Unusual Common Ground: The Watershed/HP Labs Partnership

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collaborations

The Watershed Media Centre in Bristol and Hewlett-Packard Research Laboratories Bristol have been involved in research collaborations since the mid 1990's. This report describes the benefits for The Watershed and for HP labs and lists a number of joint projects and programmes such as Mobile Bristol (the precursor of MediaScapes), SE3D, MeiGeist and CommunicationWear.

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Abstract:

The Watershed Media Centre in Bristol and Hewlett-Packard Research Laboratories Bristol have been involved in research collaborations since the mid 1990's. This report describes the benefits for The Watershed and for HP labs and lists a number of joint projects and programmes such as Mobile Bristol (the precursor of MediaScapes), SE3D, MeiGeist and CommunicationWear.

"As the pace of economic, cultural and social change speeds up, creating value is increasingly dependent on fusing the knowledge capital of diverse partners. Successful collaborations need partners who make things happen rather than find reasons why they can't. What drives us is a shared instinct for 'can do' participation and creative collaboration, allied to mutual trust and respect; a desire to connect and engage with ideas and talent that mirrors and reinforces the radical spirit of the digital age."

Dick Penny, Managing Director, Watershed

1. Introduction

In the fast moving digital media world, finding new ways of doing things is essential to the development of innovative products and services and maintaining a competitive edge. In the purely commercial realm, strategic alliances between companies are commonplace. The pooling of knowledge, expertise and resources frequently underpins research and development initiatives. In industry terms, the partnership between Hewlett Packard Labs and Watershed is an exceptional case - not simply because it is an imaginative public/private sector alliance that has been sustained and developed over several years, but also for the open and flexible nature of the relationship.

In this paper we tell the story of some of the projects that have taken place as part of the HP Labs/Watershed relationship; to give a flavour of how they were conceived, how they worked and how the nature of the partnership influenced both their design and outcome. The source material for this paper is background documentation existing evaluation reports and interviews with key individuals involved in the partnership, research that has been part-funded by Arts Council England[i].

Promoting a co-operative approach and creating common ground, either within or between particular industrial sectors is a complex business. There are several factors that can militate against collaboration, including issues around ensuring equity between partners in such relationships, protecting intellectual property and achieving a good return for time and money spent. For some, there is the fear that sharing ideas and resources, and opening up one's business affairs to another company, might jeopardise a competitive advantage.

By examining in some detail how the relationship developed, the paper will provide insight into the partnership of a major global corporate and a publicly funded cultural organisation, contributing to the growing bank of knowledge around creating sustainable partnerships between the public and private sector, that often inhabit an uncomfortable and uncommon ground.

2. Watershed/HP Labs: The Story So Far

About Watershed

Established in 1982 as Britain's first 'media centre', Watershed[ii] has always played a key role in the development of moving image culture in all its forms, with the organisation acquiring and maintaining a high profile and good reputation at regional, national and international level.

As emergent digital technologies rapidly transformed the world of moving image over a decade ago, Watershed began to shift the locus of its activities and embrace new models of collaborative research and development, enabling artists, designers and

programmers to devise new creative applications of available technologies and explore new user interfaces.

Over the last ten years Watershed has progressively developed an effective infrastructure to support various forms of electronic design, production, publishing and presentation, and successfully brokered new working relationships, learning how to recognise talent and back new kinds of creative process, but also when to remain an enabler rather than the controlling partner in collaboration and partnership. Such an approach has earned Watershed the respect and trust it needed to become a proactive networker within the 'knowledge-based economy'.

About HP Labs

As its corporate website states, Hewlett Packard is a technology company *"fed and fuelled by progress and innovation"*. HP Labs[iii], as a major innovation driver, is indeed responsible for delivering breakthrough technologies and technology advancements that enable the parent company to gain a competitive advantage in the marketplace. Since the inception of HP Labs in 1966, these innovations have included thermal inkjet printing, the pocket calculator, light-emitting diodes and the Alta Vista search engine and more recently film-quality Photosmart digital cameras and the 64-bit architecture that is the basis for Intel's Itanium microprocessors. HP Labs Bristol is Hewlett Packard's second largest central research laboratory and among the most significant corporate ICT research labs in Europe. Since HP Labs Bristol opened in 1983, it has operated as an outward facing research centre, developing important local partnerships with organisations such as the BBC's Natural History Unit and a great many academic institutions worldwide. HP Labs Bristol also has excellent conference and seminar facilities, and has hosted a number of technical events including the Information Security Conference, the international Eurowearables conference as well as the Appliance Design conferences[iv].

A quick overview

The first explorative collaboration between Watershed and HP Labs took place in the period 1996 – 1999 as co-organisers of the first UK Digital Story Telling workshops, which also resulted in collaboration with the Ship of Fools consortium of digital artists and a digital story telling project with a group of young mothers in one of Bristol's deprived areas. Taking advantage of the good relationship with Digital City Amsterdam (DDS), the then just starting Society of Old and New media in Amsterdam (De Waag) as well as the School of Arts in Utrecht (HKU), the University of the West of England and Bristol City Council, Digital City Bristol[v] was initiated, a website for the people who work, live and play in Bristol.

In 1999 Watershed joined a Bristol University Computer Science led R&D consortium, the Bristol Creative Technology Network. The object was to experiment with high bandwidth connectivity for the media sector. Following the conclusion of a three year R&D project, Watershed and HP became founding partners in the Bristol Media Exchange[vi] (BMEx), which currently provides Watershed's broadband connectivity.

As well as the Mobile Bristol, SE3D and MeiGeist projects (described below), other collaborations include the trial and evaluation of Active Print[vii] and Misto Table, a touch screen table developed by researchers in HP, which was trialled in Watershed café and an artist in residence working within the Bangalore research labs[viii].

In the next sections we consider in some detail three specific projects from the HPLabs/Watershed collaboration.

3. Mobile Bristol (2001 – 2005)

The founders of Mobile Bristol[ix] were HP Labs, the University of Bristol and The Appliance Studio. Mobile Bristol received substantial funding from the Department of Trade and Industry to explore the uses of mobile technology in the city. Mobile Bristol's remit was to investigate *"how mobile devices and pervasive information technology can be used to enhance the ways in which residents and visitors experience and interact with their physical environment and with each other in urban and public spaces".*

Through real life testing of portable media appliances and the development of new content and applications, Mobile Bristol created a 'toolkit', which provides a *"digital canvas over the physical landscape onto which digital experiences can be painted and new commercial opportunities can be explored".* Their approach addressed not only technical issues around the use of mobile technology and wireless access, but also the development of new content authoring tools and software that enables a wide range of users to create and manage multimedia experiences.

Mobile Bristol's research and development work was led by an interest in consumer needs and behaviour and how to respond to them through technology, rather than by enterprise concerns and the drive to create new products for the marketplace. As Project Manager, Jo Reid, puts it:

"For any technological focus, especially in a consumer space, you need to think about content provision and the mechanisms by which content gets created and put into that space"

For Mobile Bristol, user experience is integral to the design of new products and applications. Their research concentrated around two major questions: what makes a technology experience compelling? How do you design situated technology experiences?

Although some pilot work had been done at HP Labs Bristol, it became clear that simply undertaking studies in a traditional research lab environment was inappropriate for this kind of investigation. Mobile Bristol therefore looked around the city for partners that could provide both a public interface and an infrastructure to support the research programme. For Jo Reid, Watershed was an ideal choice:

"Watershed is an obvious match for us – a partner who can collaborate at a research level and is willing to turn their venue over to being a 'living lab space', somewhere where we can conduct research studies in a real world setting"

Moreover, Watershed and Mobile Bristol shared a mutual interest in how creative technology might be introduced into the highly popular, social space of the Watershed café/bar. From Watershed's point of view, there was the desire to explore how its digital media work could be extended beyond the confines of the cinemas and gallery/workshop spaces into the more informal public spaces within the building. For Mobile Bristol, Watershed's café/bar provided a context in which researchers could interact with consumers from a wide range of backgrounds who are receptive to technology experiences and willing to try out innovative media appliances and content.

Schminky[x] [Reid et al. 2003] was the first major collaboration between Mobile Bristol and Watershed. Mobile Bristol had discussed with Watershed the possibility of conducting research into sound art, gaming and the use of portable digital appliances. Watershed identified the digital artist/composer Duncan Speakman, oversaw his commission and mediated the artist's relationship with Mobile Bristol for the duration of the project. As *Schminky* was conceived as a group design project, the artist did not operate in isolation and was fully integrated into the Mobile Bristol creative team, having access to a range of design experience, technical expertise and resources.

The culmination of the project was a week long public trial where visitors to the Watershed could register and use an iPAQ handheld computer and play *Schminky*. Players worked to solve musical puzzles that involved identifying sounds that are missing from an audio prompt. They could play individually or invite other *Schminky* users in the café/bar to join in a group game. The game was specifically designed to promote social interaction and test acceptability of new technologies in social spaces.

The next collaborative project *Jukola*[xi] [O'Hara et al, 2004]- the interactive Jukebox – allowed people in the café/bar to use wireless iPAQ handheld to view music tracks, find out further information about the tracks and submit their votes. Votes were collated across all the iPAQs to determine the next track, providing a democratic choice over the music played. A touch screen display was used by people in the café/bar to nominate songs for public vote. *Jukola* was also networked to allow access over the web enabling people to submit MP3s remotely or review a history of the music played on a particular day.

Schminky and *Jukola* demonstrated that it was possible to introduce technology-mediated experiences into the heart of a social space without destroying the ambience. The project gave Watershed and Mobile Bristol an incentive to explore further the integration of interactive exhibition systems into the lifestyle experience of a visit to Watershed. The 5th Clark Digital Bursary was deployed as an enabler to engage more artists in the exploration of this territory. The aims of the bursary were:

- To enable artists and multi media producers to develop their creative practice in digital media and specifically to work with next generation mobile technologies

- To explore the integration of interactive exhibition systems into the lifestyle experience of a visit to the Watershed.

- To foster creative collaborations between artists, technologists and Watershed to explore new working practices

- To develop the Mobile Bristol Infrastructure through practice based R&D

- To make digital work and practice available to audiences in the South West through seminar, presentation, exhibition and/or publication

- To support opportunities for exchange of ideas in the wider community

Under the programme title *The Interactive Building*[xii] three artists - Stanza, squidsoup and Dane Watkins - were commissioned to develop projects using the latest wireless technologies to engage audiences in public spaces within and outside of Watershed. Although the individual artists made very different creative responses to the brief, all three projects addressed the interplay between appliances, services and

infrastructure when placing technology in a consumer space. By focusing on both the experiential aspects of technology and developing audience engagement, the projects provided important real life research data for Mobile Bristol about the relationship between user experience and design.

Meanwhile, Watershed had been exploring new public interfaces in the café/bar area to allow people to browse online creative content. During capital refurbishment of the building, the artist Simon Poulter was commissioned to design and produce two new 'slacker tables' that were sited in a new area of the café. In Spring 2005, this new public area also provided an opportunity to trial one of the latest concepts being developed by Hewlett-Packard - *Misto,* the interactive coffee table. HP Labs' aim is to develop a touch screen table that can be used by people in homes and social settings to view content and communicate online. A pilot version of *Misto* was shipped over to Bristol to be road-tested by the public using a selection of content from *www.dShed.net* - Watershed's online showcase of digital creativity.

Established by Mobile Bristol, the *Active Print* project is exploring how printed materials and digital displays can be linked to online content, services and applications in all kinds of urban/suburban/rural situations. In particular, the concerns of the project lie in how this can be done using a mobile phone – *the* device that many people carry with them everywhere. Current camera phones now have good enough optics, resolution and processing power to be able to read special barcode-like symbols known as 'QR codes' on the printed materials. These symbols encode information such as web addresses, phone numbers and various pieces of meta information. When read and decoded by a camera phone, they can initiate several ways of linking the user to content and services, in particular:

- By initiating a Web (WAP or HTTP) download
- By automatically sending an SMS message to a service

I Can Read You[xiii] is a game based around QR Codes and mobile phones that was developed in the summer of 2005 by Simon Poulter in conjunction with the Watershed and HP Labs. The game consists of a large puzzle board in the shape of a QR code. At the beginning of the game, key segments of the board are removed which reveal additional QR codes underneath. These revealed codes when read by camera phones provide clues to the location of codes hidden around the environment. The players need to find these hidden codes in order to discover where on the board the removed code segments must be placed. When all the code segments have been pieced together it forms a large QR code. This code can then be read by the camera phone to reveal a quote from a famous novel in Glass's pop up text box.

4. SE3D – the HP Labs/Watershed Animation Showcase

Utility and grid computing has been one of Hewlett Packard's major success stories within the ICT industry. Animation and most recently 3D animation using computer generated imagery (CGI) is a success story for Bristol's film and media industry.

HP Labs Bristol played a key role in creating the HP Utility Data Centre, which provides a simple, flexible and low-cost way to quickly mobilise powerful computing resources. In relation to that work, HP Labs Bristol researchers had been developing a rendering service for digital animators which speeds up the process of converting wire-frame models into finished, fleshed-out frames. A key factor behind HP's decision to undertake research in this area was Bristol's particular strengths in 3D animation and in 2003, HP Labs commissioned Bristol-based production company

422 to create short 3D animation to test the prototype version of the rendering service in a real-life production situation. *The Painter*[xiv] was premiered at Watershed in September 2003, before being showcased at various international film and media events to great industry acclaim.

What *The Painter* subsequently achieved for Hewlett Packard far exceeded everybody's expectations. As well as helping HP to test and refine their utility computing systems, the quality of *The Painter* as a film made using this rendering process now gave the company serious credibility within the international CGI animation industry. This short film made from Bristol proved to be HP's calling card for a much larger engagement with one of the industry's leading players DreamWorks, for whom the team went on to create a 1,000-processor dedicated utility data centre at HP's laboratories in Palo Alto to provide a flexible rendering service for Shrek 2 with enhanced security features.

Back in Bristol, HP Labs and Watershed were considering which direction to take the research and development programme. *The Painter* had admirably demonstrated the efficacy of a single-user application of the utility rendering service, but HP needed to research how the system would perform with several users accessing it remotely at the same time. Watershed and Aardman Animations suggested offering the rendering service to emergent filmmakers and small production companies who would not otherwise have access to such expensive technology. A new animation programme was launched for which prospective participants were required to make a real-life 'pitch' to a panel of industry representatives.

Under the name of SE3D[xv] and the management of Watershed, twelve animators were offered access to the HP Labs-Maya® Rendering Service and given creative, technical and administrative support throughout the whole filmmaking process.

An advisory group was set up that included senior representatives from the BBC, Aardman Animations, DreamWorks and Alias®. This advisory group opened up access to a network of industry 'mentors' who were available to assist individual animators during the script development and storyboarding stages through to production and final edit.

The first of the SE3D films were presented in an HP Labs-Alias® showcase at the annual Animated Encounters film festival which took place at Watershed in April 2005, and subsequently at Cannes Film Festival in May as part of HP's presence and sponsorship at that major event. They continue to screen at Festivals and events around the world.

5. MeiGeist

More recently in 2006, HP Labs hosted Hazel Grian as artist in residence as part of an industry pilot of Art Council England's Artist Time Space and Money funding stream. Initiated and managed by Watershed, Hazel was based in HP Labs' Mobile Media Systems Lab in Bristol for three months, during which time she researched the development of MeiGeist[xvi]. An Alternate Reality Game, MeiGeist blended fiction with reality by telling its story across different media including websites, text message, live events and email.

The placement's emphasis was collaboration and Hazel had quite clear ideas at the outset of how she would be developing her work around this new genre:

"I really wanted a chance to work side by side with technologists. The outcome was

great; I was inspired by their application of forward-looking ideas into actual technology. They seemed to welcome my input of creative ideas from an outsider's viewpoint."

On completion of the placement, Hazel moved into Watershed for the live phase of the game. The value of the placement, aside from the production of a game that will take Hazel's work to a new kind of audience, is the relationships built:

"*Bringing together the arts, technology and social sciences has given us an opportunity to explore how emerging and online and mobile communication technologies can be used to create engaging new experiences with the technologies outside their original purpose. The work has been inspirational and thought provoking for us and its influence will extend further than the current project."*

Kenton O'Hara, HP Labs

6. Communication-Wear

The most recent (early 2007) experiment we conducted was around fashionable wearable technology. Communication-Wear is a clothing concept that has been developed at Central Saint Martins College of Art & Design, London, in collaboration with HP labs Bristol, Vodafone and the University of Bristol. The idea is to augment the mobile phone by enabling expressive messages to be exchanged remotely, by conveying a sense of touch, and presence through wearable computing technology embodied in fashionable clothing. Using garment prototypes as research probes as part of an on-going iterative co-design process, we endeavoured to mobilise participants' tacit knowledge in order to gauge user perceptions on touch communication.

After a first laboratory study, conducted at HP labs, incidentally also involving some Watershed volunteers, we wanted to take the prototype garments, in this case jackets, into a more realistic setting as a natural next design step. As with the other projects featured in this report the Watershed bar proved highly suitable a place for trying out the prototypes; the participants, all regular visitors, felt at ease wearing these rather strangely behaving jackets in public.

7. People and Structures in the Watershed/HP Labs Relationship

At the end of the day, the success or failure of any professional collaboration hinges on the caliber of the people involved and how they relate to each other. Pulling together effective teams for particular projects, and then carefully structuring the relationships, roles and responsibilities within them, has been crucial to the success of the Watershed/HP Labs partnership. Serendipity has also played its part, with several instances of the right people appearing on the scene at the right time and adding an extra dimension to the mix.

One of the real strengths of the Watershed/HP Labs partnership has been the close peer-to-peer working relationships developed not only at the top, but all the way down the project management and delivery chain. Within the two partner organisations and their extended network of industry collaborators, there has been sufficient choice of personnel with the pre-requisite skills and availability to fill all the key roles identified for effective delivery of particular projects. However, it is in the nature of this work that both process and outcomes can be unpredictable. Whereas specific roles and responsibilities have been assigned to people, the individuals involved have understood the need to be flexible and adaptive to changing circumstances and needs.

8. Finance and Resources

Making money – and achieving an immediate return for the investment of time, finance and resources – has not been the underlying basis of the Watershed/HP Labs partnership. Both companies have certainly invested a great deal in the partnership, and there have been significant commercial as well as cultural gains derived from the programme. However, bottom line costs have never been the primary concern for either party.

HP Labs estimate that for SE3D alone they have already directly invested around $2 million in staff time, lab facilities and technical support, without accounting for the the real market cost of thousands of hours of rendering time, PR and marketing support.

For Watershed too, staff time, use of workshop and technical facilities, server space, hosting events in the cinemas and conference spaces, administration, marketing and project management has over five years run up a total investment by the company in the order of several hundred thousand pounds.

Watershed is a cultural organisation driven by public service values whereas HP Labs is accountable to its parent company, and ultimately the commercial value of research and development programmes has to be demonstrated. Nevertheless, for different reasons both Watershed and HP Labs see any commercial gain derived from the partnership as part of a longer-term gameplan, in which neither party expects an early payback for their investment.

9. Outcomes of the Partnership

Creative

Aside from all the other benefits it brings to Watershed and HP Labs, the partnership has first and foremost been about achieving creative outcomes – whether that be in research terms or the production of exciting new work. The underlying approach and ethos may have been open-ended and exploratory, but it has resulted some excellent films, new artworks and imaginative artist-devised products and applications of the technology. It has also produced new forms of audience engagement, and revealed new things about how people interact with technology-mediated creative content.

For participating artists, a 'real-life' focus to projects has multiple benefits. Not only have they had access to technologies and technical facilities well beyond their normal means, but also to the expertise and resources of the wide range of industry professionals within the Watershed/HP Labs orbit.

Knowledge and capability transfer

Knowledge transfer has always been a core outcome of Watershed/HP Labs' collaborations - whether that be artists and producers learning how to apply the available technology in imaginative ways which could be incorporated into their practice; or Hewlett Packard understanding better how people in the real world will use the products and technological solutions they are developing; or Mobile Bristol building up knowledge of how end users experience technology-mediated content.

For Watershed, the partnership has expanded its knowledge and capability in the digital and pervasive media sphere and has significantly contributed to a new direction for the organisation. Building on knowledge accrued from these

collaborations, in January 2006 iShed[xvii] was set up. A Community Interest Company trading as part of the Watershed Group, iShed which will create new capacity to proactively identify, incubate and promote interdisciplinary collaboration in the field of digital media and technology, networking organisations and creative individuals to create a world-class connected creative ecology.

Thus knowledge transfer and capability transfer have gone hand in hand. The collaboration has increased know-how and expertise at many levels, for all parties involved, and it has also enabled the people involved to do things that they would not otherwise have been able to do. Julie Taylor, Creative Industries Manager at the Arts and Humanities Research Council, feels that the Watershed/HP Labs collaboration (particularly in relation to SE3D) is an important national and international model of research-based knowledge transfer within the creative industries. She comments:

"the project embeds many of our current concerns, including networking as a business model, access to new and expansive technologies, new distribution avenues, mobilisation of production funding, changes in core business practice and the ownership of IP in the content that is created by the research process"

Intellectual Property
As with all such projects in the creative industries, in addition to the immediate outcomes of individuals' creativity, skill and talents in research and development work, there is the potential for further wealth creation through the exploitation of intellectual property. For that reason, there is always a need to be clear about where intellectual property lies and who owns it, about how best to protect it from theft, and in which context it is permissible to freely share original ideas, content and knowledge – some of which may have taken many years to develop.

Finding new models for Intellectual Property (IP) protection, which are both equitable and workable, has been one of the positive outcomes of the Watershed/HP Labs partnership. Quite unusually, the artists and animators have been able to retain the intellectual property rights on all or most of their productions. The agreement, negotiated by Watershed on their behalf with in-kind legal support from TLT, is a much better deal than most production funding arrangements allow. In typical cases, for example the UK Film Council's production funding schemes, copyright on the films produced is assigned to the agency providing production finance to the maker, either on a fixed term basis or in perpetuity. The retention of IP strengthens the originator's position in terms of using the content created by the research projects to secure future commissions.

Watershed has been in a good position to safeguard the interests of all parties because it has acted as an intermediary agency that has not sought to own the intellectual property derived from the projects. Through developing an effective Intellectual Property Agreement and process over several projects, Watershed has reduced the legal costs and time that might have been spent negotiating individual arrangements. If this responsibility had fallen on Hewlett Packard, as the commercial lead partner, the process could have become tied up in legal complexity over what value is accrued at what point, and who benefits from future exploitation of films and artworks produced on collaborative research projects.

10. Some Reflections and Lessons Learnt

It is clear that there are many factors that have underpinned the success of the Watershed/HP Labs relationship – not least a mutual recognition of the two

organisations' respective strengths and differences, as well as an ethos of collaboration and open-ended investigation of new possibilities. The difference in scale and turnover between the companies has never been a barrier to them working effectively together.

Good 'casting' has been essential to the success of the partnership. This starts with ensuring that there are strong project champions on both sides, who share a clear vision for the programme and are able to enthuse and motivate other team members. Getting roles and responsibilities right within each project team is critical, as is engendering a flexible 'can-do' culture at all levels. Throughout Watershed and HP Labs' partnership working, good peer-to-peer relationships have been an important factor in effective delivery.

Being adaptive to changing circumstances has also been vital, adhering to the research maxim that *'even if you are looking for specific research data, it is the unexpected outcomes that you learn most from'*.

Watershed's intermediary role – both as a networking hub and catalyst for collaboration – has been crucial. At times, the organisation has also been very hands-on in both co-ordination of and delivery of projects, as well as its important role as a mediator between artists, HP Labs' personnel, funders and the other industry players involved. This intermediary function includes ensuring that all parties agree terms of engagement in which there is equity and fair exchange.

The local context – and Bristol's strength and depth in terms of its creative and technological infrastructure the contribution it makes to the digital media industries – has certainly helped. Concentrating activities initially around Bristol, then building out, has made it easier to identify and enlist the support of the right people and companies at the right time, and to build and sustain close working relationships for the lifespan of projects.

Adopting a 'blue sky' approach to research and development, in which what is learnt from the processes involved is as important as outcomes, has promoted greater creativity and inventiveness in the way that people have approached collaborative endeavor. It has also encouraged lateral approaches to problem solving and the application of learning outcomes to domains other than the one under investigation. In deliberately pushing the technology to its limits, and giving artists and animators the freedom to experiment with, and perhaps subvert its use, a better understanding is gained of how different technologies work together in real life applications. This in turn enables the identification of technical and design solutions that are best suited to particular user needs.

The Watershed/HP Labs experience underlines the need for a new model for public funding that recognises 'blue sky' research as integral to creativity and innovation, and one which demands fewer 'hard' outputs in the early stages of a project's development. This implies a move away from conventional notions of public subsidy towards a culture of investing in creativity, and backing innovation and new talent wherever it exists. In the mercurial and unpredictable world of digital creativity, such an approach does not seem unduly radical, but it does demand of the public funding system a greater willingness to take risks and support dynamic new partnerships with the private sector outside its traditional frame of reference.

11. Conclusions and the Way Forward

The Watershed/HP Labs partnership works. It will continue to do so.

There is a good match between the organisations culturally and creatively, and they bring complementary skills and resources to the table that combine well in joint projects and other collaborative ventures. Both organisations are ambitious and entrepreneurial, and operate in flexible environments that balance strategically planned initiatives with the continuing energy of opportunistic intervention. Both organisations have achieved the high professional standing and profile needed to draw in other industry partners, and to extend the network of expertise and resources available for projects.

There are aspects of the relationship that are locally specific, and key individuals who have been important catalysts both in making the partnership happen and ensuring that the projects undertaken realise their full creative potential. That said, the core characteristics of the Watershed/HP Labs' relationship could be applied to other public/private sector partnerships in the creative industries sector. The partnership may not provide a ready-made blueprint for success, but it does point the way forward to similar forms of collaboration. It provides a good model for networked delivery of research and development projects.

Hewlett Packard is keen to extend the work to another domain, as well as maintaining its presence in the digital media industry. For Watershed, building on the successes of the partnership furthers its ambition to be a 21st Century media organisation responding to emerging creative opportunities and supporting digital creativity across and beyond Bristol.

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