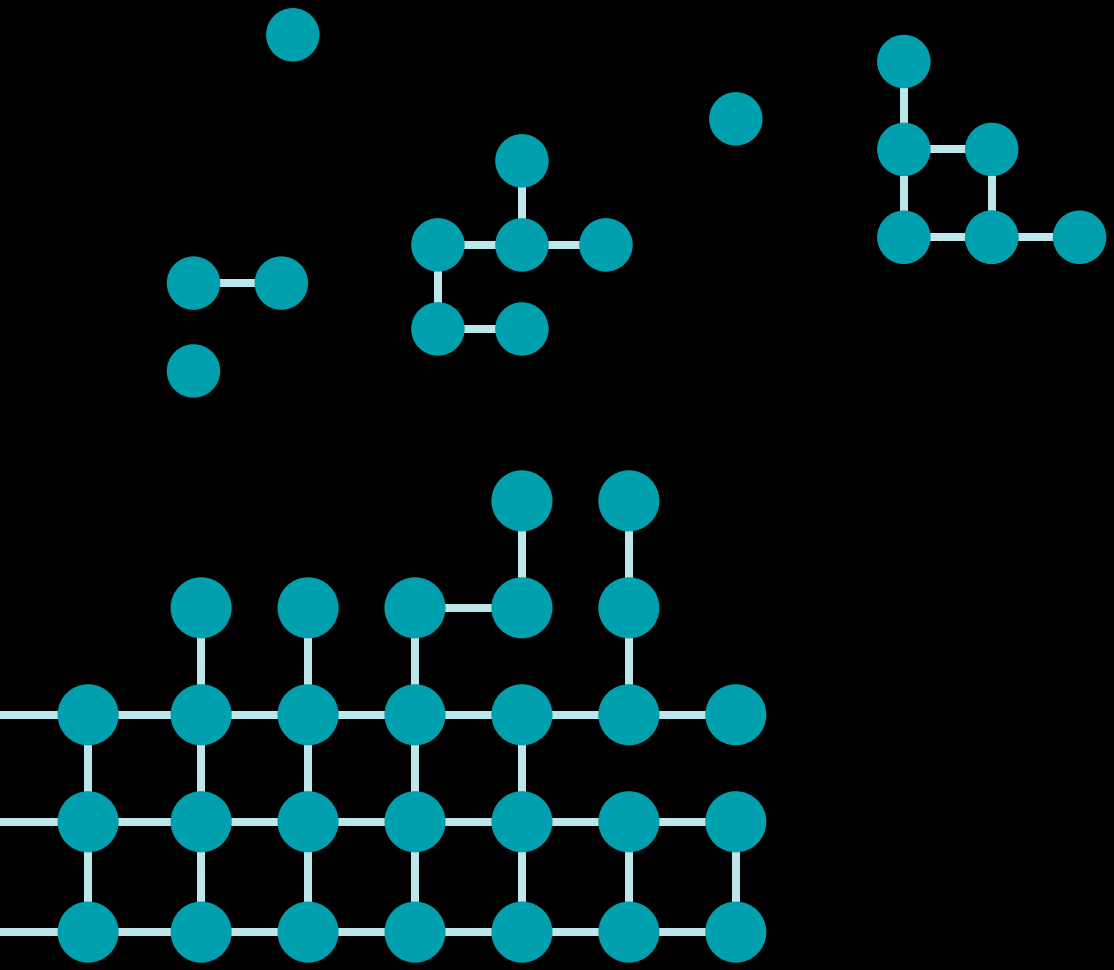
Technology Strategy Board
Driving Innovation

Collaboration Nation

Digital services 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.

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Introduction

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

Feasibility studies in digital services

Digital is one of the core programmes at the Technology Strategy Board. Our mission is to help innovative businesses unlock the economic potential of digital technology by identifying and addressing digital challenges and by resolving tensions between people, processes and technology.

Stimulating the development of novel digital services in key emerging areas is one of our priorities. We invested approximately £2m in 76 innovative feasibility studies in digital services proposed by small or micro companies. They were successful in our January 2011 'Digital Services for Growth' competition.

The competition sought proposals for innovative digital services in four challenge areas – adoption of the cloud (services and technologies that enable the delivery of computing services over the Internet); the Internet of Things (a network of things such as buildings, vehicles, clothing, portable devices and other objects with the ability to sense, communicate, network and produce new information); augmenting public services; and harnessing the value of open data.

Each three-month project received up to £25,000 to explore how to unlock business opportunities in digital services in these areas and to help them to overcome the initial hurdles to development.

Some projects were conducted by single companies, while others were carried out by collaborative consortia. The small and micro companies leading the 76 projects are well distributed nationally and have an average of 7.1 employees.

Successful projects should be well positioned to seek support to develop their ideas, including through future Technology Strategy Board competitions.

Footnote

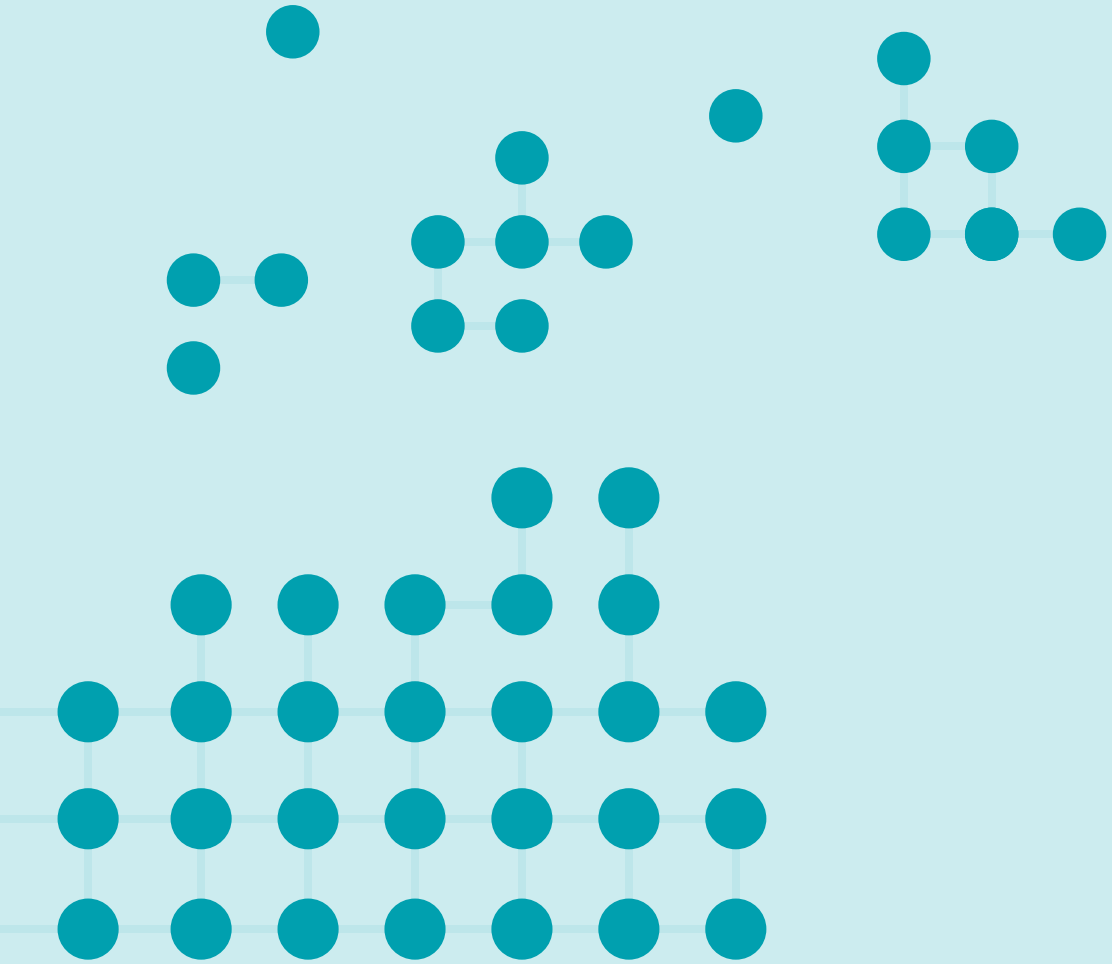
This directory provides a snapshot of the winning projects and companies so that potential future collaborators, investors and companies interested in open innovation can get to know the companies involved.

Index of companies

Collaboration Nation

Digital services feasibility projects

Harnessing the Value of Open Data



21media innovations ltd

Public data service provision to internet-protocol-based television platforms

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21media develops interactive applications for mobile, web, internet protocol television (IPTV) and digital television platforms. Our core product delivers high-quality and personalised television content directly to any web browser on any platform.

What was the business need that motivated the project?

The purpose of this feasibility study was to identify the potential opportunities in providing public data services to internet-protocol-connected televisions (IPTVs).

What approach did you take to address the challenge?

We reviewed the available open and public data resources, identified the unique challenges in bringing data applications to the television environment and prototyped a proof-of-concept data application suitable for deployment on upcoming platforms, such as YouView.

What are the potential benefits?

Our study shows that the television landscape is rapidly changing and that upcoming platforms will provide truly interactive capabilities that go beyond the current 'red button' experience. While there are a number of open data and public data initiatives looking to provide web-based access to services, there is currently little or no effort targeting service provision to hybrid-television, digital and next generation set-top-box platforms.

What are the next steps?

We have identified a market opportunity and our next steps are to further develop relationships with those organisations we have talked to as part of this study – local and county councils, broadcasters and technology providers – in order to undertake future projects and business ventures.

Calvium

Enabling media designers to use public data for new businesses and mobile apps

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Calvium makes tools and services that enable designers and digital media agencies to create beautiful smartphone apps using their own skills and content. We have been running for almost two years and have strong mobile-development and HTML5 expertise.

What was the business need that motivated the project?

Our customers want to create applications that take advantage of live data from online data sources. They want to do this with little or no programming, as their skills are in content creation and design rather than in Objective-C or Java programming.

What approach did you take to address the challenge?

The challenge was to create a system that was flexible in terms of both the visual result and the data that it could consume, without introducing complexity that only programmers could understand. We achieved this by creating graphical editing systems that allowed designers to create screen designs without programming and by creating a series of widgets for this system that allowed users to easily specify the data sources and their rendering.

What are the potential benefits?

Our suite of tools allows digital media agencies to add value to their existing relationships with their customers by also creating innovative and connected smartphone apps for them using their existing skill sets. This means smaller brands can now afford to have associated apps, the digital media agencies get increased revenue and we get fees from the use of our tools.

What are the next steps?

We are working on bringing our prototype up to production standard and hope to have a fully commercial implementation of this technology in the market very soon. We are keen to meet people who are interested in using our tools or investing in our development and marketing efforts.

Deep Visuals Limited

Creative learning from digital collections

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Deep Visuals was established as a spin-out from Kodak Research in 2009. We are creating new ways to interact with digital collections. Our first product, ViziQuest, is a totally image-led way to explore collections using our novel semantic browsing technology. Our first clients are museums.

What was the business need that motivated the project?

Following sales of our ViziQuest system to museums, we saw a need for museums to engage with a wider section of the community, especially children. Many museums have been investing in expensive digitisation projects and we saw the need to exploit these recently created assets to help maximise their investment.

What approach did you take to address the challenge?

We built on our semantic browsing application by adding a fun, creative layer. The browser is used to stimulate creativity by exploring a collection of photos and selecting a number of photos as props for a story. The selected photos are imported into a digital comic book where a narrative is added. A novel interactive demonstrator has been created by adding to the narrative with a number of fun audio effects.

What are the potential benefits?

An important part of the project was to test the concepts with users, which we did with two different groups of school children. We collected good evidence that the system will engage and educate users and, as a bonus, build skills of creativity and narrative construction. Feedback from pupils, teachers and museum professionals was extremely positive. A fully developed product would appear to have demand in both museums and schools.

What are the next steps?

We will develop a 'hard-copy story' product based on selecting images with our browser and printing them using customised templates. We have formed a partnership with the Fitzwilliam Museum and together we are actively exploring funding opportunities to develop the comic-style demonstrator into a commercial product.

Festivals Edinburgh

Festival open data

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Festivals Edinburgh is the organisation created by the directors of Edinburgh's 12 major festivals to lead on joint strategic development and maintain their global competitive edge.

What was the business need that motivated the project?

The festivals' core data asset is our listings. Limited capacity means these are typically presented in print, on proprietary websites and a through a limited number of third-party media syndications. Real and anticipated demand from third parties suggested that an open data approach would lead to additional services – providing new value for audiences, the festivals and the third parties.

What approach did you take to address the challenge?

On the supply side we enlisted a technical specialist to create the 2011 listings application programming interface (API) which took data from seven summer festivals and which was supported by some bespoke licensing agreements negotiated with the participant festivals. On the demand side, prior to the live API, we ran a high-profile event to engage developers called Culture Hack Scotland which was considered one of the most successful such events by the sector.

What are the potential benefits?

This API pilot served both press/media and web developer/entrepreneurial users and resulted in services widely used and reported on during the peak festival time in August. It also resulted in the participant festivals' first material open innovation activity and has directly led to at least two new start-up projects that are being run as ongoing concerns. Importantly to the festivals, the project has also created new sales channels for tickets.

What are the next steps?

Following the summer festival season, there will be an in-depth review of the overall project which will inform future strategy and iterations. This will include the potential of using the listings API as the foundation for additional content, and commercial and social layers.

GovEd Ltd

The Carbon Quilt – making carbon data visible, for commercial and societal advantage

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GovEd is a communications consultancy, media production company and creative agency, with particular specialism in science, technology and education. We have extensive expertise in communicating about climate change and greenhouse gases, including through our joint venture company Carbon Visuals.

What was the business need that motivated the project?

We have developed a unique set of software tools and visual techniques for communicating and supporting decision-making in carbon reduction, based around our 'Carbon Quilt' concept. Our project aimed to develop technical solutions for integration of these tools with existing decision-making tools and visualisation platforms, including in areas such as supply chain management and business strategy.

What approach did you take to address the challenge?

We focused on three areas of development – advanced 3D visualisations and integration with platforms such as Google Earth; integration with carbon analysis and supply chain management tools; and dynamic visualisations (including browser-based), using real-time data-feeds. Our research, analysis and agile development process have resulted in some unique solutions that have already generated new commercial and public sector interest, as well as a detailed technical pathway for further development.

What are the potential benefits?

Our aim is for wider take-up of these visual tools to support more effective organisational and personal decision-making about carbon-reduction at all levels of society. We believe this concept has significant commercial potential in the carbon-analysis and strategy sector, and we also see its potential to support growth and innovation in the wider economy by helping to support and accelerate the transition to a low-carbon economy.

What are the next steps?

We are now looking both to secure further client projects and to attract investment to enable the next stage of technical development and full commercial realisation of our products and services. We are also seeking technical partners in areas such as building management solutions, display technologies and low-energy technologies.

Kyenesim

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Kynesim provides high-quality embedded systems engineering, software and hardware design to clients in a wide variety of high-technology disciplines with particular expertise in communications and digital video. Partner Sellekta is a London-based design consultancy focusing on web/mobile user interfaces.

What was the business need that motivated the project?

The problem with over-the-top (OTT) digital video distribution (delivered over the Internet or broadband) is that it is hard to make video discoverable, scalable or interactive. Search technologies are underdeveloped, bandwidth demands of a popular video are significant, and interaction around a video is hampered by the lack of connection between companion devices and big screens. The need is to visualise social media to provide interactivity/discoverability while mining that data to predict bandwidth.

What approach did you take to address the challenge?

We built a number of prototype implementations which explore social media/video interaction. It demonstrated the base set-top technology platform plus the software components that comprise it. A real-time hashtag social media stream has been overlaid on top of a live TV output, mirrored on Android mobile phones.This is demonstrated as a prototype tweet-linked electronic programme guide to enable social-trending functionality.

What are the potential benefits?

Improved discoverability of video content is a benefit both for producers and for users. Improved interactivity will benefit producers and advertisers primarily, though users may also enjoy it. Scalability improvements accrue primarily to content distribution networks in reduced contingency requirements, though these will feed back to producers. It may prove easier to monetise more interactive content, though this would have to be the subject of a separate study.

What are the next steps?

The two main next steps are to develop our recommendation/content management application and try it out on real users, probably via the Android app store; and to partner with advertisers or producers to explore whether the interactivity of the prototype can be translated into gains in audience satisfaction and total viewers.

Onteca Ltd

Crowd-sourcing meaning from public data

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Onteca is a digital entertainment developer and micro-publisher. We develop applications for iPhone, Wii and other digital channels. We also offer consultancy services on social, interactive and multi-screen television usage and a number of technology solutions in this area.

What was the business need that motivated the project?

Creating structured forms of information has been one of the major trends of the last 10 years. Wikipedia, Metadata Schema and even Twitter contain structured data that can be reused for other purposes. Algorithms that build meaningful content from structured data, and that crowd source the human intelligence necessary to put together genuinely good quality information, can reduce the cost of content creation.

What approach did you take to address the challenge?

We created a system for constructing structured information around quiz and learning content. It is built on HTML5 and Javascript front-end with back-end server technology running from the cloud to obtain the information. We investigated a number of techniques for storing, analysing and improving this information. We also looked at combining with Google Translate to translate this content into multiple languages and to create new applications that can be sold around the world.

What are the potential benefits?

We observed the best results with augmented human content creation. This uses machine automation to do the initial pass on the data. We then improve the data with human help. Understanding meaning in potentially loosely structured information is difficult. It has direct applications for us in reducing the cost of content creation and also has applications in areas such as search intelligence.

What are the next steps?

We will integrate crowd-sourced knowledge more closely into our applications. This can be done in two ways, through metrics and through positive reward systems. We are able to manage large sets of information drawn from public data sources. We are looking for partnerships to further develop this work.

Opine Consultancy

Homebook: a new dimension in digital services for home-finding

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Homebook is in the home-finding business. The company is developing an application platform that will use an individual's personality profile to search for products and services in the global market place.

What was the business need that motivated the project?

A home is the largest purchase people make. This market drives more than 20 related business sectors worth more than £250bn a year in the UK. A web platform that could use an individual's personality profile to find a property or homes could be a disruptive technology in the property market. Homebook is a scaleable multi-million-pound business that could be globalised.

What approach did you take to address the challenge?

Homebook would offer a digital service that begins with identifying the home-finder's personality, aspirations and desired outcomes. The system uses these attributes to define search queries and links these to offerings in the home marketplace. Such a process driven by personal attributes would be expected to deliver more 'desirable' properties and dramatically reshape the home-finding process. The relevant technical problems were solved and we now have a working demonstrator.

What are the potential benefits?

The impact of personality on purchase decisions and choice of products has been extensively studied. Homebook represents a world first in directly linking the personality profile of an individual to specific objects and services. The system will require less personal effort for a better individual match of available properties and services. Once set up, the system could act autonomously and actively to present an individual with desirable objects or services.

What are the next steps?

Homebook is ready to scale up and enter the market place. We are seeking angel/venture capital investors with an interest and expertise in social networks, consumers or property. A collaborative relationship with a large social network or search company or a property company looking for the next generation of technology is possible.

PatAnalyse

Improved automation for complex patent studies

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PatAnalyse is an integrated technology consultancy specialising in high-quality patent searching and strategic analysis. Experience in technology consultancy allows us to provide an interpretation of the competitive intelligence landscape; our analysis is closely aligned to the client's business strategy.

What was the business need that motivated the project?

We have developed revolutionary techniques for patent-searching. Our tools improve the reliability of patent searches using a self-learning process. The core of our approach is related to organising efficient web-based interaction between experts. But reliance on human judgement does not necessarily produce high-quality results. Artificial intelligence algorithms are required to identify and correct the most questionable data.

What approach did you take to address the challenge?

We have successfully developed a sophisticated predictive artificial intelligence algorithm based on pattern recognition. The algorithm is specifically devised to learn an optimal combination of a huge number of features in the prediction of the classification task. This is to enable a robust quality audit process in a system with multiple user input. The current study used a training set of 100,000 patents screened and classified by a dozen subject area experts.

What are the potential benefits?

Efficient web-based interaction between experts, under the control of artificial intelligence algorithms, greatly improves the quality and efficiency of patent studies, which makes them more affordable for smaller companies. The results of the project have enabled further development of the 'smart' patent management tools. The tools aid efficient collaboration between users in the client organisation and enable them to re-use the results of the intellectual property intelligence studies provided by us.

What are the next steps?

We are organising trials with several commercial partners to test our new patent knowledge management tools for internal use in the clients' R&D team. Efficient collaboration between users under the control of the self-learning artificial intelligence algorithm helps to organise a better transfer of technical knowledge embedded in patent specifications.

Placr Ltd

Two-sided apps for digital services in public transport information

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Placr is a public-transport-data aggregator serving users, developers and operators with timetables, departures, routes and performance information through our transport application programming interface (API) and our placr.mobi service. We are a small company with three employees, established in 2008.

What was the business need that motivated the project?

Public transport information is complex, difficult to access and not available in the same form everywhere. Current apps do not allow the user to share/contribute information from/to the service, or communicate with the operators. Existing apps rarely have sustainable business models as the revenue is based on one-off lifetime charges for app purchases or low-margin advertising.

What approach did you take to address the challenge?

The key outcome of our feasibility study is the creation of a new transport information platform designed to support digital services and social media (http://placr.mobi).There are now 'activity streams' for every route/stop in the service areas where messages can be posted and retrieved by users and apps. This new platform can provide services to users and developers and analytics to operators, raising average revenue per user for transport information distribution.

What are the potential benefits?

There are benefits to users (free transport app), to developers (timetables, service updates and social media in one place) and to operators (social media content management and analytics) from this new service. These benefits can each be monetised to create a sustainable business model, which will allow Placr to roll out the service nationally. The funding for this feasibility study allowed Placr to build critical new relationships with bus operators.

What are the next steps?

The key step is the recruitment of operators to use the platform. Our aim is to offer social media content management services to operators as a package with our web app. We aim to carry out further market research into the need for this kind of service among operators.

Profit From Science

Solution-finding portal, matching SMEs with university innovations

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Profit From Science offers online tools and services to help companies and universities profit from science. We work with companies to find science solutions and innovations and we help universities to market and deliver their expertise and capabilities to industry.

What was the business need that motivated the project?

Universities want to find out about industrial problems they can solve to generate income, but do not always know how to find companies with relevant needs. Companies seek to profit from the science solutions and innovations universities can provide, but knowing where to look and find the right solutions in the mass of public data available can be a difficult process.

What approach did you take to address the challenge?

We needed to understand the challenges faced by companies seeking to extract understandable information from the wide variety of data sets held by universities. We talked to companies and universities and, out of these discussions, we developed the portal specification. We investigated and tested different ideas by combining a number of data techniques in new ways. Finally, we built a proof-of-concept portal demonstrator to test feasibility, functionality and usability.

What are the potential benefits?

We envisage more instances of UK companies finding new technical solutions or innovations, leading to cost savings, growth and increased competitive advantage. We also see more instances of universities finding opportunities to help industry, to create impact from research and to earn additional revenue. There will be more value-creating connections made between technology providers and commercial exploiters, and the way in which universities are engaging with and contributing to industry will be more visible.

What are the next steps?

We need to develop the demonstrator portal into a robust and scaleable platform suitable for full trials and testing, use trials to inform optimisation, and then proceed to launch. We also need to raise awareness and promote the portal and services to companies and universities. We are seeking funding and partners for this next phase.

read4sure Ltd

Integrating public data into intellectual property rights (IPR) management tools for SMEs

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read4sure provides a web-based intellectual property (IP) management dashboard for those with smaller IP portfolios.

What was the business need that motivated the project?

Around 70% of UK patents are filed by small and micro companies, yet traditional intellectual property rights (IPR) management tools require extensive training and familiarity to be useful, and constant data input to remain up to date.

What approach did you take to address the challenge?

Our study established the requirements of and potential for IPR management software designed for the distinct needs of small companies (SMEs). We then built a demonstrator. The Hawk IP Dashboard is delivered through a software as a service (SAAS) business model and extracts relevant information from public data sources.

What are the potential benefits?

The benefits include increasing an SME's competitiveness by cutting IPR management burden, reducing outside attorney cost and reliance, and enhancing IPR reporting to decision-makers and stakeholders (investors, funders etc).

What are the next steps?

Our next step is a launch and to build up an initial customer base. We are seeking partnerships with other IP service providers and will develop trademark functionality. We will also undertake ongoing development of the dashboard.

SES Construction Software Ltd

Pitched roof covering specifications

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SES Construction Software was formed in February 2003 and is the UK market leader in estimating software for construction.

What was the business need that motivated the project?

The roof is a complex construction. It has many angles and pitches, creating engineering challenges in fixing down the roof coverings for a particular location and in particular weather conditions. The development of a 'fixing specification' is essential for manufacturers to guarantee the covering. This does not exist today in an industry-wide form.

What approach did you take to address the challenge?

Our study aimed to prove the feasibility of creating a web-based system that would accurately create a fixing specification for any roof tile in the UK. The outcome of the study has shown conclusively that this is possible, that the technology is capable of doing this, that the data exists, and that there is enough co-operation within the market sector to achieve such a tool.

What are the potential benefits?

The national/international roof tile manufacturers are agreed that it is not feasible for them to develop their own approach. Our unique approach to the software development will allow each participant to progress in their own way. The UK, Europe and USA are a multi-billion pound marketplace. To compete, manufacturers have to guarantee the whole roof based on their products being fitted to specification.

What are the next steps?

In order to build the software, we will need to formalise the original working party and expand it to include European partners and government bodies in order to secure the supply of the data required. Further grant funding will be necessary to finance the project.

Tinley Media Ltd

Different story

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Tinley Media is an interactive agency specialising in conceptual design and prototype development of new interactive services. Recent clients have included BBC R&D, BBC Vision, the Welcome Trust, Wildscreen and WWF.

What was the business need that motivated the project?

People's consumption of text media is changing, and there are gaps in an emerging market. News organisations are moving to a 'paid content' business model. Alternative news sources are increasingly popular, with blogging and micro-blogging leading to a rise in 'citizen journalism'. We have developed a concept to fill the gap between these two approaches. The concept is simple and has market potential.

What approach did you take to address the challenge?

Our challenge was to build a responsive HTML5/JavaScript-based app, to filter large numbers of items down to a handful that should be of interest to a particular person, and to search and index large amounts of information. Our solution was to make use of existing open-source technologies and libraries, namely Python, Django, SOLR and Nutch. Our innovation was to reduce the amount of information and choice people are presented with to that which interests them.

What are the potential benefits?

For us, project success is our businesses having both a product and practical knowledge of exploiting interactive media's new frontier of apps and tablet devices. Success also means we have a larger portfolio of intellectual capital for use in other projects. Beyond our team, bloggers and publishers will reach larger audiences and thus be more successful themselves.

What are the next steps?

We will continue development to the point of a releasable prototype, recruit more test users to learn as much as possible from our prototype, and use the prototype to create technologies we can exploit with new clients. We will also research possible models for revenue generation and seek investors to turn the prototype into a saleable product.

YorkMetrics

Delivering public data in context

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YorkMetrics is a spin-out company of the University of York specialising in business analytics. We have conducted over a decade of world-class research and development into state-of-the-art semantic modelling technology requiring transition to commercial exploitation.

What was the business need that motivated the project?

The rapid growth in open and linked public data offers exciting opportunities for generating end-user value. However, the release of this value is often inhibited by data and analysis operating in 'silos' that reflect the disparate needs of users. The business need is therefore to develop and exploit new semantic technologies to overcome these problems and deliver improved digital services.

What approach did you take to address the challenge?

Our feasibility study trialled an innovative semantic data platform using contextual metadata to move modelling and analysis closer to the language of users and allow disparate data sets to be more readily integrated and synthesised. The case study was a local authority that needed to improve strategic decision-making by consolidating data collection and analysis that is currently duplicated, inconsistent, obscure and expensive.

What are the potential benefits?

Our approach lowers the barriers to data collection and analysis, particularly in 'white-space' applications that are high-value but unmet because of the cost of current solutions, or where they span different stakeholders or organisations. For instance, cross-platform tools for gathering and querying rich semantic data from every school, council or hospital in the country could prospectively be delivered in a matter of days and weeks instead of months or years.

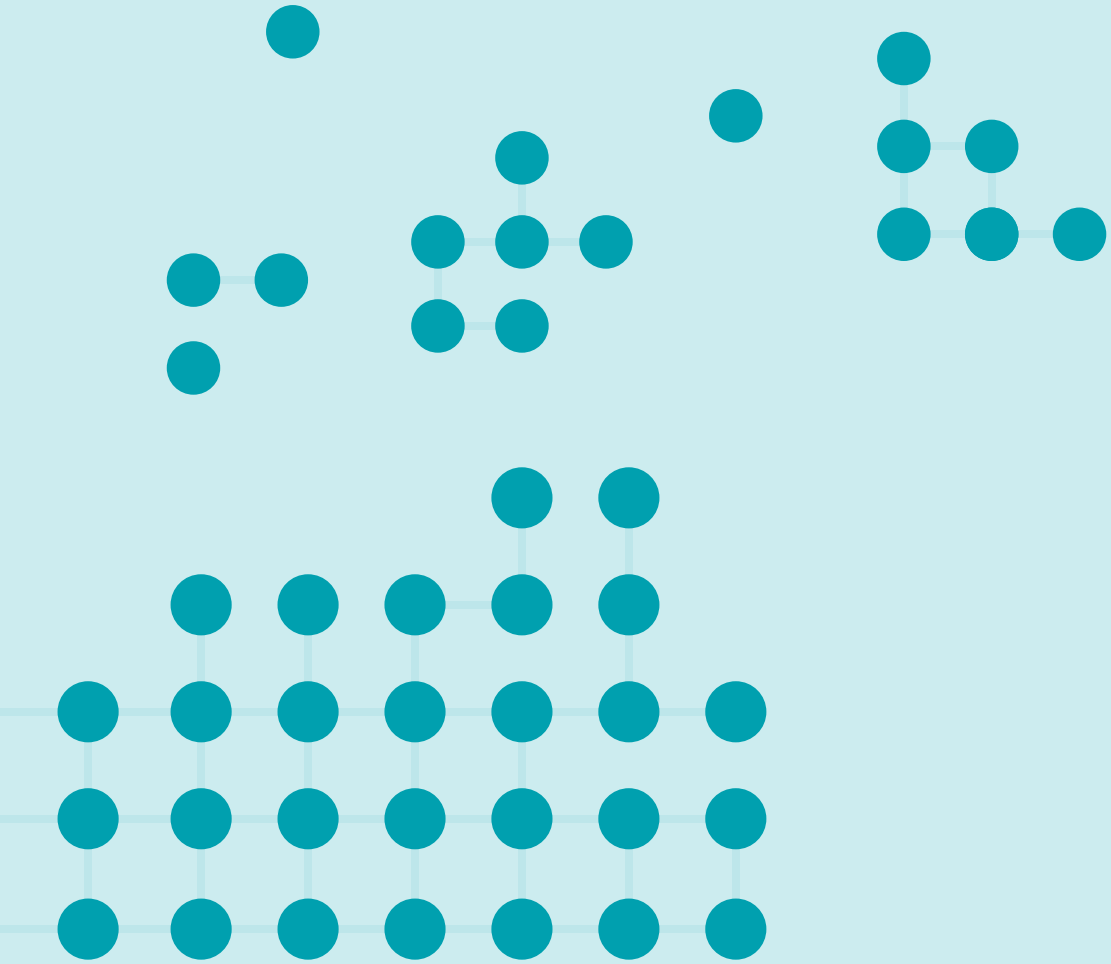
What are the next steps?

The next steps are to deliver progressive case studies and incremental research and development towards commercialisation. We are looking to partner with public and private organisations that require rich multi-facetted data to support their objectives, particularly where the information needs are complex and evolutionary.

Collaboration Nation

Digital services feasibility projects

Enhancing Public Services



Angel Solutions Ltd

Children's centre unit-costing tool

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Angel Solutions is a software development company specialising in the education sector. Established in 1999, we operate in every local authority area in the country and in hundreds of schools and children's centres.

What was the business need that motivated the project?

There is an increasing need for children's centres to demonstrate that their services are not only targeted at the needs of their users and their surrounding area, but also that they represent value for money. This is particularly the case as the Government is phasing in payment by results. We needed time and resource to explore a solution.

What approach did you take to address the challenge?

Some children's centres use paper-based systems or spreadsheets that are complex or time-consuming to complete these tasks, but there is no national standard. Crucially, centres also have no way to benchmark service delivery against successful projects that have been delivered elsewhere. We looked to simplify and integrate these systems within our web-based Perspective tool and have created prototypes to demonstrate it.

What are the potential benefits?

Our solution could bring a number of benefits including a significant reduction in the time taken to assess services against benchmarks; monitoring of services/costs across communities of centres to provide value for money; effective targeting of limited resources to meet needs of specific centres or communities; creation of a 'services and roles knowledge database' giving anonymised cost ranges for analytical purposes; and strengthening of our current revenue stream in this sector and new business opportunities.

What are the next steps?

We plan to steer development of the product by partnering with Action for Children and 4Children, working with user groups, and liaising with national policy groups. We are conscious of the political environment that affects the 15 local authorities involved in a pilot and consultation, so we have to time this carefully.

Broadband Access Strategies LLP

Smart-device delivery of multi-modal real-time passenger information

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BAS LLP is a technology and business strategy consultancy specialising in broadband, transport and wireless issues and with particular interest and experience in solutions for the travelling public.

What was the business need that motivated the project?

Traditionally, all public transport information was timetable based with scant information to update the traveller on current conditions. A third of travellers claim they would travel by public transport if they felt 'in control'. This project offers a solution that allows the traveller to know what is happening, putting options at their fingertips and helps them feel in control.

What approach did you take to address the challenge?

We structured the task so that the smart device was not swamped with data and that the updating in real time was practical. The demonstration showed the ability of the assistant to re-plan a current journey and adopt an alternative mode whilst in transit. Other planners report a delay but do not offer alternative travel plans, especially on other modes, in other words a bus alternative to a failed train.

What are the potential benefits?

The benefits include the promotion of public travel within the Government's wider green energy policies. This is a working solution that will fuel the debate and help government deliver affordable access to travel data. It delivers a smartphone-based 'app' that encourages sceptics to go back to trains, planes and buses. There is also an opportunity in the field of integrated ticketing to deliver responsive and real-time validated travel documentation.

What are the next steps?

We need to overcome the remaining barriers to market – an effective commercial agreement for travel data, and the relative lack of availability of real-time bus data from a single, reliable aggregated source. We also need to take this forward by working with a commercial partner to develop a product that handles multiple modes in a city region.

Cambridge Healthcare Ltd

NHS.info e-health portal

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Cambridge Healthcare is working in partnership with the NHS and Connecting for Health to develop NHS.info, an e-health portal for patients and healthcare professionals. The portal will integrate with the NHS IT infrastructure and provide the platform for healthcare applications.

What was the business need that motivated the project?

The UK spends 69% of its annual healthcare budget managing long-term conditions. By engaging patients actively in their management, the portal seeks to improve patient outcomes and reduce healthcare costs by encouraging and supporting self-management. Past information technology solutions for the NHS have been expensive and unsustainable. NHS.info is provided free of charge and has a commercial operating model.

What approach did you take to address the challenge?

We built a prototype portal that included a secure messaging service, natural language processing to select useful information to build patients' personal health plans, personalised information sources, the ability to create a network through invitations and a state-of-the-art security infrastructure. We also hosted the portal within N3, the national NHS network. We launched the portal a few months ago and have over 50 active users already.

What are the potential benefits?

We envisage improved patient outcomes and better support for self-management. The benefits of the portal include a reduction in the amount the NHS spends on managing long-term conditions; opening up of the healthcare marketplace to third parties, who will drive innovation by designing healthcare applications and who will deliver consumer choice; a new level of scalability and interoperability; and the ability to harness healthcare data to inform commissioning, improve efficiency and inform public health decisions.

What are the next steps?

We will develop a number of fundamental applications, such as video consultations. We will also develop the application programming interface for third-party applications. There will also be a clinical dashboard for healthcare professionals.

Cotoco Limited

Increasing patients' ability to self-care

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Cotoco has researched and developed innovative ways of managing and personalising information for key work groups in commercial organisations, using digital technology in order to engender improved performance and behavioural change.

What was the business need that motivated the project?

The Department of Health states that there are 15 million people in the UK with long-term conditions, and numbers are increasing. As a result, it has never been more important to empower people to self care. This study sets out to see if digital techniques successfully used in industry could improve people's ability to self care.

What approach did you take to address the challenge?

Our study aimed to identify areas where people lack competence and/or confidence when managing their long-term condition. There is not a lack of information for these people – quite the opposite, there is usually too much. It is often too complex, too general, and hard to put into action. The challenge is to create an engaging and personalised computer-based support toolkit that helps people take appropriate action.

What are the potential benefits?

Bournemouth University assessed our project and reported a statistically significant improvement in the ability to self care of people who had used the toolkit. More than 45% of participants reported that they had modified how they managed their condition as a result. The study demonstrated the potential of a digital toolkit to support people to self-manage their care effectively, potentially improving quality of life and saving valuable NHS resources.

What are the next steps?

Our ambition is to apply these techniques to many other long-term conditions, and to help as many people as possible. We seek to engage with the Department of Health, NHS, pharmaceutical companies, and patient associations in order to take this successful approach forward.

getWell Media Ltd

Impact research

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getWell Media is revolutionising the pre-publication peer review process for scientists and academic publishers by measuring the social impact of science as it spreads through social and professional networks.

What was the business need that motivated the project?

Peer review is the foundation of all science yet it is fundamentally flawed. Digital media has radically changed how scientific data is read and social networks have altered how opinions on scientific output are shared, yet this is not reflected in impact measurements. A quantitative metric of the social impact of research is needed as a measure of research quality.

What approach did you take to address the challenge?

We have worked with our partners at Equal Media Ltd to create new tools to measure scientific opinion as it spreads through social and professional networks. We have developed novel analytics to incentivise the peer review process and to help academics understand the impact of their work. We have also designed an entirely novel pre-publication platform to bring publishers and peer reviewers together in a collaborative work space.

What are the potential benefits?

The benefits are significant – a rapid, robust and democratised peer review process for a global population of academic and scientific researchers; an incentivised and engaged peer review community; novel metrics of the social benefit/impact of science for both academic institutions and publishers seeking to demonstrate the impact of their work; and cost-effective and efficient analysis of individual performance for academic institutions and industry.

What are the next steps?

We are seeking a second round of funding to drive the demonstrator through to a fully functioning tool ready for market and the engagement of a scientific publisher to serve as a partner. We will also publish an evidence base from the alpha test to demonstrate its significant potential.

getWell Media Ltd

Getwell media laboratory

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getWell Media provides digital information on medical device technologies and procedures for patients and medical professionals. It was founded by a practising surgeon who understood that patient information is often not provided in the digital medium used by patients.

What was the business need that motivated the project?

Patients and doctors are not easily able to interpret metadata regarding medical and surgical therapies. Patients find it difficult to make informed decisions about treatments because they are not able to gain access to appropriate medical information at the point of care. There are also limited interactive tools for teaching doctors about the principles of medical procedures.

What approach did you take to address the challenge?

We have created a proof-of-principle demonstrator game on a mobile platform. It is based on real-world clinical outcome data and surgical approaches to hernia repair. This product uses structured clinical outcome and efficacy data (for example randomised control trials) which are streamed into a mobile gaming environment. By encouraging users to engage in a fun and interactive 'game', data is interpreted in a more intuitive and personalised manner.

What are the potential benefits?

This is the first approach of its kind. We see it being rapidly expanded to provide a large number of games for hundreds of surgical and medical conditions. The aim is to alter people's perceptions about how medical education can be delivered to all patients and medical professionals and to transform the medical education market. The financial implications are significant for medical manufacturers who require affordable and reliable marketing platforms.

What are the next steps?

We need funding to allow us to continue developing a much larger selection of games in numerous other surgical conditions and medical specialities. We also need engagement from governmental organisations with a remit in patient education, for example National Institute for Health and Clinical Excellence (NICE). We would also like to introduce this approach to an international audience of healthcare providers.

Hao2.eu Ltd

People with autistic spectrum conditions making a world of difference

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Hao2.Eu Ltd is a female-led social firm specialising in 3D social media technologies, and providing training, design and development services to the public and private sectors. Hao2.eu is a Business Professional Certificate accredited member of Intellect, and 80% of its staff have autistic spectrum conditions.

What was the business need that motivated the project?

Services using traditional channels (telephone, web/email and face to face) do not meet the disability/support needs of people with autistic spectrum conditions (ASC) because of the costs and the barriers they experience when using them. 3D social media technologies could offer a cost-effective and sustainable fourth channel, leading to increased participation and more positive outcomes.

What approach did you take to address the challenge?

Our team of people, most of whom have ASC, worked with three public sector organisations to demonstrate and test our products. The work confirmed the costs/benefits of using 3D social media technologies to better meet the needs of people with ASC. Our collaborative, inclusive approach resulted in some practical/low-cost solutions to overcoming technical/organisational barriers to innovation and subsequent adoption of this technology, and identified further R&D needs.

What are the potential benefits?

Our feasibility study tested demonstrator products, created practical solutions to overcome common technical/organisational barriers and identified what further R&D needs to be done. We identified the main benefits for individuals with ASC and organisations providing services to them – significant cost, time, travel and premises savings; increased participation of people in remote locations; more accessible employment and learning opportunities; and access to new market opportunities

What are the next steps?

We need to carry out a longer term study with more detailed cost-benefit analysis and a larger sample. We also need to carry out further R&D to design sector/disability-specific technical solutions and services and to secure investment partners to continue the R&D, protect intellectual property rights and to develop a social enterprise model to rapidly scale activity in the UK and abroad.

Instinctive Creations

Patient efficiencies in a changing world of communication

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Instinctive Creations is a specialist IT service company based in Liverpool. We started the business in May 2010 and have grown from two to seven staff. Our focus was bespoke innovative web technologies and quickly moved into smartphone applications.

What was the business need that motivated the project?

The business need came out of the £600m the NHS loses each year from missed appointments. We are also addressing other inefficiencies in the NHS in relation to practice-patient communication, patient registration and needless administrator duties.

What approach did you take to address the challenge?

The technical challenges involved writing new software on a variety of platforms that all integrated with each other seamlessly in real time. Our real-time software is the most innovative aspect of the software and allows for a whole range of functionality, derived from solid primary research, that has not been seen before in the NHS or, to our knowledge, in the UK and US.

What are the potential benefits?

We see the potential benefits as large cost-savings and efficiencies both within the NHS and within any organisation that has regular appointment and booking systems. We hope this technology and our approach to practice-patient communication will mean an increase in the provision of quality health care.

What are the next steps?

We plan to run an NHS pilot scheme across three practices in the North West, produce a detailed cost-benefit analysis based on these trials and move the technology into the rest of the NHS. We have already received positive feedback from the NHS National Innovation Centre.

i-Spy Digital Ltd

Next generation public healthcare communication tool

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i-Spy Digital is a digital media communications company specialising in digital signage and bespoke information 'channels'. We are a micro business established 18 months ago and our core directors have more than 10 years' experience in innovative digital communications technologies.

What was the business need that motivated the project?

The need was to provide a digital solution to facilitate greater independence for an ever increasing elderly population, increasing the quality of the service care and communication channels, while reducing delivery costs. The challenge was to use the television (the one communications technology the elderly are most familiar with) as an individualised interactive communication tool with messages delivered over commercial programmes.

What approach did you take to address the challenge?

The technical challenge was to interface i-Spy's proprietary Hermes™ digital signage server software with an existing hybrid set top box in such a way that text and other messages could be directed to specific television screens (via an individual set top box identifier), channelled through the Hermes™ server and 'translated' by the set top box for display on an individual resident's television. This type of personalised messaging to individual televisions is unique.

What are the potential benefits?

Our system offers an unprecedented ability to communicate effectively with the fastest growing section of the population through hand-held devices and Internet portals. This has hitherto not been possible because most of the target audience have no mobile phone or broadband. i-Spy has significant opportunities to work with telehealth, smart metering, and 'digital inclusion' companies to create a 'hub' or integrated communications, distribution and management medium. Other strong benefits include cost-savings, social inclusion, multi-device integration, and a greener way of communicating without paper.

What are the next steps?

We need to work with other set top box companies to expand our solution for use beyond a specific set top box and to become a middleware solution. We also need to work on intergrating with devices that hold data profiles on patients' medical records and energy consumption, and with other household devices such as doorbells and smoke alarms.

LASSeO Ltd

SNAPI: Using contactless smart-media to personalise the user interface to ease access to public-access devices and services

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LASSeO Ltd is a not-for-profit company operated through a supervisory board. We reduce public sector risks by developing smart-media specifications and have been highly influential over the past nine years through the energy and enthusiasm of our members.

What was the business need that motivated the project?

We wanted to convince the market of the case for using a software interface to personalise access to information devices using smart-media. We set out to evidence a need in our ageing population and to create a solution that allows citizens to store and activate personal preferences on a tag in order to control the way that information is presented to them.

What approach did you take to address the challenge?

We set out to demonstrate, and show a demand for, interface software to ease access to information terminals by developing demonstrators to be deployed in public spaces. The project involved tag specification, configurator and demonstrator development, deployment and feedback capture and analysis. We used focus groups to gather response from users and to show evidence of the demand. This is a new concept that has yet to be implemented anywhere in Europe

What are the potential benefits?

The project provides an opportunity for fresh players to get involved with Government objectives of easing and improving access to information technology for those with the greatest need. Our ageing population demands greater customer control over the machine interface and this product could provide a real differentiator in a crowded marketplace such as the one for cash machines. It could also be incorporated on all travel cards and into public service points such as in healthcare.

What are the next steps?

We need to create a slick and effective demonstration environment across a range of service areas to engage providers. We also need to establish appropriate industry sectors for further engagement (for example ticketing, healthcare, booking-in, cash machines), and to find service-providing partners to develop our plans and invest in deployment. We must also develop the software with our present partner and other interested players.

Medifit Instruments Ltd

A universal cardiovascular screening and monitoring software that can be used with any wireless digital ECG sensor on a mobile device platform

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Medifit provides a unique, patented technology, the NeuroScope, for the measurement of a key human vital sign, Cardiac Vagal Tone, bringing new analytical data quickly to neurological and cardiovascular clinicians.

What was the business need that motivated the project?

A study by the Health Economics Research Centre in 2006 showed the enormous burden that cardiovascular disease places on the UK. It costs the economy £29bn in healthcare expenditure. Wireless electrocardiogram (ECG) sensors that can be operated on mobile devices are increasingly seen as the future for diagnosing cardiovascular disease as they are relatively cheap and cost efficient.

What approach did you take to address the challenge?

Most of the mobile devices in the market merely display ECG data and record it for later review by a diagnosing doctor. The key difference in our technology is that our algorithm will not only monitor the ECG data, but it will also analyse it in real time to detect cardiac abnormalities or possible cardiovascular conditions such as bradycardia and heart-blocks.

What are the potential benefits?

The global wireless cardiovascular monitoring market is forecast to reach $1.2bn by 2017. The growth in this market will be driven by an increase in the population of patients with cardiovascular disorders. We strongly believe that our technology will greatly contribute to how cardiovascular disease is tackled by providing a proven clinical tool that has been adapted to fulfil the technological advances made in the telephony industries.

What are the next steps?

We are looking for delivery partners within the NHS, and we have already contacted Biobooth, which is part of the NHS innovation gateway. The aim is to develop, with technology partners, a cost-effective screening tool capable of providing screening programmes and of monitoring patients remotely, through optimising new wireless technologies.

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MedilinkWM is an industry organisation focused on the life sciences sector. MWM has significant expertise in the assisted-living sector and works closely with industry, health and social care to raise awareness of assistive-living technologies and to build collaborative projects.

What was the business need that motivated the project?

With the development of personalised-health and social-care budgets, citizens will have an increasing role in managing their own health and social-care needs. Patients, service users, families and carers are now at the centre of care planning and procurement. There is now a need to provide tools which aid in the selection of assistive technologies and services.

What approach did you take to address the challenge?

After initial research, we were guided towards the development of tools that could support healthcare professionals in assessing and advising on the assisted technology options available to users. We developed a decision support tool (DST) that guides the user through a range of questions about their healthcare needs. The DST selects the most appropriate assisted technology to meet those needs. We developed a prototype i-Phone app to demonstrate the tool in use.

What are the potential benefits?

Our DST, which can be delivered over a range of devices and platforms, has two key benefits. First, it cuts the time needed to research assisted-technology products that may be of benefit to the patient or service user. This is critical when GPs and other frontline healthcare professionals are involved in the assessment process. Second, it increases the awareness of assistive technologies amongst healthcare professionals, leading to greater adoption.

What are the next steps?

We are developing a final version of the prototype that will be used in discussions with GPs, care home managers and occupational therapists. Significant interest has been shown by GPs and care home providers.

mySociety Ltd

Integrating fixmystreet.com with council back-end systems

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mySociety Ltd is the commercial arm of the not-for-profit organisation mySociety. Its sales directly fund all mySociety's work in the civic and community arenas.

What was the business need that motivated the project?

FixMyStreet, one of mySociety's most-used websites, provides an intuitive interface for reporting common street problems to local councils. We hoped to sell integration of this functionality into councils' own problem-reporting systems. We needed to discover the feasibility, scope and costs of providing such a service so that we could market it at a viable price.

What approach did you take to address the challenge?

We aimed to identify the fault-reporting software used by councils, to establish friendly relationships with councils and to create two proof-of-concept integrations. All of these goals were broadly achieved.

What are the potential benefits?

The key question we were looking to answer was whether or not a commercially viable product could be created integrating council customer relationship management systems and the FixMyStreet service. The clear outcome of this study is that the answer is 'yes'. It is both technically and financially feasible for us to provide this service and there is a clear demand for it on the part of councils.

What are the next steps?

We need to complete and bug-test the initial council back-end integrations, formalising a working product. We also need to continue to develop our relationships with potential customers and convert these initial meetings into sales.

OBS Medical Limited

A dynamic index as part of a digital service for post myocardial infarction patients

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OBS Medical is focused on the patient. Our mission is to enable medical professionals to deliver a significant improvement in clinical performance (for example in the areas of mortality/ morbidity, re-admissions, and clinical events). This will, in turn, also deliver a substantial reduction in costs.

What was the business need that motivated the project?

At least 113,000 patients suffer a myocardial infarction (MI), commonly known as a heart attack, every year in the UK, and the six-month mortality rate is 12-16%. National Institute for Health and Clinical Excellence (NICE) guidelines state: 'Patients should be advised to be physically active for 20-30 minutes a day to the point of slight breathlessness.' By encouraging patients to become fitter, the chance of a repeat MI is reduced.

What approach did you take to address the challenge?

We acquired data from volunteers who were asked to complete a session of mild exercise three times a week wearing a pulse oximeter, respiration belt and activity monitor. We demonstrated both the feasibility of automatically acquiring continuous physiological data and of generating a dynamic index of patient health and fitness.

What are the potential benefits?

By encouraging patients to become fitter, the cost of future care is reduced and their quality of life improved. The economics of healthcare assert that value is obtained by extending lifespan and by improving quality of life in the most cost-effective way. Since the NHS bears the biggest cost of deteriorating health, especially in expensive emergency hospital admissions and re-admissions, it would see the biggest benefits from cost reductions.

What are the next steps?

We need to forge partnerships with healthcare providers who are able to commit to a trial of the technology with post-MI patients to refine our algorithms. We also need to seek commercial partnership(s) with designers of medical/mobile technologies to create tailored hardware that meets our ergonomic and cost requirements for a production system.

Orangutrans Ltd

Next-generation journey planner

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Orangutrans is a start-up formed in 2010 and is developing a platform for transport matching. The platform scheduled for release in 2012 is primarily based on matching demand and supply of transport services along similar routes and predefined areas.

What was the business need that motivated the project?

Journey planners enable us to plan journeys with public transport. Car-sharing provides a significant parallel transport network: the Liftshare, Rideshare and Covoiturage networks alone have more than two million members. The integration of car-sharing into a journey planner provides further options for travelling from one location to another and it aims to encourage greater use of public and shared transport.

What approach did you take to address the challenge?

To address the problem we set out to build a proof-of-concept journey planner that can handle not only public (scheduled), but also 'flexible' transport. Car-share journeys are flexible in that vehicles can normally deviate a certain distance from a route. Storing, retrieving and matching flexible journeys requires complex schemas, results in high matching rates and demands considerable computing resources. We also developed user-friendly interfaces despite the added complexity.

What are the potential benefits?

By offering combined door-to-door solutions, the journey planner aims to increase car-sharing. There is considerable scope for growth in car-sharing. A leading UK network currently has 260,000 live trip offers and 77 million trips registered for the next 12 months. Each year, the site saves enough miles to do 13,000 trips around the earth, saving more than 100,000 tonnes of CO2. The system could also be used for freight transport journeys.

What are the next steps?

We need to raise £150k to integrate the most relevant features of the journey-planner into our platform and run a regional awareness campaign for the system to reach a small critical mass. With a further £250k, we can roll out a scalable platform with a low-budget awareness campaign across the UK.

OSIC Limited

Use of cellular location data for the purposes of real-time transport management and as source data for the provision of information services

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OSIC is an optimal mix of sector-focused business development experts, technologists and business-intelligence professionals working to deliver business-transforming information from both private and open-source information sources, with a strong technical and commercial capability to deliver.

What was the business need that motivated the project?

The study was to assess whether it is feasible and practical to use cellular data location information from the mobile phone network operators to anonymously track phone devices for the purposes of real-time journey planning, management of transport infrastructure performance (road and above-ground rail) including capacity, and multi-modal journey identification.

What approach did you take to address the challenge?

Working together with our collaboration partners we had to first decode and process the exceedingly high volumes of data being produced. Our innovation came from developing the very complex algorithms and data processing techniques and platform to be able to deliver information on journey routes, performance of the route, modes of transport and, importantly, traveller volumes at any given location.

What are the potential benefits?

This project has allowed the theory to be turned into practice, leading to the ability to develop commercial services. A number of opportunities exist in developing commercial services and licensing. Through the use of this technology, improvements can be made to the use of transport infrastructure that will benefit both the environment and traveller.

What are the next steps?

We are continuing to develop our capabilities and improve on what has already been completed. Commercialisation of our work is already taking place and we expect this to grow. Approaches have also been made to our business and we welcome the opportunity to meet with interested parties.

Shoothill Ltd

H20 aware: mapping live water levels and current flows across England and Wales

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Shoothill are a leading Microsoft software developer specialising in the creation of bespoke software solutions. Using Microsoft platforms like Bing Maps, Silverlight, Deep Zoom and Photosynth, we develop innovative web and network-based applications for the public and private sectors.

What was the business need that motivated the project?

Current data on water quality and saturation levels is not freely available to the public, and companies have to purchase a licence to use it. The Environment Agency has recently released its water data as a live feed for developers to purchase, and it is our aim to take this data and transform it into an easy-to-use portal.

What approach did you take to address the challenge?

We are in the process of launching a single web-based and Smartphone app that would be available for anyone to use, free of charge. Our aim is not only to inform the public about water quality levels but also to develop a 'warning mechanism' so that they can be notified when water quality reaches 'good' or ground saturation levels reach a certain level.

What are the potential benefits?

Our study is about making water quality data more accessible to the public and private sectors. It will enable the general public, local authorities and industry sectors to make better informed decisions about their own health and safety and about the provision of services. Also, the application can be used by the insurance market to reduce policy premium, by property owners to mitigate risk and by commercial businesses to manage otherwise impossible data sets.

What are the next steps?

We are building on the work already undertaken to bring future enhancements and additional data to the system and are planning a full launch of the service in early autumn 2011.

Sidekick Studios

Care swap

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Sidekick Studios is a social venturing company. We create technology start-ups that solve massive social problems. We have been established since 2009 and have commercialised a venture in mental health.

What was the business need that motivated the project?

We are facing an unprecedented crisis created by an ageing population. There are more and more of us needing social care, at the same time as the state is retreating from providing this kind of service. The challenge for us is how to increase the amount of care in the community, particularly by keeping people active.

What approach did you take to address the challenge?

We adopted the principles of a lean start-up. This meant creating prototypes of the service. It meant focusing on customers and customer discovery. It meant being prepared to develop and change our ideas as we understood more about our users and the market.

What are the potential benefits?

We have expressed the core concept as The Amazings, which is a platform for the recently retired to create active experiences based on their unique knowledge and skills, and to make these available to their peers and the community. The potential is for keeping people active and for improving well-being. For us, the potential is a marketplace business.

What are the next steps?

We are conducting a trial with 10 users in the London Borough of Hackney. This will enable us to bring in revenue and to iterate the service. We propose to take it to scale by partnering with the right kind of organisation that has an audience already.

Sidekick Studios

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Sidekick Studios is a social venturing company. We create technology start-ups that solve massive social problems. We have been established since 2009 and have commercialised a venture in mental health.

What was the business need that motivated the project?

One million young people are not in education, employment or training in the UK at the moment. This is the highest figure for a generation. We need to find more innovative ways to support and mentor young people back, so they do not become a lost generation.

What approach did you take to address the challenge?

We adopted the principles of a lean start-up. We built a minimum viable product and involved users early and often to get real-life feedback on the application. We connected with customers to understand their needs and requirements and we used metrics to understand what was working and what was not. We also adopted a principle of iteration and prototyping until we got to a product/market-fit solution.

What are the potential benefits?

The wider benefit is in helping young people back into education, employment or training. This can reduce the burden on the welfare system, improve community cohesion, and ensure we provide young people with opportunity. For us, there is a business as a software provider to organisations looking for innovative ways to deliver the national back-to-work programme.

What are the next steps?

We are currently expanding our trial user base as part of an alpha release. We are also in talks with a number of services to pilot the innovation directly to young people. From these first customers, we hope to grow and scale the product.

Sidekick Studios

The social library

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Sidekick Studios is a social venturing company. We create technology start-ups that solve massive social problems. We have been established since 2009 and have commercialised a venture in mental health.

What was the business need that motivated the project?

Public libraries are under extreme pressure at the moment, and looking for new ways to engage and interact with their audience. At the same time, consumers are looking for new ways to connect with people in their local area.

What approach did you take to address the challenge?

We adopted the principles of a lean start-up. We built a minimum viable product, and we brought in an entrepreneur to head up the venture. We created a demonstrator site, with a pilot community, and we launched the prototype into the community and tested our hypotheses in the market.

What are the potential benefits?

We have decided against pursuing the business any further. Our pilot suggested that communities liked the proposition in principle, but in practice were reluctant to swap their better books, or to prioritise the service sufficiently to provide a good community experience. We felt our proposition to public libraries was going to be a tough sell in these constrained times.

What are the next steps?

We do not plan to continue work on this venture.

Slider Studio Ltd

Web platform for neighbourhood planning

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Slider Studio specialises in digital media communications, collaboration and participatory design for the built environment. Slider invented the StickyWorld platform for display, dialogue and decision-making and we support its deployment for our clients across a wide range of projects.

What was the business need that motivated the project?

The Localism Bill sets out new planning powers for local communities through the process of neighbourhood planning. At a time of severe cuts in local authority planning departments, our team believes we can innovate to offer a new digital service to support planners' new role in the neighbourhood planning process, combining StickyWorld and Slider's YouCanPlan service.

What approach did you take to address the challenge?

The proposed neighbourhood planning process is poorly understood. Accordingly, our team developed a series of workshops inviting more than 60 stakeholders from local authorities, planning departments, and professional consultants to explore with us where digital tools (existing and proposed) might help. We were able to fully understand the process and also gain valuable insight into who our customers might be, identifying the roadmap for developing and commercialising our digital service.

What are the potential benefits?

Our proposed digital service repurposes StickyWorld functionality to meet the different requirements and price points of different stakeholders. We will offer neighbourhood forums a tool for crowd-sourcing, sharing and commenting on visuals, including panoramic photography. Our service can help disseminate activities and decisions made at meetings, improving transparency. For local authorities, we offer a web-based design review tool to streamline multi-stakeholder examination of neighbourhood plans and to offer contextual feedback.

What are the next steps?

We are now commercialising the StickyWorld service for local authorities, as there is benefit for this group before the new law is passed. Next, we should develop a new service with a lower price point (and potentially free for limited functionality) that makes it really easy for communities to adopt.

Startup Intelligence

CABLE – complementing advice from Business Link for entrepreneurs

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Startup Intelligence is a business intelligence platform giving investors and corporations a comprehensive, real-time global view of emerging technology businesses.

What was the business need that motivated the project?

In a world where growth companies re-shape markets in a matter of months rather than years, traditional business intelligence is too slow to give companies the edge they need to compete. Our platform allows clients to identify perfect investments, position a product in a rapidly-growing value chain, or track market evolution, all in real time.

What approach did you take to address the challenge?

Instead of going bottom-up to understand a market in a manual way, we innovated by dispensing with legacy systems from other organisations and creating our own bespoke algorithms to mine data from the web about the performance of growth companies. Our platform is built on top of a database of private companies and involves the calculation of proprietary financial algorithms to determine revenue, valuations and price-to-earnings ratio comparisons.

What are the potential benefits?

Our platform is useful for private equity analysts looking for fast-growing companies in emerging sectors. For a private equity house, growth intelligence means they get the best investment opportunities first. It is also a comprehensive and fast way for product managers to understand live market trends, model future evolution and direct resources accordingly into marketing, engineering or mergers and acquisitions. The system is also used by entrepreneurs to benchmark their companies.

What are the next steps?

We will bring out a commercial product in October and get charter subscribers on board. We plan to continue agile development of the growth intelligence platform and increase the number of people and organisations we have helped with our intelligence system.

Substrakt

Urban Lens

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Substrakt is a digital media and design agency creating online and visual campaigns that help clients cultivate better brands. Our focus is on harnessing the power of digital information – linking data created by people and places to enrich user experience.

What was the business need that motivated the project?

There is no easy way to search for and access visitor and cultural information from multiple sources through one application – mobile or web. Access to content often centres on a specific organisation, with little or no connectivity between geographically related content and points of interest, resulting in the keen user having to visit multiple websites to discover information.

What approach did you take to address the challenge?

Our study set out to connect multiple data sets from a range of cultural organisations to provide a more intuitive search experience for visitors to a city. The main technical challenge was to access and standardise large data sets through automated data integration. The eventual fully developed Urban Lens application programming interface (API) will be an innovative centralised mechanism for managing and linking data pertaining to multiple places, spaces and people.

What are the potential benefits?

Urban Lens enhances a visitor or resident's engagement with a city through access to information via a centralised platform. We now have a prototype ready to develop for market. Ultimately, Urban Lens will create a new business stream and jobs within the company. In the cultural economy, Urban Lens could enable organisations to create value from their content and drive audience.

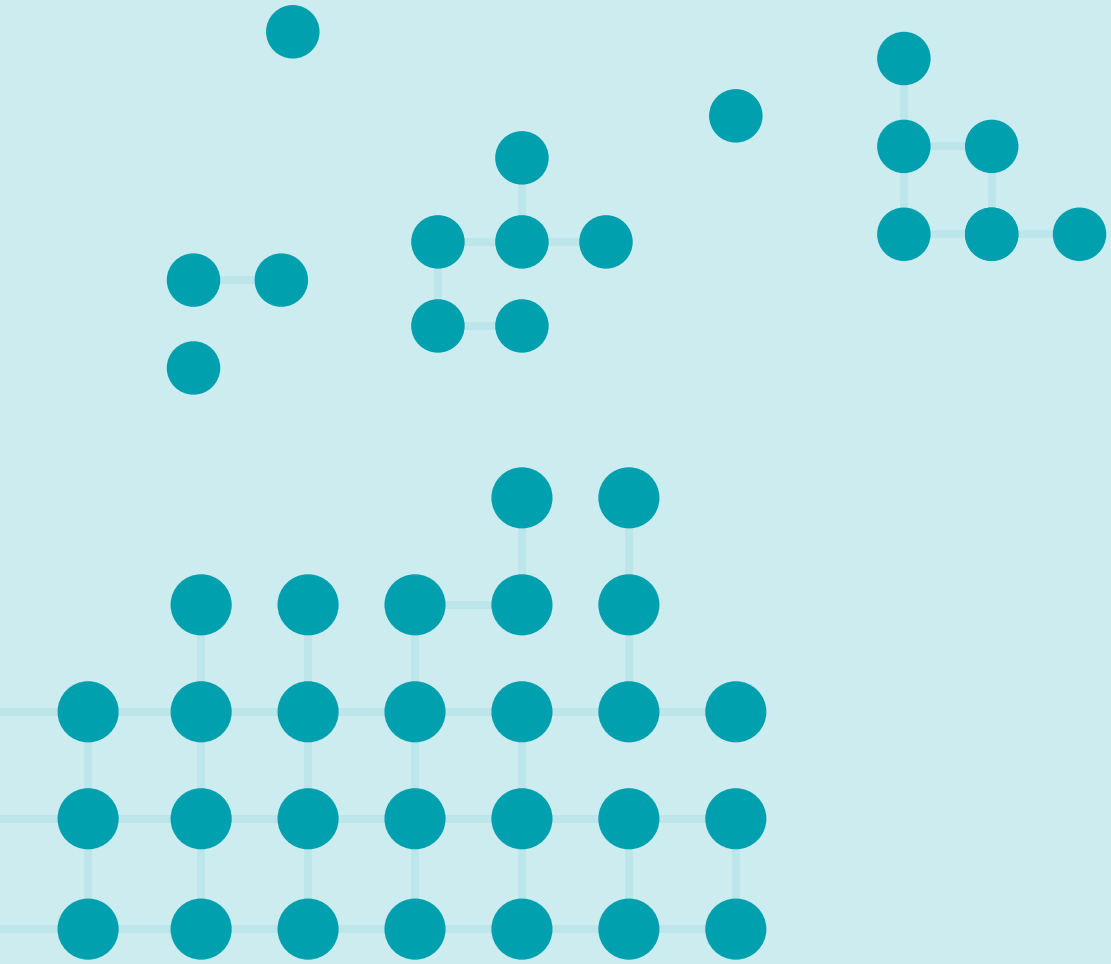
What are the next steps?

We are planning further user testing and data integration. The prototype API will be used to secure the engagement of a strategic tourist industry partner. We are then looking to secure further technical investment, to complete development of the core framework and to take it to market.

Collaboration Nation

Digital services feasibility projects

Internet of Things



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4D creative designs and installs immersive learning spaces in schools for pupils of all abilities. We transform ordinary classrooms into user-friendly, instantly adaptable environments in which to stimulate, encourage and develop creative thinking through light, sound, projection and space.

What was the business need that motivated the project?

The significance of this project can be measured in terms of the benefit to both the teacher and pupil. Immersive environments naturally lend themselves to exploratory learning as the traditional rules of teaching are put to one side. There is also a growing trend in education for pupil-led activity where the passive learner is engaged.

What approach did you take to address the challenge?

We held focus groups with teachers who represented a cross section of the schools market – special needs, nursery and primary and secondary. We aimed to understand the current uses of immersive environments, what teachers would like to see next and emerging agendas within education.
We produced a technical plan identifying existing services and the emerging technologies that can be used to overcome technology hurdles.

What are the potential benefits?

Our study highlighted a potential for increased use of technology and interaction within these environments as long as the models for use are in tune with the current use of the environments. A key discovery was the way technology can be used to help measure the impact of sessions through the use of activity mapping and data.

What are the next steps?

Our study provides a well-informed road map in terms of both potential uses and integration of immersive environments. Our next steps are to identify appropriate partners to form part of an ongoing project consortium and to explore sources of funding.

Ask4 Limited

Investigation into methods for presenting information on individual energy consumption in multiple-tenanted buildings

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Ask4 was established in 2000 and provides managed telecommunications services such as broadband, telephony and Internet Protocol TV to multiple-tenanted buildings, primarily focusing on residential and student accommodation.

What was the business need that motivated the project?

Current smart metering systems (for measuring, recording and reporting on energy use) are not designed for use in multiple-tenanted buildings. This project sought to build on existing work we have done to develop a suitable data collection system, adding a display and presentation layer that makes information available to the various building stakeholders, to enable and drive behavioural change.

What approach did you take to address the challenge?

Our approach was to develop a web-based system to provide meaningful energy usage information to residents in metered flats. As well as usage data, the system also presents comparisons with other flats, taking flat occupancy into account. As a further drive for behavioural change, we worked with the Culture, Communication and Computing Research Institute (CCCRI) at Sheffield Hallam University, investigating innovative visualisation concepts to engage residents.

What are the potential benefits?

Independent research indicates that a 10% reduction in energy consumption can be achieved where appropriate feedback is made available to energy users. This project has delivered a system that could be deployed to help the operators of multiple-tenanted buildings to drive real, meaningful reductions in energy consumption by their tenants. This not only has an economic benefit, but also an environmental one.

What are the next steps?

Our customers have expressed interest in the product, but we would like to explore the possibility of offering it as a pure managed service, where they have no capital expenditure. We are therefore considering partnering with a company willing to finance the capital expenditure required.

Blackroc Technology Ltd

Enhanced Global Navigation Satellite Systems (GNSS) services for the Internet of Things (IoT)

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Blackroc Technology is a hardware and solutions engineering company specialising in the development and manufacture of custom mobile computing and data-capture technology products. This includes computer wireless mobility, rugged devices and all associated imaging, positioning and identification technologies.

What was the business need that motivated the project?

We are a small business and new entrant to the GNSS market, and we were facing financial barriers to introducing new ideas from the mobile industry or to assessing their feasibility in the GNSS field. Blackroc's new product developments in GNSS and IoT are expected to transform the company's aims and objectives.

What approach did you take to address the challenge?

Understanding complex technologies and their limitations was our key challenge in this project. We talked to leading equipment manufacturers and research universities who specialise in GNSS and positioning technology and this provided us with an abundance of new knowledge. We combined this with a review of recent research papers on radio frequency technologies and, using our own first-hand experience of radio frequency identification (RFID) and IoT, we absorbed all the knowledge needed to overcome the challenge.

What are the potential benefits?

The study has shown the possibility of seamlessly taking outdoor GNSS positioning and using it to provide indoor positioning for mobile devices through the combination of several RFID technologies. The study did highlight critical issues due to the susceptibility of GNSS to interference. This finding will benefit our future product developments because we will have to find ways to avoid it, and we will be able to make customers aware of the issues.

What are the next steps?

We need to work on prototype devices that build on our existing IoT-enabled platform of GNSS devices and that overcome the positioning limitations and other issues highlighted in the study. We also need to continue diversification into consumer near-field-communication (NFC) products and carry out further research into ideas generated by the study.

Cybermoor Services Ltd

Real rural avatars

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Cybermoor Services Ltd provides ICT and broadband services to rural communities. Our wireless network covers approximately 25 square miles of fields, hamlets and towns. With local communities, we develop innovative applications which drive the take-up of broadband.

What was the business need that motivated the project?

Farmers who have sheep high on the fells need to check them to make sure that none are sick, in distress or have strayed. It can be difficult to access these fells in the winter, so avatars have a role to play. Tourist operators are keen to explore the potential of avatars for people who cannot access rural areas.

What approach did you take to address the challenge?

We sourced a Giraff ground-based avatar (GBA) and an unmanned aerial system (UAS) from Bluebear Systems to test out the technology with tourists and farmers respectively. Scenarios were developed to use the UAS with hill-sheep farmers and the GBA with the tourist office. Both groups had plenty of input into the avatars once they had seen the possibilities and limitations of the technology.

What are the potential benefits?

The UAS can deliver greater efficiencies to farmers and land managers in finding lost livestock. Search-and-rescue teams can also use the UAS to locate missing people. People who are unable to get around because of ill health can use the tourist avatar to explore rural areas. This is an exciting new tourism product for the future.

What are the next steps?

The avatars need various software upgrades over the coming months to allow them to be used 'out of the box'. We will establish a new co-operative to rent out the avatars to the farming community and tourists. We will also need to raise finance to purchase the devices.

Dream Machine Media Ltd

Enhanced e-books: augmented reality and pattern recognition

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Dream Machine is a new transmedia content production company. We create original digital content for web, mobile, social and broadcast media. Built around an award-winning team and powered by innovative technologies, we create digital experiences for brand owners and agencies.

What was the business need that motivated the project?

The rapid rise of mobile tablets means UK creative industries have an opportunity to innovate in new content forms by using technologies currently only deployed in niche sectors. Our project is about bringing together augmented reality, tablet sensors, audio phrase recognition and interactive animation to create a prototype enhanced e-book that offers benefits to academic, publishing, e-learning, broadcast and animation sectors.

What approach did you take to address the challenge?

Working in an agile way, our team identified several challenges to delivering a prototype enhanced book app. They were to develop a story that adequately demonstrates the range of interactions possible; and to build a platform that supports easy adoption of new sensor techniques and creatively explores those techniques. We examined animation that responds to children reading (audio phrase recognition) and that uses augmented reality.

What are the potential benefits?

If successful, our techniques will encourage new products in e-commerce. They will also encourage broadcast extensions into digital, and be beneficial to publishing, including for formal and informal e-learning. We are confident we can provide a low-cost production route for rights owners to create powerful tablet experiences in a cost-effective way. This project has uncovered several challenges but some fantastic opportunities.

What are the next steps?

We plan to publish a prototype e-book to the Android marketplace at the beginning of November. In the meantime, we would like to talk to contents rights holders, investors and technology partners to help our company realise its dreams and build its machines.

Edesix Ltd

Connecting carers

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Edesix is a software and hardware consultancy that specialises in low-power embedded video systems. It was established in 2002, has seven employees and has developed a range of low-power body-worn video cameras and management software used by lone workers.

What was the business need that motivated the project?

Society is changing. Families are increasingly geographically spread, making it difficult to support elderly parents who are living at home with illnesses such as dementia. The number of people with dementia in Europe is approaching 7.5 million. Edesix sees a need for a wireless monitoring system that will allow carers to check on the safety of their parents remotely.

What approach did you take to address the challenge?

We investigated possible low-power wireless technologies that would allow a sensor to be worn that would enable a remote family member to monitor and communicate with their relative. We showed that Bluetooth did not give enough range for some houses so we selected a low-power WiFi system. We now have the world's smallest WiFi communication system that can be used to ensure the safety of the user.

What are the potential benefits?

The benefits of this system are widespread. It will allow a family to maintain contact with their relative without the need for expensive changes to the relative's property to install wired monitoring systems. Care can be shared amongst the family rather than being transferred to the state. It will allow people to live at home longer and reduce the worry of having a parent living at home alone.

What are the next steps?

We are finalising the packaging of the hardware and completing testing of the system, which will allow us to begin live testing of the sensor. This testing will allow us to prove the effectiveness of the process and hopefully allow us to move forward to a commercial product.

Fire Arc Ltd

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Fire Arc is a mobile development agency with clients nationwide. We have a wealth of experience developing across a range of platforms and projects in both the commercial and entertainment sectors.

What was the business need that motivated the project?

The significance of this project can be measured in terms of both the experience of the car park user and the benefit for car parks themselves. From our meetings with managers of large car parks, we believe this concept solves an important problem for them in terms of parking logistics at weekends and during holiday periods, when the facility needs to be physically managed with extra staff.

What approach did you take to address the challenge?

Our study was split into three areas, cultural, technical and commercial. We explored the user scenario with both consumers and car park managers. We identified the existing services that can be used to solve pieces of the problem and the emerging technologies that can be used to overcome the project's technology hurdles. Finally, we explored the cost benefit for the industry and the market impact.

What are the potential benefits?

In terms of market impact, our focus has been on identifying the most appropriate solution for both consumer and operators. Our focus groups and operator interviews have helped us scope out what we believe are a set of solutions for different users to meet their level of technical capability and technology adoption.

What are the next steps?

We have a good potential solution and the window of opportunity is reasonably wide as there are significant technical risks in development. Our next steps are to build a strong project consortium to draft a development plan for a prototype demonstrator that may attract further funding or private investment.

GeoLang Ltd

Assuring authenticity of 'things' through prevention of rogue-device registration

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GeoLang Ltd is based in Wales and provides specialist services and software solutions for cybersecurity, assurance and standardisation practices, and geolinguistic information management. GeoLang originally formed to support the development of several, now published, British and international standards.

What was the business need that motivated the project?

Internationalised domain names (IDNs), supported by various international standards, bring new opportunities for registration and for use of rogue Internet devices. This could become a fundamental authenticity problem, with the possibilities of such devices in the Internet of Things increased massively due to the necessary advent of the new version of the Internet protocol system IPv6. The business needs to address this to support IDN-related activities more fully.

What approach did you take to address the challenge?

We constructed a cloud-based proof-of-principle through which we experimentally verified approaches to developing and delivering a service that would be able to address the problem, and through which we assessed key technical and non-technical barriers. This offered insights into how a variety of brand-protection services could be produced and run in real time.

What are the potential benefits?

Our approach is targeted at the prevention of online scams, which account for a significant portion of the £21bn reportedly lost each year by UK businesses due to cyber crime and which cost UK citizens a further £1.4bn a year, according to a joint Detica and Cabinet Office report on costs of cybercrime in the UK. There are few relevant services in this area, and most are US-based. With one offering an annual $20,000 corporate subscription, there is substantial economic potential of various kinds.

What are the next steps?

We need to construct a fully demonstrable system, negotiate access to specific databases, and carry out third-party evaluation in each target market before we can take this forward to commercialisation. We need to seek further grant funding and/or venture capital in order to formulate a self-contained development group to progress the project.

Infonote DataSystems Ltd

Where's that satellite

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Infonote is a small software development company with extensive experience developing bespoke solutions for business. From time-saving workflow innovation to must-have smartphone apps, we have helped our clients save time and become more profitable for almost 14 years.

What was the business need that motivated the project?

Our ambition is to develop a combination of applications that will use and promote greater use of satellite data. Currently, a single collective database of satellite data does not exist. We believe that a developed database that directs and gains access to various data providers would promote greater use of the data in industry, business and the community

What approach did you take to address the challenge?

We concentrated on studying the types of data, existing solutions and applications that are associated with satellites. We also spent time developing networks to support the on-going development into the next phase. Our knowledge of existing tools and similar projects, the websites and organisations has helped identify methods and supportive techniques that may prove to be useful in developing aspects of the finished solution.

What are the potential benefits?

Allowing better access will encourage and enable greater use of satellite data and images and generate a much wider audience than currently exists. It will enable people to explore uses of the data itself. There is the potential for income for providers through greater use, through more accessibility for the general public and through further commercial development more generally.

What are the next steps?

To move this forward we are seeking partnerships with organisations who have experience and extensive networks within this field, and who can enable or provide access to test data and can continue to raise the profile of the project within this sector.

KineticaRT Ltd

A distributed processing and inference service for the Internet of Things

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KineticaRT provides innovative industrial measurement and automation solutions worldwide through the integration of software and off-the-shelf hardware. Established in 2003, a core team of experienced system and software developers can access other engineering skills for the delivery of turnkey solutions.

What was the business need that motivated the project?

The volume of data that will be generated by ubiquitous smart sensors in the Internet of Things (IoT) makes it essential to distribute the tasks of associating, aggregating, integrating and blending data from multiple sources and making and acting on decisions between the intelligent devices in the network. Further challenges are plug-and-play sensor deployment, quality-of-service monitoring and redundancy management.

What approach did you take to address the challenge?

We have developed an innovative, niche service architecture that will enable our existing and future industrial clients to gain commercial benefit from publishing their data, subscribing to open data and using cloud data processing services. To diversify into emerging markets associated with IoT, we have defined the outline specification of an intelligent gateway based on low-cost off-the-shelf hardware and the conceptual architecture for a distributed, agent-based, inference system.

What are the potential benefits?

The value of new services in IoT could reach as much as $200bn a year and Gartner's latest Emerging Technology Hype Cycle predicts mainstream adoption between 2016 and 2021. As a result of this feasibility study, we will significantly change our marketing strategy, continue with the research we have started and also seek opportunities to provide services and implement solutions that are associated with both our traditional markets and IoT.

What are the next steps?

We will create an online presence to promote our capabilities in IoT to potential industrial clients based on our track record of implementing 'silo' systems for that market over many years. We will strengthen the relationships we have formed during this study with potential partners and academic researchers.

Matter2Media

TouchWorld

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Matter2Media specialises in technology and service development for the creative industries.

What was the business need that motivated the project?

Oyster cards are functional but dull, QR codes are cool but often just take you to a website. How could we devise a system for the creative industries that would use these touch technologies but allow amazing functionality that can deliver location-based content, social media connections and engage you in a live relationship with a brand experience?

What approach did you take to address the challenge?

Our goal was to build a system that would allow the use of any touch technology. Our workshops with industry professionals revealed that cost was an issue so we set about building a low-cost, multi-tech reader and creating the software to back it up. We devised and tested several prototype readers and have settled on a form for our initial production model.

What are the potential benefits?

Many touch technology services are popping up – companies providing near field communication (NFC) stickers for example – but they offer limited functionality; you swipe, you go to a website. Our service allows the creative industries (music events, advertising, film festivals) the kind of functionality you would find on a website, but in the real world. This means brands and events can offer unique scalable experiences with all the benefits of online customer relationship management.

What are the next steps?

We are continuing the development of both hardware and software and actively seeking commissions. We used Touch Engine for a launch event for the All New Ford Focus and have a theatre company back for their third touch-based show. The platform will grow as we deploy it at real events.

Mobile Acuity

Reality enhanced: digital augmentation of objects using image recognition

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Mobile Acuity is a world pioneer of mobile visual search and robust barcode scanning technology. Our customers include major UK and global retailers with mobile applications. Our management team includes Chris Wade, Dr Anthony Ashbrook and Geoff Ballinger.

What was the business need that motivated the project?

Our primary commercial activity is business-to-business software licensing with a particular focus on the retail market, where there is increasing use of mobile by consumers. The business objective that motivated this project was to identify other applications for our core technology and to demonstrate our technology to a wider audience and generate new revenue streams.

What approach did you take to address the challenge?

Our idea was to build a vision-based mobile augmented-reality platform – comprising a mobile browser application and a cloud-based image registration service – that allows the creation of augmented-reality experiences without the need for mobile application development. Our innovation was to create a mobile browser that recognises an image, based on our large-scale image recognition platform, and then downloads and displays WebGL (web-based graphics library) content that had previously attached to that image.

What are the potential benefits?

This application provides a great platform for demonstrating the scale and effectiveness of our image recognition technology. It is an exciting new application that will benefit users and will generate new revenue streams for our company.

What are the next steps?

We have identified some minor improvements to our early demonstrator that will have a big impact. We then plan to meet with potential users and develop the business case, meet with potential investors to fund further development, carry out the development and then launch.

New Wave Innovation

A digital service to improve road-worker safety and provide new value-added services to highway maintenance contractors

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New Wave Innovation is a technology development and innovation consultancy. Since 2009 we have been commercialising our own ideas and helping others to develop world-leading products for the energy, security and healthcare sectors. Our clients range from small companies to high-street brands.

What was the business need that motivated the project?

Despite stringent regulation, road workers have one of the most dangerous occupations in the UK. As a result, we developed the Intellicone technology, which improves road-worker safety by monitoring temporary highway lane closures for perimeter breaches by rogue vehicles. However, our existing technology is limited in its ability to provide real-time safety and operational information.

What approach did you take to address the challenge?

We undertook a systematic approach to developing the GSM communication system, SMS gateway, SQL database, geo-mapping and auditing functions in discrete work packages. The performance of each work package was verified before the technology was integrated into a real-time proof-of-concept system.

What are the potential benefits?

Our new digital service will provide a visual interface of the entire highway network for specific contractors and the UK's only real-time map of temporary road works and lane closures. This new digital service will enable us to offer an all-encompassing safety solution to road maintenance contractors. In addition, we will offer new added-value digital services including highway procedure auditing, operational savings, safety alarms and asset tracking.

What are the next steps?

We have partnered with Highway Resource Solutions which is responsible for manufacturing the new Intellicone safety system in the UK. We are planning to invest in the technology and develop it to a commercial level so it can be rolled out nationally over the next 12 months.

PIXELearning

PIXEL Emotional interaction study

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PIXELearning was established in 2002 and is a leading provider of serious games. It focuses on the use of gaming technology for learning. Our simulations provide highly engaging immersive learning experiences, delivering measurable results within business education and business skills development.

What was the business need that motivated the project?

Serious games within the learning environment suffer from a key disadvantage compared to traditional human mediated training in that software systems have no scope for capturing and assessing a learner's non-verbal emotional cues (facial expression, posture and gestures). Our aim is to understand capture-based technologies, to analyse techniques for capturing emotional response and to see how a simulation can respond to these.

What approach did you take to address the challenge?

We studied whether recognition software could be integrated into a pre-existing role-play engine. Our study highlighted a lot of technology challenges, particularly rebuilding of the engine. What we did achieve was a detailed business case and future plan of what we could potentially achieve through recognition technology and its integration into a serious game for potential use in interview training.

What are the potential benefits?

We see great opportunity for a role-play engine to be used to enhance employability among young people. An application that allows users to practise their interview techniques, for example, would assist in building confidence and in preparing to attend real-life interviews. A serious game allows individuals to experience interviews in a risk-free setting, encouraging practice and improvement of skills.

What are the next steps?

The role-play engine needs to be rebuilt in order to cope with the enhancements. We see a huge opportunity to increase the value of learning as soon as possible. Without further funding, we will at best be able to solve part of the problem but over a longer timeframe.

Trusted Renewables Ltd

The Blender – netcentric information management for smart households

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Trusted Renewables provides research-led innovation for renewables management, managed energy services and converged ICT smart-home solutions. Our background is mobile and e-commerce, and core skills include service integration, security and payment and developing innovative trusted services.

What was the business need that motivated the project?

The Internet of Things means a significant change in the way future smart-home services will develop. A 'Blender' can manage smart household 'information' and 'things', combining hard information coming from systems, sensors and appliances, with soft household inputs. We envisage that this will support agile service development and influence evolution of interoperability and integration of diverse netcentric 'things'.

What approach did you take to address the challenge?

We treated this study as a software engineering project, developing the high-level architecture and specification of the 'Blender' solution. Because this is a massive area, instead of a comprehensive design, we created a conceptual framework design for future smart-home development and a test environment. We also tackled some specific design and interoperability issues and looked at how particular features of our netcentric 'Blender' can be 'virtualised' in the cloud.

What are the potential benefits?

The potential benefits will be substantial because large-scale programmes such as roll-out of smart meters traditionally require evidence from feasibility studies before investment decisions can be made. This is already happening in several areas and we see substantial revenues coming from expertise provided to these large deployments, and from creation and licensing of intellectual property rights derived from this and other project activity.

What are the next steps?

We are engaged with initiatives where web-enabled gadgets need to network and communicate with each other. This includes discussing future business evolution with players who wish to use our ideas to increase their penetration in UK assisted-living and smart-home markets as well as in renewables management.

Virtual Technologies

Internet of things apps engine

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Virtual Technologies specialises in software development and systems consulting services. Through partners such as Piercy Adams we also do electronics design and small quantity manufacture.

What was the business need that motivated the project?

Apps are the driver for acceptance of any new technology. Internet of things (IoT) apps are currently difficult and expensive to create. This is restricting the ability of domain experts to develop and create new solutions in the IoT field. As a result, the IoT market has been slow in taking off, despite the magnitude of the perceived opportunity.

What approach did you take to address the challenge?

We wanted to support sophisticated solutions based on networks of sensors and actuators. This was intended to run atop the Pachube online database platform and to facilitate rapid prototyping and refinement of IoT-based solutions by domain experts without the necessity for software skills. We built online form-based tools, using javascript, ajax and node.js, and demonstration applications in the energy sector. To our knowledge this is the first high-level tool of its kind.

What are the potential benefits?

Our concept is proven to be technically viable and many of the original uncertainties are resolved. Once certain new features of Pachube are released, we can roll out a beta version of our tools for use by the less-technical target audience. We are confident that, with a little refinement, the barriers to creating sophisticated IoT apps will be significantly reduced.

What are the next steps?

We propose to deploy the app to representative users and then incorporate refinements into a production version. We also need to work with Pachube to develop a sustainable business model, something that has been discussed from the outset. In parallel with this, we are looking for clients with whom we can build applications using the tools.

WildKnowledge Ltd

Smart mobility – using smartphones and the Internet of Things to track, quantify and socialise human activity

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WildKnowledge is a spin-out company from Oxford Brookes University and specialises in mobile software development. As well as creating bespoke applications, we provide an online toolkit for creating mobile recording and mobile learning applications.

What was the business need that motivated the project?

We wished to add sensor (for example accelerometer, gyro) data to our mobile recording applications to provide automatic as well as 'manually entered' data. As the use of smartphones continues to rise, an increased use of sensors will provide opportunities for new data to be collected via phones. When combined with the Internet of Things (IoT), this can lead to new insights.

What approach did you take to address the challenge?

We created an online repository that gathered data and provided simple feedback on certain exercises (for example 10 sit-downs, stand-ups). This interpretation developed an existing (desktop) movement model to generate online analytics. We also tested the application's ability to monitor and identify certain movement and activities. We then interconnected these data sets to provide a societal pool of data along with automatic feedback of how individuals were performing.

What are the potential benefits?

The explosion of new smartphone sensors combined with the potential of the IoT will deliver smarter services over the next five years. Given that we already enable users to gather data with smartphones, the move towards incorporating sensors and interconnecting data is a logical progression. Through the funding of a prototype, we are now in a position to identify and exploit potential markets for 'the monitoring and interpretation of movement'.

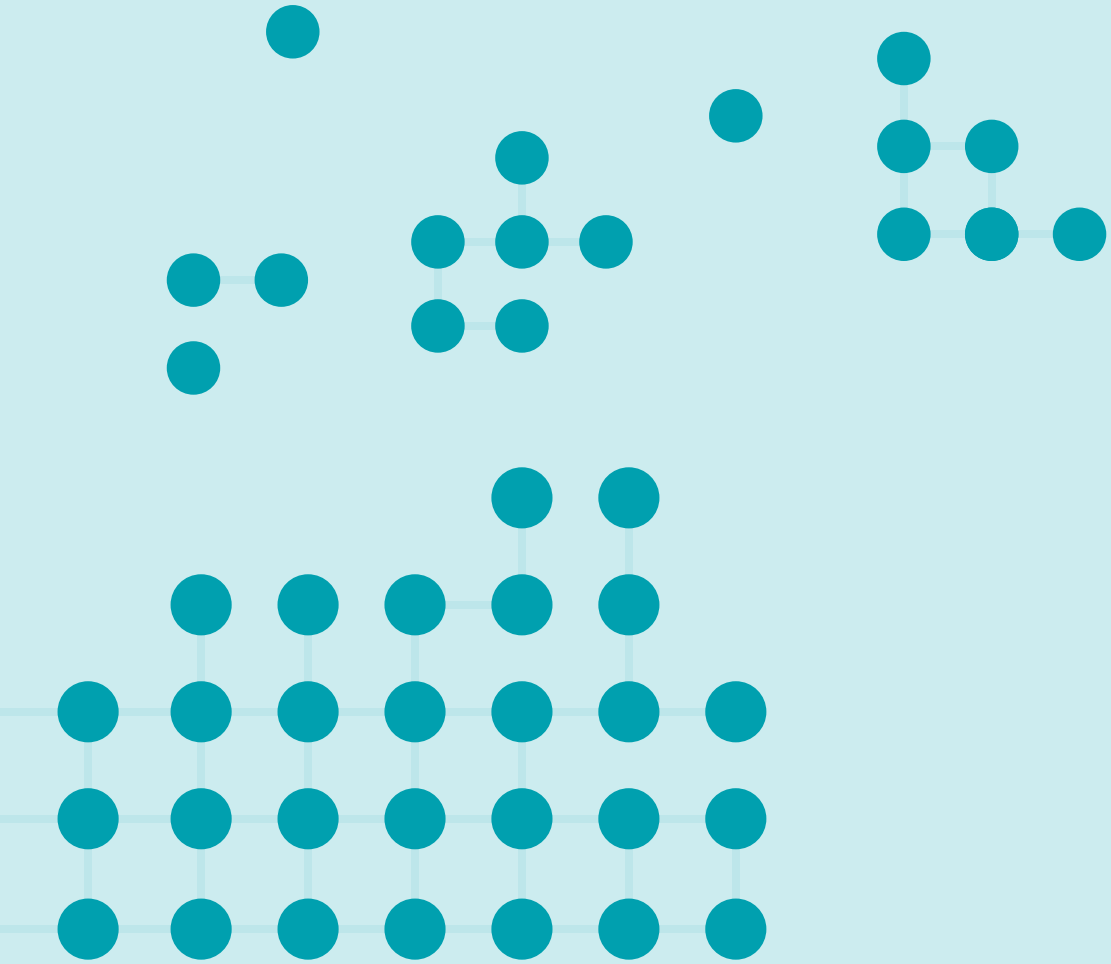
What are the next steps?

Having developed a prototype, we now wish to trial the application with more users. In particular, the evidence that 'socialising' the data acts as a motivational force needs more investigation. Further work on the calibration of results is required to determine whether differences in individuals/exercise conditions affect the results

Collaboration Nation

Digital services feasibility projects

Cloud Adoption



AIMES Grid Services CIC

C_CARE

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AIMES Grid Services is an award-winning technology company that delivers innovative R&D projects and commercial cloud computing services to businesses from across a range of industries, including pharmaceutical, automotive, professional services and the digital and creative sectors.

What was the business need that motivated the project?

Providers of primary physiotherapy care to children with additional needs suffer from a lack of data integration between their systems. Typically, spreadsheets are used to store the details of all children who use this service. Changes in the structure of primary care trusts across the country have also led to a greater need for improved data integration and visibility – particularly from local authorities and GPs.

What approach did you take to address the challenge?

We have investigated use of a cloud service to provide an electronic workflow to replace existing paper-based systems and provide greater system integration. This information will be easier to create, more securely accessible and transportable and more readily shared between GPs, occupational/speech therapists, NEYS, schools and the physiotherapy service. The records kept for assessment results will facilitate trending of results and improve the selection of the most successful assessments for each situation.

What are the potential benefits?

The project will benefit children with complex health needs and their carers. The integration of systems will lead to a more efficient care service for these children, more accurate data and a smaller workload for the carers. It will mean resources can be more focused on providing care to those in need. The system will improve information sharing, allowing access to those who need it via a secure authenticated login.

What are the next steps?

We are now planning a trial deployment of a C_CARE demonstrator within the Liverpool Community Children's Physiotherapy Service, user testing of architecture for tablet deployment, and further integration work to connect to the children's hospital's main patient data system Meditech. We have also made initial approaches to Innove (as a partner) and strategic health authorities.

Ambiental Technical Solutions Ltd.

Flood modelling data service – prototyping for effective cloud deployment

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Ambiental is a specialist flood-risk mapping and modelling company. We have created and distributed river, storm-surge and surface-water flood models for at-risk areas in the UK, USA, Europe, South America and Asia.

What was the business need that motivated the project?

We are aiming to address some of the key barriers to the uptake and dissemination of very-high-detail flood risk data using cloud computing. We are familiar with this technology, having used it extensively prior to this study, but we have experienced issues relating to cost-effectiveness and data transfer bottlenecks.

What approach did you take to address the challenge?

Our approach involved construction of a prototype solution for disseminating flood-risk information that both exploits the strengths of cloud computing and aims to address perceived barriers to adoption of cloud-powered digital services. Our chosen approach is to provide a web portal and data delivery/payment mechanism tailored for both business users and consumers. The inherent flexibility of cloud computing is well suited to this kind of product.

What are the potential benefits?

We are now in a position to provide both the niche insurance market and the wider consumer market with address-specific detailed flood-risk information, without the need for expert knowledge or costly data purchases. In relation to societal potential, we believe that this feasibility study and the subsequent roll-out and wider market testing of the product will lead to a greater general level of awareness of the flood threat.

What are the next steps?

The majority of the site infrastructure, optimisation and scalable geo-database mechanics are completed (although not scaled fully) and, as such, we are currently finalising the site design for the initial UK-based roll-out. The next step towards taking the product to market is client user testing.

BAFTA (British Academy of Film & Television Arts)

Video timelines

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BAFTA conducts R&D in media technology on digital preservation and cloud computing. We aim to contribute to archive/media technology excellence worldwide, benefiting members, and innovating commercial services to generate funds for our charitable remit.

What was the business need that motivated the project?

The project solves the problem of simplified cloud-based management for overstretched and multi-tasking small companies with video collections. These content owners face several barriers to adoption – fear of security and piracy, concerns about format longevity, and gaps in practical understanding of information communications technology. The project addressed these challenges and identified a new visual metaphor for effective, compelling and simple media management.

What approach did you take to address the challenge?

We engaged with users via face-to-face meetings and a survey to better understand barriers to adoption, and we then created a partial visual prototype. In parallel, we prepared a 25-hour exemplar collection, extracting metrics to provide provable cost economics and an information-rich case study. We were able to confirm and improve on the cost assumptions in the case study, and now have an excellent starting point for service development.

What are the potential benefits?

Our aim was to discover an optimum visual metaphor to allow small companies with moving-image collections to manage their assets. This could bring 250,000 small collection holders worldwide into the digital domain, enabling final migration from physical tape-based assets. We plan to address this small but significant market with a new cloud computing service, creating substantial value and generating social enterprise revenues.

What are the next steps?

We plan to identify and work with 10-20 small collection owners between October 2011 and March 2012 on a commercial trial basis to validate our findings and further plan the initial service offering. In parallel, we will publish market engagement materials and conduct detailed preparations for launch.

Bubblephone Ltd

Feasibility of interfaces for cloud computing adoption and trialling service

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Bubblephone is an innovative communications and research company.

What was the business need that motivated the project?

Our aim was to identify the best ways to provide our innovative cloud-based adoption and trialling technology. The purpose of this study was to identify the best methods by which to offer this to the customer so as to make it as far reaching and effective as possible.

What approach did you take to address the challenge?

We looked at all the means by which the cloud-based adoption and trialling technology could be provided and considered these in terms of business and customer requirements to give us an overall assessment of viability for each approach in both contexts.

What are the potential benefits?

The work has allowed us to identify a number of viable ways to take the cloud-based adoption and trialling technology forward to commercialisation. The technology has the potential to revolutionise design and delivery of cloud-based services.

What are the next steps?

We are now seeking to trial our cloud-based adoption and trialling technology with the eventual goal of full launch and commercialisation.

Celestor Ltd

Virtualisation and service aggregation

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Celestor is a provider of end-to-end solutions with a focus on cloud architectures. Celestor also provides consulting services.

What was the business need that motivated the project?

The need we identified is for low-cost solutions for remote diagnostics and treatment for the Asian and African markets, able to operate on the existing mobile telephone network. We aimed not for a 'gold standard' solution but to develop a 'good enough' device with a focus on value for money.

What approach did you take to address the challenge?

The challenge was to drastically reduce costs, to reduce size and to create a robust and resilient device. Handling needs to be easy and meet the requirement of a primarily rural population. In accordance with market forces, we opted for Android as the rising operating system on the mobile market. We started off with a relatively large prototype, successively reducing size and price. We are now able to manufacture it for US$50.

What are the potential benefits?

There is a clear demand on the Asian and African market for our device. The market is worth billions of dollars. The technology has the potential to improve the lives of millions who are currently without proper healthcare. Through our project, we found partners for the next step and for developing a pre-production prototype and we have had the first serious discussions about the routes to market.

What are the next steps?

Together with a partner who will provide venture capital we have applied for further Technology Strategy Board funding to go the last mile. The Technology Strategy Board funding will enable us to keep a share in our development without selling it out completely. We are now aiming to go to market in early 2013.

Cirrious Ltd

AppAdmin – new services for application administration in the cloud

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Cirrious is a start-up software micro-company focused on the cloud. It is built on the founder's experience of 15 years' working in commercial software development in environments as varied as the pulp/paper industry, banking, radio broadcasting and embedded radio development.

What was the business need that motivated the project?

Our aim is to prototype new tools to assist companies in moving their operations to the cloud – to provide tools for a new cloud generation of 'SysAdmin' applications. These tools are especially designed to help companies manage services instead of servers.

What approach did you take to address the challenge?

Our AppAdmin project built, iterated and validated a new toolset to enable cloud application administration. The initial focus was on an audio-streaming application deployed to the Microsoft Azure Cloud platform as a service (PaaS) environment – as this was a platform where significant challenges were identified by our lead partner, especially in terms of monitoring, security and performance.

What are the potential benefits?

Our tools allow customers to benefit from the cost savings and scalability/reliability improvements of migrating to the cloud, whilst continuing to be assured of the functionality, performance, and reliability of their applications.

What are the next steps?

We learnt a lot from building, deploying and especially using our prototype tools. In particular, we identified some key areas on which to focus initially, and we are now working on a version 1.0 of a specialist desktop tool. Our next step is a commercial software as a service (SaaS) platform.

Exvine Plc

A cloud service for the insurance and reinsurance market

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Exvine is a leader in social business software services and consultancy for the insurance industry. It provides innovative, secure, auditable collaboration platforms designed to enhance business relationships within and between insurance organisations.

What was the business need that motivated the project?

The commercial/speciality insurance supply chain is complex, geographically dispersed, and involves multiple technologies and processes. The underwriting of risks often requires collaboration between many business people and organisations. The effectiveness of the business process is dependent on human interaction between clients, brokers, and underwriters. Exvine's secure cloud-based service aims to significantly enrich these key business relationships between participants.

What approach did you take to address the challenge?

The Exvine feasibility study focused on delivering the functionality of an integrated business networking service to meet the needs of the London commercial and speciality lines insurance/reinsurance market. It examined and defined the needs of brokers, underwriters, and service companies, and established a demonstrator using an award-winning secure cloud-based technology platform. The aim was to show how relationships can be enhanced using innovative technologies and to complement existing processes.

What are the potential benefits?

The study and demonstrator were successful in validating the potential benefits of the collaborative technologies and services offered by Exvine. The feedback suggests that they could enrich collaboration between business people, help to maintain the UK insurance market as a global leader, make it easier to do business in a global industry, reduce costs, and improve communications within a secure environment.

What are the next steps?

The feedback from potential customers and users of the Exvine platform has been very encouraging. Exvine is now seeking participation from collaborative partners within the insurance sector and financial support to develop a fully functional prototype based on study findings and the demonstrator.

Independent Networks Co-operative Association Ltd

Quality cloud systems for independent networks

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The Independent Networks Cooperative Association (INCA) is supporting, planning, building and operating sustainable, independent and interconnected networks that advance the development of the communities they serve and provide applications and services through open competition, innovation and diversity.

What was the business need that motivated the project?

Independent next generation access networks lack the scale to engage with other service providers and have a number of weaknesses. There are a wide range of technologies used in independent networks; a fragmented range of service level agreements, management systems and standards; and a lack of standards and harmonisation, particularly when raising finance and attracting retail Internet service providers (ISPs).

What approach did you take to address the challenge?

Networks recognised they could reduce costs in their operational support services and business support services. We assessed the feasibility of a cloud-based system to do this and the complex issues of integrating a wide range of service level agreements and network architectures. We now have a draft 'quality marque' for organisations aiming to work with INCA.

What are the potential benefits?

We have provided an agreed set of standards to those organisations who are building networks and who wish to see what they should be asking of industry. Public sector organisations are using the quality mark to influence their thinking on 'build and benefit' projects they are carrying out with communities. It has fed into the policy debate on the role of competition for ISPs on Broadband Delivery UK (BDUK)-funded projects.

What are the next steps?

We need to further develop the quality mark (QM) to complement the cloud-based system so it can work with a range of ISPs. Launching the QM accreditation will show networks there is an alternative to working in isolation. We also need to identify sources of finance to develop the service further.

Intergence Systems Limited

Data assurance for cloud services

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Intergence is a leading data centre, network and security optimisation business that provides consulting and software solutions to many of the largest users of IT. The company was founded in 2002 and has nearly 50 employees, including an innovations team.

What was the business need that motivated the project?

There is a perception that cloud infrastructure is insecure, preventing both large organisations and small companies from investing in cloud providers to store and process data deemed sensitive. In particular, UK organisations are in violation of data protection law if their cloud provider allows sensitive data to be processed or copied on infrastructure outside the UK, most notably in the USA.

What approach did you take to address the challenge?

Our study tested whether visualisation could offer clarity to the following: where does the protected data reside? where is it being processed? where is it being copied? how resilient and secure is the infrastructure over which it travels? Our study leveraged technology provided by market leaders to supply the relevant data. The study provided a process and visual solutions suitable for cloud providers and users alike.

What are the potential benefits?

Our study team will seek a commercial route to enable cloud-based data to be managed through visual techniques. At present, only 30% of chief information officers in the US are considering using third-party clouds, citing security as their main concern. This commercial route is underpinned by a patent defining the process and visual techniques. This will then be used to enhance the leading solutions that discover and track sensitive data.

What are the next steps?

The study team will build a prototype using a large simulated network. It will deploy the leading visualisation, data and infrastructure discovery solutions to simulate the process necessary to visualise data movement. Following a prototype, the study team will seek to deploy solutions and offer consultancy around these visual techniques.

Lexegesys Ltd

Hidden in the cloud: privacy-preserving data-mining by obfuscation

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Lexegesys is a micro-company with contracts developing data-analytics solutions for government and commercial sectors. The directors and majority of associates have extensive experience delivering technology into operational customers.

What was the business need that motivated the project?

Cloud-based technologies are becoming an industry paradigm for efficient analysis of truly massive data sets. The focus of this study is on preserving personal, corporate and governmental privacy when performing analysis across such massive data sets. Data anonymisation could still lead to privacy violation if the published data is analysed in conjunction with other data sets available in the cloud.

What approach did you take to address the challenge?

This study developed an approach based on differential privacy (which makes no assumption about an adversary's background knowledge) from within the privacy-preserving data-mining field, for inference protection (protecting against efforts to derive answers from data) in cloud computing. The study involved the evaluation and implementation of tools for anonymising data; control of data queries through a privacy mechanism (which may alter the query or the response in order to ensure privacy); and tools that evaluate privacy metrics.

What are the potential benefits?

The project developed an approach to inference protection in a cloud environment and performed an assessment of the technology to achieve it. The potential benefits of the approach are the provision of tools that enable the publication of data that is immunised against privacy attack while still supporting effective analysis. This approach enables policy based disclosure, allowing the management of the level of risk accepted and auditable privacy metrics.

What are the next steps?

We need to complete a thorough evaluation of the technology using representative data sets and business models, and to consider the legal implications (for example under the Data Protection Act). This will be followed by the development of a marketable software component as part of a broader offering through partnership with a business informatics provider.

Mirada Medical Ltd

Feasibility of interactive 3D image processing on the cloud

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Mirada Medical is an internationally recognised brand in advanced medical imaging. The company develops high-value clinical software applications that are used across diagnostic radiology, nuclear medicine, radiation oncology, tumour board and other sectors.

What was the business need that motivated the project?

Adoption of cloud technologies within the healthcare imaging domain has been largely limited to data storage for 'access anywhere' and for visualisation via remote desktop technologies. The cloud could offer greater benefits in terms of the processing power available. Therefore, we wished to investigate the potential for interactive cloud-based tools for medical image processing.

What approach did you take to address the challenge?

Our investigation centred on reducing the transfer time required for large medical images, since that is the main barrier to interactivity. A baseline system was developed to transfer images to the cloud, process them in some way, and return the results. This system was used as a platform to investigate how limited pre-processing could be used to reduce the transfer time, while maintaining the accuracy of the processing results.

What are the potential benefits?

Using the cloud for medical image processing could have two benefits. First, the additional resources may enable more sophisticated processing methods. Second, using the cloud could reduce individual hospital IT costs, saving money for healthcare institutions. This project has enabled us to better understand factors relating to the use of the cloud for medical image processing, and allowed us to focus our future research and development in this area.

What are the next steps?

Based on this study, we have a better understanding of how a system for cloud-based medical image processing should be built. Our next step in developing this technology will be to build a prototype system, in collaboration with clinical sites, for demonstration to potential customers.

Nexor Ltd

Cloud guarding: providing trust and control over your sensitive data while using cloud services

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Nexor connects, transforms and protects sensitive information in cyberspace. It provides an end-to-end capability to manage secure information exchange, to enable cross-domain interoperability, to prevent data loss and to promote collaborative working by building solutions to enforce corporate security policies.

What was the business need that motivated the project?

Cloud technologies and services are becoming increasingly available and are attractive propositions for public and private organisations. However, the adoption of cloud services implies the passing of trust and responsibility for the protection of organisational data to the cloud service provider. Our project was designed to demonstrate suitable controls that ensure only permitted information is shared with cloud service providers.

What approach did you take to address the challenge?

Based on experience of building guard and gateway solutions to enforce security policies where information crosses a boundary, we developed a new guard concept to sit between the cloud user and the cloud provider. The guard identifies sensitive information based on defined parameters and acts as a filter, thereby ensuring that only allowed data can pass to the cloud, leaving protected data within the organisation.

What are the potential benefits?

The benefits of adopting the cloud include reduced overheads and costs, but the downside is the loss of control and custodianship of sensitive information. Removal of the downsides will open the door and allow many more organisations to realise the benefits.

What are the next steps?

Having proved the feasibility of a 'cloud guard', we are undertaking market research to understand the commercial validity of the concept, for example how will potential cloud service adopters procure and deploy the guard, what value would it have and would cloud service providers offer the capability as an incentive?

Obex Technologies

Cloud-based networking for complex healthcare interventions

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Obex Technologies is a technology start-up established in 2010. With an expertise in translational medicine, we focus on developing bespoke systems integrating performance analysis and research data collection within routine practice.

What was the business need that motivated the project?

Clinical research, service evaluation, and multi-site co-ordination play an increasingly important role in the provision of routine clinical care. This imposes complex data demands on medical information that are not fully met by traditional patient-centred, single-site electronic systems. Extensive data duplication thus occurs between healthcare and research institutes, leading to significant additional administrative and capital costs.

What approach did you take to address the challenge?

Our aims were to evaluate the feasibility of integrating clinical trial data collection within routine healthcare provision by means of a novel cloud-based application operating across multiple sites. Our approach was to create and evaluate a generic software application framework capable of generating and analysing bespoke intervention protocols incorporating complex patient and clinician-reported outcome measures, using best-of-breed technical and security methods to maintain data integrity and confidentiality.

What are the potential benefits?

The technology developed and principles established in our study have significant implications. We believe that the automation achieved through our novel application can reduce the cost of a typical phase-1 trial by 5-10%. For a biomedical campus running hundreds of trials concurrently, the cumulative cost and time-saving for research and clinical budgets would be in the order of £2m-3m a year.

What are the next steps?

We are in the process of finalising hosting arrangements and system-use policy prior to live deployment. The technology has already generated interest from healthcare providers and is being implemented within the East of England Major Trauma Network to co-ordinate pre-hospital, acute and ongoing care across the region.

ObjectSecurity Ltd

Feasibility analysis: cloud computing application security policy automation as a service: gaps and solutions

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ObjectSecurity is the leader in information security policy automation based on 'model-driven security'. Our OpenPMF product involves intuitive model-driven security policy configuration, and automated technical policy generation, enforcement, auditing and update.

What was the business need that motivated the project?

Cloud computing is forecast to be a very large and rapidly growing market, but all surveys find that security is seen as the number-one hurdle to adoption. Current solutions (authentication/monitoring) are not sufficient. Preventative, granular, contextual authorisation policy enforcement is required that correctly enforces the cloud subscriber's requirements, not simply those of the provider. There is a great commercial opportunity for solutions.

What approach did you take to address the challenge?

To reliably identify the exact requirements and unique market opportunities, our project first analysed unique security concerns related to cloud computing, and gaps in cloud-related standards/regulations/recommendations and in technology solutions. It then validated the viability of OpenPMF model-driven security for security policy and compliance automation implementation and testing. Community involvement and promotion of the results also formed an important part of the project.

What are the potential benefits?

ObjectSecurity, standards bodies, potential customers and the wider community are now aware that model-driven security 'policy as a service' is needed for effectively implementing relevant regulations, standards, and guidance for clouds, and for giving cloud subscribers more control and visibility. Without it, traditional mechanisms (for example role-based access control and network security) alone are insufficient to effectively implement the recommendations. There is significant market potential for OpenPMF 'policy as a service'.

What are the next steps?

We need to find investors for this high-growth, cross-industry, scalable investment opportunity; to get early-adopter customers to buy into the OpenPMF cloud service; to close a few non-critical technical implementation gaps; and to partner with software developers, with system integrators and prime contractors, and with secure cloud hosts.

Onteca Ltd

Using the cloud to streamline the development of mobile phone apps

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Onteca is a digital entertainment developer and micro-publisher. We develop applications for iPhone, Wii and other digital channels. We also offer consultancy services on social, interactive and multi-screen television usage and a number of technology solutions for this domain.

What was the business need that motivated the project?

Mobile apps and social gaming are driving forces within the games industry. Cloud computing enables complex desktop tasks to be simplified and scaled up, thus reducing the cost of entry to new markets. Publishers often deploy multiple applications to multiple handsets. Managing this process is tricky as each handset has specific software development kits and tools.

What approach did you take to address the challenge?

This project moves the building and deployment of mobile apps into the cloud. Developers are able to build and test their applications in a browser and then create an automated series of builds for all major handsets via the click of a button.
These builds are deployable to remote or local testing services or even straight into application stores. This system also collates application metadata such as keywords, descriptions and icons.

What are the potential benefits?

We have been able to automate what to this point has been a labour intensive process of manually building and testing new versions of applications. We have reduced our time to market and production costs by 80% in some cases. It will be possible to offer this toolset as a cloud service via either subscription, advertising or revenue share.

What are the next steps?

We need to improve the product through use within our internal product development and get it to a point where the range of target builds is wide enough that we can run a public beta service to test the tools and the business model.

Outlandish Ltd

Development of a cloud-based technology to deliver efficiency and quality benefits to the public and private sector home-care service

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Outlandish is a small team focused on driving technology and innovation. We are developing a cloud-based system to improve communication, visibility, quality of care and efficiency across the care-in-the-home sector, and to support health and social care industries.

What was the business need that motivated the project?

Ongoing healthcare reforms and demographic shift continue to put much greater focus on care in the home. While governing bodies try to support this shift, a disparity between quality and cost exists. With current budgetary constraints, it is critical to measure service performance, allowing costs to be controlled whilst delivering a quality of care to patients.

What approach did you take to address the challenge?

We carried out a user-centered design process to capture market needs, stakeholder requirements and technological capabilities. The results fed into the development of an integrated system that supports communication and visibility more effectively. Smart devices report and capture evidence data on quality measures, and manage real-time updates and scheduling, while a web dashboard captures data on workflow and performance, allowing reporting against agreed service levels.

What are the potential benefits?

The solution would deliver significant improvements in controlling costs, efficiency of service delivery and quality of care, for example eliminating paper-based records. The technology would be relevant to around 7,000 care agencies and 18,000 care homes in England, serving some 1.1m people aged over 65. There are further opportunities in improving health and social care provision for other service users such as adults under 65, children, those with disabilities and vulnerable people.

What are the next steps?

We plan to develop the technology with a pilot client already in place, to conduct robust testing and to deploy the technology with further clients. To successfully achieve this we are looking to raise £200k funding for technology development, preferably from a source that has the ability to actively support our market entry strategy.

Pitchie Ltd

Reducing costs and increasing usability of clustered cloud-computing hosting environments: an investigation and demonstration

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Pitchie is a start-up consisting of an experienced R&D software entrepreneur and a young proven development team. Through our product StackBlaze, we aim to disrupt the market for cloud-hosting of PHP/MySQL applications through lower costs and improved usability.

What was the business need that motivated the project?

We see a need and an opportunity to address the current frustrations that developers working in the PHP scripting language face in web hosting their applications. We think that there are better ways of tackling the challenges of complexity, scalability and growth of web applications. Current commercial hosting provision is also much more expensive than it need be.

What approach did you take to address the challenge?

We conducted a detailed study into cloud-computing hosting platforms. We built a prototype to demonstrate proof-of-concept. Rather than relying on pre-existing services, such as Amazon, we built the infrastructure from scratch. The key challenge was enabling the deployment and growth of scalable databases. This was achieved by not requiring virtualisation, as in current state-of-the-art technology, but through an innovative method of instancing. The technology was tested with several applications.

What are the potential benefits?

There is a large market opportunity if we successfully commercialise the technology that has been developed on the project. We are on track to commercialise this as StackBlaze and see a potential market of over £100m. We expect therefore to expand rapidly in the next five years, creating highly skilled jobs in the process. We will also enable lower costs and easier web hosting for UK organisations and small and medium-sized enterprises.

What are the next steps?

Following alpha testing of the technology developed, we are now developing the software user interface and developing our value proposition before commercial launch. We are acquiring and seeking private beta users. The commercial launch is planned for quarter four of 2011.

RPPtv Ltd

Cloud archive and production services for local news and television

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RPPtv is a micro company that has developed industry-standard collaborative cloud archive and production media tools that are being trialled for use with local news and television. We have a good track record of delivering EU-based projects.

What was the business need that motivated the project?

We wanted to look at the business and technical feasibility of using our tools for new services in local news and TV production. The potential is there to stimulate and drive innovation in business practice by replacing expensive traditional methods with ultra-low-cost cloud-based tools. The tools could stimulate new media production and distribution, are easily scalable and could provide fast access for re-use and sale of content.

What approach did you take to address the challenge?

We worked with three diverse university user groups to produce local news stories. A fully running test cloud platform was installed and run from AIMES data centre in Liverpool. The technical challenges involve virtualised servers and network bandwidth to run fast media-heavy services and the sharing of media between diverse groups for collaborative use. The low-cost delivery is innovative.

What are the potential benefits?

The project demonstrated that our cloud tools deliver on a technical and cost basis, opening up media creation to new user groups and lowering the costs for both these groups and for current media sectors such as agencies and local television. When the additional functionality highlighted by the study is added, content trading will be enabled, unlocking content and generating new revenues.

What are the next steps?

The local news platform will continue for some months and we will add two-to-three new user groups. We have applied to build a prototype based on outputs from the study. Good partnerships are being formed to take the company forward in both education and business. We will also explore funding options.

Seamless Sensing Ltd

The establishment of load-driven real-time energy utility tariffing for smart-grid control of household appliances

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Seamless Sensing is a technology start-up company that provides a range of smart-grid enabling products.

What was the business need that motivated the project?

The project addresses the need for efficient electrical power generation. Power generation plants must be able to respond to high-peak demands, and utilities build very capital-intensive power plants and lines. Peak demand happens just a few times a year and these assets run at a fraction of their capacity. Users pay for this idle capacity through their electricity prices.

What approach did you take to address the challenge?

Our proposed solution is a reduction in the electrical load during times of peak energy grid demand. The idea is to incentivise users, offering lower cost electricity if they participate, giving the energy utilities the control to switch home appliances and electric car chargers on and off according to the demands of the electrical energy grid. Users subscribe to a 'smart tariff' and use 'smart plugs' that allow consumer appliances to be controlled.

What are the potential benefits?

The economic benefits can be demonstrated by reduced or deferred power plant capital expenditure and improved energy grid efficiencies, leading to reduced operating costs. There is an added benefit to corporate image from the resulting improvements in system reliability and resource availability. Society as a whole, particularly in terms of greenhouse gas emissions, will benefit from more efficient use of resources.

What are the next steps?

The next steps with this project are to prove it on a larger scale. Currently it has been proven on a street and it needs to be rolled out to a community of hundreds of houses so we can understand how consumers will use and react to this solution.

Techmatics Ltd

Real-time anonymised identity (RTAID) for health and social care

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Techmatics specialises in information systems and data security. The company's small agile team uses its technical and commercial know-how to bring innovative solutions rapidly to market. Past projects include consultancy on data and security within the youth justice system.

What was the business need that motivated the project?

An estimated 3.4 million adults in the UK will require care and support by 2026. Coping with these ever increasing needs and expectations within available budgets will require us to embrace technology in a way that we never have before. Barriers to adoption of technology include worries about data security and the handling of sensitive personal data.

What approach did you take to address the challenge?

Our feasibility study explores the viability of adapting the Techmatics RTAID system for use in health and social care, how we overcome the barriers to acceptance of technology, and how RTAID could be adopted as the de-facto standard for secure exchange of social and medical care data in the UK (and hopefully European and world markets). We defined prime data sources and systems; identified end-user communities and requirements; investigated actual barriers to adoption; and produced a market plan.

What are the potential benefits?

The market and societal potential of more secure and granular data handling is not insignificant in itself. It can overcome issues relating to acceptance of technology and the governance of shared data. The real impact, however, is in enabling dramatically more effective delivery of core services. Once secure access to appropriately entitled data sets is implemented, a whole range of process improvements become possible with huge cost savings on the delivery of care.

What are the next steps?

We wish to engage with health-record aggregators and NHS electronic staff record departments in order to trial the technology. Funding is an issue. In addition to discussions with venture capitalists and other investors, we are keen to explore avenues such as Government funding or EU Seventh Framework Programme (FP7) funding to help us to bring the development to fruition.