ecsite
uropean Network of Science Centres and Museums
N E W S L E T T E R

autumn 2006 issue 68

Exploiting the web

How do science centres and museums use their websites? How have websites evolved - or have they evolved? - from electronic marketing medium to interactive enhancement of the exhibition experience?

Virtual flight through the 'Computer.Medicine' exhibition

Contributions were invited 'if you are using your website in particularly interesting ways'. As a result this issue of the Newsletter represents experiments ranging from the dodo blog to the dino club.

London's Natural History Museum was the first national museum in the UK to have a website, and has recently set up a dedicated interactive media team within the Public Engagement Group: Ailsa Barry relates NHM's attempts to develop a 'virtuous circle' between a museum's on-line and physical spaces.
In Paris, la Citéé des Sciences et de l'Industrie is using blogs to foster science debates on the web. Further case studies come from Naturalis, Leiden, and the Heinz Nixdorf MuseumsForum, Paderborn. Dr Per-Edvin Persson rounds off this issue with his personal philosophy of website exploitation.

Many, many great examples failed to find space so, in passing, I mention a few personal favourites:

- This flash of enthusiasm from Discovery Corner Netherlands: "Our website www.ontdekhoek.nl works very well. We have about 2,000 hits a week and until now we only received highly positive reactions. Look for yourself!"
- Liverpool football captain and England midfielder, Steven Gerrard, filmed during his recent visit to World Museum Liverpool and the Walker Art Gallery: viewers get a rare glimpse of one of the world's top footballers looking relaxed and laid back at http://liverpoolmuseums.org.uk/blog
- Naturalis' training centre, where work-experience students of biology, geology or biomedical sciences help develop the content of www.natuurinformatie.nl: students learn to be sharp narrators using both word and image
- Six live webcams at the Scottish Seabird Centre: view the outstanding wildlife at this stunning location overlooking the sea and islands of the Forth at www.seabird.org
- The Exploratorium's on-line exhibit 'Which embryo is human?' and of course the magnificent series of live webcasts: www.exploratorium.edu/origins/belize-london/live/index.html

I have just been to wikipedia's page about science centres and museums, and have edited the 'historical background' section.
The page also lists 'pre-eminent science museums of the world'. Go and take a look. You'll be surprised which institutions are included, and which are definitely missing. Make sure you're on the list!
http://en.wikipedia.org/wiki/Science_museum

Melanie Quin, Ecsite Editor
(and Director, Ecsite-uk)

Naturalis web work studio

: CONTENTS >>>

To contact the Brussels Office:
Ecsite Executive Office
T +32 2 649 7383
F +32 2 647 5098
email: info@ecsite.net
http://www.ecsite.net

ADDRESS for Newsletter contributors:
Ecsite-uk
Welcome Wolfson Building
165 Queen's Gate
London SW7 5HD
email: melanie.quin@ecsite-uk.net

Copy date:
Copy date for the Winter issue, 22 December, with publication in February (theme: Science in Society); for the Spring issue, 30 March, with publication in April 2007.

Create-A-Scape

Using the Create-A-Scape PDAs

Create-A-Scape is a free educational resource that enables young people to learn with PDA handheld computers. Create-A-Scape is a powerful personalised learning tool. The website provides a set of resources to enable teachers and pupils aged 10 and over to create and experience 'mediascapes' (a collection of location-sensitive sounds and images that are 'attached to' the local landscape which can be experienced using mobile technology). Users can create a range of experiences from a mystery tour to an art installation - the only constraint is imagination.

E info@createascape.org.uk
www.createascape.org.uk

DODO BLOG

Members of an expedition to Mauritius dig for dodos, write up a web log and answer visitors' questions.
After a day of rooting and digging, the members of the dodo expedition describe their results in a web log. Having read the stories, website visitors ask questions about the biology of the dodo and about the expedition. The members of the expedition answer their questions on the site. These questions and answers are an additional source of information for new website visitors: a successful form of interaction between scientist and visitor.

Searching for dodos

E hoorn@naturalis.nl
www.dodo-expeditie.nl

glasgowmuseums.com

Glasgow Museums' award winning website has been developed to guidelines promoted by the World Wide Web Consortium (W3C) and adopted in the UK for local authority and other government-related websites. The site went live in April 2003, and hits are currently in the region of 2,250,000 each month. Accessibility is the underlying principle governing the site's development, reflecting Glasgow Museums' commitment to make museums and collections more accessible. The launch of our online Photo Library is due soon, and work is underway to get the collections database online in an accessible format.

Visit www.glasgowmuseums.com.'
E george.inglis@cls.glasgow.gov.uk
www.glasgowmuseums.com

innovatives-oesterreich.at

'innovatives-oesterreich.at' aims at raising sympathy and understanding for the benefits of innovation, research and technology by generating a user-driven landscape of questions and science in Austria.
Because questions are the starting point for any research and facilitate individual involvement,

innovatives-oesterreich.at collects questions from people all over Austria online. More than 50 partners, institutions, groups and initiatives are part of innovatives-oesterreich.at helping to collect questions. Key benefits are a number of interactive features for the Austrian scientific communities, like blogs and RSS feeds.

Contact: Christian Döögl
uma information technology gmbh, Vienna
www.uma.at
http://innovatives-oesterreich.at

Leaving breadcrumbs in the web

RSS feeds, podcasts, photo albums and public calendars, to create external links to the Scientific Museums of Corunna
Our recent website redesign focused on providing a straightforward access to the visitor info. However, as internet users often feel like Tom Thumb in a deep www forest, we decided to leave breadcrumbs leading to our site. So we use free web services to better spread our news and activities: a blog for press releases, a Flickr account for photos, a Google calendar for events and podcasts for science talks and museum audioguides.

E susana@casaciencias.org
www.casaciencias.org/mc2/
Museos Científicos Coruñeses (=mc2)

MUSEONLINE

Museon in The Hague has produced *MuseOnline*, as part of the new permanent exhibition *Your World, My World*. This exhibition on the origin and development of human life targets a family audience, therefore the information should be presented in different ways for different visitors. In the exhibition over 80 screens give tailor-made information supplementary to the objects, models and texts, also games, videos and animations. You enter *MuseOnline* with a barcode printed on the ticket. You are asked to give your age, sex, language, areas of interest and email address. Logging into the system automatically generates an email to your home address, containing a link to a personal webpage where you can relive your visit and find information not available in the exhibition - to make you feel somehow special, which is an essential part of a relationship.

Arjan Agema, head of Marketing & Communication
E aagema@museon.nl
www.museon.nl

Museum of Natural Sciences, Brussels

An online experience of the look, sound and atmosphere of our Museum: a trilingual active website about exhibitions, research and education, aiming at scientists and the general public.
There's always something new to be discovered in our Museum. This dynamism is reflected in our website, providing live coverage of scientific expeditions, news about research 'behind the scenes', information on exhibitions, guided tours, workshops, special events, etc. Diverse multimedia are offered for young and old to enjoy. Each temporary exhibition is accompanied by a tailored flash site.

Naturalsciences.be is developed every day by and for museum designers, scientists, educators, communication and IT specialists, and… our visitors!

E jiska.verbouw@naturalsciences.be
www.naturalsciences.be

National council of Science Museums

The corporate website of NCSM elucidates its objectives, activities and aspirations. It showcases some of NCSM's recent galleries and science parks and describes the services NCSM may provide.

In compliance with the recently implemented Right to Information act, NCSM posts all its administrative details, project details, purchase details and career opportunities on the net. NCSM teamed up with the Birla Institute of Technology & Science (BITS), Pilani, to provide a Masters Programme (MSc) in Science Communication. The course details are provided on the NCSM website.

E ncsmin@giasc101.vsnl.net.in
www.ncsm.gov.in
www.ncsm.org.in

Science Citoyen

The goal of the Science Citoyen website is to allow every citizen to inquire about scientific topics that make debate in society.

Created in 2001 by the Mission CST from the University Louis Pasteur in Strasbourg, the site presents today 17 questions.
Each of them contains basic scientific information about the topic but also data on its implications in society.
Different levels of reading are offered, to discover the topic or to go further. The net surfers are encouraged to ask questions to the scientists. Currently more than 100,000 pages per month are downloaded.

E science-citoyen@adm-ulp.u-strasbg.fr
http://science-citoyen.u-strasbg.fr/

Science Network, Western Australia

ScienceNetwork WA is an online knowledge protal developed by Scitech in partnership with the State Government's Office of Science, Technology and Innovation. Articles on the latest scientific breakthroughs, news about upcoming events, stories focusing on science education, and profiles of our leading scientists and scientific organisations can easily be found on ScienceNetwork WA. Activate your connections to science today and subscribe at www.sciencewa.net.au

E jennifer@scitech.org.au
www.sciencewa.net.au

Tom Tits Experiment website alive!

We are happy to have a user-friendly website that many of the staff-members can update and change. The exhibition/education staff can show: What is up now! They can change the daily program, show new experiments to do at home or make science documents with questions for visiting classes to print out. The shop staff can change what experimental material you can order from the website, and so on. The questionnaire mailbox is a great success and never ending story. Renewing the website is a permanent work!

E Ulla.Fresk@tomtit.se
www.tomtit.se

ZOOMBlox.at

ZOOMBlox interactively drives kids aged 8-15 into creating, using and communicating via blogs. ZOOMBlox.at want children to be actively involved

in producing content with max interactivity by and for children using a 'sandbox' where they can experiment with publishing: cool animations where little people moving around represent a blog, 'appropriate' content for children can be produced and proactively monitored by keywords as well as most updated and least updated blogs, all in flash.

Contact: Christian Döögl
uma information technology gmbh, Vienna
www.uma.at
www.zoomblox.at

1001 INVENTIONS: Discover the Muslim heritage in our world

www.1001Inventions.com provides a blogging platform that encourages discussions on the topics of Muslim contributions in today's society. The website highlights some of the misconceptions of what is generally believed as Muslim scientific and technological innovations. Topics include the Impact of Islamic learning on the West and the Origins of Alchemy of turning clay into gold!
The website is the first remote point of information for the 1001 Inventions project, which comprises a UK touring exhibition, a general reference book, free to download teacher's pack and educational posters.

E Info@1001inventions.com
www.1001Inventions.com

Notes

Although it was established as a scientific institution in 1820, Naturalis - the National Natural History Museum of the Netherlands - didn't open its doors in Leiden to the wider public until 1998. Now, seven years on, Naturalis is working on its third generation of websites, as Kees Hendriks describes.


The author

Website development: a core business in science communication

From the start, with its beautiful new building and highly interactive exhibitions, Naturalis managed to draw 250,000 visitors a year. It didn't take long before attempts were made to reach an internet audience too. This medium seemed ideal for the purposes of our mission: to inform the people of the Netherlands about geology and biology.
There is a certain degree of idiosyncrasy - which is also expressed in the architecture and interior of the museum - that we have tried to carry through into our web activities. Now, with a dozen projects behind us, it is impossible to imagine life without our website work. There is a whole department almost entirely dedicated to this and we receive ten times as many visitors over the internet as to the actual building.
The first generation consisted of websites that bore a close resemblance to encyclopaedias: the core consisted of articles and illustrations: www.natuurinformatie.nl; www.museumkennis.nl. This approach evolved into sites where we experimented with GIS (Geographical Information Systems), with hierarchic taxonomic structures and advanced search facilities: www.natuurkaart.nl; www.nederlandsesoorten.nl; www.doorzoeker.nl. Now we combine these earlier initiatives by linking databases, taxonomic structures, dynamic visitor interaction and GIS applications (www.walvisstrandingen.nl).

Lessons learned

For our work on the web we have developed a number of principles that have proven to be applicable time and time again:

- **Recycling of text content**

We seldom write new material for web use. Exhibition material, magazine articles, older publications: there are many sources of information waiting to be given a new lease of life.

- **Interaction with visitors**

We give visitors the opportunity to communicate. We let them ask questions; we organise communication between them and the scientist; we give them space to make a personal contribution to the site, for instance by adding images.

- **Collaboration with partners**

Collaboration is essential: to be able to test your ideas, to broaden your base, and to convince your funders. Partners can come from unexpected places. There are quite a number of scientific institutions in the Netherlands that would like to present themselves to a wider audience but don't have the means. The Geological Survey of the Netherlands, for example, participates in one of our websites.

- **Identification of the target group**

The clearer you are about who your target group is, the better your website will be able to meet their needs. Language, illustrations and interaction will all have a greater impact if they are geared to a particular audience. Of course this doesn't always bring in scores of visitors, but it does lead to effective communication.

- **Flat informal organisational structure**

The organisational structure of websites that we are involved in is highly informal and devoid of hierarchy. Tasks are defined and divided as clearly as possible and we choose our partners with care on the basis of the content they offer and the extent to which their organisational culture matches ours.

- **External financing of direct costs**

By seeking external financing for the cost of building sites, we are continually in dialogue with market developments. Funders have very distinct wishes that coincide with website development trends, communication and target group segmentation.

- **Internal funding of maintenance and development costs**

It is very important to funders that the initiatives they support make a lasting impression. To increase our chances of obtaining external support, it is imperative to guarantee best use of resources in maintaining and developing the sites, and to gear our organisation towards that achievement. In the wake of a sound set-up and an ongoing series of initiatives, the establishment of a unit specialised in work on the web is a natural development.

New bottles can hold old wine

One key shift in focus is from technology, of great importance eight years ago, to concept development and organisation, the primary basis of our work today. Particularly because it has become so easy to combine techniques, the initiatives we developed years ago are still very valuable. Within the newer sites, the older ones are the suppliers of content. Because if there is one lesson we have learned from our endeavours, it is that good content is still the core of all web activity.

Kees Hendriks
.naturalis
E Hendriks@naturalis.nnm.nl


The evolving website

Benjamin Benita is content webmaster at the Cité des Sciences et de l'Industrie, Paris. He is also responsible for the visibility of the Cité on the internet (especially on search engines), produces new contents, and is involved in a peace Franco-Israeli-Palestinan web project which he initiated in 2003. He introduces the Cité's use of blogs - simple & low cost tools to foster participation.

Blogs & science museums

All of you have surely already seen a blog and likely compared it to an on-line diary: you're right, they were initially build for this use. These on-line diaries seduced many people because they found here a way to express themselves on the web, without being a technical expert or calling a web agency and... at no cost! Indeed, a lot of companies now offer, for free, to create your own blog on their server (just type 'free blog' on your favourite search engine and you'll see!). Within several clicks you'll able to 'push' your ideas on the web and to offer your readers the opportunity to comment on your posts! It's simple, free, quick and efficient. You might have heard the term *blogosphere* that describes this ensemble of web pages of the internet. The blogosphere is a new source of information, a real (counter)-power place that competes with the big media websites, be aware!

What's the link with science museums? Well, it's in the way that a blog can serve their mission. The Cité des Sciences et de l'Industrie of Paris is experimenting with blogs on its website and the result is quite interesting: blogs can be used to create other things than diaries and they offer an easy way to foster science debates on the web.

Let me give you some examples to enlighten this assessment.

The French Economic & Social Council (CES) issues recommendations to the French authorities and also takes part in the legislative process on bills to be submitted for approval in the French Parliament. This Council was asked to produce a report about climate change. Once done, it was decided to diffuse it on the web and to open the discussion with the public, for better dissemination and comprehension. The project was done with the internet team of the Cité des Sciences and gave birth to an open blog. The public and the authors of the report have a place to discuss and interact, even through small video interviews caught with a mobile phone!

An expert from the CES in a short video made on a mobile phone. The video is on the blog and web visitors reply by posting text comments

Another example is the *Carrefour Numérique* (Digital CrossRoads): this department of the Cité des Sciences is a place of discovery and learning about new technologies. On line, the *Carrefour* offers two blogs devoted to two different purposes. One of them, *La vie du Carrefour* (Life at the *Carrefour*), publicises all the local activities of the *Carrefour*: forthcoming lectures, special events, workshops, etc. Here gain, internauts have the ability to express themselves ('I couldn't come to the lecture, can I find it online?'). The second one, *L'actu du numérique* (Digital news), vows to extend the *Carrefour*'s mission, but on line: discoveries, digital issues, news from labs, are brought to the public, who can ask for more information, debate or dispute the topic! The *Carrefour*'s team answers the questions directly and they can even come from the headmaster! 'Does it work?' you will ask. Well, yes! Some articles of the CES blog have more than 30 comments, and real discussions between experts and the public and between members of the public themselves are now online (it's in French but you can have a look here: http://www.changement-climatique.fr/blog-acces/sujet-de-la-semaine/changement-climatique-et-transition-energetique-depasser-la-crise). Same story for the *Carrefour* which found a way to inform and engage in dialogue with a community of people interested in new technologies.

For science museums, blogs are very simple tools to engage with their public, to interact and not only to deliver, while reducing the costs of the website's production. So, before creating a new flash website, think well!

Benjamin Benita
E b.benita@cite-sciences.fr
Economic & Social Council blog: www.changement-climatique.fr/
L'actu du numérique's blog: http://carrefour-numerique.cite-sciences.fr/blog-actu-numerique/
La vie du Carrefour blog: http://carrefour-numerique.cite-sciences.fr/blog-vie-carrefour

To reach a new audience and broaden its range, the German Heinz Nixdorf Museum created 'Computer.Brain' in 2001 as its first special, touring exhibition. After good experiences with 'Computer.Brain', there was no doubt that the new show - 'Computer.Medicine' - should also be promoted with a separate website, allowing the special exhibition to be independent of the permanent exhibition and avoiding competition between them. Dennis Girodo introduces the project and its rationale.

Stand-alone website for Computer.Medicine

A simple click on the introductory page of the HNF's website sends the visitor to a newly-created website for Computer.Medicine. This website offers all the important information on the exhibition, and its contents are presented in the same thematic structure as the exhibition: Anatomic theatre, Physical wellness, A view into the body, Operations on the body, Assistance for the body, and the special area Health card.

Aside from providing a topical overview, the site also offers information on the supporting programme which has been developed by the curators, our event managers and the educational department. This includes a series of lectures on the history of medicine as well as ethical, philosophical, and other medical topics. Furthermore, the exhibition will be accompanied by a number of events including a 'Family Day', symposiums for physicians, midwives, and emergency medical technicians, and workshops for specialists as well as enthusiasts.

The webpage thus helps to reach the people who are usually not addressed via restricted mailings or direct-marketing measures such as posters and flyers. We have noticed that frequently people stumble upon the Computer.Medicine website more or less by accident. This hard-to-reach group of visitors can be attracted to the museum by offering them the opportunity to book a guided tour via an online form for a specific date and time.

Another important aspect is the concept of the exhibition as a travelling exhibition. The website allows us to present necessary information on size, price, contents, and availability of the show for potential borrowers. Again, the website serves as a communication platform for very different users. Institutions who are interested in borrowing Computer.Medicine often come across our show while scrolling through international databases such as the Informal Learning Database or the Ecsite travelling exhibitions listing. The homepage gives them a first chance to assess Computer.Medicine and to see whether it is appropriate for them and if it fits into their programme - even before they contact us.

The website can also be used by editors and journalists to download the latest press clips and releases. They can even find additional photos from German Federal President Köhler's visit in July this year.

We followed the HNF corporate design when creating the website in order to create a coherent connection to our parent website, making it easier for users and visitors to make the connection between the new special exhibition and the HNF. One particular special feature was a virtual flight through the exhibition.

The flight showed the exhibition as it has been assembled at Paderborn in Germany, giving the user a chance to get an impression of the scale of the exhibition even before its execution was complete.

The flight has by now been replaced by a QuickTime movie presenting the final exhibition. Furthermore, we are planning to add the responses of visitors and the press, to include photos from the final exhibition, and to keep the site as up-to-date as possible over the coming months.

The advantages of an independent, stand-alone website are clear:

- the autonomous communication platform reaches diverse target groups who cannot be reached by conservative marketing
- the permanent exhibition does not overshadow the special/travelling exhibition, or vice versa
- there is more space for promoting the accompanying and supporting programme, which is undoubtedly as important as the exhibition itself.

HNF is interested in the experience of other museums, especially with respect to using new web design technologies - in particular those which allow users and visitor feedback and interaction.

Dennis Girodo:
E dgirodo@hnf.de
www.computer-medicine.com
www.computer-medizin.de
www.hnf.de

Dr Per-Edvin Persson, Director of Heureka since 1991, Ecsite President in 1997 and 1998, ASTC President in 2004 and 2005, looks backwards and forwards to formulate a philosophy of websites.

Philosophy of websites: do we need one?

At least in industrial countries, the world wide web is part of everyday life. Everything functions on the web. If we discuss a philosophy of websites for science centres, there cannot be any other questions than whether we have done enough on the web, and whether we are doing it fast enough.
Gone are those early days when science centres mainly used the web as a surrogate or complement for printed brochures. With the advent of advanced e-learning tools, virtual exhibitions, web-cast events, discussion groups, voting games, e-commerce and internet bookings, the world has changed for good. And the good news is: the web will enhance our visitation, not weaken it!

In just about five years, the internet as a primary source of information on Heureka for visitors to Heureka, the Finnish Science Centre, has grown from a marginal 2% to 37% of the visitors interviewed. This reflects the changes we see everywhere.
Thus it was more than fitting that the first Millennium Prize for Technology (one million euros) in 2004 was awarded to Sir Tim Berners-Lee for his work on developing the world wide web. There are probably few inventions that have changed our world as much since the Gutenberg printing press.

In today's world it is hard to conceive taking part in a cultural event or buying a ticket to something without having at least consulted the web. In most cases, the actual tickets, travel arrangements and hotel bookings will have been done electronically, on the internet. School bookings to many science centres fall into this category, as well.

Current use of the web

So what is the current use of the web by science centres? The web is used in contents production, in contents delivery, in marketing and in booking. Most science centre shops sell merchandise over the web. An almost historical example of using the web for production purposes was the password-protected intranet set up between nine museums and science centres to produce the 'Communication' exhibition in 1997-99. The effort was led by Heureka and served the network of Cities of Culture in Europe in the year 2000. The intranet functioned as a discussion forum for the participants and enabled each partner to play a role in exhibits development.

In the excellent volume 'E-Learning and Virtual Science Centers' edited by L. Tan and R. Subramaniam, an array of e-learning techniques, related to science centres, is presented. These include providing and linking to background information to themes covered by science centre exhibitions, actual interactive exhibitions on the web, quizzes and opinion polls influenced by virtual visitors, web-cast sessions, teachers' guides etc.

Eight Ecsite members were involved in producing the virtual exhibition Bionet in 2002 (www.bionetonline.org), which then continued with the interactive Decide games in 2006 (www.playdecide.org/decide_content.html). In both cases, the essential feature of the web - interaction - has been used, eg for opinion polls on ethical issues.
Presentations of exhibits and the phenomena they deal with has been done by many centres. An example is the children's exhibition area in Heureka, the web version of which can be found at the site:
http://martin.heureka.fi/exhibitions/lasten_heureka/lasten_heureka_final_eng.swf. However, examples of actual use of exhibits that physically reside in an exhibition hall via the web are few and far between. This is probably an area into which we should move next.

The Exploratorium has taken web use to a new level, and I seriously think the field should follow suit. I am of course referring to the web-cast sessions on topics of current scientific interest. In these sessions, performed before a live audience in San Francisco, experts on site, exhibits in the hall and websites plus live feed via the websites of other organisations are mixed into a diverse presentation of a particular theme. The good news is that the cost of the technology needed is not very high and within the reach of most science centres.
Web-cast sessions could be of prime importance for schools, and science centres could really enhance their educational role by more creative web use.

Marketing and information

An interesting combination of contents delivery and marketing is the voluntary registration of tagged visitors at The Tech in San Jose. If you give your email address, you will receive content updates based on the history of your exhibit, and information about upcoming events of potential interest.
I think that most of us would love to be able to build up a customised customer register! Even without individual tags, most science centres produce electronic newsletters, group emailings based on customer records and picture banks for the press on the web.

The science centre website is, of course, a primary source of information about the centre and its activities. In this sense, the website is an important marketing tool that both the media and the public use for finding out what's on, downloading news releases etc. And to check routes, parking conditions, opening hours and prices!

Many science centre shops sell merchandise over the web. At Heureka Shop the volume of ecommerce is marginal, but we have learnt that many customers use the shop website to check

what is available. And there is a small crowd that seems to do its Christmas shopping over the web.

Where should we go?

Against this rather overwhelming overview of web-related activities, the reader might think that the world is complete and we are doing our job. I would very much like to question that conclusion.
Science centres are part of the establishment and may become too slow-moving for the pace of the real world. We tend to honour business hours and labour laws, and sometimes real events do not. Maybe we are (small) elephants, after all?

When the disastrous tsunami hit South East Asia on Boxing Day 2004, the official communication channels of at least the Finnish Foreign Ministry and Embassy in Thailand collapsed. Information was not available on the extent of the catastrophe through so-called official channels in the early hours. Instead, informal self-organised content-related discussion groups on the web became providers of information and channels for help. On which side of the line are science centres?

My question is: are we as science centres aware of the ramifications of the virtual world out there?
There are thousands of science and technology-related discussion groups on the web. How many are we involved in? There are chatrooms, blogs, messenger services, webinars running by the dozen, wikipedias in a multitude of languages. In short, there are many specialised products on the web of relevance for us. Are we connected to them?

I have a feeling that life in the virtual world is becoming so complex and fast-moving that it cannot be dealt with by just running business as usual.
Science centres need to develop a strategy for achieving an up-to-date status on the web, and then probably another to remain current. I believe the solution will be similar to the strategy Heureka deployed when introducing the first personal computer programmes for public use at its opening exhibition in 1989. We asked a group of hackers to break into the programmes and awarded their results. In fact, we should have hired the best of them. So get the (probably young) nerds onto your staff, and get them now!

Bridge the virtual and the real world

We need to deepen and broaden the content we provide over the web.
We need to use the internet as the interactive tool it is. We need to build exhibitions that can be accessed and used over the web. We need to lower the walls between the physical site and the website. We need true interaction both in the virtual and real worlds, and a bridge between the two.

Some, even intelligent, people seem to think that going virtual will diminish the visitation at science centres. In the long run, the contrary is true.
The website will be used for orientation purposes and to prepare for or to enrich the visit. In the same way as no science director is afraid of having his centre featured on television, nobody should be afraid of coverage on the web. It is all marketing in the end.

People will continue coming to science centres essentially because a visit is a social event, quality time.

Reference:
Tan, L. & Subramaniam, R. 2005. E-Learning and Virtual Science Centers, Information Science Publishing, Hershey-London-Melbourne-Singapore, 457 pp.

Per-Edvin Persson
E pper@heureka.fi
www.heureka.fi

Surfing www.heureka.fi

Ailsa Barry, head of interactive media at the Natural History Museum, London, argues the case for developing a virtuous circle between a museum's online and physical spaces, so extending the visitor journey. This article is adapted from a paper presented earlier in the year at the Museums and the Web 2006 conference, in New Mexico (www.archimuse.com/mw2006/papers/barry/barry.html).

Extending the visitor journey

Established in 1881, the Natural History Museum, London, established its website in 1995, and was the first national museum to have a website in the UK. Visits to the website have now surpassed visits to the physical museum. Last year the website received over 3,700,000 unique users in comparison to just over three million visits to the physical museum. This proportion of online to on-site visits is not particular to our Museum: our neighbours at the Victoria & Albert and the Science Museum have similar statistics.

However, although museums increasingly realise that they are hybrid institutions with as many

The Natural History Museum's multimedia tour

virtual visitors as physical ones, historically there has been little attempt to strategically tie these two offerings together to create one continuous user journey. Instead, each area has been perceived as a distinct sphere with its own strengths, with only moderate overlap in the user journey.

This distinction between the virtual and physical space also extends to the information displayed in museum interactive kiosks. Although some museums have kiosks that allow visitors to bookmark objects within their collections and email themselves this information, these are commonly discreet packets of content that are not linked to their larger website - resulting in a curtailed user journey.

Historically there are myriad reasons for this. Many of the systems were planned and developed before robust content management systems allowed dynamic updating of content, both on the web and in kiosks. They were also designed at a time when rich multimedia could not be viewed over the web - making different offerings for kiosks and internet essential. The infrastructure and politics within museums have also worked against developing a coherent visitor journey. Many museums have distinct web and gallery new media teams sitting in different departments, as diverse as Exhibitions, IT, Library, Education, and Marketing. To organise and co-ordinate the virtual and physical offerings can prove difficult. Therefore although the website is seen as a means to geographically extend the Museum's reach, it is not commonly seen as a way in which to temporally extend the visitor's journey after leaving the physical museum - a way to develop a complete user journey that combines the physical offering with the virtual offering and extends from the web to the museum and back to the web, or vice versa - the essence of the 'virtuous circle'.

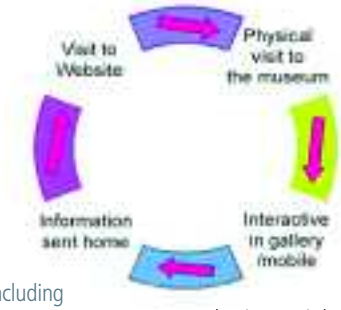
Outside the museum sector, other distributors of cultural content have seen the value of developing such a virtuous circle for their audiences, creating multiple ways for their audience to consume content and extend the experience in different media. In television, tie-ins ranging from voting, pod-casting and blogs have exploded in the last two years. Television producers, mindful of falling TV audience share, know the value of the internet as a way of keeping their audience interested and loyal between episodes, and are inventive about imaginatively tying the show back to the internet. With the burgeoning use of mobiles and the potential of payment, this re-purposing and extension of content into different media has increased dramatically.

Museums have been slow to recognise the value this adds in building a relationship with their visitors, and such tie-ins are often focused on specific projects, rather than used as a strategic approach for overall audience development.

The strategic development of the virtuous circle

In 2004, the Natural History Museum agreed on a strategy to develop and improve the relationship between the physical and virtual space, and to develop a virtuous circle that ensured the visitor journey was a continuum between the two museum offerings.

In order to achieve this it was agreed that all content development should consider multiple platforms and delivery channels when developed, including kiosks, internet, PDA, mobile and broadband, looking for opportunities for cross-fertilisation where possible.



The virtuous circle

For the Museum, the deliberate adoption of this strategy was important, as it was the first step in anticipating and understanding how audiences might wish to use and consume information in the future. The adoption of this strategy coincided with the restructuring of Museum departments and processes. The gallery interactive media team and the web team were combined, creating a common skill set and enabling material to be repurposed for all new media output.

Simultaneously a new project approach was implemented to ensure that all potential contributors to a project across Museum departments were brought together at the concept stage of a project, ensuring that a comprehensive approach to a project was taken and appropriate infrastructure, budget and resources put in place at the beginning.

Implementation

Since endorsement of the strategy, the Museum has implemented number of projects that reflect its objectives. A multimedia tour of the Museum's architecture and history, delivered via handheld iPAQ computers, allows the user to bookmark information. An email is then sent to the user containing specific links to relevant sections of the Museum website. In the evaluation of over 700 tours, 14% of visitors used the bookmarking facility, each bookmarking approximately three content points per tour. Visitors said that they found bookmarking helped them to build a record of their experiences, findings which have been supported by research carried out at the Exploratorium (Fleck et al, 2002).

In the 'Wildlife Photographer of the Year' exhibition 2005, the Museum also closely integrated its virtual and physical offer. Within the exhibition a kiosk allowed visitors to browse and bookmark any of the photographs on display. The links within the emails

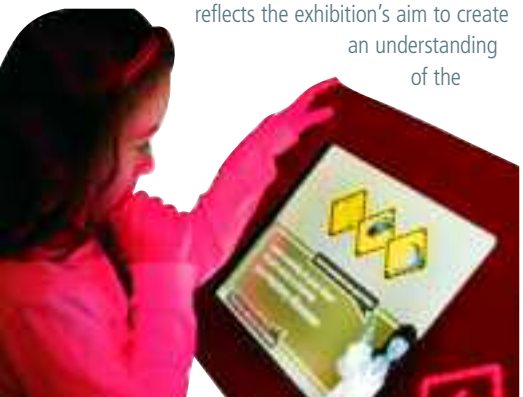
directed the user to the Museum website, which contained a virtual gallery of the photographs and in-depth information.

Preliminary evaluation showed that approximately 7% of visitors used the kiosk facility and clicked through to the website after receiving their emails, However, significantly, over half the visitors did not understand the bookmark facility. This identified the need for the Museum to help visitors understand the potential of new technology in a rapidly changing environment.

Implementing the Virtuous Circle within an Exhibition

The development of the Dino Jaws exhibition, launched in June 2006 and primarily aimed at families with children aged 4-11, offered the Museum the opportunity to build on these preliminary pilots and fully integrate the concept of the 'virtuous circle' into the exhibition development. In order to evaluate audience interest in developing further links between physical and virtual offering within the exhibition, the Museum conducted front-end evaluation with 51 family groups (Pontin, 2005). Over half of the parents were interested in having their children access gallery activities and information via their computers at home. The mix of information considered to be useful was fairly evenly distributed between additional information and links, personal mementos, eg photos of themselves with a dinosaur, and self-generated content, eg drawings and quiz scores. The evaluation gave further confidence to integrate the concept fully into the exhibition development.

The project team developed an interactive dinosaur detective trail, aimed at 7 to 11 year olds, that was integrated into the exhibition. The trail encourages the visitor to guess the identity of a mystery dinosaur that is assigned to them via their ticket. Each of the interactive media exhibits within the exhibition plays a part in this scientific 'detective trail'. The interactive activities, whether physical or screen-based hold clues to the identity of the mystery dinosaur. In order to understand the clues and correctly guess the dinosaur's identity, visitors are encouraged to explore and observe all the exhibits. This process of observation reflects the exhibition's aim to create an understanding of the scientific process, and an insight into how scientists gain their knowledge of dinosaurs.



To implement the trail, each ticket issued is bar-coded with a unique identifier that holds the identity to different dinosaurs. The interactives are activated by the barcode on the ticket. Some of the interactives capture the outcome of the activities, and this data is sent to the Museum website. At the end of the exhibition, children are encouraged to guess the identity of their dinosaur, and if successful they become a 'dinosaur detective'. They then use their ticket to log on to the Museum Dinoclub website to print out their personalised certificate, engage with other activities and explore links to related material across the site and externally.

Preliminary research has shown that the response to the trail has been positive and of the target audience, 16% log on to the website to continue the Dino Jaws experience after visiting the exhibition.

Next Steps and Lessons Learned

The convergence figures from the physical space through to the virtual space seem to be consistent at 15 - 20% of the physical visitor numbers. This figure is supported by other research. The Science Museum in London developed a way of saving visitors' biometric output to personalised web pages. According to Dave Patten, Head of New Media at the Science Museum, this project generated approximately a 15% click-through rate to the web pages from visitors (D. Patten, personal communication, 23 Jan 2006).

It is most likely that these figures reflect both the current public and the museum sector understanding of how information technology can enrich the museum experience post visit. As preliminary feedback suggests, some visitors are still unsure as to what to expect from such simple activities such as online bookmarking. Museums therefore need not only to offer opportunities, but also to educate visitors on how these information technologies can enrich and extend their experience. However, these figures are significantly higher than the average 8% click-through rate for email newsletters, considered a primary method of extending the visitor relationship and encouraging repeat visits (Natural History Museum, 2005).

As new technologies become integral to people's day-to-day lives, there will be an expectation that experiences can be consumed on a variety of platforms and through a range of media. Museums cannot afford to miss the opportunities afforded by this 'virtuous circle' - to do so would increase the discrepancy between how visitors interact with the museum environment and how they enjoy and learn from other sources. The virtual space offers opportunities for users to add their own experiences and debate via blogs, wikis or podcasts. As the environ of the museum changes, the ability to provide links between physical and virtual space will become increasingly important, if not fundamental. Visitors will expect to extend their engagement with events and exhibitions, and create and upload relevant links of related content. The links between the physical and the virtual space therefore will no longer simply sit within the governance of a museum but with the visitor. Museums need to anticipate ways in which visitors will create their own connections and deliver the tools and services that will facilitate this.

In order to achieve this, traditional gallery interpretation skills need to be reassessed to think 'virtuous circle' rather than the current understanding of the web as a separate entity. A fundamental change is also needed in the funding model. If museums are to offer an integral physical and virtual user journey, they need to ensure that their budgets and funding reflect this aspiration. We need to strategically shift the way we conceptualise our visitor journey to ensure that future visitors can move with ease between our virtual and physical offerings, and have a more personalised and richer experience.

Wildlife Photographer of the Year gallery kiosk

Alisa Barry
E a.barry@nhm.ac.uk

References

Fleck, M., M. Frid, T. Kindberg, R. Rajani, E. O'Brien-Strain, & M. Spasojevic (2002). From Informing to Remembering: Deploying a Ubiquitous System in an Interactive Science Museum. In HP Laboratories Technical Reports. Last updated March 6th, 2002, consulted January 14th 2006. www.hpl.hp.com/techreports/2002/HPL-2002-54.html

Natural History Museum (2005). Unpublished survey results. Research period Aug to Dec 2002. Statistics based on a sample size of 700 visitors.

Natural History Museum (2005). Email Newsletter Marketing 04/05, Evaluation Report, unpublished findings, Nov 2005.

Pontin, K (2005). The Natural History Museum Front- End Evaluation: Families and Dinosaur Diets Exhibition, Unpublished findings, 2005.

Marine Biodiversity Competition: closing date for entries is 30 March 2007

MarBEF (Marine Biodiversity and Ecosystem Functioning) has launched three competitions (Drawing, Mascot design and a Photographic competition) to promote marine biodiversity to children and adults around Europe. The winners can choose their prizes up to a value of 100 Euro - the prize must be connected to the area of marine biodiversity (DVDs, books, activity sets etc.)

www.marbef.org/outreach/kids/competition.php

African Science Communication Conference, Port Elizabeth, South Africa: 4-7 December 2006

The first ever African Science Communication Conference is hosted by the South African Agency for Science & Technology Advancement (SAASTA).
The conference aims to: bring together Science Communication role players and representatives from African countries and internationally to develop the field of Science Communication in Africa and forge/strengthen collaborative networks on the continent; establish Africa as an international role player in the field of Science Communication; and provide opportunities for skills transfer in the area of Science Communication.

Further information, including abstracts and registration details, are available from:
www.saasta.ac.za/ascc
E tryphina@saasta.ac.za

Designed by CUEN
T +39 081 2301118
E quaranta@cuen.it

for Ecsite - the European Network of Science Centres and Museums

Ecsite Executive Office
70 Coudenberg, 5th Floor
B-1000 Brussels
T +32 2 649 7383
F +32 2 647 5098
E info@ecsite.net
www.ecsite.net

Science and Society: Closing the Gap, Boston MA: 19-21 January 2007

A conference to explore the critical role of science and technology in today's world and develop strategies for better informing and involving the general public.
Science + Society: Closing the Gap is an important addition to the international calendar of science-related conferences. It's one of the first to involve the public in a high-level conversation-with scientists, educators, media professionals, policymakers and others-about effective and practical ways to improve science communication and enhance science literacy. Rather than target a specific group or membership, Science + Society invites the widest range of stakeholders to the table, recognizing that success depends on cooperation and conversation not only across disciplines but also between the scientific community and the public it serves. The conference is free, but space is limited.

Details and registration at:
www.scienceandsocietyconference.com/

The Ultimate Science Show Discussion, Heureka, Finland: 9-11 March 2007

This RAP (Roundtable Advancing the Profession) addresses best practice in science shows and demonstrations and how to make them available to the field. Participants are encouraged to bring their own shows, which will be performed for a live audience and subsequently discussed among experts.
The first day will be devoted to principles of show sales, exchange and intellectual property rights.

Primary contact:
Lea Tuuli, Director of Communication, Heureka
T + 358 9 8579220 - E lea.tuuli@heureka.fi

Logistics contact:
Harri Montonen, Senior Explainer, Heureka
T + 358 9 8579267 - E heko@heureka.fi

Ecsite Annual Conference 2007, Lisbon: 31 May to June

Now firmly installed in its early summer slot, the Ecsite Annual Conference 2007 will - as in 2005 and '06 - use new formats for sessions, more interactivity, more debates, more controversies, more networking opportunities…
AC2007 is hosted by the Pavilion of Knowledge.

For details contact Aliki Giannakopoulou:
E agiannakopoulou@ecsite.net

Ecsite Corporate Donors

An Ecsite Corporate Donor specifically supports the Executive Office and Ecsite network activities; in return the Donor gains prominence in the Ecsite Newsletter, on the website, and at the Annual Conference.

Barco Edutainment & Entertainment (E&E)
www.barco.com

Bruns International
www.bruns.nl

Electrosonic
www.electrosonic.com

LEGO® Education Experiences
www.legomindstorms.com/centers

Magian
www.magian.com

Sky-Skan
www.skyskan.com

nWave Pictures
www.nwave.com

If you wish to receive information about the Corporate Donorship programme, please contact the Ecsite Executive Office in Brussels:
E info@ecsite.net • www.ecsite.net