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New business models, new IPR thinking, new economic activity: Recognising micro value commodities and co-creation of digital content

Introduction
This position statement argues for a radical rethink on business models and IRP to enable the significant economic activity already taking place within the digital economy to recognised, in both revenues for the creators and corresponding tax revenues. Further, a rethink of business models and IPR and developing supporting structures will enable a much needed boost to economies around the world. The existing 'old' business models and supporting IPR infrastructure don't meet the needs of customers, the majority of digital based goods providers (certainly by volume of transaction) within the new electronic business world, or indeed social inspired value creation. Further co-creation of digital content provides a route to innovation that can stimulate much needed economic activity. For the new models to work will require wider use of micro value reward systems, such as micro payment systems, and there are examples of such systems in operation though not necessarily applied to the digital economy.

The new digital arena: The Multi-Millions of users and need for micro reward systems
Activity in the electronic business world is characterised by large user-numbers, a global presence and increased speed. It is also a domain of small or micro items of value, much of which is co-created by different people. For instance, the '100 Million Views Club' maintained by Visual Measures (as of April 2010) had 65 entries of downloads exceeding 100 million (see http://www.visiblemeasures.com/hundred). We are even seeing the emergence of the 'one billion club'. For instance, in March 2010, the comparative newcomer to the music industry, Lady Gaga, was the first person to reach 1 Billion downloads – from just three records ("Poker Face", "Bad Romance" and "Just Dance"). Apple, the manufacturer of computers, ipods and iphones, reached over 1 billion downloads from its store in nine months (http://www.apple.com/itunes/billion-app-countdown/ accessed 14/4/2010).

The focus on a few popular items that achieve 100's of millions of views attracts the attention of news sites, however the real change taking place is the many thousands and hundreds of thousands of digital creators that attract 1000's or 10's of 1000's of views. Creating things that people value digitally is fast becoming the norm for many members of society, and this is mostly outside of the usual reward mechanisms of income generation. For many smaller businesses, self employed people or up–and-coming artists, of information providers, or any digital content providers that want to

make a living within the digital economy then business modes based on small value items used by multi-thousand to millions of users could provide a conformable living standard.

For this to work we would need to recognise we are in the domain of 'micro value' commodities, and that requires some form of micro-payment mechanisms, and the domain of Multi-Millions of users (MMM or M^3) or even Micro payments/value and Billions of users (MB) (Adams 2010)

One approach to value such digital entertainment is to classify it in similar terms as say attending a concert lasting 60 minutes, with say 100 attendees each paying say £10. This could translate to say, 360,000 seconds of entertainment for £1000, or 3.6 seconds or entertainment per penny(£0.01). Similarly, consider a ten thousand play/download clip from Youtube. At 0.1 to 0.5 pence/cent per play would provide an income of £10/$10 to £50/$50. For a million plays this would be a respectable £1,000/$1,000 to £5,000/$5,000. Regular contributors could make a living from providing entertainment over the Internet. The most popular played items could provide a comfortable living for their contributors. So pricing could be based on matching the equivalent performance per second to say at live gigs, concerts or events, or it could be based on flat micro values for popular digital content, the value of which could be determined by popularity.

The characteristics of a significant part of e-tailing, particularly focusing on the information services and digital products, is evolving that of Micro payments/value and Multi-Millions of users (MMM or M^3) or even Micro payments/value and Billions of users (MB) (Adams 2010)

A further issue is that digital content is often co-created, and most of the co-creators are not recognised in any reward system. For instance, a digital image which has had some digital editing, adding of a caption or music to make it amusing may have The image would have some small value for each of the many people that would want to view the enhanced image.

Existing IPR and reward systems
The existing IPR protection and reward systems are aimed at big corporations and relatively big value items. The music, film and entertainment industries, and their rear guard actions to stop digital privacy of CDs and films, have dominated the debates and rules governing IPR in the digital domain. The existing infrastructure is not fit for purpose when we consider the creation and co-creation of small value digital content. If anything the existing IPR structures will stifle any innovation and creation of such digital content.

We need to provide protection against illegal copying of material (and so support the existing music, film and entertainment industries), but also provide structures to support the creation of micro value digital content. Again this is an area where the existing music, film and entertainment industries can also engage in creating extra value and revenues. To support micro payment and reward systems we need micro IPR systems – recognise the co creation of small value digital innovation and content, and so stimulate economic and social activity. It would also recognise the reality of the digital world: This is what is happening despite the existing rules and laws, though the large body of creators are missing out on revenue streams from

their creations and governments are missing out on corresponding potential tax revenues.

Existing system micro value and reward systems existing, for instance with small value transaction in telecoms (say texting) or with micro value reward systems used by supermarkets. The foundation technology, or at least some of it, already exists. Theory on innovation also shows that getting reward systems can stimulate economic activity.

The way forward:
Explore changes to the IPR systems to encourage micro IPR and reward co-creation of small value digital commodities. Similarly, explore micro payment and reward systems, preferably building on what already exists.

Jim Byford (Brighton Fuse Researcher/Red Design Strategic Partner) - Research themes and interests.
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Who - CDIT sector: Collaboration between social, cultural and commercial actors and agents.
Working on the Brighton Fuse as an action researcher, has galvanised much of Jim's thinking and practical experience about the value of collaboration between actors and agents from different disciplines. As a design/creative/technology practitioner, he has worked on creative digital projects in many diverse areas including the launch of government regulator Ofcom, the cartoon band Gorillaz and the multi-award winning portal to culture for children, Show.me.uk. He also actively participated in building links between organisations and sectors, working as a creative practitioner in the previous government's Creative Partnerships programme, learning much about the value of combining creativity and learning with schools across the south. He has served on the Interactive board for trade association PACT, been a governor of the University of the Creative Arts and continues to make joins between the education sector and the commercial sector through the Brighton Fuse.
As a partner in Red Design, a long-established Brighton-based design firm which was the first UK company to rebrand the Elysee Palace under Sarkozy as well as launching Fatboy Slim back in the '90s, he heads up Strategy and Digital service offerings. He's currently working on a strategic design project to rebrand Europe's largest commercial charity fundraising business.
What - Learning to learn for life in the digital age: Contribution of the arts, design and creativity to cultures of innovation.
In commercial practice Jim has long advocated the role of learning in delivering digital tools and platforms to clients and receiving partners. Getting inside the culture of an organisation and understanding the digital literacy of its users has been a constant in his work as an interactive designer. Seeing a disconnect between so-called creatives and technologists, he was an early advocate of user-centred methods to bring a singular focus to innovation projects.
As Head of Innovation for iCrossing, an international digital marketing firm with Brighton and London offices, Jim introduced many forms of innovation which were driven by a commitment to collaboration. He helped the company scale and diversify adding new skills and capabilities, securing key hires to develop and deliver profitable user experience, web development, social media and content offerings.

How - Tacit learning: Co-creation of learning models that facilitate the development of dynamic knowledge and skills. For Jim this is all about leveraging connections to people, processes and knowledge sources that can be accessed through digital tools and interfaces as well as in the physical world.

Throughout his career which started in higher education back in the mid '90s, Jim has layered his skills through exposure to many different innovation projects. From launching the Mirror and Independent online through ecommerce and multi-player games for AOL, to establishing the first open-source trade association (ZopeUK) in the early 2000s. This know-how or as he now understands, tacit learning, is born out of a wide-ranging and constantly emerging network of co-creators, collaborators and emerging sources of knowledge.

Pausing to consolidate in 2010, Jim undertook an MA in Design Studies at Central Saint Martins (CSM) where he explored through artefact iteration, the relationship between play and learning in a variety of event-driven contexts.

His interest in how disaffected youth (NEETs) could be engaged in collaborative and competitive activity through gameplay has engendered a desire to further explore how practical learning activity can unlock new areas of learning and skills. Threshold concepts underpinned the andragogy at CSM and Jim has contributed to the development of the FuseBox with research and recommendations built on these theoretical and pratical foundations.

Why - Purpose: Knowledge and skills are no longer static. Digital economy, society and culture reuires a commitment to lifelong learning which means designing and testing new models (including physical and virtual learning environments and formats) that can equip individuals and groups to learn, unlearn and relearn.

Jim's journey to date has involved traversing commercial, cultural and social (including education) spheres, layering skills, connections and dynamically evolving knowledge to remain innovative at the core. His principal interest is in helping others to break out of silo mentality, make new connections and discover new routes to personal and professional success built on lifelong learning and a commitment to innovation.

Joan Farrer

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Biography:

Joan Farrer is Director of the Design Research Initiatives (DR-i) and Reader in Design & Materials (including wood, metals, ceramics, plastics, fashion and textiles). She is a designer whose research expertise stems from a deep working knowledge of the industrial retail sector in Fashion, Textiles, Fibre and Materials product design, linked to knowledge of the global supply and disposal chain. Her Sustainable and 'Smart', transdisciplinary research collaborations, outside of the Arts, include

Physical and Biomedical science, Computing and Mathematics, Engineering and Business.

Farrer has extensive commercial design, product consultancy and R+D expertise. She has produced policy documents for industry Governmental and non-Governmental organizations and Educational institutions the UK, Europe, USA, Australia and New Zealand. Her significant projects have included developing corporate social responsibility policy (CSR) for northern hemisphere retailers and their developing world partners, establishing Work Wear ISO purchasing standards for sustainable supply chains, now the global standard and developing 'Smart' textiles for security, health and wellbeing applications. Her current significantly funded projects since joining the University of Brighton include: Building Research and Innovation Deals for the Green Economy (BRIDGE), FLAX and prototype developments for textiles in wellbeing, surgical procedures and cancer prevention material development.

Farrer's Royal College of Art PhD, awarded without amendments in 2000, was acclaimed as one of the first in fashion textile global supply chain analysis, focusing on economic, social and environmental production (sustainability) which analysed the global journey and true cost of one wool fibre from cradle to cradle. Wool: From Straw to Gold.

In 2004, Farrer decided upon a full time academic career and became Senior Research Fellow in the Textile Futures Innovation Centre, Central Saint Martins, UAL London. In 2005 she became Senior Research Tutor in the School of Fashion and Textiles at the Royal College of Art London, establishing a PhD by practice student cluster, and in 2007 she was appointed as the first Associate Professor in Fashion Textiles Design in the Antipodes where she became Director of the Textile and Design Research Lab in Auckland New Zealand.

Her previous academic posts additional to visiting lecturer include external examiner for undergraduate, post graduate and PhD candidates and program moderator for Arts, in the UK and overseas. Farrer was an external panel member for Faculty reviews at AUT New Zealand, Queensland University of Technology, Australia and Heriot Watt University Scotland and she was acting Director of MA Fashion at Central Saint Martins College of Art and Design. Farrer has been co author and co investigator for AHRC, EPSRC and INTERREG funded projects. She reviews, and writes for various trade and academic publications and was a London Technology Network Business fellow in Materials Design. Farrer has played a significant role in the writing of undergraduate and postgraduate course documents and believes that formally funded research projects should be integral to, as well as inform, scholarly activity and university curriculum at all levels when ever possible.

Points to explore:

1. Is the digital world creating a polarisation in society?
2. Are we creating a world of have and have nots due to digital technology?

3. Can we harness technology to create a sustainable and smart future for our global citizens?

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Innovating for Today while Innovating for Tomorrow:
Ambidextrous Organisation in Practice

Given the fast paced pervasive change induced by modern technologies managers of any technology-based firm face the same crucial question: *How to tap the value of today's capabilities and prepare for tomorrow's cutting edge innovations?*

In my PhD research I approach this question in terms of the *innovation ambidexterity* framework which states that in order to ensure long term performance and technological continuity, the firm has to *exploit* the accrued resources and competences and at the same time explore new technological and business opportunities for the future. The exploitation-exploration framework has an immediate appeal for a vivid conceptualisation of different types of learning within the firm and the inherent struggle the firm experiences when it tries to orient itself towards multiple, often conflicting goals. Exploitation and exploration thrive under different organisational structures, require opposing managerial styles, and compete for the firm's limited resources. Ultimately, exploitation and exploration tend to crowd out one another yet the organisation cannot achieve desirable performance outcomes without engaging into both of them. It is the positive effect on firm performance that has earned innovation ambidexterity theory vast academic and practitioners' attention.

In my research I focus on technology based firms utilising modern digital technologies. Fundamentally different from personal computing, which used to put the computer at the centre of attention, ubiquitous computing is dispersed and mundane, its social and economic impact is more important than the technology behind it. Arguably, it represents a new paradigm in the evolution of information and communication technologies and presents firms with new possibilities for capabilities recombination and development.

Fundamentally, the aim of my research is to understand organisational change in the technology based firm spurred by the evolution of the underlying technology base, or more narrowly: to understand implications for management of the new ubiquitous digital technologies and to analyse how firms that utilise these technologies build organisations stable yet flexible to remain successful in the fast changing environment over long periods of time.

My research is a case study of a single technology and management intensive firm, the British microprocessor designing company ARM, that uses a successful licensing and royalty business model and thereby derives benefit from a vast number of established and innovative technologies. The case is used to illuminate theoretical

and empirical issues with innovation ambidexterity theory and make a theoretical contribution by examining the circumstances within the individual firm. Management and policy recommendations regarding ubiquitous technology management are expected to be produced as an outcome of the PhD research.

<u>Key points to share with other participants:</u>

- Innovation ambidexterity, i.e. dual organisational focus on stabilising command and control on one the hand, and on creative chaos and destruction on the other hand, is a continuous balance that is played out within and across organisational domains.
- The ambidexterity balance and understanding of exploitation and exploration are highly contextual making theorising a challenging process.

- Innovation has become a highly rhetorical concept; incremental innovation (learning from exploiting old technologies) remains a powerful driver of long-term performance.

- Modern digital technologies should challenge out thinking and conceptualising in terms of dualities: short-term profit vs long-term growth, incremental vs radical, exploitation vs exploration, etc. because opportunities they offer for technological recombination, areas of application, and business model experimentation are rich, highly productive, but also not straightforward and challenging.

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Good ideas from interesting sources: Customers, Users, Citizens and Outlaws

1 Introduction

New ideas do not always emerge first from within a research and development lab - sometimes it is the users of a product (rather than its suppliers) who have the insights and ideas that lead to innovative products and services. Users of technologies are often best placed to identify what needs to be done and may also be able to design, build and distribute their own solutions. This is particularly true in the digital economy.

This is old news for many firms who invest huge resources in trying to better understand the needs of their users, analyse their behaviour, encourage their suggestions and monitor the ground-level innovations that emerge. For some firms exploiting this for of innovation forms a key part of their strategy and they will actively encourage users to innovate – and may even give them the tools they require to do

the job. In some cases new enterprises will emerge from this activity, whilst in others their innovations will take a non-commercial, possibly civic, form.

The academic understanding of the role of the 'user' within the processes of innovation tends to be fragmented, with different strands of literature focusing on particular aspects or perspectives. These strands of literature tend to be framed around a particular story or meta-narrative in which users are perceived as passive 'customers', active 'shapers' or useful 'contributors' to innovation processes. Innovation processes themselves may be located within market-based relationships in which organisations seek to ensure that customers buy their products (thereby becoming 'users'), or they may take place within social or governmental contexts in which advocates of an innovation seek to ensure that users (actual or potential) 'buy' their ideas. Users can be both a market for products or ideas and a source of ideas and products in their own right. Users can also co-create products and ideas with firms or simply with other users. The involvement of users in innovation may be carefully managed, planned and ordered or it may be spontaneous and hard to control, with users creating their own rules of engagement. Certain forms of user innovation can lead to the most fundamental changes for organisations, public policy and society as a whole.

2   Old Frames for new phenomena - theoretical approaches to Innovation

Innovation has been explored from a number of perspectives, each of which provides a partial understanding of what is a complex and evolving phenomenon.

The Innovation Studies literature has evolved from an initially overwhelmingly supply-side perspective in which users possessed needs (e.g., Rothwell, Freeman et al 1974), were 'tough customers' (Gardiner and Rothwell, 1985), or 'lead users', (von Hippel, 1986), all of whom may be harnessed to benefit firm innovation processes. This literature has developed to explore many non-traditional sources of innovation, for example communities (Franke and Shah, 2003), hackers (Flowers, 2008), open-source (Lakhani and von Hippel, 2003). It has also explored how firms can actively seek to prevent users from innovating (Braun and Herstatt, 2009). However, the literature has tended to retain its supply-side perspective.

In contrast to the innovation studies literature, the Science and Technology Studies (STS) literature tends to adopt a more user-centric perspective, exploring how users actively shape technologies and are, in turn, shaped by them within the processes of innovation and diffusion. These processes are viewed as highly contested, with users, producers, policymakers and intermediary groups providing different meanings and uses to technologies (Oudshoorn and Pinch, 2003). The way in which design and other activities attempt to define and constrain the ways in which a product can be used have been viewed as an attempt to configure the user (Woolgar 1991). Within this literature, users are seen as having an active role in seeking to shape or re-shape their relationship with technology, developing an agenda or 'antiprogram' that conflicts with the designer, and going outside the scenario of use, or 'script', that is embodied in the product (Akrich and Latour, 1992). Users' lack of compliance with designers and promoters of products and systems, far from being viewed as a deviant activity, is positioned as central to our understanding the processes of innovation and diffusion.

Drawing on both of these bodies of literature, it is clear that users can play a series of important roles in the creation, development, implementation and diffusion of technologies. The boundary between producers and consumers of technologies has become less distinct and users play important roles throughout the entire innovation process, potentially developing or extending technologies or applying them in entirely novel and unexpected ways. In this situation the boundary between consumer and producer, or between 'users' and 'doers' (Castells, 1996) becomes harder to discern. Innovation becomes far more open (Chesbrough, 2003), and democratized (von Hippel, 2005), as well as more complex. Users may be drawn into the traditional firm-based model of innovation, but some forms of activity may represent the emergence of a parallel or 'Outlaw' system of innovation that does not share the same goals, drivers and boundaries of mainstream activity (e.g. Flowers, 2008).

But these 'old' approaches are no longer enough and the processes of innovation, diffusion and re-innovation are becoming increasingly complex and contested and this has significant implications for our understanding of innovation, policy and practice.

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Khaled Galal

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Communications Consultant & Doctoral Researcher at the University of Brighton (Faculty of Arts).

Biography

Khaled Galal is a strategic branding and creative communications consultant with an MA in globalization and communications from the University of Leicester, UK. For the past 18 years he has worked in advertising and communications in the UK and across the Arab world with the private sector, public sector and international development and rights organizations. As a Creative Director with McCann Erickson's Middle East division Fortune Promoseven, he led the creative development of several mass media advertising campaigns for a wide range of brands, including Kodak Express, Carrier, Xerox and the 2003 International Advertising Association (IAA) award-winning campaign for the launch of the Mobil1 brand. Working with the London-based cultural master-planners Cultural Innovations, he led the strategic and creative branding for a wide range of cultural initiatives, development projects and museums, including The African Economic City in Libya, Hurghada Multimedia Sound and Light in Egypt, and Massar Children's Museum and Discovery Centre in Syria, which was shortlisted among the top 10 museum brands for the International Museum Communications Award in 2007. As an independent consultant, he has offered branding and communication solutions for development projects and rights organizations, including the International Finance Corporation's Business Reform Index and Amnesty International's Arabic Growth Project.

Points to explore:

How digital communication technologies are transforming the conditions and dynamics of innovation as a social, political and economic driver.

How digital communication technologies and innovations are creating new forms of creative and cultural production which combine technological, economic and political dimensions.

The interchange of power between economic and political actors in a society increasingly governed by the logic and conditions of digital communication networks.

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Community21 case study.

The introduction of the Coalition Government's Localism Bill (DCLG 2012) and radical changes in the National Planning Policy Framework (NPPF 2012) has

opened the gate to 'bottom-up' community development through the advent of statutory 'Neighbourhood Plans'. Former governing bodies are relieved of many of their former duties in favour of local communities themselves (us) who are now empowered to define how neighbourhoods and communities will be envisioned and developed in the future. Evidence suggests that around 70% of communities regionally will undertake a neighbourhood plan in the next 5 years (WDC poll 2012).

Community21 is an online platform specifically designed to enable communities as the 'architects and planners' of their own neighbourhoods under localism (Gant & Duggan 2013). Developed by the University of Brighton and Action in Rural Sussex it utilises ubiquitous technology to enable an interconnected 'community of communities' acting out individually defined development plans whilst providing more inclusive, tangible and accessible strategies for engagement (Gant and Gittins 2011).

Part of the project's hypothesis and design approach acknowledges the theory that 'community' can be both a geographic space and a felt sense – both of which are bounded and have edges. As individuals within these places we have real power potential to make change and have an impact, but beyond our 'communities' this potency diminishes very quickly. Community21 utilises this sense of interconnected multi-local communities (Manzini 2007, de Rita, E & Bonomi, 1998) - communities which are local, internally active and potent but open, sharing and connected to enable regional networks of sustainable development through common purposes. Whether water conservation (Gant & Balneave 2013), local energy production (Gant & Pendred 2012), caring for older citizens or empowering young people (Gant and Ganderton 2011,Gant et al 2013) change agency is locally defined and 'owned' and therefore actioned. Importantly this is often this leads to unintended and indirect but nonetheless more sustainable, development processes (Brahic 2009).

Action in Rural Sussex have historically facilitated at least one formal community-led plan with over 70% of all communities in East and West Sussex (AIRS 2010) and are delivering the majority of Neighbourhood plans in the region. By seeding an ICT within this already ubiquitous environment of self-reflection and positive development the project explores the values and attributes, elicited through technology, leveraging potential for mass change by connecting the 'knots in the net'. This provides a unique network (and database) and peer-to-peer resource that would enable social action and potential community funds through locally authenticated and 'valuable' knowledge exchange.

The project is also demonstrating the value and role of a University in engaging with such a network via it's students and staff expertise.

Community21 was piloted in prototype form in 2010 by 8 communities in East & West Sussex and Kent it is now in phase 2 development, following independent evaluation (Voss 2011). Community21 has won lead funding or as part of projects from the AHRC (2012), Gulbenkian Foundation (2011) and The Nominet Trust (2013), DECC (2012) and Defra (2012) relating to the notion that digital technologies of different forms can help often disenfranchised groups get their voices heard.

Example 2013 Nominet funded project: Community21- Young digital Citizenship.

Localism is here – hurrah! But who takes up the baton for local planning? Is it to be the 'usual suspects'? Perhaps those 'busy-body outspoken few', that always get their voices heard in the community or Parish Councils perhaps? The average of Parish Councillors in Sussex is 73 (SALC 2010) and those usual suspects are often of a narrow social profile. So what about those to whom the future belongs – the young for example!? This project researches how young people can be engaged in defining a vision for their neighbourhoods via accessible technology (apps).

Link to Community21 'digital citizenship' project advert
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Link to new site (to be launched in November 2013) http://community21.org/1.2/

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Memory as a tool for understanding transmedial relations
Transmedia or crossmedia storytelling refers to narrative-making across multiple media platforms, linked by consistent themes, iconography, plots and characters derived from a single, unified storyworld. Such platforms might include films, novels, videogames, Alternate Reality Games, comics, websites, audio, photography, and increasingly wide varieties of User-Driven Content that might include social media. Though the contemporary version of transmedia storytelling tends inevitably to utilise

digital modes of creation, connectivity and distribution, analogue media is often also employed. Depending on perspective, digital technologies have either uniquely enabled transmedia storytelling, or at least accelerated existing traditions founded in analogue media, arguably drawing upon and extending strategies already associated with licensing and tie-in media.

The multiple kinds of delivery mechanism that can be employed, together with distinct institutional, financial, cultural and creative contexts, mean that transmedia storytelling comes in multiple forms. These range from the large-scale, Hollywood variety, often associated with big budget fantasy and science fiction franchises such as *Star Wars*, *Tron* and *The Avengers* to smaller independent projects, often focussed around a progressive cause, such as *America 2049*, which engages with issues around racism utilising a crossmedial narrative told via webisodes and varieties of social media. In South America, hugely popular telenovellas also use social media as a cost-effective means of expanding the storyworlds of the parent television show. In the UK both the BBC and Channel Four have explored approaches to transmedia storytelling in relation to television programmes such as *Spooks*, *Doctor Who*, *Sherlock* and *Misfits*. Documentary-based transmedia projects include *63 Boycott*, about the Chicago Public School Boycott in which 200,000 people marched against segregation, and the *People Power* project exploring themes of nonviolence.

While many of the platforms involved in transmedia storytelling are prohibitively expensive to employ, such as film, television and console-based videogames, other varieties of transmedia production offer routes for the democratisation of the form, such as websites, webcomics, webisodes, social media, Flash-based games and even mobile telephone applications. Yet the sheer scope of transmedia storytelling, the many guises it can assume and the multiple contexts in which it can occur, makes attempts at identifying methodologies for the creation, distribution and analysis of transmedia storytelling problematic. Medium-specific approaches flounder because the multimodal nature of digital technology renders manifold ways of storytelling feasible, which might be articulated via any combination of audiovisual material, as well as numerous kinds of interactivity and connectivity. Unlike older mono-media such as cinema, radio, television and the novel, the codes and conventions of transmedia storytelling are multiple and can differ massively from project to project.

In Derek Johnson's book *Media Franchising*, the author identifies relationality as key to understanding the operation of contemporary transmedial brands (New York University Press 2013). According to Johnson, the successful operation of such relations relies on the creative exchange between producers, licensees and consumers. In my own experiences working on a variety of licenses as both a professional writer and narrative designer, I have come to see memory, articulated in a wide variety of different ways, as a crucial aspect of this creative exchange. For transmedial storyworlds to succeed, they must knowingly remember but also forget, and to use memory theorist Anna Reading's term, even 'non-remember' between elements of the franchise and with the audience (2010). Such memory play might be understood in terms of the aforementioned audiovisual iconography, via plot points or through the deployment of characters. Sometimes such relationships are legally-proscribed by the terms of the licensing agreement; at other times they are much more freeform.

I want to argue, therefore, that memory can be used as a mechanism for understanding transmedial relations, and that we should work towards a tool able to

conceptualise connectivity, creativity and rights in these terms. As well as providing a means for the analysis and creation of large-scale, large budget transmedial projects of the kind undertaken by big media institutions, such a framework would also enable the creation of smaller-scale transmedial work in the independent sector which furthers innovation and champions progressive ideals by utilising the benefits of digital production and distribution techniques.

Dr Colin Harvey is a writer, narrative designer and academic. He has written official tie-in material for the Doctor Who and Highlander ranges published by the British company Big Finish under license from the BBC and MGM/Davis-Panzer respectively. His original short fiction won the inaugural Pulp Idol award, jointly conferred by SFX Magazine and Gollancz Publishing and he has authored numerous videogame story design documents for Sony. His forthcoming work includes material for Abaddon Books, Airship 27, Moonstone, Mongoose Games and DC Thompson. He is currently writing Understanding Transmedia Storytelling: Fantasy, Memory, Play for Palgrave-Macmillan and is an Adjunct Associate Professor with the University of Western Sydney.

Laurence Hill - Head of Communications, Fabrica, Brighton
Exploring New Perspectives on Innovation in the Digital Age: Behind the Technological Picture

Fabrica is a contemporary visual art gallery housed in a former Regency church in the heart of Brighton. We commission three large-scale exhibitions every year, often site specific, within a broad thematic framework. The exhibitions are supported by a wide-ranging programme of activities suitable for a broad audience. Our mission is to promote and provide access to contemporary visual art.

I'm Head of Communications for the gallery and am particularly interested in the use of digital and how it can be used innovatively to help us deliver our mission and I'm interested in exploring the following-

Contemporary visual art gets a bad press (often literally) and our challenge is to lower barriers to engagement for the large number of people that are afraid that contemporary visual art is 'not for them' or that they 'won't get it' – digital allows us to create a space that though separate overlaps the physical space and that we can encourage people to explore without the barrier of actually having to set foot in the gallery.

Alongside and complementary to this ambition is a belief that digital can change the way that the organisation works from its communication to its programming, it can change the shape of the organisation. It can also facilitate participation by which we mean not only engagement with the organisation and its work online and in the gallery but also creative participation – allowing the creativity of our audience to impact on the gallery spaces.

I'm interested in how digital can help us to explore how we can change the ways that the organisation communicates about its work beyond the exhibition programme – to highlight the hidden in engaging, innovative and vital ways.

Digital encourages different voices to be heard and I'm interested in how that changes traditional artist, gallery and audience hierarchies.

I strongly believe that arts organisations are in an ideal place to lead innovation in the digital world but are often hamstrung by skeuomorphic behaviours and capacity restraints.

'Taking Trash Seriously': *Cine-Excess* And Innovations Under The Mainstream Movie Radar

By Xavier Mendik
Director of the *Cine-Excess* International Film Festival and DVD Label
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Biography
Xavier Mendik is Director of the *Cine-Excess* international film festival and DVD label at the University of Brighton. He has written extensively on cult and horror traditions, and his previous books include *Peep Shows: Cult Film and the Cine-Erotic* (2012), *100 Cult Films* (with Ernest Mathijs, 2011), *The Cult Film Reader* (2008), *Alternative Europe: Eurotrash and Exploitation Cinema Since 1945* (2004), *Underground USA: Filmmaking Beyond the Hollywood Canon* (2002), *Shocking Cinema of the Seventies* (2002) and *Dario Argento's Tenebrae* (2000). Beyond his academic writing, Xavier Mendik also has an established profile as a documentary filmmaker and is currently developing a new feature film remake of *The House on the Edge of the Park* with director Ruggero Deodato.

Position Paper
Over the last decade, critics and theorists have begun to develop a distinct discipline of 'cult film studies', which considers those texts, genres or filmmakers previously dismissed as exemplars of 'trash', 'marginal' or 'bad' cinema. One of the earliest and most influential accounts in this area was Jeffrey Sconce's article 'Trashing the Academy', which not only formulated the cult-friendly-category of the 'paracinematic', but also identified certain classes of marginal texts which are frequently shunned on grounds of technical or representational 'excess', or simply because they are deemed as an affront to the boundaries of 'good taste'. Sconce's analysis focused attention on how paracinema's emphasis on "cinematic style and excess" can effectively represent a challenge to prevalent ideologies and taste arbiters, while appealing to subcultural viewing groups who receive and consume the cult image in a variety of non-traditional outlets. In so doing, Sconce recognised both the crucial role that fans/fan-academics have in rereading subcultural and subversive texts, as well as the ways in which they use alternative modes of exhibition and online innovation to communicate their findings.

It is in the spirit of Sconce's innovations that the annual *Cine-Excess* international film festival has developed over the last seven years. Expanding upon Sconce's ethos of 'taking trash seriously', *Cine-Excess* regularly attracts international filmmakers, distributors, fans and scholars who critically examine both the content and changing modes of exhibition beyond the mainstream movie domain. The format

of the event includes filmmaker awards and retrospectives, alongside a themed three day conference and UK theatrical premieres of forthcoming cinema releases. Previous guests to *Cine-Excess* have included John Landis (*An American Werewolf in London, The Blues Brothers*, *Coming to America*), Dario Argento (*Suspiria*, *Deep Red*, *Tenebrae*), Roger Corman (*Little Shop of Horrors*, *The Masque of the Red Death*, *Wild Angels*, *The Trip*), Joe Dante (*Piranha*, *The Howling*, *Gremlins*, *The Hole 3D*), Franco Nero (Camelot, Django, Die Hard II), Ruggero Deodato (*Cannibal Holocaust*, *House on the Edge of the Park*), Vanessa Redgrave (*Blow-Up*, *The Devils*), Enzo G. Castellari (*The Inglorious Bast***s*, *Keoma*), Sergio Martino (*Torso*, *Mountain of the Cannibal God*), Brian Yuzna (*Society*, *Faust, Beyond Re-Animator* and Stuart Gordon *(Re-Animator*).

Alongside these headline guests, other *Cine-Excess* innovations over the last seven years have included the launch of a UK Blu-ray and DVD label which pairs high-def re-releases of cult classics with teaching tool extras created by academics, as well as a new *Cine-Excess* e-journal that combines academic and industry approaches to the cult film phenomenon.

As its current project, *Cine-Excess* has acquired remake rights to a number of iconic cult film titles, which will be developed across national boundaries using a mixture of traditional and new technology formats in their funding and marketing. This new endeavour raises the following questions for the forum to examine:

1. How can marginal movie formats be a forum for both academic and commercial communities to explore?
2. To what extent is 'cult' a useful format for funding and marketing through new online and fan-based outlets?
3. How do micro-budgeted productions within the new digital economy benefit from a recent trend towards 'mainstreaming' cult remakes?
4. Can the inclusion of academics in cult remakes provide opportunities to review the controversies of the original cult releases?

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BBC Digital: Tweeting the Olympics

During the London 2012 Olympics BBC World used a digital strategy to engage international audiences using high profile Twitter intermediaries – celebs, journalists, sports stars and public intellectuals – to relay BBC content to audiences and entice audiences to visit BBC digital content. The BBC had a cosmopolitan aim of creating a 'global conversation' across cultures and an instrumental aim to generate hits. They invited an academic team to monitor and evaluate the results. Analysis of engagement with BBC content among Persian, Russian, Arabic and English-language audiences showed some intermediaries created and improvised effective strategies to generate cosmopolitan connections and increased engagement; this was not always the case however, and we must learn the risk of controversy and conflict for both organisations and audiences.

What the BBC did:

Create a 'Twitter module' of high profile intermediaries in different language services who would relay BBC content to their followers and followers' concerns back to the BBC.

How we researched this:

What? Aim of research was to evaluate Twitter strategy of BBC WS and assess the implications of social media for participatory journalism (to test the rhetoric v reality of social media use as tool of empowerment).

How? We examined, comparatively, BBC's Arabic, Russian and Persian Services and bbc.com (English). 5m Tweets harvested. 10k systematically analysed.

Why? To assess nature, scope scale of 'the twitter conversation' - who was reacting to who, and how users were responding to BBC's coverage. Key thematic Issues included – patriotism/cosmopolitanism/xenophobia, gender and sexism, religion and secularism.

Who? We used a multilingual team of researchers coming from different academic disciplines in order to arrive at a deep quantitiave and qualitative analysis

Findings:

1.The Twitter module was effective in Persian and English because the journalists and intermediaries were best prepared, resourced and produced culturally-resonant content.

2.In all languages, controversy opened spaces for engagement. The BBC should develop more have strategies to amplify these, to pull people in. Happy side-effects included more engagement and cosmopolitan exchanges, as users tried to 'correct' the BBC. The innovation paid off.

3.Future research could explore how users share images/clips, fan communities, how accounts can act as conduit not creator of buzz, and analysing the WHOLE global conversation, not just BBC-related tweets.

Future issues
How should the BBC continue to innovate around major global events, using digital media, to enhance 'buzz', 'reach' and 'the global conversation'? Some issues they must face
- BBC's twitter sphere is very politically correct and polite – how to engage audiences more without tarnishing brand for impartiality?
- Social media are used to exchange views and responses including emotional responses to events so how can BBC use social media to create a greater sense of intimacy?
- Is Twitter more useful as engagement and editorial tool?
- Is the BBC curating or creating content?
- How can BBC use influential tweeters/fan networks more?

- Wide variation in uses of Twitter by bbc staff/accounts from information to self-promotion – uncertainty? training?
- How to balance the preoccupation with domestic/national over international issues?
- How to use social media as tool for more participatory journalism?
- How to understand/exploit the arc of audiences' engagement with big events – the journey from a) information exchange and understanding to b) interpreting and contextualising the event to c) placing self inside the event, emotional involvement and responses to it.

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Technology Strategy Board: Design Special Interest Group

The Technology Strategy Board (TSB) is the UK's innovation agency. Its role is to accelerate economic growth by stimulating and supporting business-led innovation. It also works to strengthen the UK's capability and reputation for successfully commercialising new technologies.

The TSB has established the Design Special Interest Group (SIG) to foster a better understanding of the role of design in innovation, and to support its development across the range of sectors supported by the TSB. As part of its remit, the Creative Industries Knowledge Transfer Network (CIKTN) runs the Design Special Interest Group (SIG) and its "Design in Innovation Programme" on behalf of the TSB.

Design can be transformative for companies, through leading or supporting product and process innovation, for managing the innovation process itself, for the commercialisation of science, and the delivery of public services. The average return on investment for every £1 invested in design by business is over £25 ("Innovation and Research Strategy for Growth" BIS, December 2011).

Design can yield time and cost savings and lead to better outcomes, especially when embedded early in the project life cycle. It can have a positive impact in several ways:
• Desirability – what attracts someone to want/use something
• Usability – how it is then used
• Feasibility – how these attributes are delivered.

However, design is often considered late in the innovation process, if at all, and many organisations fail to capitalise on the benefits it can provide. Whilst design is often associated with creating the look and feel of a product, many organisations are unaware that design can also be used strategically to, for example, develop systems, improve services, build in sustainability and create new approaches to collaboration for social and cultural, as well as economic, aims.

Design in Innovation Programme

The Design in Innovation programme is working to support UK business innovation by building a community of designers and technology innovators, and encouraging the use of design earlier in the R&D process. It is working in partnership with Manchester Business School and Lancaster University Design to further understand the context in which design in innovation provides value. In addition, the programme is working in partnership with the TSB family of organisations to explore how design approaches can help meet innovation challenges across specific areas including: Sustainability, Future Cities, Health, Defense, Satellite Applications and Advanced Manufacturing.

In terms of approach, Design in Innovation" programme is focusing on the desirability and usability aspects of design – on the user experience of a product, process or service. These aspects are often overlooked within technology led innovation. The Design SIG aims to develop a trusted advisor role by acting as an "honest broker" & neutral third party, recognising all the good practice that is already available and building on stakeholder and sector activities, not "re-inventing the wheel".

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The Creative Industries Knowledge Transfer Network's mission is to accelerate innovation in the Creative Industries in the UK. We are home to innovators from all sectors of the Creative Industries from Advertising to Fashion and Design, from Architecture to New Media, TV, Games and beyond.

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From the "Wisdom of the Crowds" to "Digital Maoism"?
Perspectives on Crowdsourcing Innovation

"Open is the new black" – open innovation, open source, open data, open governance, open access, open knowledge, open content, and open standards are the current buzzwords in our networked world. All these concepts are built on the principles of **transparency, participation, collaboration and sharing**. One of the currently most popular strategies within this context is the so-called **crowdsourcing**.

Within the context of innovation, **crowdsourcing can be described as an interactive, community-based innovation strategy.** Crowdsourcing is used **to outsource problem solving as well as the generation of ideas and knowledge to a crowd** of individuals of varying knowledge, heterogeneity and number. This

happens via a public or semi-public call which usually takes place online. Crowdsourcing is used to carry out both creative, development tasks as well as repetitive, production tasks (Estellés-Arolas & González-Ladrón-de-Guevara, 2012; Gassmann, Friesike, & Häuselmann, 2013, p. 6).

The **"Wisdom of the Crowds"** is the underlying idea of crowdsourcing. It is based on the simple assumption that "large groups of people are *smarter* than an elite few, no matter how brilliant—better at solving problems, fostering innovation, coming to wise decisions, even predicting the future." (Surowiecki, 2004). This assumption has led to the creation of a range of recent best-selling books which **praise the benefits of collective intelligence and mass collaboration** (such as Howe, 2008; Libert, Spector, & Tapscott, 2007; Tapscott & Williams, 2007). In addition several academics have also published work, describing how crowdsourcing can be beneficial for innovation purposes in both the commercial as well as the public or non-profit sector (e.g. Bayus, 2013; Brabham, 2013; Dubach Spiegler, Muhdi, Stöcklin, & Michahelles, 2011; Ebner, Leimeister, & Krcmar, 2009; Gassmann et al., 2013; Kosonen, Gan, Olander, & Blomqvist, 2013; Muhdi, Daiber, Friesike, & Boutellier, 2011; Poetz & Schreier, 2012; Schweitzer, Buchinger, Gassmann, & Obrist, 2012; Terwiesch & Xu, 2008).

Some authors however are not infinitely euphoric about the opportunities linked to the wisdom of the crowds but also **pay attention to the shortcomings, issues and potential risks**, such as (such as Briskin, Erickson, Callanan, & Ott, 2009; Shirky, 2008). Concerning the usefulness of crowd-wisdom for innovation purposes in particular, there is quite some criticism: Lanier even argues that the wisdom of the crowds and online collectivism can lead to "**digital maoism**" and does not necessarily lead to the best and most innovative products or outcomes. According to Lanier crowd wisdom lacks the ability to create something that is really new or innovative and should only be used very selectively (Lanier, 2006, 2010). *„The notion of crowds creating solutions appeals to our desire to believe that working together we can do anything, but **in terms of innovation it is just ridiculous**. […] let's not […] pretend that 10,000 average Joes invent better products than Steve Jobs."* (Wood, 2009)

Nevertheless an already large and still growing number of **companies and institutions count on crowdsourcing to foster problem-solving and innovation processes**, especially the generation of ideas for new products and services at the front-end of innovation.

Our research focus

My current PhD research aims to add to a better understanding concerning the effects and use of crowdsourcing at the Front End of Innovation, mainly the ideation phase. Despite the fact that there are strong underlying links to existing research dealing with user innovation (such as the open innovation paradigm or the lead user theory), there is a need for systematic research to develop empirical evidence concerning the possibilities, limitations and effects of online user or citizen involvement at the Front End of Innovation. Based on empirical studies using data from different online crowdsourcing ideation and innovation platforms, our research aims to generate a better understanding of the kinds of users involved, the types of

ideas and innovations created, the relations between cognitive distance and absorptive capacity, and the ways users can be involved effectively via crowdsourcing in the ideation phase.

Thus, our first study focussed on the question **whether it make sense to involve ordinary users in the ideation phase of new product** development (Schemmann, Herrmann, & Heimeriks, submitted 2013). There is a controversial debate concerning the potential contributions of ordinary users to the ideation phase of new product development and on how such user involvement should be managed. Despite this debate, numerous companies and institutions have started to use crowdsourcing within the ideation phase at the Front End of Innovation. This way they try to gain direct access to the participants' knowledge concerning users' needs, to generate ideas for new products and to use their expertise to solve problems. But does it make sense to involve a crowd of ordinary users (consumers) in such a way?

We tried to tackle this question with a recent study on a well-established online idea generation platform run by an international player in the hospitality, beverage and retail industry to gain insight into the involvement of ordinary users within the ideation phase. The results of different quantitative analyses based on a sample of 1456 cases show that the crowdsourcing of ideas needs to be monitored through a highly selective process if idea quantity is meant eventually to lead to quality. Highly motivated users, who suggest many ideas or pay a lot of attention to the ideas of other users, are not more likely to generate those ideas that are judged as valuable by the company. The results also indicate that the crowd of ordinary users is capable of helping to pre-select those valuable ideas. In addition there is evidence that ordinary users are able to come up with ideas which are not only potentially innovative but also judged by the company to be valuable. Overall we therefore argue that the involvement of ordinary users via crowdsourcing can actually be beneficial in different ways for the ideation phase of new product development.

Currently we are looking at the use and outcomes of "**citizensourcing**" – the use of idea generation platforms to facilitate innovation in the public or non-profit sector. We are interested to learn more about the novelty and innovative potential of the ideas which are generated via such platforms.

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Technological Innovation of the Music Industry: The Case of The Trajectory of Contemporary Digital Music Industry

Introduction

Having instantiated a society characterized by the unregulated and uncompensated distribution of intellectual property, the shift from mechanical to digital reproduction has disrupted the idea of ownership. The music industry was the first of the cultural industries to confront this challenge. The debut of Napster, the first successful digital music service based on Peer-To-Peer ("P2P") technology, suggested the possibility of an imminent, radical transformation within the music industry.

This reversal of the conventional music business structure was acclaimed as a platform of the 'networked information economy' that could offer "individuals greater autonomy, political communities greater democracy, and societies greater opportunities for cultural self-reflection and human connection (Benkler 2006, 473)." Indeed, digital technology suggested the possibility of "perfecting the law's early aim of connecting authors to their audiences, free from interference (Goldstein 2003, 236), and building a 'communal innovation (Fagin, Pasquale, and Weatherall 2002, 21)" by allowing everyone to contribute to digital commons (Lessig 2006).

The path of technological innovation, however, is by no means straightforward. Radical innovation within a technological sphere involves tremendous changes to existing frameworks and, thus, could bring profound changes throughout its respective industry. This is often accomplished "by breaking out of established business models and industrial trajectories, through the emergence of entirely new businesses (Marklund 2009, 192–3)" Schumpeter describes this as "gales of creative destruction," a process "that incessantly revolutionizes the economic structure by incessantly destroying the old one, incessantly creating a new one (Schumpeter 1950, 83)."

After almost two decades of trials and errors, the music industry appears to be entering a new phase in which consumers are attracted more to legitimate digital music services than illegal options. This year, the recording industry reported the first recovery of the business since 1999, which, it claims, owes much to the influx of digital revenues from new legal platforms such as streaming services and download stores. Newly adjusted rights and services suitable for digital formats – and the diversification of revenue streams for artists – prompted some commentators to proclaim that technological innovation has been achieved in the music industry (Roberts 2011; Preston and Rogers 2011).

However, digital technology requires a more sophisticated and intricate understanding of the relationship between technology and society; the process of technological innovation is imbued with the uncertainty, contingency and complexity,

therefore, owes an elaboration on the interplay of the heterogeneous factors who have differing power and interests. Especially in the music industry, copyright has historically been an important means "through which commodification of culture has been institutionalized and enforce (Cammaerts 2011, 492)." Herein lies a legitimate question to ask: Is the growth of contemporary digital music services a response to digital innovation or an outcome of restrictive copyright regime?

In order to explain the technological trajectory of the contemporary digital music industry, my research employs two research approaches; (1) Social Shaping of Technology ("SST") which offers a valuable framework to account for the comprehensive understanding of the innovation, and (2) Social Learning in Technological Innovation ("SLTI") which places emphasis on better apprehension of the complicated learning process of technological development within a socio-technical perspective. For a detailed analysis of the technological developments in today's music industry, I interviewed a wide range of entrepreneurs and innovators; I also interned at a digital music distribution company, INgrooves.

In this seminar, I will share the initial findings I discovered so far.

Outline
- Background
    - Industrialisation of Music
    - Copyright and the Music Industry
    - Digitalisation and the Metaphor of Transformation
- Reconfiguration of Digital Technology in the Music Industry
    - Dynamics of Technological Innovation of the Music Industry
    - Evolution of Digital Music Services
- Evaluation of Technological Innovation of the Contemporary Music Industry
    - Changing Dynamics of the Music Industry
    - Reintermediation of the Music Industry
    - Irreversibilities and Path Dependencies
    - Policy Implications

Key Points
- A comprehensive apprehension of the dynamics involved in the development of the technology underpins the limitation of linear approach in understanding technological innovation.
- Dichotomised view of digital technology neglected the crucial aspect of 'learning' that is subject to conflicts and different power struggles, and thus produced a prediction of the industry departed from the actual process of technological innovation.
- Socio-technical uptake of technology highlights the crucial role of users in the domestication and appropriation of technology.

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My work has straddled the connected areas of sport, leisure and popular culture, with a particular methodological agenda combining a critical sociology of consumption with investigative approaches to research. This has, since the advent of the VCR, focused upon the shifting parameters of the (sporting) spectacle, and analysis of the ideologies underlying the staging and construction of the sporting spectacle. In some ways this has been a quite conventional exploration of the ideological underpinnings of cultural forms and practices, applied to spheres – such as IOC and FIFA discourse, and ceremony and ritual in event-staging – previously unconsidered from such perspectives. In other ways it has been a radical agenda for analyzing the power interests and ideological strategies fuelling the institutional practices of the national and international bodies that have reshaped contemporary sport at the global level. Methodologically, a key emphasis for me has been too the recognition that any such studies can always offer the potential to put into analytical operation (following John B. Thompson) a depth hermeneutic method. Realistically, in one's own work and the studies of feasibly doable doctoral students, one or two dimensions of the depth hermeneutic suffice for separate studies. But such studies should always be located within the fuller framework of the production and consumption of cultural forms, and the various and contested discourses that are generated in the production/consumption dynamic.

Now, writing this I begin to wonder whether I have strayed into the wrong room this coming Friday; what has this blend of cultural studies, cultural sociology and old-fashioned cultural Marxism got to offer anyone interested in innovation in the digital age, and in what lies "behind the technological picture"? Well, if I did not enter a room such as this addressing themes such as these I would begin to look like an antediluvian relic. Sport has been a lead partner with, after being initially a seductive focus for, media technologies; this has been the case from the mid-nineteenth century specialist sporting press to the birth of the movies, from experiments in audio-broadcasting to the first satellite transmissions, from the exploitation of VCR markets to the early days of cable – and Rupert Murdoch's vision of sport as the

"battering ram" (along with movies, it has to be said) with which to break down barriers and explode into new markets was not of course going to grind to a halt on the eve of the digital revolution.

So the modern sporting spectacle has long been a source of experimentation for the application of new media technologies, and in the digital era has been reshaped in turn by the widening range of modes of consumption that have been made possible by those technologies. That is why any study of the contemporary sporting spectacle must be framed within an awareness of the multiple forms of consumption – and associated forms of interpretation – of the event; and in relation to the creative and innovative drives and processes that are sought and supported by the producers of the spectacle and their partners.

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How new business models emerge in the Digital Age – Creativity behind the technology

This paper proposes a discussion of the range of ontological and epistemological approaches that have been used to approach the 'fuzzy front end' (FFE) (Figure 1), the point at which novel research begins to emerge from the research laboratory, with new business models shaping and being shaped by the market domain. The purpose is to work towards conceptual clarity concerning theoretical frameworks and methodological approaches in an area where the literature is a little fragmented and diffuse. This should strengthen the literature and further, provide insight and guidance for product developers and funders, thus aiding innovation overall. The review is timely given that digitisation has resulted in new behaviours and practices at the FFE.

Third mission policy initiatives in Higher Education (HE) have gone some way over the past two decades to smoothing the path for knowledge exchange/technology transfer (KE/TT) by supporting the emergence of new business models, and their eventual commercialisation. These include Science Enterprise Challenge (initially), then the Higher Education Innovation Fund. The Technology Strategy Board too seeks to support commercialisation through *inter alia* HE-Industry partnering/networking initiatives such as the Knowledge Transfer Partnerships, Knowledge Transfer Networks, Technology Innovation Centres and the new Catapult Centres. From these initiatives, a wide range of mechanisms, including the establishment of high tech incubators to nurture TT have been introduced with some degree of success though of course the process is not linear, as implied in Figure 1. The networked character of innovation in the university<->business <-> community ecosystem has been increasingly recognised as central to success (Hauser, 2010; Dyson, 2010; Wilson, 2012). The Wilson Report (2012) highlights universities as an integral part of the 'innovation supply chain' to business, but recognises this chain is not linear -- it is a multi-dimensional network, which has to be sustainable, strong and resilient.

Figure 1
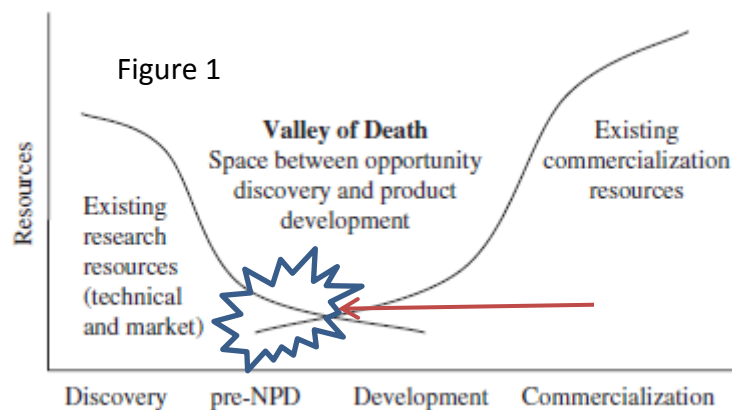
Of course, success rates for technology commercialisation have improved as a result of these initiatives (Hauser, 2010, p4; Sainsbury, 2005, p55) and the wealth of focussed research that has been carried out during this period (eg Hughes and Kitson, 2012; However as Hauser stresses, there is still a long way to go if the UK is to compete successfully in the global economy and not fall behind, highlighting the need to learn not just from vibrancy of MIT and Stanford, but from other initiatives such as Fraunhofer in Germany (who established the mp3 standard) and the Industrial Technology Research Institute (ITRI) in Taiwan which has been very influential in semiconductor developments.   The process of taking ideas from research laboratories to market across the metaphorical 'valley of death' is rarely straightforward (Markham et al, 2010; Barr et al, 2009; Boocock et al, 2009) and highly context dependent (Casper, 2007). Spin out rates remain low, and many patents are not developed further. This is a consequence of high uncertainty within those so-important innovation networks which contain multiple factors and stakeholders, including social, political, technological, legislative and cultural transitions as well as material and financial resource limitations, particularly at the FFE. For example, 'open innovation' paradigms may provide the opportunity for novel forms of business model (eg crowdfunding) that may emerge across distributed innovation networks, but they may not be attractive to traditional incubators as they not necessarily linked directly to an obvious discrete product or firm.

Not surprisingly, the FFE region is already seen as very risky to funders and a long way from revenues. Thus it has traditionally not been attractive to the 'silicon valley' pattern of funding where Angel investors are followed by Venture Capitalists with a view to exit via flotation in a relatively short space of time: hence the need for incubation and seedcorn support. The advent of the Digital Age has added to both opportunity and uncertainty at the FFE: *firstly*, digitisation has lowered entry barriers to new forms of technological innovation; *secondly*, traditional incubation pathways have been supplemented by free-form crowd-driven patterns of activity, often linked to social media, such as crowd funding (de Buysere et al, 2012), or the intricate multidisciplinary 'barcamp', or 'unconference' style events, which combine creative artists of all kinds and computer scientists, amplifying energy and result in the emergence of multiple value outcomes, including new creative projects, new educational opportunities (formal and informal), as well as ideas for commercialisation (Kemp et al, 2012). The contribution of the creative industries in this milieu is well recognised (Hearn et al, 2007) in stimulating innovation overall, as new business models are co-created and shaped. The interacting factors below contribute to this surge of creativity

Widespread access to broadband technologies • Smartphones and tablets • Social media • Increasing availability of government datasets to the public • Falling prices

for some technology areas expanding creative potential • Increased popularity of self-organising formats, with the potential for unexpected serendipitous outcomes.

At Southampton, we have sought to encourage creativity around the interplay of these factors at 'digital festival' events such as SXSC1, SXSC2 and SXSC3 (November 19, 2013). (influenced by SXSW in Austin Texas, Kemp et al, 2012) SXSC2 was attended by over 200 people in May 2012 that brought together computer scientists and creative projects from the arts, humanities and webscience, in a free-form self organising format of demos, talks and workshops. This event had multiple knowledge exchange outcomes, for example, one PhD project in digital music attracting the attention of Google for further development. but this energy is easily dissipated, if the right way forward is not taken.

De facto, the FFE ecosystem grows ever-more complicated, and the pathways to development of new economic models to monetize innovation are not always obvious. Currently of course, the climate of austerity presents a more challenging context, as does the more recent emergence of new funding paradigms for monetizing new innovation constructs. While a number of authors have described and at times conceptualised activities in the FFE, they have not developed theoretical frameworks to explain the phenomenon (Markham et al, 2010). Other researchers too have discussed tools and approaches used in this space, such as voice of the customer (Griffin and Hauser, 1993), lead user techniques (von Hippel,1986), open innovation (Chesbrough, 2003), technology roadmapping (Phaal et al 2004). While these discussions are helpful, they do not provide explicatory or predictive devices that fully identify or explain the range of processes and structures in this region of development.

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A Living Lab for local innovation

The aim of the Living Lab is to develop a suite of workshop games and linked online methods for exploring how digital technology impacts on our local communities, and on people at different times of life.

The Lab idea brings together work over the past 35 years by David Wilcox, Drew Mackie and others on processes for engagement and innovation.

Drew and David have used workshop games and simulations extensively for local regeneration processes, community engagement, partnership and in order to introduce people to the potential and challenges of digital technology.

The games complement more formal guides to engagement, collaborations, and the potential of digital technology.

Recently David and colleagues have developed a methodology for social reporting explorations. These combine online research, crowd-sourcing ideas and workshops to evolve reports, linked resources, and a network of key interests. Drew has also linked his work on games design to that on social network analysis and asset mapping.

The Living Lab combines these various approaches, and roots explorations in a fictitious community. There are early descriptions of the neighbourhoods, characters and organisations of the community in the games examples cited below.

All innovation depends to some extent on context. That's why case studies may have limited value in sharing experience. People tend to say "interesting … but that's not how things are here". Creating a fictitious scenario, which participants can expand, adapt, and engage with, allows pooling of ideas within a common framework.

The Lab will be developed by creating an online space bringing together a methodology framework, games examples, games resources, and instructions. It will by used to curate content from other relevant sources.

All content will be Creative Commons licensed, and people will be able to download and use games, and also contribute to the site.

One application of the Lab has been accepted by Nominet Trust in stage one of their current funding challenge on digital technology and life transitions. The challenge fund was informed by our exploration for them – reference below.

Summary of proposal to Nominet Trust
Digital adoption research for Nominet Trust highlights the importance of personal history, situations, and skills. One digital size won't fit all. While there is now a huge range of potentially useful tools and projects, there is no systematic way for people to explore and adopt what is appropriate for them. One recommendation to NT** is for a professional knowledge hub. However, individuals will need to create their personal knowledge hubs by customising mobile devices, and developing personal learning networks. The Lab is a place to develop a flexible digital operating system for our personal-social life apps.
** http://dtlater.wikispaces.com/Theme+4

Discussion and collaboration on the Living Lab
We will be submitting next stage proposals to Nominet Trust by December 2013, and would be interested in exploring collaborations on this and other applications of the Lab ideas. Talking points:
- The role of games and simulations in innovation
- Blending online and other methods in collaborative research
- Personal learning networks, and new approaches to knowledge sharing

Reference

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- Guides to participation and partnerships http://partnerships.org.uk/ 1994-98

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  http://makingthenetwork.org/housing/ - 2002
- Social technology for social impact – Social by Social
  http://socialbysocial.wordpress.com/sxs-handbook/ - 2009

Games examples
- Early workshop games - http://usefulgames.co.uk/
- Digital enabling in a fictitious community - http://socialreporters.net/?p=720
- Collaborative business planning for community groups
  http://www.communitymatters.org.uk/content.aspx?CategoryID=553

Explorations
- Explorations for Big Lottery Fund, Nominet Trust and others
  http://socialreporters.net/?page_id=552
- Exploration for Nominet Trust on digital technology in later life -
  http://dtlater.wikispaces.com/

The idea of Living Labs
- Wikipedia http://en.wikipedia.org/wiki/Living_lab
- Open Living Labs network http://www.openlivinglabs.eu/

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Brighton connection: David co-founded Sussex Community Internet Project in 1997, and also UK Communities Online at that time. He now lives in London.

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