New Strategies for Digital Inclusion
A participatory action research study

Summary, February 2014

Sheffield City Council
EUROPEAN UNION
Investing in Your Future
European Regional Development Fund 2007-13
community media association
www.commedia.org.uk
cmsolutions
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access-space.org

New and innovative digital tools and strategies are available to businesses (including social enterprises), communities and individuals. Can these emerging and developing technologies and services promote entrepreneurship within deprived communities and disadvantaged groups? How can mobile technologies be used to develop existing businesses and social enterprises and to support new ones? Can web 2.0 and cloud computing technologies be deployed at community level to enhance existing community media enterprises and to start new ones? And what potential do new physical computing technologies, practices and value chains (including design and manufacture, analysis and remanufacture) offer to businesses and social enterprises?

Sheffield Community Network's digital inclusion pilots set out to answer these question through a programme of participatory action research. The pilots aimed to increase understanding and test the potential of the new technologies to support businesses and social enterprise; promote and encourage social entrepreneurship; and provoke and support new business ideas. The pilots conducted action-oriented research, through neighbourhood-based workshop activities, focussing on three areas of new technology:

- Digital Media on the Move
  Mobile platforms to access, make and share digital media content
- Virtual Enterprise in the Cloud
  Web 2.0 technologies and cloud computing for social enterprise
- Physical Computing Laboratory
  New tools, machines and processes that manifest the digital as physical products

The purpose of each pilot was to work with deprived communities and disadvantaged groups to inspire, innovate, test and demonstrate, acting as a catalyst and a context to identify and engage new and potential micro-enterprises. Each pilot explored questions around: the transformative economic and community development potential of the technologies under investigation; the practical feasibility of their implementation, including factors that either inhibit or encourage effective usage; the sustainability of engagement with such technologies.

The key findings and recommendations of the study are:

The development of 'smart' mobile communication devices and mobile broadband are fundamentally changing the ways in which people access and use the internet. Access to a computer and an internet connection at home or at work is no longer the only measure of digital inclusion.

For a growing number of people with smart mobile devices it is possible not only to access the internet on the move but also to play and to record digital media – text, sound, pictures and moving images. The mobile platform is one of the new opportunities for community media development,[1] engaging a new generation of content makers and broadening the reach of community media.

Digital Media on the Move pilot research focused on the potential of mobile marketing and communications for business, social enterprise and community media. It demonstrated the ease and accessibility of smartphone media content production and distribution in enabling effective growth for businesses and social enterprises, and environmentally sustainable economic development.

The research confirmed that mobile technologies are a large and expanding part of the contemporary digital economy and that their use is vital for businesses and social enterprises if they are to reach their economic potential. But whilst most people running microenterprises had access to smartphones, before our intervention, the majority were unaware of the ease with which the technology they were carrying around could be harnessed to benefit their business.

Social entrepreneurs can benefit from running a *Virtual Enterprise in the Cloud*, saving them time and money and making other people more aware of the organisation they represent. Our work showed how it is possible to integrate the functions of a business into the cloud.

1. CM Solutions 2008, Girard et al. 2010, Mulrow 2010, Ulbricht 2012

Executive Summary

Technically, integration is quite straightforward; however we identified issues of connectivity, affordability, security, trust and scalability that act as preventative barriers to cloud integration. And a strong message came through that, currently, cloud computing is more useable as a tool from the inception of an organisation rather than for an existing organisation to integrate retrospectively.

A number of factors pre-dispose, reinforce and enable potential users to integrate cloud computing. We identify and examine these and make recommendations to enable greater uptake of the cloud technologies which can help reduce the cost of social enterprise; and provide social entrepreneurs with greater flexibility and choice over the information technologies that support sustainable growth.

Physical computing technologies with potential to disrupt existing modes of manufacture are becoming affordable and widely available. At the same time, concerns over economic and environmental impacts are bringing awareness of digital technologies as material objects to the fore.

The Physical Computing Laboratory research pilot tested and demonstrated at neighbourhood level the use of physical computing technologies for social enterprise.

All the technologies investigated appear to show potential for enterprise incubation. They also show signs of having strong potential as a means of engagement and capacity-building.

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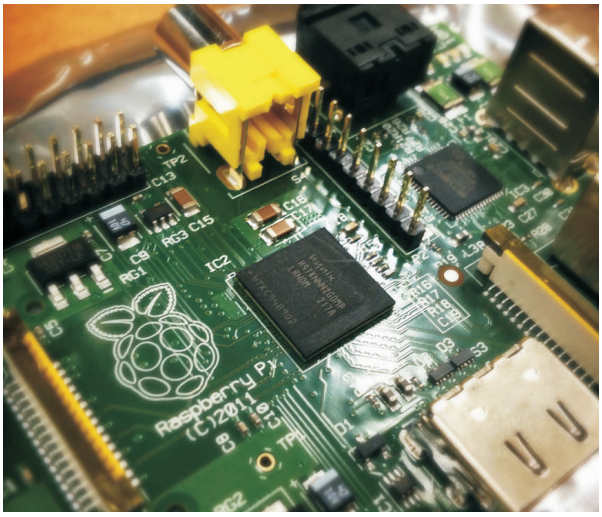

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All three strands of the research have demonstrated that, beyond accessibility, many other factors can prevent uptake of the technologies or can mitigate against them being used to their full potential - whether for social enterprise, business growth and development, or for community capacity building. Common barriers to uptake include: awareness, understanding and education. All can be dealt with relatively easily.

General recommendations

We've made specific recommendations within each chapter of the full report, but also recommend the following in order that more social enterprises and businesses can benefit from the application of emerging technologies:

Policymakers

- Government should identify opportunities for wider research and dissemination of good practice in the uses of mobile technologies, cloud technology and physical computing for developing businesses and social enterprises. This could be conducted through the Technology Strategy Board, which the Government is currently using to run a technology competition (with £8m funding available) which aims to test and showcase the use of technology to create footfall for high streets and town centres. A similar funding competition could assist in the wider testing and uptake of all of the technologies tested in this report.

- Local Enterprise Partnerships, local authorities, as well as Enterprise Zones, need to consider that access to and effective utilisation of digital opportunities is vital for business growth - including technologies such as cloud computing and digital media content sharing. They should also map and signpost access to physical computing technology that businesses and entrepreneurs can use to test and refine prototypes.

Business and enterprise support sector

- Support organisations should provide information and guidance about the enterprise potential that these technologies offer, and provide support to businesses, social enterprises and social entrepreneurs in levering the abilities of their smartphones, accessing cloud technology and mapping the availability of new physical computing hardware that emergent businesses can use. They should also create 'matchmaking' services (which themselves could be cloud based) to assist new businesses and social enterprises in accessing learning from existing businesses that are already using these technologies.

Education sector

- Educational organisations should better equip students with the knowledge of how to create compelling video and audio content as an enterprise skill; and with software as a service as part of the IT curriculum.

- Physical technologies that demonstrate both scaleability and accessibility (e.g. laser cutters, Raspberry Pi, Arduino), should be used by educational organisations to demonstrate business applications of technology. They could also develop student skills in digital embroidery as a route to highly skilled employment.

- Educational organisations could adapt the SCN workshop model of concentrated skills and knowledge, for further use and application to meet a range of different needs and situations e.g. a 1 to 3 hours workshop could be developed for conferences, festivals and “one off” special events.
  A longer workshop (one week or more) could be designed to allow for more time to comprehend and assimilate technical knowledge and combine with creative skills, potentially as a module withing a broader educational framework.

Businesses and entrepreneurs

- Individuals and start-up social enterprises and businesses should use the full capacity of their smartphones and consider video or audio content creation and distribution as a key part of their marketing strategy.
- Start-up business should consider the implementation of cloud computing at as early a stage as possible in their business development and plans for risk mitigation.
- Entrepreneurs should consider examples of how other businesses have used mobile content, cloud, and physical computing technology to benefit their business - and learn from this experience.
- New and early stage businesses should make use of the opportunity to digitally prototype, test, market research and refine their physical products by using the services of Physical Computing Labs.

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Acknowledgements

We would like to thank Sheffield Community Network partners, Digital Media Centres and the staff, volunteers and entrepreneurs we spoke to for their assistance and patience in helping us carry out the research.

Sheffield Community Network is supported financially by the European Union. The project has attracted £2.3 million investment from the European Regional Development Fund as part of Europe's support for the region's economic development through the 2007-2013 Yorkshire and Humber ERDF Programme.

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