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Author(s): Parry, R.

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Digital Learning

Biology Collections and New Technologies

Department of Museum Studies, Leicester University, 30th January 2001

IT usage has moved far beyond using computers simply for documentation purposes. Digital technologies are reshaping how we use, interact with and display biological collections. They offer new ways of communicating and affording access to the huge resource and potential contained within biological collections. This meeting looked at some of the ways digital technologies are being used and at their potential for providing access, information and new ways of using and interpreting collections.

This was a very well attended meeting, with over 70 delegates, this perhaps reflecting interest in and opportunities afforded through IT usage. The day included demonstrations of the pilot NBN Gateway, virtual reality technology, and the Virtual Store project created by Stoke on Trent Museums.

Overcoming the Shock of the New Changing the agenda for digital learning

Ross Parry - New Technologies Lecturer,
Department of Museum Studies

There's more to IT than word processing and collections databasing. Isn't there? Ross Parry from the Museum Studies Department at Leicester University discussed the wider usage of IT and how it can be effectively utilised to communicate with our audiences.

Late Victorian Cambridge – exclusive, hierarchical, conservative. Not, perhaps, the place where we would today (with our inclusive and progressive outlooks) expect to find a key moment in the history of collections and new technology. And yet on 13 June 1894, J.W. Clark (historian of library classification) delivered a paper as that year's prestigious Rede Lecture, which was just that. Through a meticulous piece of scholarly work, Clark placed the University libraries that surrounded him and his audience into the context of a sweeping story of civilisation. From Sir Christopher Wren to St. Benedict, and from Sir Robert Cotton (one of the benefactors of the British Museum), to Bishop Alexander of Jerusalem, this was nineteenth-century narrative history

at its most introspective and self-congratulatory. It was, however, his comments on the current state of archiving and librarianship that contribute to the history of museums collections and media technology. Clark concluded that: 'common sense urges that mechanical ingenuity, which had gone so much in other directions, should be employed in making the acquisition of knowledge less cumbrous and less tedious'. His recommendation, therefore, was a simple one: 'that as we travel by steam, so we should also read by steam, and be helped in our studies by the varied resources of modern invention.' In short, writing at the twilight of the Victorian age of expansion and mechanization, Clark saw his culture's new technologies as having a role (a significant role) in the organization of his society's, libraries, archives and museums. To him, it was 'the varied resources of modern invention' that had a active and unavoidable part to play in the future of memory institutions. I doubt he could have guessed how true his words would prove to be.

In particular, it is in the last twenty-five years that the 'resources of modern invention' (our new technologies) have become increasingly more conspicuous within the modern museum. By the end of the 1970s IT projects were emergent in museums – if weighed down by the weight of expense and labour-intensive

data entry that they (invariably) needed. And yet, working in the early 1980s, a team on Merseyside bucked this trend and used (in contrast) some of early microcomputers within their exhibitions. Engaging with the subject of insects, growth and habitat, simple programs allowed visitors to build creatures on the screen (formed from the letters and characters on the keyboard). This proved to be both an early and enduring in-gallery digital interactive - the machine and the program defending their place in the museum into the 1990s. By the end of the decade the computer was established both in front of and behind the scenes of the UK museum. In 1989, two years after MODES had appeared for the first time on registrar's desks, an exhibition of the drawings of Leonardo da Vinci, at the Hayward Gallery in London, used a series of computer models to support its scholarly commentary on the collection. (Interestingly, for curators of biological collections, these were drawings that made anatomical studies of the heart, the cranium and spine proximate with those of architecture and mechanics.) For the first time, the sketches and jottings of the Windsor Codex were realised as three-dimensional objects

By the early 1990s (when *A Hard Day's Night* had become the first full-length feature film in hypermedia, and when, for the first time, sales in hypermedia encyclopaedias had exceeded those for conventional print encyclopaedias) there was a clearer sense of how new media could be used in museums. (We think here primarily of the document published by the MDA in 1991: *Who's Using What Software for Documentation Where?* But, perhaps, we also think of the British Library's 'Initiatives for Access' programme begun in 1993, investigating the technical requirements (both hardware and software) for digitisation and networking of library materials. Also, in the same year Bibliotheque Nationale de France began a programme for digitisation, storage and public-access retrieval system for 300,000 scanned documents, books, periodicals, images and sound.) Some curators now felt confident to let visitors commune - *unsupervised* - with the new technology. It was, significantly, just at this time that the 'Micro-Gallery' was opened in the new wing of the National Gallery, London. With its digital tours, 12,000

high quality images and 4,500 pages of art historical information stored on Apple Mac computers, the Micro Gallery signalled a (high-profile) enhancement in the capability of multimedia software, an increase in the power of digital processing, and a reduction in the cost of computer hardware. And yet, from another perspective, the Micro Gallery might be viewed as a muted revolution, being somewhat marginalised within the space of the museum - a basement ghetto, anything but 'in-gallery'. Moreover, in terms of the profession countrywide, it stood as a privileged provision of a national institution - rather than the paragon of curatorial best practice.

In fact, it was not until the late 1990s (in the UK at least) that the axis of digital change finally moved both into the galleries and into the localities. To use the words of Wendy Sudbury in 1996 (then Chief Executive of the MDA) advances in new media (especially networked media) meant things were 'growing fast'. (Indeed, that same year the MDA produced its first published report, by Sue Gordon, on the role and impact of the Internet in museums). In 1995 (in her paper on 'New technologies for museum communication') Anne Fahy left little doubt that the advent of new media presented museums: 'with the opportunity to develop new ways of communication which allow the visitor to explore the richness and diversity of collections at their own pace and to their own requirements'. In the same year, the *International Council Of Museums* was more proscriptive: 'ICOM encourages museums' a policy statement from the executive council announced, 'to be active contributors of information to the Internet about their programmes and collections in order to fully play their role "in the service of society".' Allied to this has come the new Cultural Heritage Training Organisation (CHNTO) guidelines for heritage training providers that has stipulated that the use and knowledge of information management media is now a clear part of any validated training curriculum.

Consequently, today, in the face of this new professional responsibility to engage with new media (J. W. Clark's '*resources of modern invention*') we are now perhaps used to seeing in

typical city museum services such as Leicester CD ROM terminals providing the sounds and contextual information to support the surrounding objects (as happened with last year's 'Sikh' exhibition at New Walk, and the 'Suffering for Style' interactive at Jewry Wall's Leicester millennium exhibition). We are not even surprised (as happened at Leicester's recent centenary celebrations) when we are given an opportunity to put on a headset and walk with a virtual reality Teranasarus Rex. In short, in those twenty years (from the Merseyside keyboard characters, to the Leicester virtual Dinosaur) we may still be using computers to make digital creatures. But, crucially, the resolution, the location, the intention and cultural condition has changed beyond recognition. Less of a mainframe curiosity, or privileged gimmick, Digital Communication Technology (New Media, ICT, IT - call it what you will) is now an established curatorial medium and tool to which we are now beginning to turn with comfort and confidence.

And yet, despite these myriad initiatives, and irrespective of the decades of development, there is much for all of us (as professionals working in or with museums) still to learn about using new media. Or to put it another way: we might want to read the title *Digital Learning* – our subject for all these discussion – as a reference to the learning we need to embark upon; and not just the learning our audiences will engage with once our collections and interpretations are digitised.

Consequently, when we consider David Dawson's reflections on the 'Networking Collections' (and the new potentials for information management within some of our collections) let us also think about how much we can *learn* from others who have undertaken such work. Already (with respect to New Media) it is, for instance, becoming clear that it is, in fact, evaluation that is the key to successful, deliverable, sustainable projects. It is evaluation that helps us confront key questions about why we are embarking on a particular initiative or project. It is evaluation that provides context for the work we are about to undertake; and that provides direction for the work ahead. It is evaluation that helps a project ful-

fil the needs of its intended audience; that maintains a focus for a project; that allows a project to respond to change; and that can help ensure an end product is successful and effective against the project's original criteria. Moreover, it is evaluation that helps us understand how we might develop our provision in the future, as well as providing us with the means to see how we (personally) operate as individuals within a team dynamic. It can help us play to our strengths in future projects, and plan our continuing professional development. In short, when approached appropriately, project evaluation (front end, formative, summative, on-going) can be a positive and productive agent for our audiences, our projects ... *and* ourselves. Undoubtedly, part of our *Digital Learning*, relates to *learning* how we evaluate *digital* projects

However, there is another aspect of *Digital Learning* which involves *learning* how digital media is used. These are lessons (aspects of which the contributions from the Potteries Museum and Art Gallery, and Leeds City Museums will remind us of) in *learning* both the nature and limits of the technology's potential. Why, for instance, do we persist in allowing the Internet to remain synonymous with 'accessibility' and 'inclusion' when, in actuality, in Britain today some three-quarters of the Adult population do not have access to the web at home? Why do we continue to fanfare the audio-visual wonderland (and interactive eye-candy) of the web when, in fact, the realities of a design rationale that is responsible, browser-independent, client-side-application-based, access-technology-sensitive, W3C top level compliant ... in most cases generates products that are far short of this. Though I appreciate that we are future proofing ourselves and our collections for a cultural moment in which society is fully networked with blue tooth technology (a web-compatible playstation in every teenage bedroom, a WAP phone in every pocket, a broad band online connection into every home, classroom and library) we should, nevertheless, strive to be more critical of this media and of these visions of how it may be used. We should perhaps develop a more nuanced appreciation of what networked hypermedia is, and what it can do for us. The sound-bitery and simplifications

that marked our initial 'shock of the new' should perhaps be behind us. After all, this new technology is now not so new. Therefore, our *Digital Learning* needs to confront and critique (with alacrity and acuity) the very nature and communicative culture of the World Wide Web and its hypermedia discourses. Is the Web empowering - a mass communication for the masses? Or, is it just the means to a new social underclass? Is it a confusing, unsettling juxtaposition of dismembered data? Or, is it in fact - for this very reason - the perfect medium for the post-modern generation? Does the web present a new mode of dialogue for the museum - a private form of public communication? And what happens to the value of the published word on the web (the notion of the authentic) when publishing is itself so democratised? As difficult as they may be, it is time to answer questions like these. It is time to ask ourselves if we really know *why* we are putting things online. And it is definitely time - likewise - that we become more aware of the different abilities of our online users. After all, the diversity of users and usage of our online (and in-gallery) digital media is invariably characterised by more than just differences in equipment used. When engaging with the technical specifications of building our websites, we can all too easily forget how we are not just connecting computer with computer, but also person with person. Web designers and museum professionals alike may want to bear in mind that people are just as diverse in their abilities as the computers they use. Our 'Digital Learning', therefore, is also about *learning* about people, their abilities, their expectations, and their preferences.

However, what Nick Gordon's paper on the Termlists project does is open up another vista of debate, and another set of new lessons for our *Digital Learning*. Lessons to do with what happens to information when we structure it (or relate it) using a computer. And, again, we are perhaps here at an important moment of transition within the development in museum computing - a transition to do with the structure and taxonomies of our information management systems. Consider for instance MODES. The development of the MODES products from 1987 onwards is rep-

resentative, we could say not too controversially, of an approach to digital collections that is orientated around the curator and registrar as principal users. These products (and many like them that followed) located informed registration and expert documentation as their main objectives. Within them, intuitive front ends for public access have only developed as something of an after thought. However, in the new generation of products (of which, say, MUSIMS stands out as a prime example), the approach is, instead, to provide a computerised system for the flow of information *right through the museum*. Therefore, in contrast, in the computerised information management system of *today*, information retrieval by *all* users (whether inside or outside the museum) is now paramount. As such, we detect a shift in the use of Database Management Systems, from a guarded provision (a registration tool) to a mechanism (dare one say 'a culture') for information presentation and access. Our museums' 'Collections Databases' are, it seems, now evolving into 'Information Exchanges'. Moreover, the very theoretical principles (semiotic frameworks) of these databases and exchanges are, in many cases, shifting as well: from a system-orientated to an object-orientated paradigm, where multiple meanings and varied interpretations take precedence over (or, at the very least *hold equal status with*) controlled classifications and universal standards.

Allied with this paradigmatic shift is the new culture of interoperability, yet another area of our new *Digital Learning*. Through Malcolm Scoble's description of a project that is looking to facilitate access to specimen databases across the European Community, let us think on about what interoperability will mean for the museum. Interoperability is an example of New Technology (in this case *networked information management technology*) synchronising with the social and political aspirations of some of our modern cultures. (In short, because of what information management technology can now do, we are now able to think through some aspects of social change). Therefore, in one respect, interoperability is the point at which information management becomes conspicuously semantic, legal, political, and cultural. Moreover, interoperability

marks the point at which technology and museums, (computers and society) connect in a mutually transforming way.

Finally, John Hopwood's presentation of new Virtual Reality technologies will remind of yet more lessons we need to have as part of our on-going *Digital Learning*. For what the innovative work of Education City is doing (in Leicester) in its interactive, low-cost experiences for lifelong learners (what elsewhere has been called its '*Knowledge Space*') is quite literally rethinking the space of the museum. The thought processes at the kernel of the creative networked virtual reality products that John Hopwood's team are building, raise questions about the very essence of what museums are, and what they are trying to do.

Museums have always been associated with Technology. After all, in one sense, they are themselves a technology of sorts; a medium, a physical form of communication. Indeed, over the centuries our museums, libraries and archives (our 'memory institutions') have found their beginnings and shaped their changing roles at the same time as they also found new ways to present, process and protect their objects and ideas. From the cabinet of curiosity to the tableaux diorama, and from the glass-fronted display case to the hands-on interactive, and from the punch card catalogue to the database management system ... communication technology continues to inform and support the purpose and practice of the museum world. The histories of museums, and the histories of their mediating technologies are inextricably linked. To tell a story of museums is to tell a story (also) of the technologies they contain. This has certainly been the case (at least) for the technology that is the subject of these discussions - *digital information technology*. It is the proximity of this digital technology to the construction and representation of knowledge, which is the theme that sits at the very heart of these papers here. Within this theme are fundamental issues for museums today: who they are for, what they contain, what form they take? We cannot avoid the series of questions and issues centred upon the role of new technology - in particular those challenges centred upon the portable, programmable, automated, digital-

processing machines we call computers. How and why may we talk about a 'virtual museum'? To whom would it serve, and in what way? How do the processes, roles and skills of curatorship change in such a setting? Who should fund such innovation? For what benefit, as museum professionals, do we enter the digital age? It is to these questions, these issues and these challenges that this discussion looks. It is a discussion about new beginnings; new approaches to the way we work, and new approaches to the way we sustain this work. It is about new standards, new protocols and new partnerships. It is a discussion about new potentials, new visions, and even, perhaps, new museums.

Networking Collections Can we make it work?

David Dawson -
Senior ICT Advisor, Re:source

Much is talked about the power of IT to unlock the huge potential of natural history collections, but is it possible? David Dawson discussed the issues and some of the projects that are attempting to make this a reality.

True to the spirit of this meeting David's talk is available online both in HTML and as a Powerpoint presentation. It can be accessed at www.peoplesnetwork.gov.uk/team/dawson/present.html.

