ecsite
NEWSLETTER

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: CONTENTS >>>

Technology and the human condition

By Maarten Okkersen,
Museon, The Hague, Netherlands

"The spoken word was the first technology by which man was able to let go of his environment in order to grasp it in a new way" - Marshall McLuhan

Technology is all around us; it is a seductive part of our modern lifestyle and it is changing at ever-increasing speed. From the invention of the steam engine through to the introduction of the iPad, new technologies have radically changed our lives and our perceptions of reality - perhaps more than may appear at first glance. New technology is the domain of geeks, technophiles and trendwatchers. Where nerds were once regarded as pathetic losers, they are now held up as sexy style icons and high-tech lifestyle magazines like Wired and Stuff gadgets give copious coverage to the trendiest gadgets - the more inessential the better.

Even philosophers are increasingly preoccupied by the relationship between man and technology - especially those technologies that have become part of everyday life in our society. This philosophy of technology sometimes lags behind the advance of technology itself, failing to predict ethical dilemmas that were unimaginable just a short while ago. Time and again we have to get used to interacting with technological devices in new ways and hence to change the way we think about technology.

How should we react when an individual announces on Twitter that he is going to commit suicide? What should we do if we can treat the symptoms of Parkinson's disease by Deep Brain Stimulation, but only at the risk of completely changing the patient's personality? We may soon be able to construct cyborgs that can reproduce independently, but should we let them? Technological advances, especially in the Life Sciences, are likely to raise ethical issues that will force us to reflect more and more frequently on our humanist tradition and the modernist canon.

Dramatic shooting incidents in American high schools have prompted the influential National Rifle Association to coin the slogan "people kill people, not guns". But is this true? Is technology really as neutral as gun producers claim? Our relationship with technology has become much more complex, raising the existential question of how we should define our relationship to technology and technological devices and, above all, how we may be able to shape that relationship. Does the development of technology follow a more or less autonomous path, largely beyond human control, as the technological determinists claim? Do we merely respond to such developments and organise society in such a way as to support them?

Perhaps, as Langdon Winner writes in his essay *Technology as Forms of Life*, we are simply "sleepwalking" through our existence, without any real thought about how we truly interact with technology. In Winner's view, we see new technology as a tool that we can use and then put away again, without realizing that the long-term use of such technology actually changes the way we look at the world.

Or is it in fact the other way round: are constantly texting teenagers actually driving technological advances in the mobile phone sector, as the social constructivists would argue? According to them, technology cannot be understood without analyzing the way it is embedded in its social context. Leading-edge French sociologist of technology Bruno Latour has pointed out the artificiality and absurdity of drawing a sharp distinction between man and technology. According to him, mankind and technology have

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Next issue:
Bringing adult audiences to science centres

gone hand in hand since the dawn of time. "Nobody has ever seen technology in isolation, just as nobody has ever seen human beings without technology".

Are the new technologies a threat to humanity, as neoconservative thinker Francis Fukuyama argues, or is it, as British-based ethicist Nick Bostrom suggests, our moral duty to make mankind more intelligent, more sensitive and stronger through the use of technology? Especially in the field of medical technology and biotechnology, the "bioconservatives", who want to intervene as little as possible in human nature, are ranged against the "transhumanists", who advocate the use of technology to improve humanity. In itself, this fundamental ethical debate demonstrates that man and technology are not opposites but are in fact increasingly closely interrelated.

Time and again, new developments in technology reconfigure the relationship between man and machine, almost automatically ensuring that the technology concerned comes to play an increasingly mediating role in our day-to-day lives. Our personal impressions, experiences, activities and interpersonal contacts are mediated, not just technically but intellectually, by telephones, computers, television, cars and planes. According to Dutch philosopher Peter-Paul Verbeek, this complex interrelationship between man and technology is not a threat to our individual human freedom, but rather an opportunity to shape our freedom and human identity within that relationship. He uses Peter Sloterdijk's controversial lecture Rules for the Human Zoo as an important source of inspiration for this updating of classical humanism.

Ultimately, what is important is to steer the development of new technology, driven as it is on the one hand by the technological field itself (the engineers and inventors) and on the other by society (critical consumers). These days, science museums and science centres are increasingly acting as knowledge brokers, promoting and facilitating enquiry-based learning and citizen science in the information society of today. We operate right at the cutting edge of these fields and are important intermediaries in the process of transformation. Together with our visitors, we seek to gauge the significance of new technologies, define our relationship to technology and shape our human identity. Technology is constantly changing and doing so at an ever-increasing pace; nevertheless, it will remain more than ever an inherent part of the human condition.

Maarten Okkersen, Head of Design and Productions at Museon, is the Guest Editor of this Ecsite Quarterly Newsletter.

Getting in touch again

By Claire Pillsbury, Exploratorium, San Francisco, USA

"And I found that of all the senses the eye was the most superficial, the ear the most haughty, smell the most voluptuous, taste the most superstitious and inconstant, touch the most profound and philosophical." - Diderot

From outward appearances, the child's instinct to point, grab and hold may appear to be less than philosophical, yet psychologists long ago established that active touch is central to perceptual maturation and understanding of the physical world. It is no accident that the hands-on experience is the calling card of modern science centers. Hands-on activities convey an authenticity and can entice visitors to invest extended time exploring phenomena and manipulating artifacts. Verbal descriptions and illustrations are important resources yet we recognize that the tangible experience has a unique emotional and intellectual primacy.

With the emergence of computer-based exhibits, science centers celebrated the new potential to exhibit simulations, mathematical phenomena, and abstract visualizations. However, compromises necessarily accompanied this new tool. The display was spatially separate from the roller ball and buttons and the typical single user interface forced companions to be observers. Some visitors who identified themselves as "bad-with-computers" were too intimidated to try any such exhibit. Other visitors would be attracted by any computer kiosk or exhibit resembling an arcade game regardless of topic.

Though touch screens became more widely available in the mid 1990's the first decade of experimentation in the exhibit environment was not confidence inspiring. The "intuitive" interface was, in reality, frustrating for most visitors. Touch screen calibration and touch detection technology were unreliable for the constant heavy usage of a science center. Fortunately the consumer market fueled ongoing engineering development into robust touch screen technologies. Research in the academic world on gestural interaction supported the development of multi touch capacities, pinching, zooming and rotating objects directly on the display.

In the last five years, more robust touch screens and the user-friendly touch-tables reawakened interest from exhibit developers. While computer kiosks are no longer a novelty in museums and most visitors are reasonably confident using them, many visitors more readily engage with touch screens and touch-tables. As people have learned to adapt to the myriad of technology protocols in their daily routines, the flourishing of touch screens is an example of how technology has adapted to people. The instinct to point, grab, and manipulate by hand is supported in the virtual world by responsive robust touch screens. Bill Verplank, human computer interface expert, has described the evolution of how we relate to computers from independent entity to tool to an expressive medium with which we can directly engage. The maturation of high tech into high touch offers the best of both worlds to science centers and their visitors - fascinating phenomena and visualizations to interact with and a mode of interaction that comes naturally at any age.

A visitor gets hands-on with an exhibit. Photo: W5@ Odyssey, Belfast, Northern Ireland.

Technology-enhanced museum visits

By Hub Kockelkorn, Museon, The Hague, Netherlands

"The more you know, the more you see." This statement by a famous Dutch art educator is, of course, correct: knowledge gives meaning and new dimension to our observations. This is as true of a walk in the countryside or in a city as it is when looking through a telescope or microscope. It is also true of a museum visit - knowledge gives context to exhibits and directs visitors' attention. Without this context and direction, there is a risk of museum fatigue which is the enemy of any museum in its mission to educate audiences. A visitor overwhelmed by museum fatigue is no longer open to learning.

The question is whether we can reverse the statement. Can people learn by seeing more? Can we promote learning by encouraging our visitors to be more active and persuading them to look more attentively at our exhibits? Okay, there are exhibits that will seize the visitor's attention simply because of their intrinsic value or astonishing presentation, but most items struggle to capture the average visitor's attention. The story we want to tell is conveyed through a whole series of exhibits but we do not know in advance which parts of the story will really captivate people. Can we do anything to retain people's attention for longer periods? We should certainly try to provide them with a context for their visit and direct their attention. This is where informatics comes in. We can use computer applications to give visitors explicit and implicit tasks for their visit and we can also use them to promote interaction between visitors and exhibits and spotlight the exhibits that are essential to the story we want to tell.

Guided by questions

A digital, interactive quest is a good way to seize attention, especially among children. Questions delivered on a fixed screen or handheld device can guide visitors to key exhibits and encourage them to focus on specific information. As they answer each question and receive direct feedback from the applications, we may assume they are learning. Personalizing the quest by giving visitors the chance to select topics might be expected to enhance educational returns on the experience. Surprisingly, however, a modest survey conducted at Museon in The Hague indicates that, in the case of children, personalization does little to increase enjoyment of the museum visit.[1] On the other hand, the same study seems to suggest that augmenting such interaction between visitors and exhibits with interaction between visitors would likely enhance both educational returns and enjoyment. This is an argument in favour of developing collaborative quests.

Sharing opinions

There are other ways to encourage interaction between visitors and exhibits. We can ask visitors for their opinions. Which mask or statue do you like most? Which one is the scariest, the most impressive, and the funniest? Any question will do, as long as it makes people investigate exhibits more closely. Give people a chance to express their opinions. It will force them to look carefully at the exhibits, formulate their views and make choices. You can also enable them to compare their preferences with those of other visitors. It will give their museum visit more structure and lead to greater personal involvement.

Questions as answers

There is another way to approach this sort of personalized museum visit. Social tagging is being explored mainly as a means to collect missing information, bridge the semantic gap between curators and audiences, and add value to existing museum information. But we can also use social tagging to enhance visitors' involvement and give them a context in which to consider cultural heritage. This is the approach adopted by the Museon's Roots 2 Share[2] project, which revolves around photographs taken in Greenland by a Dutch museum curator. As part of the project, a tool for tagging and storytelling has been developed to enable Greenland citizens to offer interpretations of the photographs. For the corresponding exhibition in the Netherlands, however, a completely different approach has been taken. There, visitors are being asked to select a photograph and answer questions about it. Why did you pick this one? What do you feel when looking at it? Which caption would you give it? But also: what questions would you like to ask about it? After all, learning starts with asking questions.

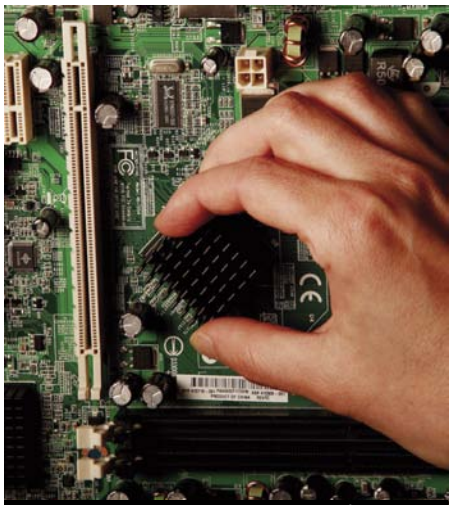
[1] L.M. Perloy, The influence of personalization on education and enjoyment in a museum. Master thesis, University of Twente, 2011.

[2] www.roots2share.nl and www.roots2share.gl

Roots 2 Share Project. Photo by Jeroen Toirkens.

A one-stop digital shop for science educators

By Sally Horspool, Consultant, Brussels, Belgium



An exhibit in the National Museum of Science and Technology in Milan (IT)

Learning about science and understanding the latest discoveries is an ongoing challenge for teachers and students alike.

Increasingly,scientists are being asked to talk about research with different non-scientific audiences.The Open Science Resources (OSR) project stimulates virtual science communication which encourages these two groups to exchange knowledge, experience and educational needs.

"The OSR Repository includes many images of exhibits and scientific instruments, animations, videos, lesson plans, student projects and educational pathways with guidelines for interactive museum visits," explains Jennifer Palumbo, Ecsite Projects Coordinator. "The OSR Toolbox equips researchers with everything they need to prepare lessons and share this material with others working in their field."

The OSR project is a collaborative initiative co-funded by the European Commission under the eContent*plus*programme. It recently won the IMS Global Learning Consortium's 2011 Silver Award, the 2010 EDEN/IMS Award for Leading Practice in Learning Impact, and most recently in December 2011, picked up the Opal Award 2011 for Quality and Innovation through Open Educational Practices.For more information, visit the OSR portal: www.osrportal.eu

The finest digital collections from science centres and museums

Teams from Europe's science centres and museums, pedagogues, educational technologists, metadata experts, user groups and standardization bodies come together on the Open Science Resources (OSR) portal (www.osrportal.eu/) to build a common digital repository of open science education objects. Guided by attractive educational pathways or virtual tours connecting the objects, users can easily navigate some of the finest digital collections across Europe and create their own information pathways.

Educational pathways may target different user groups within the project. These include students, teachers, families and museum visitors. The pathways are like a storyline connecting different objects which are physically located in different museums throughout Europe.

Social tagging to share information

One of the portal's most innovative features is its social tagging system which makes it possible for users to engage and share experiences with education and collection staff in participating science centres and museums.

Social tagging also allows users assert their own connections and associations between objects and phenomena to reflect personal perspectives and interests. In so doing, users re-discover previous activities they have performed, record salient characteristics of personal interest and support subsequent searches on the OSR portal.

Mapping the future

Aside from setting up an interactive online tool to improve science education resources and practices, project participants are also drawing a Roadmap for the future.

The Roadmap will propose a series of guidelines for designing science education learning content and activities and outline appropriate metadata to accurately describe educational and domain-related characteristics of the content.

Recommendations about how learning templates can be combined and appropriate processes and criteria to certify science education content will also emerge from the OSR project.

"The project's outputs will be made available to European educational actors and institutions, facilitating a project-long dialogue," Palumbo says. "The conversation is engaging experts and stakeholders during conferences, thematic meetings and consultations where they are negotiating the best way to standardize organize and reuse digital science educationcontent from science centres and museums."

A class interacts with exhibition elements at the Eugenides Foundation, Athens, Greece

The K-Jing experience

By Laurent Chicoineau, La Casemate, CCSTI Grenoble, Grenoble, France

Computers are not going to replace teachers. Some say the necessity for real, warm-blooded teachers is even stronger now than in the past. Of course, teachers' pedagogical methods must change and adapt alongside their evolving interactions with pupils.

Technology is following the path that researchers and practitioners in science education initiated: fortify teaching skills - not just one's knowledge of content, adapt pedagogy to the different needs of students, and make effective use of inquiry-based activities.

What about science museums? Will "edutainers", "infotainers", "mediators" - or however you identify an explainer - be replaced by computers and new digital interfaces on the museum floor? Of course not; as is the case in the classroom, the need for *human mediation* is increasing in science centres and museums even while a smorgasbord of technological devices take up residence alongside exhibits.

Much research and development is carried out on digital devices for visitors. Current investigations include: How can people's smartphones play a role in an exhibition tour? How can people tag or be tagged by exhibits in order to profile their visit? How do we design timely and interactive multimedia kiosks to integrate with exhibits? How can we use augmented reality or three-dimensional visualisation to bring objects to life? How can we get our visitors fired up about sharing their comments and criticisms of our offerings on Facebook, Twitter, Flickr, and other social networks?

At first glance, all these questions leave the human mediator in a grey zone. What role does the explainer play when visitors start using their smartphone as a guide through an exhibit? Maybe it's time to reflect on how we can use technology to compliment rather than compete with the explainer's role.

To tackle this issue, professionals from La Casemate, the Grenoble Science Centre (CCSTI), joined Museolab - an experiment by a multimedia centre near Lyon called Erasme. The experiment applies technology to cultural, educational and social domains. We started by asking a basic question: how can we adapt software such as PowerPoint or Keynote to increase the dynamism, adaptability and interactivity of explainers' presentations? This would be useful for tailoring exhibit content to visitors' needs and expectations based on age, language abilities, etc.

A new software K-Jing was borne out of Museolab. The name is a reference to D-Jing (a music mixing program) and V-Jing (a video mixer) where the K stands for knowledge (as in knowledge mixer). In practical terms, K-Jing is a client-server application, which uses the internet and portable tablet computers such as the iPad.

Before using K-Jing with the public, explainers select media (pictures, videos) and organise them in different libraries. Once chosen media are available on the server, an explainer can use them as they choose while walking through an exhibition, talking to a group, or conversing with only one or two visitors. So far, it's possible to integrate this multimedia enhancement with up to six different screens in an exhibition.

We've tested K-Jing for months in our new exhibition about art, informatics and science (XYZT, *abstract landscape*). Our explainers' feedback about K-Jing has been positive, even if some of them don't yet feel comfortable with an iPad in their hands while facing the public. An upgraded version of K-Jing is in development which will eventually be used by our colleagues at the forthcoming Musée des Confluences here in Lyon.

www.ccsti-grenoble.org
www.erasme.org

An explainer gives her audience the K-Jing experience at La Casemate, the Grenoble Science Centre (CCSTI), Lyon, France. Photo by Christophe Levet, CCSTI Grenoble

INMEDIATS project: French science centres reach out to 15 to 25-year-olds

By Nathalie Caplet,
Cap Sciences, Bordeaux, France

The INMEDIATS project (for INnovation, MEDIAtion and TerritorieS) was launched by a consortium of six French science centres: Cap Sciences, Bordeaux, (Coordinator), l'Espace des Sciences, Rennes, la Casemate, Grenoble, Relaisd'sciences, Caen, Science Animation, Toulouse, and Universcience, Paris.

Innovative digital tools to reduce the social, cultural and geographical inequalities of scientific culture, grabbing the attention of the difficult-to-reach 15 to 25-year-old set, and experimenting with innovation at the heart of science centres: France's INMEDIATS project is striving for these ambitious goals in a collaborative consortium of six science centres.

The project was recently granted 15 million euros as part of the French government's 'Investments of the future' programme. The project is posed to lead the way toward a new generation of French science centres which are more inclusive, participatory, reactive, and in tune with digital media.

It is essential that science communicators captivate the attention of young people because youth are the future stakeholders of society and they will need the keys to unlock the future of science, technology and innovation. At the moment, in France as in many other Western countries, youth are showing a serious lack of interest in science and technology as a career choice.

Fifteen to 25-year-olds are deeply involved with the Internet and new technologies, not just as consumers, but also as creators, editors and writers. The rich possibilities offered by digital technologies are an opening to reach young people on their own turf. Because of its prevalent use across populations, the Internet and mobile technologies are an effective means to connect with and excite populations who do not typically visit science centres.

In addition to the government grant, local authorities, research institutions and industries committed themselves to providing another 15 million euro to implement activities during the project's four-year lifespan.The overall budget will cover building infrastructures, setting up equipment as well as developing and experimenting innovative content and services. The idea is that within an open innovation framework, each partner can experiment with mediation tools and share experiences (see box for more on these tools).

INMEDIATS'mediation tools will include:

The Studio:offering the chance to live blog and broadcast experiences

The Mediamobile: a specially equipped vehicle to bring technology to the French territories

Virtual worlds: experimenting through interactive, three-dimensional and virtual environments

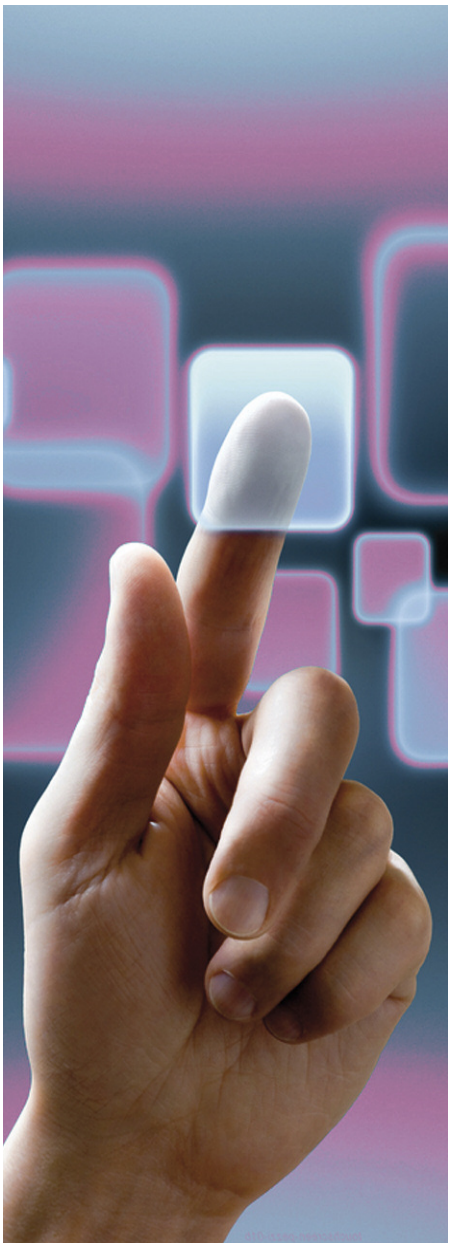
Navinumand SciencesOnautes: a visitor relation management device, profiling systems for personalized content, linking in-house and Internet experience through personal accounts

LivingLabs and FabLabs: ICT experimentation, computer-aided manufacturing and educational workshops

Serious games: educational computer games

Remarkably, INMEDIATS was initiated by its participating French regions and involves collaboration between six of them in a traditionally centralized country.
Not only does it aim to be more participatory and less "top-down", but it is also trying to develop a real collaborative approach among science centres.

The initiative is not only an opportunity to develop scientific culture in France, but also a vehicle to emphasize the role of science centres in innovation.
In their own processes of cultural mediation, science centres are in the unique position of experimenting advanced technologies and media with their visitors - a process that can yield insights which are transferable to other fields such as tourism and education. It's an exciting new avenue for French science centres.



Is "new technology" really new in science centres and museums?

By Andrea Bandelli, Consultant, Amsterdam, the Netherlands

"New technology", especially when applied to science centres and museums, is almost always an oxymoron. A certain technology may be new for the centre or museum, but it has usually been tested and implemented countless times prior to hitting the floor or website of that museum or centre.

It is rare to see museums and centres liberally experimenting (in the sense of trying something out, not of testing a hypothesis) with technology. Often, technology is used as a tool or instrument to achieve a certain goal, for example to provide more information about an exhibit, collect visitor commentary, or enhance a hands-on experience. What museums and centres actually need are reliable technologies, rather than new ones. They may choose to use some of the latest gadgets (which quickly become obsolete), but it would be inaccurate to call this "new technology".

On the other hand, it is interesting to reflect on what we usually call "new technology" - including the process that leads to it - and consider what role museums and centres can play.

Paul Saffo, forecaster and former director of the Institute for the Future, says if you want to look into the future, you'd better first consider at the past: "Look back twice as far as you look forward" or even further back[1]. By searching for parallels and patterns in the past, we can identify those elements that triggered a change and that can help us better understand how comparable events in the present can, in turn, shape the future.

Development of new technologies, in particular those created for popular consumption, follows a similar pattern: the technology itself usually dates back a few decades, but it is the way we use it that makes it "new" in our eyes. The history of personal computing could be described as a series of technological adaptations of which the key popularizing element was the ability to cater to emerging human behaviors - social and communication purposes in particular.

Museums and centres often want to use "new technologies", but miss a critical role where they could excel. Instead of passively using acknowledged technologies to spice up certain services, museums have the chance to develop, or co-develop, authentically new technologies by focusing on what they do best - allowing people to socialize and communicate in a pleasant, stimulating environment.

Science centres and museums preserve, exhibit and witness the evolving roles of technology in society. The bases for inventing what we term "new technology" are presented in these venues: at science centres and museums, we can "look back" as far as we want at the history of technology. With this knowledge museums and centres, and their visitors, can develop innovative ways to understand and interact with technology. What we need now is a more risky and adventurous attitude with the awareness that museums shape the way we - "we" meaning not only the visitors, but the museums too - interact with science and technology.

[1] "Six Rules for Effective Forecasting" by Paul Saffo, Harvard Business Review, July 2007.

New technology: It's a social thing.

OIL CHANGE: RENEWABLE ENERGY AS AN ALTERNATIVE?, WISSENS.WERT.WELT - BLUE CUBE & KIDSMOBIL, KÄRNTEN, AUSTRIA

Green jobs, CO2 footprints and e-mobility are concepts that we encounter daily in the media. This workshop aimed at children in grades 6 to 10 asks how individuals can care for the environment. Students analyse their own consumption habits related to food, housing, transport in conjunction with global environmental implications.

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Children analyse their respective ecological footprints at the kick-off of the Oil change workshop at Blue Cube, Kärnten, Austria.

THE ODYSSEUS PROJECT, EUROPEAN PHYSICAL SOCIETY ASSOCIATION AND SPACE EXPO

The Odysseus project is a pan-European scientific contest on space exploration themes, aiming to engage and inspire students. The contest, open to students aged 14 to 18 year, opens in July 2012 and closes in January 2013. Participants must formulate a question and a research strategy. Part of the closing event will be a small exhibition of some of the students work.

The Odysseus competition is organized by Signosis, Ellinogermaniki Agogi Scholi Panagea Savva AE, European Physical Society Association and Space Expo.

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www.odysseus-contest.eu

THE JOURNEY INTO THE KINGDOM OF THE SMALLEST PARTICLES, DASA, DORTMUND, GERMANY

The new zone in the DASA - Working World Exhibition deals with Nano technologies. It shows the virtual laboratory of a scientist working in cancer research. A 3-D-screen presents fascinating pictures of molecules and these pictures can be seen without special glasses. You can also discover a scanning tunnel microscope and immerse yourself into the world of the smallest particles. Microscopic images of cells complement the presentation.

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Pondering a molecule at DASA in Dortmund, Germany

ZONE-I, MUSEOS CIENTÍFICOS CORUÑESES, A CORUÑA, SPAIN

Zone-i is a new space dedicated to thinking about scientific news. It' s a place where visitors use digital tools, play, are exposed to information, carry out activities, and give their opinions by voting on science issues that affect their lives. The room has computerised infrastructure which means content can be changed and adapted according to what's in the news.

Contact: Susana Pérez
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http://es.mc2coruna.org/2011/03/zona-i.html

Visitors share opinions about science topics at Zone-I, Museos Científicos Coruñeses, A Coruña, Spain

BRICKS ACADEMY, IN AFFILIATION WITH DUBAI CHILDREN'S CITY, DUBAI, UNITED ARAB EMIRATES

Bricks Academy is a new leading edutainment project providing innovative skills development programs to children using LEGO bricks. Children engage in interactive activities to enhance their communication, problem solving, and critical thinking and creativity skills. It revives the concept of learning through playing to develop children's soft skills.

Contact: Naila AL Mansoory
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www.bricksacademy.org

Learning through play at the Bricks Academy

GO BUG HUNTING WITH YOUR MOBILE, NATURAL HISTORY MUSEUM, LONDON, UK

Identify common bugs straight from your phone with the new OPAL Bugs Count app from the Natural History Museum. You can also use the app to contribute to valuable research by submitting photos of six important species whenever you spot one. It's free to download and available now for iPhone and Android users.

www.opalexplorenature.org/bugs-app

Explore the bug world with facts and identification tips using the OPAL Bugs Count app from the Natural History Museum, London, UK

DESIGNING OUR FUTURE, MIRAIKAN, TOKYO, JAPAN

To engage the public, Miraikan is offering a series of events where experts discuss the future of Japan after the country's unprecedented earthquake in spring 2011. The on-going series, "Towards democratization: Which energy to use, what science and technology to promote, which information to publicize," offers new perspectives which may influence people's values.

Contact: Yuko Okayama
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Experts and visitors discuss science and technology issues at Miraikan, Tokyo, Japan.

NANO-LAB: AN ACTIVITY CENTRE ON NANO SCIENCE & TECHNOLOGY FOR VISITORS AT SCIENCE CITY, KOLKATA, INDIA

The hands-on activity based NANO-LAB was opened to visitors and students on 5 November 2011 at Science City, Kolkata, India - a unit of the National Council of Science Museums. NCSM fosters public awareness, engagement and understanding of Nano-scale science and engineering through this new NANO-LAB. The lab aims to link science centres and science education institutions with research institutions engaged in active Nano-scale science and technology.

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QUESTACON - AUSTRALIA'S NATIONAL SCIENCE AND TECHNOLOGY CENTRE

Questacon's new digital technology capability has enabled us to reach over 6,500 people in our first pilot year. Through high-definition video conferencing, we deliver interactive digital outreach programs to schools across remote and rural Australia, and host video conference-based special events and projects that link Australian and international students with leading scientists and with each other.
Questacon is now driving the uptake of digital technologies within the regional science centre sector and we are continuing to expand our suite of digital programs.

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www.questacon.edu.au

Questacon hosted a video conference between Australian high school students and a leading CERN scientist to discuss the Large Hadron Collider as part of the 2011 National Youth Science Forum.

A MODEST YET POWERFUL WIND TURBINE AT SCIENCE CENTRE AHHAA, TARTU, ESTONIA

Science Centre AHHAA has erected an 18.5 metre tall wind turbine in front of its new building in Tartu, Estonia. The silent wind turbine weighs 120 kilogrammes and is also supplied with solar panels. It is capable of producing a total of 700 kWh of energy annually and will soon inform the centre's visitors of the outdoor weather via an indoor screen.
Video about erecting the wind turbine and some photos can be found online:
http://ahhaa.fotoring.eu/?p=1358

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POPULAR SCIENCE ONLINE TV CHANNEL, PARQUE DE LAS CIENCIAS, GRANADA, SPAIN

Parque de las Ciencias has created a tool to promote science through new technologies, called Knowledge Centre, financed by the Plan Avanza (Ministry of Industry, Tourism and Trade).
One of the best examples of it is the Popular Science Online TV Channel which contains a lot of videos about the museum, exhibitions, interviews, conferences, and short reports about scientific curiosities.

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www.parqueciencias.com/parqueciencias/canaltv/

Popular Science Online TV Channel, Parque de las Ciencias, Andalucía - Granada, Spain

LISTINGS

PALAEO-SIMULATOR, DINÓPOLIS, TERUEL, SPAIN

Dinópolis has a new attraction: a virtual simulator that allows visitors to experience a new adventure with dinosaurs thanks to new technologies.
The simulator has six degrees of motion freedom (creating great sensations of movement) using two mobile platforms.
The 3-D digital projection has a magnificent surround sound and special effects generation.

www.fundaciondinopolis.org
www.dinopolis.com

HIGH TECH ROMANS, LANDES MUSEUM, BONN, GERMANY

Two thousand years ago, the Romans ruled over a great empire. How did they become so successful?
The Romans were curious, inventive and practical. They borrowed many ideas from nearby cultures. They took existing inventions, adapted them to suit themselves and then systematically exported them all over the empire. The result was a widespread array of architectural and engineering masterpieces unequalled for many centuries afterwards. This exhibition combines more than 30 interactive exhibits with exciting archaeological finds in 20 showcases.
The exhibition was created by Technopolis®, the Flemish Science Centre and Museon.

Contact:
Patricia Verheyden
patricia@technopolis.be

XPLORE HEALTH ACTIVITIES AT CENTRE FOR LIFE, NEWCASTLE UPON TYNE, UK

Using materials developed under the EU-funded project Xplore Health, students carry out a bacterial transformation experiment, transforming E. coli bacteria by adding a plasmid containing additional genes. They also take part in dialogue activities where they discuss the ethical implications of biotechnology. Students also have the chance to meet real researchers and see how their research is linked to the activities they have taken part in.

Contact:
Sarah Robinson
Sarah.Robinson@life.org.uk
www.life.org.uk/
www.xplorehealth.eu/

NEWS FROM ECSITE

ECSITE'S NATURE GROUP NEEDS YOUR RIO + 20 INPUT

RIO+20 United Nations Conference on Sustainable Development

In June 2012, experts will meet to set the agenda for a sustainable future at the UN Conference on Sustainable Development (Earth Summit 2012), better known as Rio + 20. Science centres and museums are on the front lines of public education about sustainable development. Keep the momentum going by sharing your efforts and ideas with the science communication community.

Be involved in the campaign - in two simple steps

1. We want your contribution to the *Science centres and museums: Inspiring people to action for the planet* catalogue. Just fill out a fact sheet for each sustainability education action your institution has advanced (now and in the past). The diverse actions of science centres and museums in Europe will be assembled into a knowledge-sharing catalogue to be available in www.ecsite.eu 's Resources section.
Your submissions will also be uploaded to the Planet Under Pressure website. See page 12 for more information.
What types of actions should you report for the catalogue? It could be - an exhibit, a special programme, a film, a question-and-answer session with a scientist - any material related to helping people better understand and protect the environment. Please download the Catalogue of Actions form, fill in the information, and return to Michèle Antoine, Chair of Ecsite's Nature Group, by **28 February 2012**:
michele.antoine@sciencesnaturelles.be
2. Record a 30-second to 1-minute video clip of your sustainable development action. This could be an explainer demonstrating an exhibit, footage of visitors learning about environmental issues in your centre or museum, or any other creative approach you can think of. The clip is not expected to be professional quality (you can use your iPhone, a small video camera, a photo camera, etc). You can also speak in your national language(s) - just please provide a transcript in English so we can include subtitles.
All clips will be compiled into a professionally-produced mini film depicting the sustainability education efforts of science centres and museums around the world. The film will be made available for use as a promotional tool for members and will also be shown in conjunction with Rio + 20 events in Rio de Janeiro, Brazil. Please return your video clip along with the Video footage form by **30 March 2012** to Emma Wadland, Ecsite Communications Officer and Webmaster: ewadland@ecsite.eu. Heavy files can be sent using Wetransfer: www.wetransfer.com/. You may also send via post to:
ATTN: Rio + 20, Ecsite Executive office, 70 Coudenberg, 5th floor, 1000 Brussels, Belgium.
All necessary forms are available at:
www.ecsite.eu/news_and_events/news/be-part-ecsites-rio-20-campaign

FEAST The new project FEAST, coordinated by Ecsite, began in December 2011. Project partners met on January 10 and 11 for the kick-off meeting hosted by Teknikens Hus science centre, in snowy Lulea, Sweden. The first step for project partners is to develop 5 FEAST Workshops and related Activities on different scientific topics, aimed at parents, which will enhance their competences as informal science educators for their children. www.ecsite.eu/activities_and_resources/projects/feast or contact Marzia Mazzonetto, Ecsite Project Manager mmazzonetto@ecsite.eu.

ENGINEER Engineer project partners are strengthening collaboration and creating meaningful content for the teaching modules that will be used by schools in ten countries to get children involved in engineering challenges in the form of collaborative projects to solve daily life problems. In this way, children learn to collaborate in a team, while carrying out an engineering task. To learn more about the project visit:www.ecsite.eu/activities_and_resources/projects/engineer

INPROFOOD The INPROFOOD project is off to an exciting start on food safety measures and research. After a successful kick-off meeting at the University of Hohenheim, work on the first part of the project's objectives has begun. Research partners are looking into the current state of affairs of food safety as a first step in exploring the issues with stakeholders and creating meaningful dialogue opportunities. For more information, contact: Jennifer Palumbo, jpalumbo@ecsite.eu, www.ecsite.eu/activities_and_resources/projects/inprofood

OPEN SCIENCE RESOURCES The Open Science Resources project is enjoying international success and recognition in its final months of operation. After receiving the prestigious Open Educational Quality Initiative (OPAL) Award for quality and innovation through open educational practices, the OSR was presented at the American Association for the Advancement of Science Annual Conference in Vancouver, Canada, February 2012. Explore the portal and contribute your own resources: www.osrportal.eu

Looking ahead to the Ecsite Annual Conference: Space and Time, Unlimited

Cité de l'espace, Toulouse, France, 31 May - 2 June 2012

Exhibit development, digital learning, fundraising, inspiring visitors - you name it, this year's conference has a session to match every need and inquiry. The main conference sessions take place from 31 May to 2 June 2012 at a conference centre in central Toulouse. Visit the conference website for the full digital programme: www.ecsite.eu/annual_conference/programme/sessions Registration opens in late February.

Ecsite's biggest-ever Pre-Conference Workshop series, 29-30 May 2012

Two-day workshops 29-30 May

- Equipping the explainer
- Researching and evaluating your institution
- Creating accessible experiences
- Building a fundraising strategy

One-day workshops 30 May

- Creative LAB
- Communicating European achievements in space
- "Going Green": More than a slogan
- Designing interactive mobile experiences

All workshops take place at Cité de l'espace, except "Going Green": More than a slogan which will be hosted at the Gardens of the Natural History Museum of Toulouse. Find out more on our website: www.ecsite.eu/annual_conference/programme/pre-conference.

Grundtvig Grant available for attending the Annual Conference

If you're planning to attend one of the Pre-Conference workshops as well as the full three conference days, then you might be eligible for a Grundtvig Grant from the European Commission. The Ecsite Annual Conference is officially accredited as a training opportunity in adult education. Contact your National Agency to apply: http://ec.europa.eu/education/lifelong-learning programme/doc1208_en.htm. For more information on the grant, see the Comenius Grundtvig database http://ec.europa.eu/education/trainingdatabase/search.cfm. The code for the course is: BE-2012-197-001. Apply via the scheme "Visits and exchanges for adult education staff". Contact Aliki Giannakopoulou for invitation letters: agiannakopoulou@ecsite.eu.

Book your 2012 Business Bistro booth

Share commercial activity with about 1,000 delegates at the largest science communication conference in Europe. Be sure to book a booth at the Ecsite Annual Conference Business Bistro. With 55 booths and all coffee breaks hosted there, the Business Bistro is the commercial and social hub of the conference. Contact Aliki Giannakopoulou for more information: agiannakopoulou@ecsite.eu. Visit www.ecsite.eu/annual_conference/business-bistro for conditions, the floor plan and the exhibitors guide.

Save on flights to the Ecsite Annual Conference via Air France and KLM Global Meetings

Come to the 2012 conference and benefit from discounted flights by booking online via Air France and KLM Global Meetings. If you buy your ticket via the Air France & KLM Global Meetings website, your electronic ticket will carry a special mention which justifies the application of the preferential fares. Visit www.airfranceklm-globalmeetings.com to: access preferential fares granted for this event, make your online reservation, issue your electronic ticket, select your seat and print your boarding card. Use these references:

Event: Ecsite Annual Conference 2012
Event ID: 14142AF
Valid for travel from 24/05/2012 to 7/6/2012
Event location: Toulouse, France

Discounts are applied to a wide range of airfares on all Air France and KLM flights worldwide if passengers are travelling on the following classes of travel: Espace Affaires [Business] and Economique [Coach]. A -10% rebate is applied on published non-restrictive public fares. A reduction of -5% is granted on restrictive-discounted fares.

Sponsorship Opportunities

Choose one of our new sponsorship packages and show everyone what your company has to offer the world of exhibitions, technology, services and all other things related to modern science communication. For more details on the available packages follow this link: www.ecsite.eu/sites/default/files/AC2012_Sponsorship_opportunities_0.pdf

Planet Under Pressure, London, UK, 26-29 March 2012

In advance of the Earth Summit 2012 (Rio+20) the world science community is preparing policy documents on nine major issues relating to Global Environmental Change (GEC). These will be significant in framing what is said when the world's scientists meet in advance of Rio+20 at the Planet Under Pressure (PUP) conference in London in March next year: www.planetunderpressure2012.net/. The International Council for Science has launched the first four of these policy reports, and all of them link to the future management of biodiversity and ecosystem services: **www.icsu.org/rio20/policy-briefs**.

12th international public communication of science and technology conference (PCST), Florence, Italy 18-20 April 2012

Content will cover science journalism, science communication and science in society research, science museums, public engagement with science and technology, and communication activities by research institutions. Attend the Ecsite Annual Conference and the 12th PCST Conference and get a ten per cent discount on registration for both events. Look for details on both event websites. **www.pcst2012.org**.

7th Ecsite-Technopolis® Science Center Academy, Mechelen, Belgium, 16-18 April 2012

A select number of participants and experienced science centre professionals will once again contemplate on the question of how to set up a low cost high quality science centre. This question will be treated in depth during an intense programme consisting of sessions on an array of topics such as mission statements, business plans, exhibition design, marketing, and a look behind the scenes of Technopolis®. Coming from all over the world, the participants face different challenges, making the Science Center Academy highly interesting both for participants and experts. For more information, contact: +32 (0)15 34 20 00, **www.technopolis.be/eng/index.php?n=2&e=3**.

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