable third parties to deliver services efficiently using our backbone.

What do you need to do next – to get closer to a marketable product, service or usage?

With six months' funding, we could develop, launch and do direct marketing of an initial (subscription-paid) tool, but ideally we would like to work with an industry partner and secure 18 months' funding to allow us to develop the structure for the third-party enabled 'open' asset management service. We are currently looking at the most effective ways of getting our products to market and in meetings with clients, distributors and high-level consultants – more work here is needed.

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Curling Consulting

Curling Consulting offers leading business advisory services for global players in electronics, from technology developers to business-led end-users. Current foci include new market applications enabled by revolutionary printed/plastic electronics, including interactive displays. Wayside MPD is active in localised media delivery via radio-frequency networks, and in media management and distribution.

What is the problem your project is trying to solve?

The study covers the feasibility of a low-cost ubiquitous interactive personal device (Gateway Navigator) that can be issued to all attendees of large events, guaranteeing communications and information services. Early studies focused on the 2012 Olympics, but this concept/device is relevant to any area or event with large numbers of international individuals.

This device need results from the fragmented service platform across mobile phones. Navigator will provide localised and user-profiled content sensitive information delivery and visitor guidance relevant to both the user (language, specific interests) and location (guidance, public announcements), as well as carrying sponsored advertising and commercial services.

What is the study aiming to achieve?

This study on the Navigator is assessing end-user platform acceptance, the best route to market and the most effective business model: user/sponsor acceptance; identifying any immediate market opportunities for the concept and platforms which would permit initial development. Such devices can be built and the delivery infrastructure is viable now with current technology. This study aims to find out when device costs and market opportunities will converge, given the rapid pace of technology development.

What are the potential benefits?

The products and services under consideration are driven by: desirability of highly localised and flexible media/information delivery both for public services and commercial/business activities; and the increasing fragmentation of the mobile phone hardware/software platform and network delivery. In the Olympics example, the estimated market is about £20m-30m before the added value to sponsors and advertisers is included, which may subsidise the unit cost. It is not unrealistic to seek revenues of at least £5m-10m within 3-5 years and possibly 10 times that from the UK alone.

What do you need to do next – to get closer to a marketable product, service or usage?

Partner needs going forward include project/company finance and, in the 2012 Olympics context, potential sponsor/partners: consumer focused hospitality and media advertising agencies/partners facilitating media and technology interaction. Project scope implies that only major players are likely to be of benefit to, and able to benefit from, this project.

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Di8it Ltd

We are a unique digital agency specialising in user experience research and human-centred design. We have expertise in web, digital TV and mobile devices, supporting you from initial concepts through prototype to polished design. Our aim is to help you create enjoyable products, engaging services and grow compelling experiences.

What is the problem your project is trying to solve?

Investment in technology is considered one of the highest capital investment needs in voluntary sector organisations (VCOs). At present the need for technological investment surpasses the need for investment in infrastructure and programme development. Many VCOs find it challenging to adopt technologies into their workflow and their organisation.

ICT offers huge benefits and opportunities for the voluntary and community sector. ICT can transform the way an organisation manages its operations, unlocking potential in the data and information it holds, ensuring that it makes the most of this valuable asset to achieve its goals. Effective use of ICT can enable VCOs to attract new audiences and deliver more efficient and effective services to their beneficiaries through the use of databases, websites, email, wikis, blogs and more.

What is the study aiming to achieve?

We are developing a prototype called Desk Slice. This is a cloud computing platform that embeds the 'web orientated' model for sharing in the centre of the desktop experience, demonstrating a new way to integrate the desktop and the web. Desk Slice gives non-profits a virtual desktop that can be accessed anytime and from everywhere – there is no need to install any application on your local machine, everything can be accessed through web browser-enabled devices (such as the computer or phone).

What are the potential benefits?

Desk Slice is designed to address the unmet need of organisations operating in the third sector. It enables VCOs to more easily overcome some of the challenges of adopting technology, creating savings in money, time and human resources. Desk Slice allows organisations to work more efficiently and be more productive.

What do you need to do next – to get closer to a marketable product, service or usage?

We have established a strategic partnership with a research partner and a technology partner. We would like to seek the required funding to build a prototype that will allow us to demonstrate our concept practically.

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ENRIA Ltd

ENRIA is developing technologies that use various communications systems to enhance user interactivity. Existing communications infrastructure is highly under-utilised. By creating new applications, ENRIA intends to offer value-added information, transaction and entertainment services to its customers.

What is the problem your project is trying to solve?

Money transfer systems remain expensive, with brokers charging a significant premium for access to a universal infrastructure. This particularly impacts the unbanked and poor. Credit card companies have ignored this market due to anti-money laundering (AML) and fraud concerns. This legitimate market is a significant opportunity if a system can be developed for the transfer of small funds, within a secure infrastructure and with due considerations to prevent fraud.

Several successful solutions have emerged in the developing world. The challenge with the UK market has been that none of the parties – communications operators, banks and card schemes – has agreed on common standards or costs. ENRIA is exploring a technology which can create a platform for services to be offered independently of these operators but using the existing communications infrastructure.

What is the study aiming to achieve?

ENRIA has developed embedded software that resides in payment card terminals and clears a voucher presented by the customer. This may be in the form of a number code, which is then verified on a central server and settled. This project is to demonstrate the feasibility of a complete system that can issue, transmit and settle vouchers from one individual to another, address concerns about AML and fraud, and demonstrate a robust architecture through testing.

What are the potential benefits?

This solution could have a significant impact in the retail market in the form of a stored value gift voucher transfer system. This could help get rid of eco-unfriendly and consumer-unfriendly plastic cards and paper vouchers. This would benefit the consumer and allow retailers to offer value-added solutions. Once the application is established commercially, this could be rolled out as an e-money system.

What do you need to do next – to get closer to a marketable product, service or usage?

We are looking for angel investors to help us access the retail market as well as offering equity to develop the solutions further. We welcome individuals with expertise in card processing and payment terminal software, as we will be executing integration projects.

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IceRobotics is a 10-person company, formed in 2002 to address emerging global opportunities in dairy farm automation. Its first product was a 3D vision sensor for use in robotic milking, and it has since developed a 3D motion sensor for attachment to livestock to provide automated health and welfare monitoring.

What is the problem your project is trying to solve?

Where sensors are currently used in livestock monitoring, the arising data cannot easily be shared among the interested parties in the dairy industry supply chain. This project explores the feasibility of a Digital Dairy Farm, using electronic sensors and wireless communication to create a smart data-driven digital environment for automatically monitoring animal health.

This will enable continuous collection of data on each animal in the dairy herd, reducing herd management costs for the farmer, and providing government agencies, farm advisors and milk buyers with remote access to this data for disease prevention and welfare monitoring purposes.

What is the study aiming to achieve?

Through a technology test-bed on a farm in Scotland together with focus groups and interviews across the UK dairy industry, key barriers and challenges have been identified in relation to the Digital Dairy Farm concept.

To address these, a data management solution is proposed that involves on-farm data processing with centralised presentation of results, creating a new gateway to enable the development and testing of new advanced algorithms for interpreting the meaning of changing behaviours. This has huge potential implications for improving animal welfare and providing early warning of infectious diseases.

What are the potential benefits?

If dairy farming disease incidence was reduced by just 15%, the annual saving on an average UK dairy herd would be £4200, or £69m annually across the 16,400 registered dairy holdings. The same level of saving would equate to €966m on dairy farms across all EU member states.

What do you need to do next – to get closer to a marketable product, service or usage?

With a £450k investment a fully operational beta system could be implemented for early warning of health and welfare problems for 2000 cows from a representative cross-section of UK dairy farms, providing a full practical demonstration and appropriate web interfaces for farmers, farm advisors, milk buyers, and relevant government agencies.

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Imense

We license a range of image retrieval and visual content analysis software. We are keen to work with partners to develop custom applications.

What is the problem your project is trying to solve?

Automatic content identification to automate video workflows. We developed a skeleton video search and browsing tool as part of the study on market assessment and work flow design for commercial content based video management.

What is the study aiming to achieve?

Identify where Imense's existing image content identification and retrieval technology can improve the efficiency of existing video workflows.

What are the potential benefits?

Save operators time in performing tasks. Examples might be the finding and blurring of faces in video for privacy reasons, or allowing similar clip search for video production.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £50k we would be able to turn our skeleton video search and browsing tool into a more fully featured post-event security video search application. This would include a face extraction and clustering tool as well as the ability to search for repeated instances of a strongly patterned (or shaped) object. We would require a UK police force or department to tune the functionality of such an application to their needs.

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ixPocket mobile apps

Founded in 2003, ixPocket is a small mobile application development company that specialises in creating mobile apps for platforms such as iPhone, Android, Blackberry and Symbian. Our typical clients are interactive digital agencies, mobile start-ups and public transport organisations.

What is the problem your project is trying to solve?

For many people in the UK the mobile revolution never really happened, as they are unable to use a standard mobile phone interface to make calls or send text messages without assistance from another person. A principle cause of this is lack of dexterity on behalf of the user (or interfaces designed without sufficient consideration for people with a dexterity impairment).

Severe dexterity impairments can result from a number of different conditions: cerebral palsy, arthritis, spinal cord injury etc. We believe that with today's technology, these barriers to autonomous communication (and related constraints on independence) can and should be removed.

What is the study aiming to achieve?

We are defining the user requirements for a more accessible mobile phone interface by engaging with the disabled community. Those requirements are feeding into an interface design that will make the most of the hardware capabilities that are available on the modern mobile phone, including the touchscreen (not simply tap, but also gestures such as drag left for example), the accelerometer (the phone can simply be bumped to indicate an instruction), the microphone (blowing on a microphone can be detected) and the light sensor/camera.

What are the potential benefits?

Quality of life impact for around 300,000 people in the UK currently unable to use a mobile phone. At a highly competitive £5 charge for each download, potential European market of £14m. Strategically, the chance to move ixPocket from a 100% services company to one which also has a product line.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £50k we would be able to produce a functional beta app and run a limited user trial with real handsets. Partnership with a university or relevant charity will be important to gain sufficient access to potential users of the system; we have made some initial contacts with this in mind.

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KSL Consultants

KSL Consulting provides strategy, management and technology solutions within the digital and retail sector. KSL offers an ethical approach in management and strategic consulting, technology integration and delivery. In addition, we develop innovative new online services (Digital Delicatessen Ltd and Whatsmysize.com).

What is the problem your project is trying to solve?

The Technology Strategy Board allowed us to test if suggesting clothes based on the customers' measurements would be of benefit to the British public and in turn the retailer. Hugely significant, because it is a brand new approach to retailing, which we can show has considerable demand.

What is the study aiming to achieve?

We developed Whatsmysize.com, where one can search for clothes directly on the site according to item, colour, shop and price. The potential customer selects what she wants from the drop-down menu, and Whatsmysize.com displays a selection of items in her size according to the personal measurements saved in her account.

What are the potential benefits?

It has been anticipated by the Said Business School that the annual growth rate of retail online spending will remain a constant 14% until 2012 undisrupted by the economic crisis. Yet a study published in the Guardian in 2008, which measured 10,145 women aged 12 to 70, showed that more than 40% had problems finding clothes to fit. Women taking part were happy with their bodies, and 86% were what the World Health Organisation calls 'healthy'. Our own trial before this project involved creating a lightweight Drupal website, which showed a huge demand for a service that resolves these issues.

What do you need to do next – to get closer to a marketable product, service or usage?

Corporate governance: legal guidance for our consortium. Business development: business angel investment would mean that new retailers could be brought onboard including from new markets. Technology: software specialist partners could move the current proof of concept to a fully fledged service. We are keen to move to a more social network approach such as customer tagging. Marketing: a marketing and press relations specialist would fill a gap in our knowledge and help get our service out to a bigger audience.

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Matter 2 Media supplies consultancy and technology to the mobile and digital media industries, aimed especially at media for city spaces. It was formed in November 2009 and has one member of staff. In the next five years it aims to expand considerably to provide services for widely accessible digital media campaigns.

What is the problem your project is trying to solve?

The study is investigating how to provide location-specific content in urban spaces such as retail, leisure, social, civic and transport, in such a way as to satisfy the needs of three stakeholders: users (visitors to those spaces), space owners, and 'campaigners' – content providers, advertisers and brands who want to reach their market by targeting selected types of spaces.

What is the study aiming to achieve?

We are developing a prototype of Krstl, a network for delivering location-specific content to mobile phones in urban spaces such as retail and leisure.

The project objective is to investigate: (1) What types of physical design will enable Krstl to be embedded in many types of space – and what are those spaces? (2) What means of interaction will include the majority of phones, not just smart-phones? (3) How can the benefits best be realised in a commercially viable way: valuable content for users; increased footfall for space-owners; and for campaigners, the ability to target audiences and measure responses?

What are the potential benefits?

A network for delivering location-specific content to mobile phones would constitute a major new channel for the UK, akin to poster and digital signage sites but with far richer functionality. Benefits would include growth in revenues from physical retail and leisure sites, to help offset the trend to online activity.

What do you need to do next – to get closer to a marketable product, service or usage?

We are seeking partnerships with digital media agencies, retail chains, leisure chains and other space owners. We are keen to talk to potential manufacturers of Krstls as embedded urban devices. We seek investment and grants in the region of £400k to roll out the Krstl service in pilot cities.

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MetaBroadcast

MetaBroadcast builds innovative technology for audio and video distribution. We maintain twin metadata platforms: URIplay, for managing content metadata; and Purple, for managing user metadata. During more than two years of operation we have used these platforms to develop prototypes and production products for the BBC, Channel 4 and for ourselves.

What is the problem your project is trying to solve?

We are answering the question: how can social discovery techniques be used to increase content views, and to drive traffic away from recently broadcast content that is hard to monetise, without compromising privacy? In our proposal we highlighted this as a significant opportunity to increase revenues for TV content producers, by driving traffic into pay TV windows. This is the main opportunity we are currently investigating.

What is the study aiming to achieve?

We are building a website that links to a wide range of long-form video content, then testing various navigation and algorithms on users, to see which ones achieve our objectives. The navigation modes we plan to test are: mood-based navigation, 'show me something intelligent/uplifting', bookmarking 'my channels' to quickly find shows later, channels built by users, and a stream of recommendations.

What are the potential benefits?

The TV long tail is monetised via subscriptions/micropayments, but top tail catch-up content is free. If the TV long tail caught up with the long tail of music and generated £1 an episode, it could be worth £400m each year in the UK alone, enough to triple independent producer's non-broadcaster revenue. Novel navigation techniques will play a vital role in opening up this market.

What do you need to do next – to get closer to a marketable product, service or usage?

To go to the next stage, we will seek several medium-sized launch customers (for example, small broadcasters, video retailers), and look to raise a small funding round in late 2010. We may also need to partner with a provider of software for generating recommendations.

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Mobile Pie

Mobile Pie is a boutique studio focused on producing innovative entertainment and imaginative games for mobile platforms. Based in the heart of Bristol, the company has received such notable accolades as Channel 4's New Mobile Game Developer of the Year and has received the Media Innovation Awards Trophy 2008.

What is the problem your project is trying to solve?

The amount of electronic data available to us is huge; one of the biggest challenges to this is how to effectively navigate it. Augmented Reality (AR) has the ability to deliver context-aware data and present it in an engaging, easy to navigate manner, relevant to our surroundings.

Although AR has been around for a long time, it has up till now been restricted to expensive specialist hardware which has limited its widespread adoption. Historical towns or sites have a wealth of information which at the moment is mostly restricted to audio guides and books. By making the content available on mobile devices in an exciting, accessible and useful way, they could inform and engage members of the public.

What is the study aiming to achieve?

The aim of this study is to investigate mobile AR techniques and how they can be efficiently implemented into an engine. This engine will then be used to produce some technical demonstrations to provide an effective AR experience for historical sites.

Some of the technical aspects of developing the engine include: utilising GPS, accelerometer and compass; fiduciary marker detection; 3D graphic overlay; blending of real and virtual scenes; and querying site information efficiently.

What are the potential benefits?

The application of AR onto consumer mobile devices has the potential to make it a mass market, with the market revenue expected to rise from $1m in 2010 to over $700m by 2014. Our research will help establish Mobile Pie as a pioneer of commercial mobile AR systems.

What do you need to do next – to get closer to a marketable product, service or usage?

For our compass/GPS based AR, we are close to having a marketable product and need to find interested customers who we could deliver a finished application for. The tag recognition is more of a technical challenge and still requires R&D funding to make us market ready.

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Omnipia Ltd

Omnipia Ltd provides businesses across the digital multimedia value chain with management and consulting expertise in critical business functions including business planning and strategy, marketing and sales strategy, technology strategy and product development strategy.

What is the problem your project is trying to solve?

The aim is to assess the viability of a more disruptive business model for advertising using Internet Protocol TV (IPTV). In a report by TV Weekly (July 2008), user-generated content (e.g. YouTube) only accounts for 4% of the online video advertising revenue, the remaining 96% is attributed to professionally broadcast content. IPTV has an opportunity to lower barriers of entry for smaller businesses to advertise through providing more dynamic and intelligent ways of personalising advertising to consumers using internet technologies.

What is the study aiming to achieve?

The study aims to test the feasibility of an IPTV application that could lead to the development of sustainable and profitable personalised TV-based advertising services. The objective is to take an already proven IPTV delivery platform and enhance it with new and more 'sticky' content using context-sensitive and user-relevant information derived from the electronic programme guide, subtitle track and internet-based information. This novel and innovative approach offers users individually-tailored interactive TV options based on textual analysis of programmes scheduling and content.

What are the potential benefits?

The commercial advertising/personalisation model is applicable and of interest to a number of vertical market sectors. For Omnipia and its partners, being instrumental in introducing such a capability to market will open up the possibilities for global licensing/reselling of technologies and pioneering a technology in a high-growth market.

What do you need to do next – to get closer to a marketable product, service or usage?

With an additional £100k we would be able to enhance the prototype and have it fully integrated with a transparent client overlay application on the IPTV channel and use it for live user trials. For commercialisation opportunities we need to be engaged with broadcasters, content providers and platform vendors.

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Onteca is a developer of interactive entertainment content. We look to innovate in the field of user experience. We are currently publishing our own game content on iPhone and Wii. We also deliver solutions around interactive TV content. We formed in 2001, have an annual turnover of £300k and employ 12 staff.

What is the problem your project is trying to solve?

The success of Apple's App Store has shown the power of open content portals, allowing developers a fair and open way to monetise their work through sales in a market place. With the next generation of IPTV set-top boxes (STB) (including but not necessarily the BBC's Canvas platform) it is now possible to deliver and receive payment for interactive content. There exists a need for tools which increase access to content creation for this new wave of app stores.

What is the study aiming to achieve?

The study will analyse the capabilities of broadband-enabled-STBs which are currently on the market or will be coming to market in the next 3-5 years. This includes the BBC's Canvas platform and a number of commercial alternatives. We need to understand the commercial, technical and social barriers to creating app store content for these platforms. We are then looking at how the production of content for these and other app store platforms can be streamlined and democratised.

What are the potential benefits?

We think this project will have a very positive impact on our own revenues; we currently sell content on the iPhone but ideally would sell it on a much broader range of devices and next-generation IPTV. This project gives us an opportunity to get a lead in the early IPTV app store content market. Using our technology we believe UK companies could gain quicker and cheaper access to selling content both on IPTV app stores and other app stores.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £100k we would be able to bring a fully functional cross platform toolkit for the production of casual games and interactive quizzes. We are looking either for external investment or collaboration in future research projects.

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What is the problem your project is trying to solve?

We are looking at how to implement a portable game object format for cross-platform and MMO gaming. Games should be able to encode objects with a unique ID, which would then be used to generate a set of representational, functional and ownership and creation meta-data.

The casual and social network gaming sector is currently very strong – both iPhone and Facebook app games have shown explosive growth over the last couple of years. Games such as Farmville have millions of active users. The user experience in both these forms of games is greatly enhanced by the ability to move objects around between players and game environments.

What is the study aiming to achieve?

We are delivering a proof of concept which connects players and simple game worlds in a working system. We are using Facebook as our user authentication system – this allows us to leverage user bases later on, plus their sharing functionality. We have looked at different data representations and researched the creation of a secure system which will scale to millions of users. We developed a demonstrator system where applications can safely share information with a game service, and explored economic game models based on a variety of criteria (not just tokens).

What are the potential benefits?

This technology will allow us to leverage both the interconnection implicit in Facebook apps and the strong network effect we are seeing with the distribution of apps. As a later impact of the project we would like to establish an object barter and gifting system. This will allow players to exchange items between games or game environments.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £300k we could create a complete toolset to support a sophisticated socially networked in-game economy system, which we could apply both to our own titles and white label as an external service. This would be cross-platform in terms of targets and the social networks it connects to. We are looking for external investment in either the technology or Onteca.

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Ovation Data Services

Ovation is one of the UK's premier data storage solution providers, specialising in providing fully integrated solutions to companies. Using in-depth understanding of workflow, infrastructure and applications, Ovation integrates leading hardware and software to create the optimum system – turning data into valuable information, accessible anywhere.

What is the problem your project is trying to solve?

The global post-production industry currently uses about 500 Petabytes of storage for audiovisual assets and associated files (Coughlin, 2009). This will double within the next five years, by which point over 50% will be directly network accessible. The move to tapeless (file-based) workflows, the drive for concurrent production, adoption of collaborative working practices, and the demand for reduced turn-around times are all driving the adoption of high-performance network accessible storage, including for archiving. This is hugely expensive.

What is the study aiming to achieve?

This pilot (MAVIS – Mulit Audio Visual Information Systems) will test new technologies to better manage storage and storage solutions, integrate it into production and post-production workflows, and increase use of cost-effective mid-tier storage solutions – all of which has the potential to dramatically lower costs.

The project aims to provide a pilot system for use by Smoke & Mirrors to improve the way they manage the archiving of their data from their Isilon-based online storage to something more cost effective, as well as to explore and demonstrate an alternative to in-house storage solutions, such as the use of outsourcing some storage to a service hosted at a sector-specific provider for use by the UK creative media industry.

What are the potential benefits?

It changes the way production and post-production houses are able to operate. At present companies have no mechanism for charging for storage that is in use by clients, although companies are expected to store increasing quantities of archive material.

MAVIS allows economic accounting for storage, which then becomes a predictable cost that could be charged out to support client demands. It allows a new business model to develop for third-party provision of storage facilities. Other data intensive industries beyond creative industries could also benefit.

What do you need to do next – to get closer to a marketable product, service or usage?

An industrial partner in this sector willing to invest further (money and contacts), and an investment partner, such as a VC or business angel, to take the project forward.

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Perfectly Created

We are a small team working on the creation of a range of 'life-style' products and services aimed at young adults. The core team has four active members plus a number of associated creative artists with specific product/service expertise. Formed in 2009, we will launch in May this year.

What is the problem your project is trying to solve?

To investigate the supply of a low-cost signalling device and a local service platform that would help individuals to locate and identify others they may wish to meet at large events and gatherings. This might be arranged prior to the event or via a form of 'pop-up' social network within a larger group during an event. Whilst this can be achieved using mobiles and PDAs etc, fragmentation of the mobile space limits the numbers in any group that might be able to access a service. We aim to produce a very low-cost product/platform to solve this problem.

What is the study aiming to achieve?

The study aims to evaluate technical models for the platform and end user reaction to concept via market research. This would then be extended to detailed study of effective business models for further development and deployment together with preliminary product and platform designs for costing and presentation to potential investors, users and commercial partners. The study will focus on two distinct user groups: private/social – large parties, public events and such like; and professional networking at conferences and exhibitions.

What are the potential benefits?

Benefits fall into two main areas: the social benefit amongst users at public events and gatherings; and the potential to facilitate focused networking at professional conferences and exhibitions. But these are not financially quantifiable benefits. Our business will benefit by the provision of hardware and service platforms.

What do you need to do next – to get closer to a marketable product, service or usage?

The next steps will involve trials of the system at a number of events to permit detailed feedback from users and service providers, followed by production and certification of the devices and a progressive roll-out of the concept. Access to external funding (£50k-100k) would accelerate this process.

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ProVision

ProVision is a world leader in wireless video technology and applications.

What is the problem your project is trying to solve?

The opportunity is to provide in-ground sports spectators with the information, analysis, replays and video feeds currently only available to those watching sport on TV. The service, delivered direct to personal smartphones, impacts within a global market worth £500m per year in the UK alone.

What is the study aiming to achieve?

The overall aim of the Stadia Casting study was to demonstrate the feasibility of scalable, high-quality, robust, multicast, wireless video transmission within sports stadium environments.

What are the potential benefits?

The capability to provide on-demand live video services in stadia is attractive to stadium owners as it matches or exceeds the benefits available to TV subscribers. There are a number of approaches looking to exploit this opportunity, but most entail the cost of specific additional hardware. By using its wireless video expertise, ProVision can provide the same service on users' existing smartphones, thereby massively increasing the potential market.

What do you need to do next – to get closer to a marketable product, service or usage?

ProVision is expert at the R&D of the cutting-edge wireless video technology identified during the feasibility study. In order to quickly move towards commercialisation, however, it requires a partner that is an established provider of WLAN in-stadia solutions, thereby providing integration and distribution capabilities. ProVision is currently undertaking commercial negotiations with one such potential partner.

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Rebellion Developments Ltd

Rebellion is Europe's leading independent games developer. Formed over 16 years ago by Jason and Chris Kingsley, Rebellion's games range from sci-fi shooters to the Simpsons. Rebellion's key titles of Aliens vs Predator, Sniper Elite and Rogue Trooper cemented its position as an innovative developer with its own unique style.

What is the problem your project is trying to solve?

The problems addressed in this study of new business models for games using downloadable content were technical rather than commercial – we experimented with ways of having groups of players with mixed collections of purchased content, meeting together in multiplayer settings.

The key problem is ensuring that all players have the correct access to the correct set of assets: if I join a game in which player X has bought character model B, I need to also have that character model loaded in memory before the game starts. But I cannot apply this model to my own character unless I have also bought it. We developed a metadata system for this.

What is the study aiming to achieve?

The feasibility study created technology whereby players could purchase and add items to their game character, after buying the initial game title. This will allow us to experiment with different business models and pricing structures in a highly responsive manner.

We therefore needed functionality that would allow players to preview content prior to purchase; handle online transactions and support different pricing structures (e.g. promotions and sales); unlock bought content ingame; and ensure that all players in multiplayer settings can see the DLC that others have bought, but that they do not themselves own yet.

What are the potential benefits?

The principal benefit of DLC is to extend the lifetime of games as products, by providing ongoing content in a way that is responsive to the needs of the customer base. Games become less of a short-term experience, and more of a framework for an enduring relationship with the customer.

What do you need to do next – to get closer to a marketable product, service or usage?

With further development, we now have the rudimentary technology to enable DLC models for our games. This is currently aimed at infrequent purchases of 'packs' of digital assets, but we now wish to extend this to a micropayment model for smaller chunks of content, without interrupting the gameplay.

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Renaissance Southend Ltd

Renaissance Southend Ltd is the urban regeneration company for the Borough of Southend-on-Sea, an important area within the Thames Gateway. We work with Government, public, private and third-sector partners to achieve long-term sustainable regeneration and economic development across Southend.

What is the problem your project is trying to solve?

Renaissance Southend Ltd and its partners recognise that increased use of digital technology by businesses and residents will significantly boost Southend's economic potential, and support existing sector strengths such as creative and cultural industries and health.

Through iSouthEND and the wider DEC project, we are investigating new ways of strengthening Southend's existing business base, particularly in the creative and cultural sectors, and encouraging existing and new clusters to develop in the area. Businesses locally will be able to achieve more with improved ICT infrastructure and new services, which can in turn support the exploitation of digital technology and drive innovation.

What is the study aiming to achieve?

Through iSouthEND we will identify innovative solutions to support and strengthen the existing creative and cultural cluster in Southend-on-Sea. The study has five key areas: researching and gathering data on the existing network infrastructure across Southend-on-Sea; designing an overlay network architecture to overcome existing limitations; gathering specific market information on prospective customers, partners and beneficiaries; operational and governance requirements and competitive positioning; and identifying a sustainable business model for new infrastructure and services. The ability to assess different charging methods and business models will be an integral part of the test-bed.

What are the potential benefits?

iSouthEND will focus on specific usage experiments where high bandwidth symmetrical access is a key enabler. Integral to iSouthEND will be a 'user-led' innovation process, which will drive service prototyping and experimentation leading to 'digital transformations'. This will provide intelligence on usage and strengthen creative and cultural clustering in Southend.

What do you need to do next – to get closer to a marketable product, service or usage?

With investment from public and private sources, we will be able to implement the iSouthEND network infrastructure and try out a selection of innovative business applications. In addition to this we need an e-commerce company, network system and backhaul providers and application developers.

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Sidekick Studios Ltd

Sidekick Studios is a social innovation company. We have seven staff and an annual turnover of £350k+. We were set up in 2009. We mix the internet, design thinking and creativity, in modest attempts to save the world. We put a writing robot in Parliament. We developed tech to combat censorship.

What is the problem your project is trying to solve?

The social problem that we are trying to solve is rising levels of obesity. Budge is a creative health intervention, deployed in community spaces (like parks), to improve levels of physical activity. The technical challenges we needed to explore included defining the conceptual model for the underlying hardware and software, investigating wireless networking technologies, and spec'ing RFID systems.

What is the study aiming to achieve?

We worked with communities, local boroughs and primary care trusts to co-design the service. The most important step was building something that people actually wanted and needed. Alongside this we needed to investigate the technical feasibility of the service, across wireless technologies to robust electronics platforms. Ultimately we were seeking to create a rapid prototype of the system in action.

What are the potential benefits?

The cost of obesity to the UK economy is £3.5bn each year. Obesity leads to heart disease (cost to the UK is £29.1bn each year) and type 2 diabetes (costs £1m a minute). Our concept aims to reduce obesity amongst all age groups, via a community service that is personalised to them. Using our technology, we hope to reduce the costs associated with treating obesity, and its consequences, by local government and the NHS.

What do you need to do next – to get closer to a marketable product, service or usage?

With £80k we are able to conduct a proof-of-concept trial of our community obesity service. We are working with NHS Redbridge and are in talks with NHS London and Camden for the trial to extend to schools and the elderly. A number of organisations and foundations have shown an interest in match-funding the trial, if there's seed money from elsewhere.

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What is the problem your project is trying to solve?

The study (Buddy – a new kind of telecare device to remotely monitor the moods of the mentally ill) allowed us to investigate the feasibility of a new kind of telecare device designed to manage long-term health conditions using digital technology, in order to reduce the cost burden on the NHS, improve the quality of care, and increase patient satisfaction with personal treatments.

The fundamental problem in telecare is that solutions tend to be technology-led not user-led, so our aim was to work with users and professionals to design a more appealing and sustainable solution.

What is the study aiming to achieve?

During the course of the study we aimed to: research existing tools and technologies; understand the NHS and government agenda; identify a specific long-term condition to focus on; work with users and professionals to co-design the product and service; and investigate the technical infrastructure required to deliver the solution.

What are the potential benefits?

Long-term conditions account for £7 of every £10 spent by the NHS. Our aim is to reduce the number of interventions and visits by community services professionals, reduce the use of acute services by patients, and integrate care pathways.

What do you need to do next – to get closer to a marketable product, service or usage?

We have partnered with South London and Maudsley Mental Health Trust and are ready for trial. We have worked closely with their users and their professionals, and have senior stakeholder buy-in to our proposal. With £100k we are able to conduct a proof-of-concept trial.

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Smartgrid Technologies Ltd

The company was set up in 2009 to provide products and services related to the application of networked sensor technologies for better management of power and energy.

What is the problem your project is trying to solve?

Reducing energy consumption and making its usage more effective is an increasingly important issue in the modern world. Current energy monitoring is based around unidirectional meters, which are permanently associated with a specific energy access point in a home or business.

Whilst adequate for billing, this technology does not allow for fine-grained monitoring of energy usage and associated demand control, or for effective 'tagging' of energy with additional information, such as its carbon content. It also does not lend itself to integration with 'microgeneration' sources such as wind and solar, or to monitoring energy consumption across multiple physical locations.

What is the study aiming to achieve?

The project seeks to develop a new approach to energy monitoring and control based on the usage of network-centric sensors which can monitor fine-grained energy usage, independent of physical location, and assign usage to a 'virtual energy account'; the sensors can also activate individual appliances in response to opportunistic availability of low-carbon electricity tariffs, monitor appliances for early signs of fault conditions, and account for microgeneration of electricity by individuals or businesses.

What are the potential benefits?

The technology will make energy accounting, monitoring and control much more flexible, agile and powerful. This will form the basis for a number of high-value energy applications: real-time electricity tariffs which respond to availability and quality of generation capacity; more effective 'energy tagging', enabling greater accountability of usage and associated carbon content; energy management of commercial and industrial premises; easier and more convenient recharging of electric cars; cheaper fault monitoring of diverse electrical appliances; and sub-metering of multi-tenanted buildings.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £100k we would be able to develop a commercial prototype and carry out marketing activities with a number of actors in the electricity supply industry.

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SmartSensor telemed

Founded in 2000, SmartSensor is developing interactive health assessment devices which capture diagnostic and other health risk data from the home and, with web-based informatics, make screening more efficient and accessible. This will enable healthcare professionals to remotely interpret captured health risk data.

What is the problem your project is trying to solve?

Barriers to full and efficient implementation of vascular screening include: accessibility for patients, particularly hard-to-reach groups; the provision of tests cost-effectively and on the scale required; and the collection, reporting and interpretation of large amounts of information collated from a variety of locations.

SmartSensor is looking to help overcome these barriers and to support vascular screening by delivering more accessible and effective screening technology to help reduce the number one UK and global cause of morbidity and mortality.

What is the study aiming to achieve?

We are developing means to support vascular assessments by expanding an existing home screening platform technology to combine relevant blood spot tests with a means for patients to capture other health risks that might relate to lifestyle, symptoms, personal and family health history. In addition, we are investigating how the electronics supporting this technology can be adapted to cope with the additional demands of this more complex application. This study has helped prove the feasibility of the above.

What are the potential benefits?

Employers, health insurers and healthcare providers (including the NHS with an annual budget of £250m for this) are undertaking vascular screening. SmartSensor creates efficiencies, economies, and potentially delivers better test results, more immediate data, and better access to screening, particularly for deprived groups where vascular disease is most prevalent.

What do you need to do next – to get closer to a marketable product, service or usage?

With further funding we would develop a prototype, test and refine it with clinicians and patients, and undertake early trials and focus groups. We would also refine production economics and look to develop partnerships with industry and with UK clinical centres of excellence in order to plan trials and commercial exploitation.

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Syxth Ltd

Syxth has both the vision and the capability to develop new low-cost, high-value systems that use internet sensor-based devices. These solutions being designed to painlessly encourage and assist consumers to better manage their lifestyles and the natural resources they consume, saving them money and/or time in the process.

What is the problem your project is trying to solve?

The Syxth team has come to the conclusion that the majority of domestic heating boilers installed in the UK (about 22 million), including most of the so-called 'energy-efficient condensing boilers', are not operating near optimal efficiency much of the time.

We believe that our planned low-cost internet-connected control system and methods can reduce fuel consumption by 20% or more, even on a typical modern condensing boiler, without impacting householders' comfort levels. During the feasibility study on iPhone energy saving boiler control we believe we have identified at least two patentable ideas with global potential.

What is the study aiming to achieve?

We have created a working demonstration of some of the key elements of our proposition and used this in a number of real homes to collect the necessary data, to establish the technical feasibility of our ideas.

We have carried out market research with UK consumers to identify their willingness to purchase such a product. Another aim of the project was to identify key industry partners who already have a need to meet climate obligations.

We have already received an unsolicited approach, from a leading European energy supplier interested in exploiting our ideas.

What are the potential benefits?

We believe household CO_2 could be reduced by 20%. With a 25% take up of our technology, this could provide a UK-wide saving of £715m. The UK economy would benefit directly by implementing this technology in support of Ofgem's Project Discovery conclusions published on 3 February 2010.

What do you need to do next – to get closer to a marketable product, service or usage?

Engage with the following collaborative partners: a university to help validate our practical findings; a major energy supplier, with a complimentary smart metering project; and an existing major boiler control manufacturer. Finally, further grant funding from the Technology Strategy Board or Carbon Trust to help facilitate this collaborative project.

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V.I.A.

V.I.A. is a media futures agency centred around innovative cultural production, content creation and mobile technologies. We map new narratives for online environments and networked urbanism. We focus on digital film and storytelling using the latest concepts in open source, transmedia, social publishing, locative media and participatory content creation.

What is the problem your project is trying to solve?

While micro-companies and independent creators dominate the cultural sector in the UK, no single online solution exists so they can flourish by keeping control of their work, in terms of development, production and distribution. For the first time, our NCS (networked creator studio) platform gives independent media publishers and content creators a simple solution to increase consumer engagement with their content and maximise the value they can achieve from it.

What is the study aiming to achieve?

Our study researches and defines a scope for the most valuable needs and enabling services an open source platform can achieve for independent creators. By building a plan and initial prototype of this software tool, we can assess the viability for further development for this 'nano-studio' solution, whether as web platform or other iterations.

What are the potential benefits?

A next-generation, easily usable nano-studio content platform has the potential to dominate the sector and be the first choice for independent creators, micro- and small companies.

Forrester's report 'Global Enterprise Web 2.0 Market Forecast: 2007 To 2013' indicates enterprise spending on Web 2.0 technologies will grow strongly over the next five years, reaching $4.6bn globally by 2013, with social networking, mashups, and RSS capturing the greatest share. We estimate 20% of this market would be appropriate for a fully developed NCS solution – meaning a potential market size of $920m globally.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £75k we can build a polished beta platform to roll out the platform to independent content creators. We have firm leads to establish a prominent internet presence for outreach to a first tranche of proactive creators who are 'micro-distributors' and wish to become fully fledged nano-studios. Expert knowledge and mentoring in building out web services and e-commerce solutions would be valuable to our next stage.

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VID Communications

The ARKive project is a world-class example of a large multimedia aggregator and distributor, and is bringing together the best wildlife films and photographs from thousands of contributors worldwide into one centralised digital library to create a stunning audiovisual record of life on Earth, accessible to all via its award-winning website – www.arkive.org

What is the problem your project is trying to solve?

Whilst the continued growth of digital media content, platforms and networks opens up major opportunities for new creative industry products and services, this expansion also poses significant challenges for developing effective online content distribution and sales models.

In the new digital media landscape, owners/distributors of digital media content will need to diversify their products and services, develop greater effectiveness in marketing themselves, and look to exploit new opportunities in the market place.

This study will look at identifying the means by which ARKive can further unlock its content and exploit additional opportunities for revenue generation for the benefit of all stakeholders.

What is the study aiming to achieve?

This study will review the potential for new distribution and exploitation opportunities for ARKive's digital media content, looking to unlock this content for new audiences and for wider use, whilst protecting and exploiting rights holder interests, and finding a fair and efficient flow of revenue across the value chain, from content suppliers to consumers. Areas of particular interest and value to ARKive, and covered as part of this feasibility study, include: SEO, online marketing, effective use of third party platforms, sponsorship, advertising, 'pay per click', transactional sales, and repurposing of content for new ARKive markets – education, mobile, social networks.

What are the potential benefits?

This study has enabled a wide-ranging analysis of ARKive's place within the new digital media landscape, and helped identify opportunities for future project investment in audience expansion and revenue generation that will form the basis of a route map for the future success and sustainability of the project.

What do you need to do next – to get closer to a marketable product, service or usage?

The ARKive project now needs to recruit additional personnel at senior executive level with skills and experience in the areas of new media/online marketing and business development, in order to drive the ARKive project forward and provide the organisation with the relevant knowledge base.

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WeardaleNET Ltd

We are a social enterprise that has been established to deliver a high-speed broadband service to Weardale – we have no full-time employees but work with volunteers. We also have a close relationship with Cybermoor in Alston and are seeking to mirror their success.

What is the problem your project is trying to solve?

Weardale is a typical ribbon community comprising more than 10 small towns and villages. The topography and relatively low number of residents means that commercial companies aren't interested in providing a broadband service – if the community does not take the initiative itself, no-one else (public or private sector) will.

What is the study aiming to achieve?

Topography, geography and demographics mean that hard-wired solutions (copper or fibre) are non-starters. Wireless is a potential answer, but Weardale has a railway along much of its length and the study aims to determine whether installing a fibre optic connection alongside the railway will provide a future-proof internet backbone which could connect via wireless links to homes, farms and businesses.

If this proves to be a commercially viable solution for Weardale, the study aims to develop a template which could be used by other, similar ribbon communities where there remains a heritage railway or the residual trackbed.

What are the potential benefits?

Weardale is currently the wrong side of the digital divide – as other local areas get connected this divide will become an abyss. A next-generation access service would create wealth, jobs and preserve a sustainable population.

What do you need to do next – to get closer to a marketable product, service or usage?

The study has identified a total project budget and business plan for 500 user connections: we have already identified a significant percentage of the necessary funding but need an unsecured loan of £200k to complete the funding and have the project fully operationally by end 2012.

Enabling Technologies

Enabling Technologies

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Aegis Systems Ltd

Aegis Systems Ltd is a small independent consultancy, established in 1988, that advises regulators and industry on regulation and use of the radio spectrum, from detailed engineering analysis to strategic issues. We have expertise in all types of radio systems (broadcasting, space and telecommunications).

What is the problem your project is trying to solve?

We are investigating the potential for locally unused frequencies in the TV broadcast band (sometimes called 'white spaces') to improve the coverage of wireless networks in residential environments.

These frequencies are attractive because of their lower attenuation but require larger and more complex antenna systems to take full advantage of this benefit. Coexistence with terrestrial and cable TV transmissions and availability of sufficient spectrum to support the required data traffic are also potential problems.

What is the study aiming to achieve?

Our study attempts to quantify the extent of coverage improvement that would be obtained by using the TV band instead of the existing 2.4 GHz WiFi band. We also assess the likely availability of frequencies in the TV band for home networking and what can be done to facilitate co-existence with existing services. Potential ways of optimising antenna efficiency to gain full benefit from the lower radio frequency attenuation in the TV band are also investigated.

What are the potential benefits?

Improving the coverage of in-home wireless networks would benefit consumers by facilitating low-cost access to high bandwidth services and content, particularly on mobile or portable devices. Community WiFi networks could provide mobile broadband coverage in areas not commercially attractive to mobile operators, supporting the Digital Britain objectives.

What do you need to do next – to get closer to a marketable product, service or usage?

The next step would be to demonstrate the viability of the UHF TV band by developing suitable prototype equipment. We are keen to work with consumer technology developers to pursue the development of wireless devices to operate in this band without compromising existing users of that spectrum.

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AIM UK

Founded in 1984, AIM UK is the trade association for the automatic identification and data capture industry. Its members are involved with technologies such as barcodes, RFID, smartcards, biometrics, voice recognition and mobile data capture. The feasibility study was undertaken in collaboration with AIDC Global Ltd and Praxis Consultants.

What is the problem your project is trying to solve?

Our project: a coding resolver system for internet access and Internet of Things. The concept known as the Internet of Things is seen within the European Commission as a key driver for future technologies in relation to ITC developments. With the introduction of standards for RFID, object identifiers were used as a means of distinguishing such items unambiguously between different domains.

To achieve this objective, there is clearly a need to link objects or 'things' to the internet. A primary consideration has been to preserve the integrity of legacy data systems to enable a relatively seamless migration from barcode to RFID and to the Internet of Things.

What is the study aiming to achieve?

Our feasibility study is designed to explore how to exploit the possibility of using three components in an integrated Internet of Things system: a unique object identifier to preserve the integrity of different domains; a unique item identifier that preserves legacy data structures; and a resolver system for object identifiers over the internet that meets the security and application-specific requirements of different domains.

By preserving legacy code structures and providing domain-based security and applications, migration can be accelerated to achieve an implementation of the Internet of Things.

What are the potential benefits?

Enabling legacy data structures to link to the Internet of Things could reduce a migration path by years and save millions of euros for European business. The concept also offers the prospects for a new range of applications and services for the Internet of Things.

What do you need to do next – to get closer to a marketable product, service or usage?

To test our proposed object identifier resolver solution and explore the business model options, including a not-for-profit structure to manage the object identifier resolver system. Research funding (£100k) is needed for a forum of different industry domains and to develop prototype structures and metadata messages so that the system can evolve.

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Avanti Communications

We are a provider of broadcast services to users in remote and rural areas using bi-directional satellite communications. The group that undertook the project performs our research and development and third-party consultancy, and has 14 staff.

What is the problem your project is trying to solve?

Satellite broadband networks have different characteristics to wired (ADSL or cable) broadband services – for example, in areas of latency and jitter – and utilise different approaches to standard transport protocols.

Various 'acceleration' and caching techniques can be used to improve end-user quality of experience. Accelerators can be installed on a satellite modem or user PC but this can provide problems associated with operational maintenance, processing burden and need for user installation. It makes better sense to implement acceleration at the connection into the user's home on an internet router device.

What is the study aiming to achieve?

The REX project (Router EXtension for enhanced broadband performance) has investigated the feasibility of hosting acceleration software on domestic router products to improve end-user quality of experience when accessing the internet over a satellite broadband connection.

What are the potential benefits?

Providing improved user experience of satellite broadband will help contribute to closing the digital divide, enhance digital inclusion and avoid discrimination against users in remote and rural areas. By doing so, it will help acceptance of satellite broadband for meeting the Government's USC and NGA aspirations. Therefore, it will benefit our business by increasing the number of subscribers and reducing the cost of rolling out broadband to rural areas.

What do you need to do next – to get closer to a marketable product, service or usage?

Further development needs to be undertaken to design and implement the acceleration techniques on the user's router equipment as well as the operator's gateway. This will lead to a trial that will involve 50 users testing the various acceleration techniques. This will require a further £200k.

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Blackroc Technology Ltd

Blackroc Technology is a hardware and solutions engineering company specialising in mobile computing and data capture technologies. This includes computer wireless mobility, and all associated imaging, positioning and identification technologies. Formed in 1990, we provide a range of services from custom product development and systems consultancy, to integration on site.

What is the problem your project is trying to solve?

Developments in the internet and the European-promoted Internet of Things are creating the need for object-based access and interface tools that provide a range of generic functions for a range of horizontal and vertical-market products and services. These object-based systems will need to accommodate a range of capabilities in a mobile internet access platform, including image capture, automatic identification, GPS positioning, and mobile communications.

While low-end mobile phone platforms can fulfil simple requirements, higher-end industrial and field-based platforms are needed with higher resolution and other optical capabilities than can at present be achieved with mobile phone-based platforms.

What is the study aiming to achieve?

The study is directed at the feasibility of developing a mobile platform for object-related internet applications and services for commercial and industrial use which provides high-end capability, particularly with respect to image capture and positioning resolution. The study addresses important issues concerning imaging and positioning, and information transfer. The study is also looking to specify a service support framework and exemplar scenarios for demonstrating field-based applications supported by interactive access to internet services. Providing a range of functions including data synchronisation, information support, processing, data storage, transfers and comparisons, client communications and billing, to name but a few.

What are the potential benefits?

The specified mobile platform will provide a route to product development offering a significant high-end industrial alternative to the simple mobile phone-based systems being developed for domestic markets in relation to internet access, but with similar economic impact, as well as a foundation for Internet of Things products and services.

What do you need to do next – to get closer to a marketable product, service or usage?

To develop a proof-of-concept demonstrator based on one of several application areas identified in the study. One such application, already identified by an NHS trust, is a wound imaging camera for mobile healthcare workers, allowing transmission of wound images via the internet to remotely based specialist(s). Development cost is estimated at around £100k.

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Data Driven Logistics Ltd

DDL specialises in the development of innovative software and technology solutions. The business, formed in 2004, employs 14 staff and has an annual turnover in excess of £1m. The company is focusing current R&D and its expertise in combined telephony and software solutions towards a range of environmentally beneficial projects.

What is the problem your project is trying to solve?

This study aims to solve current problems associated with real-time and cohesive data collection within the home and other environments, interpretation and dissemination of that data, and the ability to take responsive action without onsite dependence or for any specific communications device or skill set.

Key data include that collected by utility meters where current solution limitations do not enable true optimisation of service usage impacting the environment, which is a global problem but with key national short-term targets. The study also progresses integration of energy data with other critical data such as healthcare, security and fire/water/gas detection.

What is the study aiming to achieve?

The objective of the study is to explore the feasibility and to produce a prototype solution that will deliver benefits and efficiencies over existing data collection and reporting devices that currently operate independently in the home.

In addition, key value extensions will include healthcare monitoring and control, home/ buildings automation, security monitoring and proactive response to flooding, gas leaks and fire, all managed by a central control unit. Unique methods of device independent reporting and subsequent control will ensure value is derived from vast volumes of data being collected, processed and analysed.

What are the potential benefits?

Key benefits of the solution will be the optimisation of energy utilisation, helping the environment, support of elderly or disabled people through healthcare system connectivity, improved security, and early warning/ revention of large-scale water, fire and gas instances.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £45k of funding, our plan is to develop the raw prototype solution into a beta-test version capable of being demonstrated to key integration and channel partners. This next phase will involve developing relationships with utility firms, meter manufacturers, home healthcare, security system and premises automation system providers.

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Devil's Details Ltd

Formed in 2008, Devil's Details is a high-technology entertainment software development company specialising in consultancy, prototype and R&D services. We have worked on several technology projects for various clients and are actively researching proprietary technologies. We aim to expand our business by exploring new markets and technological opportunities.

What is the problem your project is trying to solve?

We're working to deliver high-quality, interactive rich media content to any device that can connect to the internet. This means supplying the tools and technologies required to allow web-based businesses the same creative possibilities available to a game designer.

Our new platform opens up a wide range of e-commerce opportunities; i.e. allowing customers to fully explore products and configurations before buying, meaning less physical carriage of goods, helping to save money and the planet. By utilising a cloud-based platform we address problems with content distribution and piracy, allowing more predictable revenue streams and vastly enhanced IP security.

What is the study aiming to achieve?

We are working on proving the business case for the project whilst also exploring the technical challenges and finding customers, partners and suppliers for the final platform.

We have identified several business sectors where our service can add value and are talking to individual companies about their interest. Feedback has been positive. We have also explored the technical challenges and have discovered a very interesting implementation route, which has significant energy saving benefits. Our final goal is to find further funding for the project and to keep the development in Yorkshire and the UK.

What are the potential benefits?

One use-case benefit: we know certain businesses have a return rate of approximately 40%. By allowing their customers a way of examining products in a configurable virtual environment we can cut that significantly, thus cutting dispatch and stock costs. This one example saves millions of pounds each year and considerable energy.

What do you need to do next – to get closer to a marketable product, service or usage?

We have developed a staged plan and have a number of paths open to us, depending on funding. With a further £200k we can build a proof-of-concept system. With a further £600k we can build a small, working system. With £1m+ we can explore green delivery options.

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Elysium Ltd

Formed in 1991, Elysium has particular skills in supporting and using standards-based processes. Chairing UK MPEG and JPEG committees for 11 years, we have worked with many major clients. Our workflow audit tools for the finance and recruitment sectors are being developed to offer new possibilities in image management and searching.

What is the problem your project is trying to solve?

New capabilities have been developed and standardised for searching images, without relying on associated metadata – an 'image DNA'. Our study (PLIMSO – picture library image management, searching and organisation) looks at how these can be used by picture libraries to help users find and identify images, and manage, control and monitor their usage.

Using a technology developed and patented in the UK by Mitsubishi, it offers the capability of matching images in databases of millions of images in a few seconds. 'Orphan works' in particular are a problem this can solve – identifying where an image came from and attributing it correctly, offering an effective way of adding still images to the more easily monitored audio and video information in the new digital economy.

What is the study aiming to achieve?

We hope to develop a centralised repository of image signatures, allowing picture libraries to register and market their content without releasing their valuable images in bulk, and allowing new models and effective controls to be developed which automate the pre- and post-sales process. It also allows large organisations to develop effective methods of managing and auditing the increasingly large number of images held as assets, allowing existing collections to be merged with new. The work is supported by one of our partners, BAPLA, representing nearly 400 UK agencies.

What are the potential benefits?

The new digital economy bill has problems in how it can legislate to deal with the volume of still images in existence. The study has submitted a paper to help the passage of the legislation and offer standardised alternatives to proprietary proposals, and hence a more level playing field for smaller players to participate.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £100k we could create the basis for a national register to handle orphan works, enabling image rights holders to register and link their images, and for image users to identify, control and license their use of these still images. It offers the opportunity for many derivative products, which we would plan to exploit.

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Exoteq Ltd

Exoteq is a small technology consultancy, developing high-quality mobile broadband solutions.

What is the problem your project is trying to solve?

It is estimated that over 100,000 households in the UK are unable to access the internet through a broadband connection, many of them because they reside in a rural location too far from a telephone exchange.

Coincidentally, the EU electricity directive dictates that 80% of households in the EU must have a smart meter installed by 2020. A major barrier to implementation of smart meters is providing reliable two-way communication between the smart meter and the network.

This feasibility study explores the possibility to provide wireless connectivity to rural communities to serve both purposes concurrently.

What is the study aiming to achieve?

This study will assess the feasibility of meeting both the demand for broadband in rural areas and respond to the pressure on energy providers to relay smart meter data, by deploying a dual-purpose wireless broadband network, funded by an innovative cross-subsidy deployment model.

What are the potential benefits?

This system will allow the UK to join other countries in offering broadband access to rural communities, as well as provide connectivity for smart meters.

What do you need to do next – to get closer to a marketable product, service or usage?

With a further £100k we would be able to build a trial network for a rural community. We also need to continue building relationships with utility companies and need a network deployment company to collaborate with us.

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FAB 3D Ltd

FAB 3D Ltd is a new start company specialising in the production of physical concept and presentation models using the latest full colour and high-resolution rapid prototyping/3D printing technology.

What is the problem your project is trying to solve?

At FAB 3D we believe that web and mobile platforms are going to collide with direct digital manufacturing processes. Our vision of the future is called Design Interaction Online (DIO), a framework that allows users to: engage in the creative process and co-design a product through internet and mobile applications; order their design straight away; and receive it in the post a few days later.

What is the study aiming to achieve?

The aim of this feasibility study is to determine the technological and commercial viability of using 3D printing as a direct digital manufacturing process for 'designer toy' products which are mass-customised via the web.

What are the potential benefits?

Rapid adoption of this concept and technology would signify a paradigm shift in the way we use the web as a platform for designing, manufacturing and purchasing our own products/designs online. Crossing the boundaries of both digital and tangible markets, the DIO platform has the potential for a significant global impact.

What do you need to do next – to get closer to a marketable product, service or usage?

We require further funding to build a beta version of the DIO platform. We also require marketing advice and support to help us prepare for launching the concept into both digital and tangible global markets.

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First Mile Networks Ltd

First Mile Networks Ltd is a leading expert in fibre-to-the-home (FTTH) and fibre-to-the-premise in the UK, and has been at the forefront of the promotion of this technology since 2003. FTTH facilitates the provision of high-speed broadband at speeds of 100 Mbit/s and beyond, with massive benefits for users.

What is the problem your project is trying to solve?

There is a need for 100 Mbit/s bandwidth (and 1 Gbit/s in the future), zero contention and full open access. Current offerings, both current and proposed, still do not meet these fundamental requirements. This work is therefore highly significant in meeting user requirements for the future.

What is the study aiming to achieve?

The UK is now at an interesting juncture in that a number of fibre access networks have been deployed, or are being planned, ranging from a GPON bitstream service from the incumbent (Openreach) to 'native' Ethernet services using point-to-point technologies.

We believe that these are interim solutions, mainly because of the limitations in line speed, and we further believe that an open access methodology should be mandatory (this is not always the case in the current roll-out).

The significance of the study is to identify an approach that could be adopted by the UK (and other countries) to deliver telecoms-based services at the 'lightwave or lambda' level.

What are the potential benefits?

Within the study we are currently talking to a leading manufacturer of WDM-PON equipment and also an open access software vendor, and at this stage any product from the project is at least 18 months away. In terms of market, we would look to telecom sectors in both the UK and other countries with a view to launching enhanced open access enhanced connectivity, and we further believe that our revenues would increase considerably.

What do you need to do next – to get closer to a marketable product, service or usage?

Further funding will be necessary to enable us to demonstrate three projects, the first of which we could feasibly put together within 18 months. The other two projects are longer term, but should demonstrate the full 'lightpath on demand' concept. Potential collaboration is tentatively in place with a UK university, and we are looking for further partners.

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INCONSERV Ltd

INCONSERV is a technology and business solutions company which has its foundations in the telecommunications industry. We aim to provide outstanding technology benefits to increase your efficiency, reduce costs and maximise productivity. Our development team establishes novel networking products for vendors who deliver services over an IP network.

What is the problem your project is trying to solve?

The global market is moving towards convergence, which needs an underlying infrastructure to deliver and support it. Advances in compression technologies and faster connection speeds are resulting in huge demands on IP-based services.

The main issue is whether static networks will be able to handle the requirements of emerging applications and the multimedia traffic flooding the internet. This will lead to a shift from static to more flexible networks such as active networks. In conventional networks security issues are more established, but industry is reluctant to venture into active networks due to a lack of knowledge of how to address security and performance issues.

What is the study aiming to achieve?

To establish the technical feasibility of developing a tool that can simulate active network architectures to evaluate security threats. An active network consists of intelligent nodes, which can execute customised code within packets as they travel through intermediate network nodes.

This customised packet processing has the potential to solve many networking problems. Active networks must be at least as secure if not more secure than static networks. The study will define the architectural framework required for a scalable and extendable active network, and the framework required to support security threat models and solutions. The study will also explore the possibility of extending existing network simulators.

What are the potential benefits?

To date no commercial tools are available to analyse key issues like security in an active networking environment. If the project is successful, it will facilitate the development of a more intelligent networking model which will better support the quality, security and processing required for future network applications.

What do you need to do next – to get closer to a marketable product, service or usage?

The team must develop the active network simulation tool as per the specifications proposed from the feasibility study. To develop this product we need the expertise of an additional partner specialising in advanced network security and the specific requirements of a Tier 1 end-user. INCONSERV is looking for collaboration partners and additional private/public sector funding.

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KineticaRT Ltd

Innovative and reliable systems and software for complex engineering and scientific applications. KineticaRT provides companies with measurement, automation and test solutions by integrating software and commercial off-the-shelf hardware. KineticaRT also offers high-performance .NET instrumentation components, the .NET Rapid Application Development Tools, KineticaRT Studio and Wind Studio, and legacy ActiveX instrumentation controls.

What is the problem your project is trying to solve?

Globally the number of elderly people living alone is increasing. One of the ways to establish whether an elderly person is safe is to monitor their activities of daily life (ADL).

Although several ADL telemonitoring systems are available, they require the fitting of sensors to a house and/or person. These sensors can be obtrusive and reduce the self-esteem of the person being monitored by visibly labelling them as old; the installed cost of the sensors is also significant.

There are simpler systems that require a person to press a button at intervals or to respond to an automated telephone call; although these are less obtrusive and less costly, they may still reduce self-esteem. There is therefore a need to provide low-cost, non-intrusive monitoring of elderly people who wish to continue living on their own.

What is the study aiming to achieve?

A minimally intrusive approach is proposed to the monitoring of ADL by measuring the electrical and water supplies to a house. The proposed system might also be used to provide health carers with early warning information (e.g. by analysing heating and water use patterns).

What are the potential benefits?

The US Census Bureau report *An Ageing World: 2008* states that the 'oldest old', people aged 80 and older, are the fastest growing portion of the total population in many countries. The market for a low-cost, non-intrusive system to monitor the elderly living alone is large and expanding.

What do you need to do next – to get closer to a marketable product, service or usage?

To get closer to a marketable product we need to co-operate with: a provider of care to the elderly to facilitate field trials; an academic partner to help develop ADL algorithms; and venture capitalists or business angels to provide funding.

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Nexus Alpha Ltd

Nexus Alpha Low Power Systems has recently been created from the engineering division of Nexus Alpha (primarily a software company specialising in rail information systems) to concentrate on ultra-low-power technology for a variety of markets including transport and M2M, using solar/wind as the power source.

What is the problem your project is trying to solve?

Digital communications remain a major problem in many areas around the world where infrastructure is poor. Having developed a first-generation very-low-power computer, we wanted to know how to optimise that hardware to exploit standard WiFi technology to provide long-distance communications on a solar/wind power budget.

This meant not using the most powerful hardware (as most such developments of long-range WiFi are using), but the least powerful transmitters fitted with high-gain aerials, managed by our own low-power computers.

What is the study aiming to achieve?

The intention is to improve the low-power hardware even further, taking its power demand from 0.5 W to 0.3 W (approximately) whilst increasing data handling rates and processor power. This, allied with the results of practical tests, will ultimately enable us to offer a standard WiFi package with known characteristics that is able to communicate over significant distances. As this employs off-the-shelf hardware and does not require large areas of solar cells, the costs are minimised.

What are the potential benefits?

Such systems are expected to be of use in remote regions, bringing web connectivity to otherwise disconnected communities. The systems could also be of benefit in regions where NGOs and other agencies need temporary communications in order to deliver their services effectively.

What do you need to do next – to get closer to a marketable product, service or usage?

Neither development nor production is a problem. We are looking for organisations that can make use of the technology directly or which can promote its use.

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Ogier Electronics Ltd

Ogier Electronics is an engineering-based company offering solutions in microwave and integrated system design. The company was established in 1993 to develop transmission and system solutions for military, police, commercial and local authority applications. We have 25 staff in the UK, turnover of around £5m each year, and we work with customers worldwide.

What is the problem your project is trying to solve?

Low-speed internet access in poorly served metropolitan, rural and remote communities over ADSL networks can be transformed to high-speed links by installing fixed wireless point-to-multipoint broadband infrastructure. Ogier has partnered with an ISP to determine the potential for installing wireless broadband systems in these areas, specifically in Scotland, Wales and the south west.

What is the study aiming to achieve?

The study will determine the technical and commercial feasibility of providing fixed wireless broadband operating in the GHz frequency band for poorly served metropolitan, rural and remote communities. Key issues regarding initial infrastructure establishment costs and ongoing support structure will also be addressed.

What are the potential benefits?

The benefit to Ogier is the opportunity to develop fixed wireless business in the UK – for people in general, in areas where internet speeds are currently lower than 1 Mb/s, then competition to BT ADSL services by a third-party ISP can enhance service levels over existing telephone lines.

What do you need to do next – to get closer to a marketable product, service or usage?

With funding we could establish a UK-based trial area either with our current ISP partner or with a third-party ISP provider. We also need a community that will allow access to third-party organisations to evaluate and monitor the usage of the system.

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Tangentix Ltd

Tangentix is a technology start-up founded in 2009 to commercialise a new approach to handling 3D graphics models, such that they can be rendered seamlessly over the internet in real time.

What is the problem your project is trying to solve?

The basic idea of our feasibility study is to deliver high-quality 3D graphics to a web browser in real time. Current approaches for representing complex 3D models are not well suited for use in web browser applications. They either require significant bandwidth to download a detailed 3D object, or sacrifice detail to enhance response speed for the end user.

We have developed a new method for representing 3D models that requires significantly less data while maintaining high detail. We expect this technology to enable us to deliver real-time 3D graphics in a web browser.

What is the study aiming to achieve?

The aim is to demonstrate the difference in download speed obtained with a 3D scene implemented using Tangentix's novel and patented model representation, versus the same scene using a typical existing state-of-the-art model representation.

Both representations will be implemented on a common underlying technology platform and server, so that a comparison between our approach and existing approaches can be made. This comparitive approach should demonstrate our technology's superior functionality compared to the current state of the art.

What are the potential benefits?

Bandwidth capacity on the internet limits the ability to render high-quality 3D graphics in real time in a browser environment. Although internet bandwidth is increasing slowly, the fact that this is an infrastructure problem means that our software approach could facilitate data distribution for a wide range of industries.

What do you need to do next – to get closer to a marketable product, service or usage?

Tangentix will soon be looking for further funding to fine tune the technology and gain market traction. In this respect the company is looking to build relationships with potential investors and trade partners (cross-industry) to take the technology to market.

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21media innovations ltd

21media innovations ltd is an SME specialising in wireless network deployments and multimedia service provision, including IPTV. 21media has experience of developing wireless technology (hardware and software) to enable broadband access within rural and poorly connected communities. 21media is based in Lancaster University's ICT Centre of Excellence, InfoLab21.

What is the problem your project is trying to solve?

To investigate the potential for creating utility-like community-based networks within Digital Britain and to examine how a competitive market could be established across a shared community and private sector broadband infrastructure. This will help generate revenue for community interest companies to help expand their infrastructure, and also provide new market opportunities for traditional ISPs and service (e.g. IPTV) providers.

This investigation is highly significant since at present in the UK over 50 disjointed community networks are established and the resulting 'patchwork quilt' of networks means that consumers and businesses are being offered a sub-optimal range of services.

What is the study aiming to achieve?

We are trying to define how establishing a low-cost standardised, shared infrastructure for Digital Britain can support multiple providers and multiple service offerings. The benefits of having multiple service providers and operators using a shared infrastructure include increased efficiency of the network, including reduced spectrum and energy use, and service providers gaining increased opportunities as the cost of reaching rural consumers is vastly reduced.

What are the potential benefits?

The size of the potential is substantial, with the term 'final third' (the hardest to reach) representing approximately a third of the UK population. Despite this overall size, this final third comprises many hundreds (potentially) of rural and community networks of varying sizes (from tens of users to thousands), which often means there are no economic incentives for traditional ISPs.

By allowing multiple service providers and operators to offer services over a shared infrastructure you provide greater consumer choice and further increase the motivation to establish new community networks.

What do you need to do next – to get closer to a marketable product, service or usage?

We would like to create a pilot project in collaboration with communication and service providers and community interest companies to demonstrate the viability of our proposed approach over NGA networks.

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Aegis Systems Ltd

Aegis Systems Ltd is a small independent consultancy, established in 1988, that advises regulators and industry on regulation and use of the radio spectrum, from detailed engineering analysis to strategic issues. We have expertise in all types of radio systems (broadcasting, space and telecommunications).

What is the problem your project is trying to solve?

The challenge is to provide broadband to rural users, and mobile could be a cost-effective solution with the evolution to HSPA+ and LTE technologies, which support higher data rates. However, operators need to ensure a return on investment and will need to be incentivised to roll out rural base stations.

Backhaul links from cell sites are an essential element of the mobile network, and fixed point-to-point links are used extensively, so if it is possible to use the 1800 MHz band to reduce operator costs it might help to facilitate roll-out in rural areas.

What is the study aiming to achieve?

The aim is to address the questions of how and to what extent utilising some of the 1800 MHz cellular spectrum might provide a cost-effective solution for rural backhaul links by considering: the potential size of the market (the ability for other countries to adopt the same solution); the amount of spectrum (bandwidth) required assuming use of adaptive modulation, LTE base station and frequency re-use; interference aspects – the potential to still use the 1800 MHz spectrum in non-rural areas; potential costs savings (opex and capex).

What are the potential benefits?

To facilitate the roll-out of mobile broadband services in rural areas and so assist in meeting the aim of Digital Britain to provide universal access to 2 Mbps broadband by 2012. To reduce demand for backhaul links in the 7, 13 and 15 GHz bands and improve spectrum usage of the 1800 MHz band.

What do you need to do next – to get closer to a marketable product, service or usage?

The next steps are: discuss the concept with operators and manufacturers (equipment and antennas) – estimate £15k; if the reaction is positive, require manufacturers to develop prototypes to undertake measurements to prove feasibility – cost unknown; address standards and regulatory issues within Europe to fully define when and how the 1800 MHz spectrum can be used for rural backhaul.

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Bath Labs Ltd was formed in 2003 as an engineering design consultancy business. With expertise in electronics design and communications engineering, the company specialises in finding innovative, low-cost solutions to communications infrastructure problems.

What is the problem your project is trying to solve?

A feasibility study into novel, very low cost, next-generation internet infrastructure in houses of multiple occupation.

Next-generation broadband infrastructure is extremely expensive, especially in the 'final drop' to user premises. The use of existing cabling and ducting can reduce these costs, but there are commercial competition issues where this existing infrastructure is owned by competing companies in a near-monopoly position.

Our feasibility study has investigated the use of existing infrastructure for which no such commercial barriers exist, enabling significant cost reductions.

What is the study aiming to achieve?

The study aims to demonstrate that next-generation internet access can be delivered to users in the UK's 2.7 million flats at speeds of 1 Gbps and beyond using unused bandwidth in the terrestrial TV distribution cable within buildings.

What are the potential benefits?

The benefits include estimated cost savings of at least £441m, reduced installation times, greater convenience for users, the ability for internet service providers to connect directly to 11% of UK homes using an estimated 68,000 km of existing high-bandwidth cable, faster connection speeds than are possible with the existing copper local loop, and independence from incumbent suppliers, leading to greater competition.

What do you need to do next – to get closer to a marketable product, service or usage?

The next stage for this project is a full-scale test-bed, delivering next-generation internet access to users in flats and hotels. This will enable the technology to be proven in use, and the installation cost savings to be accurately measured. To achieve this we are searching for an academic partner, a cost-effective internet backhaul connection at Gigabit speeds, and development funding of the order of £100k.

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Broadband Access Strategies LLP

We are a consultancy formed in 2001 with the objective of advising the public and private sectors on cost-effective, sustainable implementation of broadband.

What is the problem your project is trying to solve?

The Digital Britain process identified the problem of bringing next-generation access (NGA) to rural areas. One of the solutions proposed was a 50p monthly levy on all fixed phone lines in order to fund NGA across the country by 2017. Estimates for the cost of bringing NGA to all rural areas, the 'final third', were in the region of £10bn to £20bn.

What is the study aiming to achieve?

A review of a typical rural area to evaluate the most cost-effective technologies that will meet the NGA requirements in terms of businesses, consumer and public sector requirements.

What are the potential benefits?

Potential removal of the pariah status of rural communities. Saving of billions of pounds of public money (taxes) to support the roll-out of NGA in rural areas.

What do you need to do next – to get closer to a marketable product, service or usage?

Extend the work to look at other rural areas across England and to hone the cost and demand models.

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CIP Technologies

CIP is a leading supplier of advanced photonic components and services in the communications, industrial and defence market places. For nearly 30 years CIP has been at the centre of the development of photonics. This experience is now being applied to the prototyping and supply of advanced products and research.

What is the problem your project is trying to solve?

Next-generation optical access technologies for fibre to the home (FTTH) are being developed to address an increasing bandwidth limitation. However, these technologies suffer from high power consumption due to the need to be thermally managed (cooled). There is therefore a requirement to develop an uncooled optical network unit (ONU) to significantly reduce power consumption.

What is the study aiming to achieve?

CIP is developing the technology to generate uncooled ONUs to address the problem of high power consumption by carefully controlling the heat path. This enables the devices to be cooled passively rather than by the current active peltier cooling. In order to develop the technology further an accurate and detailed thermal map of the devices is required. This will be provided by De Montfort University, which will measure the devices once they have been fabricated.

What are the potential benefits?

Reducing the overall power consumption of an individual ONU not only significantly reduces running costs but also makes the system greener because of the knock-on effect of reducing CO_2 emissions by reducing power consumption. As the demand for increased bandwidth continues, the development of uncooled components becomes paramount.

What do you need to do next – to get closer to a marketable product, service or usage?

To take the project to the next stage CIP would require a telecoms vendor who is interested in supplying uncooled passive ONUs. Typical partners such as Ericsson, Nokia Siemens Networks or ADVA Optical Networks would be desirable. Such a collaboration would be ideally suited in the future for a PIANOPLUS type consortium.

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Cybermoor Ltd

Cybermoor is a social enterprise which focuses on digital inclusion in rural areas by providing broadband and innovative services such as e-health. We work with public and private sector clients and have about 350 broadband customers. Formed in 2002, we aim to bridge the digital divide by improving access to services.

What is the problem your project is trying to solve?

The cost of deploying next-generation access (NGA) to the final 30% of households in the UK will probably not be met by mainstream operators without significant public funding.

A large proportion of rural homes and businesses will not be able to reach their potential as they will not benefit from services which rely on NGA (telepresence video conferencing, cloud computing etc). There will be a drift of economic activity away from areas which do not have access to NGA, resulting in fewer opportunities for rural residents.

What is the study aiming to achieve?

The project aim is to assess the feasibility of delivering fibre to the home (FTTH) to every property in the parish of Alston Moor in Cumbria. The two innovative elements are: quantifying reducing the cost of FTTH through novel use of local resources; and engaging with the community to develop a model to obtain local investment.

The project will build on lessons learned from Cybermoor's initial deployment of a fibre between Alston and Nenthead. The Cybermoor civils team will assess cost reductions using 'the dig where you live' approach used in northern Sweden, where landowners lay their own ducting, making use of local contractors and local expertise.

What are the potential benefits?

We would minimise costs and learn how to finance NGA using community shares. The successful engagement of the local community would result in NGA implementation for 1,155 households and 100 businesses within 18 months (i.e. Alston Moor).

If 10% of UK households without NGA used community investment to deploy their own FTTH, an additional 1.6 million households would be covered – a significant market for next-generation services.

What do you need to do next – to get closer to a marketable product, service or usage?

We are seeking partnerships with organisations which can help us to meet demand in other areas, to extend the project into other rural communities who are interested in deploying their own NGA networks.

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Fibrepoint Ltd

We are a UK manufacturer of high-speed plastic optical fibre home networks that are designed to get the most out of broadband connectivity. Formed in 2007 to tackle home networks, we have developed a range of innovative consumer products that combine leading-edge optical networking with a low-voltage DC renewable energy system.

What is the problem your project is trying to solve?

The problem we are addressing is connecting consumers to reliable, high-speed broadband access. Existing wired networks are based on copper cables and suffer from electromagnetic interference (EMI). This is caused by domestic appliances such as washing machines, hair dryers and microwave ovens, which make the home environment challenging. The result is data corruption to a point where digital services such as IPTV streaming begin to fail.

We have developed a plastic optical fibre network system for the home that is immune to EMI and combines effective, high-speed data delivery with a low voltage, 48V DC power bus to deliver a full range of digital services. Existing connectors are not designed to deliver both data and power in one device, and a new design is required that will allow simple and reliable connection to NGNs.

What is the study aiming to achieve?

The feasibility study focuses on the development of a new connector which will incorporate leading-edge fibre optic technology with low-voltage power distribution. The design must take into account the needs of several different industries and should ideally give benefits to all of them whilst also complying with several different international technical standards.

What are the potential benefits?

A successful feasibility study would allow us to create and protect a valuable IP design that could secure the Fibrepoint project for UK Plc and open up the home to the rest of the industry. Our main target market is incumbent telecoms companies across Europe, but several associated market areas in consumer electronics have already expressed an interest.

This could bring substantial revenue and also allow NGN infrastructure to use, where available, sustainable, locally generated energy and reduce reliance on fossil fuels.

What do you need to do next – to get closer to a marketable product, service or usage?

We would like to work with a specialist connector manufacturer to help bring the system to production and introduce this connector to other OEMs that build consumer products for the digital industry. Additional funding of about £250k would allow us to develop a home hub consumer unit and European-style wall outlets, which would allow us to take advantage of sales enquiries coming from European countries.

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Gnodal Ltd

Gnodal is developing a new generation of 10/40 Gbit Ethernet networking technology for high-performance data centres. The product family, to be introduced in mid-2010, consists of hardware switch products. The industry sectors initially addressed are internet, finance, oil and gas, and high-performance computing. We are also evaluating the use of the technology in NGA networks.

What is the problem your project is trying to solve?

Corporations and enterprises are locating their computer equipment in large data centres. However, the trend towards server virtualisation and cloud computing is putting extreme stresses on data centre networks. Ethernet is the network of choice, but Ethernet congests leading to network efficiency as low as 10%.

Gnodal has invented and patented technologies that eliminate congestion from Ethernet networks, offering near 100% efficiency and scalability to 64,000 server ports at very low cost and power consumption.

What is the study aiming to achieve?

The study is aiming to demonstrate how, by using Gnodal technology in next-generation access networks, telecommunication and cable companies can dramatically improve network efficiency and make radical savings in terms of cost and energy usage.

What are the potential benefits?

It is estimated that widespread use of Gnodal Ethernet switch technology could have significant savings in carbon versus incumbent network equipment vendors. Furthermore this is a market dominated by US and Asian companies, and this is an opportunity to build a real UK competitor in this global market.

What do you need to do next – to get closer to a marketable product, service or usage?

A follow-on project with a budget of £3m-5m, with a major telecommunications or cable company and other UK-based smaller technology companies, would enable the development of a low-carbon broadband exchange test-bed of the order of 2 Tbit of data throughput, serving potentially 20,000 homes at 100 Mb/s per user.

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Move Networks

Move Networks is the first company to provide both content owners and distributors with a comprehensive solution for delivering and monetising a true television experience on the internet.

What is the problem your project is trying to solve?

This study (on energy monitoring in the home related to internet use and service distribution) focuses on a number of proposals which could see significant contributions to our greenhouse gas emissions targets while at the same time exploring how they could catalyse the adoption of such new business models, fuelling growth of the UK economy.

What is the study aiming to achieve?

The study's aims were to investigate the energy savings and reduced CO_2 emissions possible via various digital convergence technologies, specifically as it relates to energy monitoring in the home, taking into account the Universal Service Commitment, and SMART Metering initiatives.

What are the potential benefits?

The benefits, in addition to the potential environmental benefits of dematerialising ICT use in the home, are the promotion and acceleration of digital inclusion, with the subsequent benefits to social inclusion and positive societal change. Further benefits include the emergence of new business models that leverage digital convergence technologies, revitalising the economy at the same time as making it more green.

What do you need to do next – to get closer to a marketable product, service or usage?

With further funding of £150k we would be able to resource a proof of concept of an internet smart metering system. It is recommended that a trial to evaluate the challenges and the benefits of implementing the proposals be conducted at a facility such as The Works, Ebbw Vale.

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Networks by Wireless Ltd

We are the UK's premiere wireless integrators working across all sectors to install and maintain the latest generation high-speed communications links in cities and across the country's most challenging environments. We are also trusted to provide our specialist services to some of the industry's largest IT and outsource providers.

What is the problem your project is trying to solve?

The future outlined by Digital Britain recognises that access to broadband will be central to the UK's economic development. It also highlighted that several million people, largely in more rural areas, could be deprived of this potential.

We believe our technology, delivering broadband across significant areas with licensed WiMax, is the perfect answer at the perfect time to deliver a digital future to millions, who would otherwise be marginalised.

The solution must also deliver future-proof bandwidth in a cost-effective manner overcoming adverse geography and topology to economic and available devices. These may be either domestic or business customers.

What is the study aiming to achieve?

The use of this type of WiMax equipment at this frequency (3.5 GHz) is new in the UK. This study deploys this equipment in a pilot urban environment and a pilot rural village within the same local authority.

With these deployments we are accumulating the metrics and characteristics necessary to load our predictive wireless mapping tools.

This then gives us high-confidence information on new territories and geographies, leading to accurate estimates and quotations. The feasibility study also allows us to accurately determine the range and performance of antennae and receiving equipment, and develop return on investment metrics.

What are the potential benefits?

We have made this product a central element of our corporate strategy going forward. Despite its early stage of launch we are experiencing high levels of interest in this technology. We believe this can deliver the silver bullet to deliver broadband to the 3 million people in not-spots and nearly-spots.

What do you need to do next – to get closer to a marketable product, service or usage?

We are seeking introductions to local authorities or groups seeking to address broadband inequalities. The most relevant initiative of this type is the Government's plan for a 50p levy on telephone subscribers to support broadband in rural areas. Information or help to access this fund would be our main objective.

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Powerline Technologies Ltd

Powerline Technologies has implemented a unique solution to deliver broadband services over an electricity infrastructure called Hybrid Fiber Powerline (HFP). HFP is the ideal cost-effective network infrastructure for a fixed-line telecommunications network and for alternative network operators in developing economies, and for deploying rural broadband.

What is the problem your project is trying to solve?

Existing telecommunications infrastructure in the UK does not have the ability to deliver broadband services to rural/remote areas, and the cost of delivering fibre-to-the-home (FTTH) networks is prohibitive for the final third (30%) of the population in these areas.

The HFP solution is a new approach which has been developed for deployment in emerging economies, where infrastructure is at a minimum. It is essentially an 'add on' to the existing electricity infrastructure. It uses a combination of fibre optic cable for the backhaul together with Broadband Powerline Communications for the final connection to the customer.

What is the study aiming to achieve?

The HFP solution will utilise the electricity infrastructure to deliver next-generation access (NGA) speeds of 10-40Mbps (uncontended, symmetrical bandwidth) to each rural/remote premise today and will enable full NGA by delivering fibre to the community (FTTC), which can be easily upgraded to FTTH when this is commercially viable.

In reality HFP bandwidths may well satisfy the demands of many rural residential customers, and the more expensive FTTH may only be required for rural commercial and business premises. The study will investigate the commercial, technical and operational issues contributing to the feasibility of utilising HFP technology to provide broadband in rural and remote areas.

What are the potential benefits?

There is a significant incremental infrastructure cost once FTTC/FTTH deployment reaches 70% coverage, the remaining 30% – the final third – amounts to 7.5 million households. This is the market opportunity for the HFP solution. Providing access to NGA broadband services in rural/remote areas has significant community and environmental benefits.

What do you need to do next – to get closer to a marketable product, service or usage?

The company requires further funding to develop a business model with key stakeholders in the telecommunications and electricity sectors. The next technology steps are a proof-of-concept demonstration, product development, pilot trial and commercial roll-out.

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Predictable Network Solutions

We are a small international consultancy formed in 2003. We provide a priori performance engineering for large complex distributed systems and data networks. We have developed a data network quality assurance technology that 'wraps' existing networks. Once wrapped, we can turn standard broadband into a carrier of multiple assured services.

What is the problem your project is trying to solve?

There is a key barrier for UK plc to exploit broadband data networking – you can't trust the existing network deployments to deliver the data for any particular service (such as VoIP, teleconferencing, video streaming and remote working).

Without reliability at the service delivery level, many of the benefits of 'digital task substitutes' (e.g. video conferencing) can't be realised, and many new economy business models are at risk as they have erroneously assumed that the network will deliver what they need.

What is the study aiming to achieve?

Dissemination – we are using the study to expose how end-to-end service delivery can be approached. Delivering quality in data networks is so badly understood that even though large amounts of money are being spent on next-generation networks, they are not going to deliver the assured end-to-end bi-directional data transport infrastructure that UK plc needs.

The study will show what the existing infrastructure is capable of and help create a framework to structure the associated commercial dialogues for delivering quality assured services.

What are the potential benefits?

Properly deployed multiple assured data services would make a massive difference to business and the UK. For three years we have had working video conferencing for sign language, remote desktop computing into the cloud etc. all over 256k/512k ADSL. We know of multiple projects (in the £10m to £500m range) where this technology would make greater than 20% cost savings – including local government, mobile network operators and social services.

What do you need to do next – to get closer to a marketable product, service or usage?

We've been told that this is a disruptive technology. We've funded ourselves through the technical due diligence and market analysis with a large telco but now their cost structures and time scales are becoming the barrier to large-scale deployment. We have an alternative approach which would use existing and proposed UK broadband infrastructure to create these services – at a wholesale level. We need £500k to start down this path to bring it to fruition in the UK, and start the equivalent process in selected European territories.

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Regenology Ltd

Regenology Ltd was formed in 2006 with the main aim of developing technology to assist in the economic and social regeneration of deprived areas. Over the years Regenology has developed a suite of services to help with this and has carried out a number of research projects.

What is the problem your project is trying to solve?

With the internet becoming more and more a part of daily life it is vital that the opportunities that technology brings is available to all. The Government has made a commitment to enable everyone in the country to have access to the internet with a speed of at least 2 MB by 2012.

By developing technology to cheaply and easily deliver internet access to people in multi dwelling units we aim to be able to reach out to members of the community who are sometimes left behind for various reasons, not least of which is the high cost of internet connectivity.

What is the study aiming to achieve?

We are aiming to develop a solution to deliver internet access to households which currently have a shared aerial installed. Shared aerial systems are commonly fitted to high-rise and low-rise blocks, hotels and other multi dwelling units (MDUs). They allow multiple households to receive television, radio and satellite TV signals all through one aerial and dish located on the roof of the block. With the help of this technology we hope to deliver high-speed internet to those users too.

What are the potential benefits?

We hope the technology will be taken up by local authorities, housing associations and registered social landlords who will use it to deliver services to their tenants. This will be of benefit to both the tenant and the landlord, with the landlord making cost savings by enabling their tenants to conduct more of their queries online and helping to bridge the digital divide.

What do you need to do next – to get closer to a marketable product, service or usage?

First we need further funding to run a field trial of the system. After a trial we will need help to turn the project into a ‘product’, especially in terms of providing backhaul internet connectivity, first line support for end users and marketing to our target market (local authorities and housing associations).

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Zap designs consumer profiling engines for use by IPTV networks as they develop targeted advertising applications. Our software is hosted inside broadband networks where it reads captures and analyses audience viewing habits over time. The analytics output is then transferred into IP packet headers to determine who sees what.

What is the problem your project is trying to solve?

All TV consumers understand the concept of irrelevant advertising. They respond to it by heading for the kettle. The technology now exists to start to change that. Our vision of the future is one where consumers will readily transact personal data in return for more meaningful sets of messages which are better tailored to their individual tastes and consumption behaviours.

What is the study aiming to achieve?

Zap is working both front end (the consumer behavioural piece) and in the content delivery area (the network piece). Our profiling tool is raw but essentially complete. Our study has examined using an existing IP capacity management protocol called TTL (Time To Live) as an addressability tool for cost-efficient deployment of next-generation IP video.

What are the potential benefits?

The received wisdom on efficiency improvements from properly targeted advertising is a factor of four uptick on ROI in a global advertising industry worth $580bn. Britain is still regarded as a world leader in media and creative services. Zap's objective is to see that lead consolidated by being first to market with this infrastructure initiative.

What do you need to do next – to get closer to a marketable product, service or usage?

Our concept has recently been approved for full grant by the EPO. However, it still needs to be concept proven in a broadband TV environment. The company seeks partners willing to support its objectives in that space. We also need to scale up our engineering resource and achieve follow-on financing to come to market. Some of this funding is already in place.