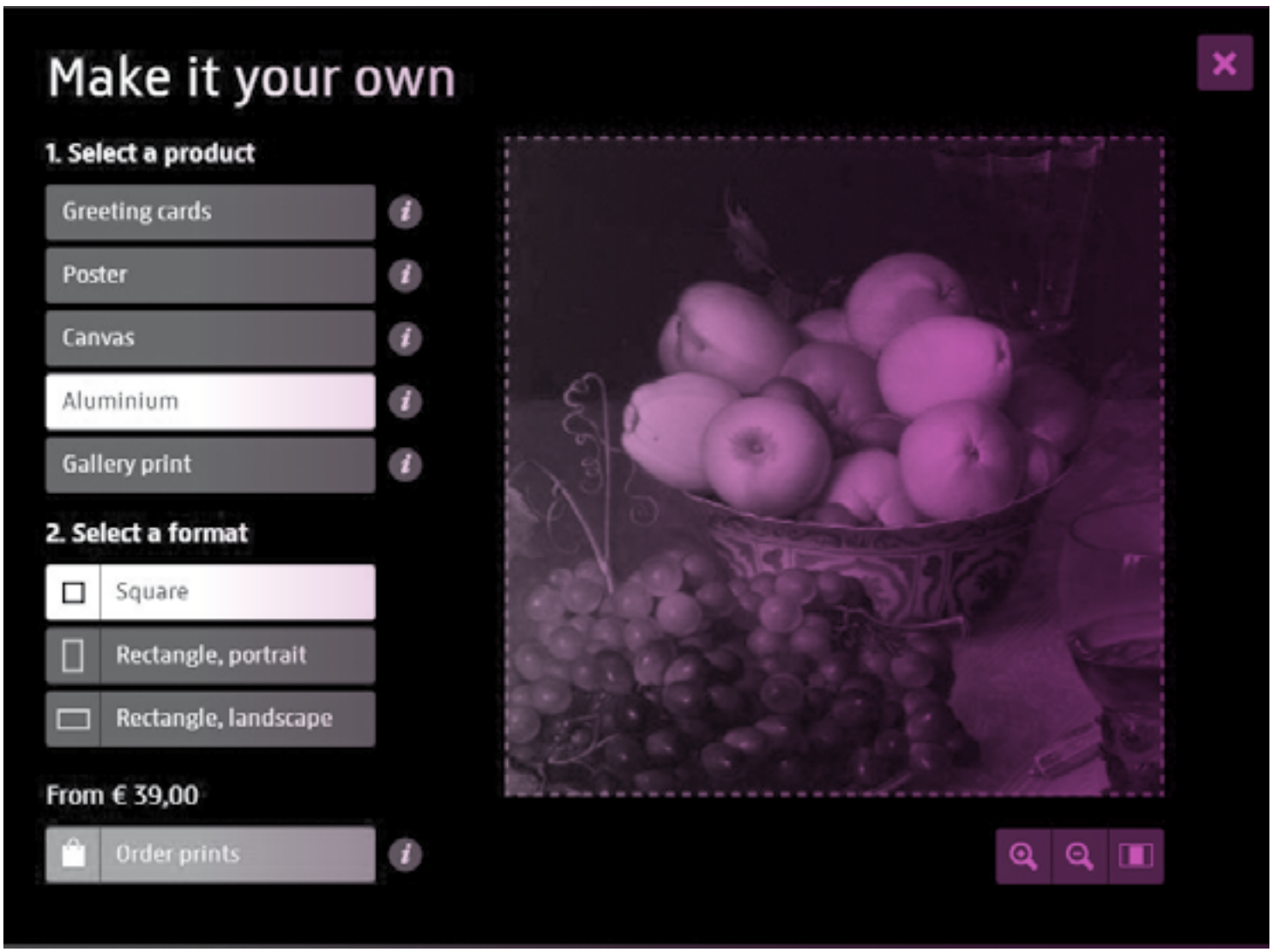
ecsite

Mapping european science engagement networks

THE ECSITE MAGAZINE
FALL 2014 | ECSITE.EU

REVEALING THE MOTIVATIONS OF ONLINE MUSEUM AUDIENCES

Rijkstudio, a personalized online tool allowing visitors to create their own collection and download it for creative projects – or buy posters, cards etc. of their favourite pieces.
www.rijksmuseum.nl/en/rijksstudio



What are visitors looking for when they visit museum websites?

RUI GUERRA
CO-FOUNDER OF INTK,
A CREATIVE STUDIO
SPECIALIZED IN DEVELOPING
DIGITAL STRATEGIES FOR
CULTURAL ORGANIZATIONS

Museum professionals have access to a myriad of tools that can reveal interesting information about online audiences. Softwares like Google Analytics provide detailed information about website visitors and their behaviour during their visit. Although this information can be useful to understand online audience behaviour, it often does not answer fundamental questions such as: "What is the motivation behind a museum website visit?"

In 2012 the Indianapolis Museum of Art[1] (United States) conducted a series of studies to answer that exact question. The results of their studies are published online[2]. In short, the museum team collected feedback from visitors in order to identify online motivational categories. With a list of those categories the team conducted an online survey asking visitors why they were visiting the museum website. They used the following multiple choice question: Today, I am visiting the website to:

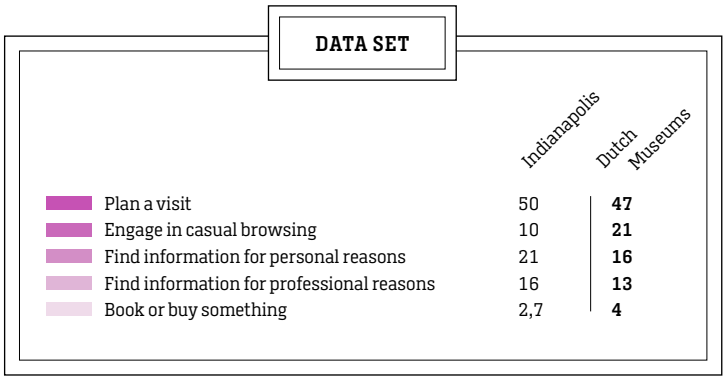
- **Plan a visit to the museum**
- **Find specific information for personal interest**
- **Find specific information for research or professional purposes**
- **Engage in casual browsing without looking for something specific**
- **Make a transaction on the website.**

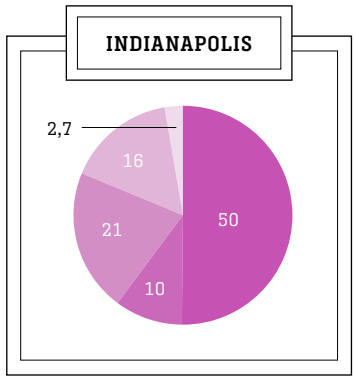
4,074 responses were collected. The Indianapolis Museum of Art published their research with the hope that the results would provide a reference dataset, and a replicable model for other museums interested in conducting similar studies to inform their own web activities.

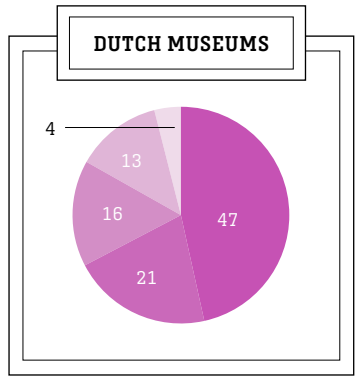
That is exactly what 15 Dutch museums did in 2013, in the context of a research project dedicated to evaluating and understanding online success [3]. The museums used a bilingual survey in Dutch and in English. The survey was live for 30 days and was viewed by 1,300,000 online users. It got a 3.1% response rate, with 41,000 collected responses. I was involved in assisting participating museums in the collection and analysis of data. Three Ecsite members participated in the survey: Museon, Naturalis and NEMO.

The results were similar to those of the Indianapolis Museum of Art. A noteworthy exception was that in the Dutch research the proportion of casual browsing was significantly higher. A possible reason for that discrepancy is the fact that in the Dutch survey the option "Engage in casual browsing without looking for something specific" was presented as the first option.

Let me discuss the key findings. While participating institutions were museums, I think that interesting lessons can be learnt for all organizations combining a physical venue open to the public and an online website accessible to all, like science centres, zoos, botanical gardens, cultural centres...







Approximately half of online museum visitors are planning a museum visit

It should be no surprise that people browse through museum websites while preparing a visit to the museum's physical campus. From our research, 47% of online museum visitors are planning a visit to the museum. Across the 15 participating Dutch museums, figures ranged from 35% to 57%.

Most museum websites include practical information for those planning a visit although often that information is spread across several pages. Nowadays, Google also supplies most necessary pieces of practical information, such as address, telephone, opening hours and even a rating based on visitor reviews.

Since planning a visit is the main motivation to browse through museum websites, how can museums take a step further in facilitating that process?

A possible approach could be to send potential visitors an automated email including all necessary information: opening hours, admission fee, direction from visitors' locations to the museum based on preferred transportation modes and an overview of the programme available for the chosen day.

A large audience is interested in spending some of their leisure time online

An average of 16% of users visited museum websites for personal reasons whereas only 13% of visits had a professional motivation. This is an interesting finding as museums often struggle with the decision of customising their online information for scholars and museum professionals or for the "general public". Note that 37% of online visitors were either engaging in casual browsing or searching information for personal reasons.

It appears that just like people are interested in visiting physical museums venues, they are also interested in spending some of their leisure time visiting museum websites.

What can online visitors do and learn on museum websites? What do museum websites have to offer to these audiences? The Tate (United Kingdom) for instance prominently display on their front page a large image from their collections, not necessarily related to the programme at their physical branches: it is targeted at online audiences. The Rijksmuseum website (Amsterdam, The Netherlands) offers three clear options to online visitors: "Plan a visit", "Collection" and "About the museum". In the "Collection" section, visitors can explore or search both collection and library catalogues, as well as create and download their own collection using the "Rijksstudio"[4]. More recently the Van Gogh Museum (Amsterdam, The Netherlands) introduced a novel feature on their website. Besides navigating the collection, online visitors can read interactive stories about Vincent's life. These are three examples of interaction scenarios targeted at online audiences who are not necessarily professionals or planning a visit. Many museums produce audiovisual content of interest to online audiences at large, but this content is not always easily accessible on museum websites. This is a missed opportunity as there is a large audience interested in spending some of their leisure time online.

Notes & References

[1] Indianapolis Museum of Art *www.imamuseum.org*

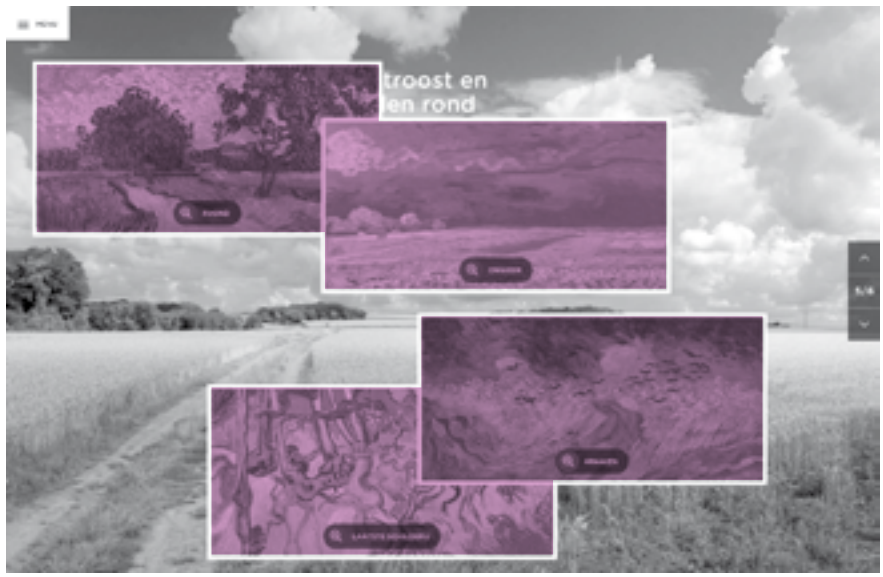
[2] "Exploring the Relationship Between Visitor Motivation and Engagement in Online Museum Audiences", 2012. *www.museumsandtheweb.com/mw2012/programs/exploring_the_relationship_between_visitor_m.html*

[3] Museum Analytics: Action Research Project *www.intk.com/action-research-project/*

[4] Rijksstudio: Make Your Own Masterpiece! 2013 *http://mw2013.museumsandtheweb.com/paper/rijksstudio-make-your-own-masterpiece/*

[5] Metropolitan Museum of Art, Annual Report for the Year 2011–2012 *www.metmuseum.org/en/about-the-museum/annual-reports/annual-report-for-the-year-20112012*

[6] Raw data collected during the online survey *https://docs.google.com/spreadsheet/ccc?key=0Aqd-haJkSpD7dHU1NklmN1p6STJZcEh3NWpMSkxXQ2c&usp=sharing#gid=0*



"Nature and the artist", one of the dynamic online stories available at *www.vangoghmuseum.nl*

Online museum visitors are interested in e-shopping

While planning the Dutch version of the online survey, participating museums considered removing the answer "To book for an exhibition or event, or buy something" from the survey. The main reason being that 8 out of the 15 museum websites did not include an e-commerce functionality. The group decided to keep the question in the survey for matters of consistency with the one conducted at the Indianapolis Museum of Art.

Despite the fact that more than half of participating museums did not offer e-commerce on their websites, we were surprised to find out that 4% of online visitors still intended to book an event or buy a product.

Museums have been experimenting with e-commerce for several years. Today museums use e-commerce possibilities to sell tickets for events, generate donations or memberships and to create online shops selling books and other products. There are several examples of museums successfully using e-commerce. The Metropolitan Museum of Art (New York, United States) reported having generated $4.5 million (approx. € 3.6 million) from online membership sales alone in the fiscal year of 2012[5]. In 2009-2010, the Victoria and Albert Museum (London, United Kingdom) reported an overall online retail net turnover of £614,862 (approx. € 688,000) which represented 9.4% of their overall retail income. Their website had a conversion rate of 1.63% which means that 1.63% of online visitors completed a successful transaction. These are two examples of museums successfully using their websites as an extra source of income. As museum gift shops are established revenue sources for museums, it is logical that online shops will follow a similar path.

Take part

In the spirit of open data, we have made the raw data collected during the online survey[6] accessible to all online. The survey was installed on the several museum websites using Quaraloo. We encourage other museums to conduct similar online surveys and to publish their results online.
We are also collecting examples of museums:

- going one step further in terms of helping visitors to plan their visit
- offering experiences specifically developed for online audiences
- successfully using e-commerce.

Please feel free to send examples:
rui@intk.com
@ruibeep (twitter)

You can also browse through an online platform that delivers free social media reports for more than 3,000 museums worldwide.
www.museum-analytics.org

JULIE BECKER

ECSITE COMMUNICATIONS MANAGER

Mapping European science engagement networks

When I joined Ecsite as Communications Manager last April I had put down on my to-do list "get clearer picture of science engagement players in each European country and connect". August is a quieter month at the Ecsite Executive Office: a good time to tackle long-term projects that tend to lose out to urgent matters the rest of the year. Since one month seemed a little short to embark on a pan-European comparative study of science communication governance, I decided to interview one or two experts in each country. For a couple of weeks my phone was continuously engaged, resonating with enthusiastic voices and a myriad of accents – a precious antidote for us during the gloomiest August on Belgian weather records.

I spoke with 32 colleagues from 30 different countries and far too many interesting ideas came out of these interviews to be shoe-horned into a single *Spokes* article. Before I can publish a more comprehensive picture on the Ecsite website, I'm offering you a first glimpse of the European science engagement landscape, concentrating on one topic: national and regional networks of science centres and science engagement professionals.

I found 17 of these networks in geographical Europe: 13 national networks, three governmental agencies fulfilling a network-like mission, and one regional network: the Nordic Science Centres Forbund (NSCF) bringing together professionals from Scandinavia, the Baltic States and Iceland. In total 21 European countries are covered by a science centres or science engagement network. Sweden and Norway count their own national organization while also belonging to the NSCF area.

A blossoming scene

The first network to see the light seems to have been the Italian Associazione Nazionale Musei Scientifici (ANMS) founded in 1974. France followed in 1982 with the Association des Musées et Centres pour le Développement de la Culture Scientifique, Technique et Industrielle (AMCSTI) and the Nordic countries gave birth to their own regional organization in 1987. The late 1990s and the 2000 decade saw a boom, with nine networks springing to life.

The field's newborns are the Polish and Czech networks (both created in 2013), while the Russian Federation is awaiting a happy event for the end of 2014 or beginning of 2015. Spanish colleagues are upping their game: they already had a network created in 1997 whose main activity was an annual senior managers' meeting and are now announcing the birth of an association open to a wider professional audience this November in Granada.

This last case is interesting: while most national networks emerged in times of blossoming science engagement activities, the future Spanish association is a child of the financial crisis that drastically hit all publicly-funded activities in the country. For Ernesto Páramo Sureda, Director at Parque de las Ciencias (Granada), it has now become crucial to transform a hitherto informal professional gathering into a more robust, more open and more powerful network. "This terrible financial crisis can be an opportunity to look back on our young scene and critically review what we have been doing in the past 25 or 30 years. We need to plan for the future, diversify our income sources, rethink our mission. We used to concentrate on education – now we need to look at our broader cultural role and fully participate in society, engaging in dialogue with all audiences. I'm convinced that we need to reinvest the international scene we have been neglecting a little – international collaborations are not a luxury, they are essential these days," he declares.

Paradoxically, high governmental interest for science engagement can also mean fiercer competition for science centres.

National raisons d'être

Unsurprisingly, missions and activities respond to the specificities of each national or regional context and are partly dictated by public authorities. All networks have a representative role and most of them pursue best practice sharing activities like conferences, publications, training and sometimes exhibitions or events.

Some networks are the fruit of a close collaboration between governments and the science communication sector, with public authorities encouraging science engagement professionals to speak with one voice – which often goes with the existence of an articulated national science engagement strategy like in France, Portugal, Austria or Norway. In other countries on the contrary, networks are the result of a bottom-up attempt from the sector to self-organise.

In this category one finds two types of networks. First, very politically active ones like the UK Association of Science and Discovery Centres (ASDC) that follows a pro-active strategy to influence policy making or SPiN in Poland whose wide ambition is to foster democratic dialogue between science and society. Second, much more pragmatic collaborations centred on training, professional development or common exhibition projects like the Nordic Science Centre Forbund or German MINTAktiv that voluntarily keeps running costs low with no permanent staff but raised €900,000 for projects since it started four years ago.

Supportive governments

The majority of networks receiving financial support from their governments are funded in an effort to improve science education and inspire today's children and teenagers to become the engineers and researchers our knowledge economies will badly need tomorrow. A few national governments like Austria, Sweden or Norway combine economic interests with a broader science and society vision. They finance science engagement networks as a tool to equip scientifically literate citizens with the skills needed to participate in informed and democratic dialogue about scientific issues.

Strong governmental support seems to result in bigger operational budgets: four out of the five networks boasting a yearly operational budget of €200,000 or more receive at least 50% of public subsidies (Portugal, Austria, France, The Netherlands). A mixed blessing that can make networks sensitive to governmental changes and structural reforms. French AMCSTI is currently undergoing "a transition period" in its own director's words: "On the one hand we had a strong national push for "scientific culture" as we call it with a special €100M project-dedicated fund put in place in 2013. On the other hand scientific culture competencies and budgets were transferred from the central government to the regions in 2013, a transition still in the making. As a network we still contribute to the definition of a national strategy and try to help our members re-organize in the face of changing public funding sources and increased pressure for the mutualisation of resources. We also work closely with the OCIM (Office de Coopération et d'Information Muséales), the public body in charge of professional training in our sector," Didier Michel explains. One can't contemplate the French science engagement landscape without also mentioning Universcience, whose activities largely go beyond the running of its two Parisian venues Cité des Sciences et de l'Industrie and Palais de la Découverte. In 2010, this public body was given the mission to assist the creation of local networks for each region and set up a national council advising the government, associating science centres and museums, universities, research institutes, popular education NGOs, local governments, schools...

Paradoxically, high governmental interest for science engagement can also mean fiercer competition for science centres. One of the raison d'être of Svenska Science Centers was to prevent detrimental competition between an increasing number of science centres eligible to apply for a grant from the Swedish National Agency – a case successfully argued, resulting in a larger overall dotation. These days competition is coming from "outside": "Everyone is worried about plummeting results in international science education tests. New actors are entering the scene such as major companies willing to spend big amounts of

Some governments go one step further and directly manage public science engagement agencies whose mission encompasses network-like coordination activities.

cash – but also demanding 'new stuff'. Some of them are ignoring existing structures and creating new projects and activities – in this context we have to be particularly vocal to keep science centres at the heart of informal science education," regrets Lena Engelmark, CEO of Svenska Science Centers.

Network-like public agencies

Some governments go one step further and directly manage public science engagement agencies whose mission encompasses network-like coordination activities. The Fonds National de la Recherche in Luxembourg for instance is trying to bring together its rather young research and science communication scene. The Science Popularisation Unit of the Malta Council for Science and Technology (set up in 2010) and the Center for the Promotion of Science in Serbia (created in 2011) are both planning the opening of major national science centres (respective project budgets of €26M and €60M) but also mobilizing and structuring existing science engagement players. "We ambition for the new science centre to be the focal point for all actors and a resource and support centre for other initiatives," states Karl Azzopardi from Malta. "We want to cater for the public interest we have been generating and to become the home of scientists and innovators," echoes Aleksandra Drecun whose agency also redistributes small project grants in Serbia. Similarly the Portuguese Ciência Viva success story started with a small team working inside the Ministry of Science and Technology in 1996. Almost twenty years later Ciência Viva has become a foundation and funding redistribution agency whose yearly €10 million budget (50% of which directly comes from public sources) is divided between its flagship Lisbon-based science centre (the Pavilion of Knowledge) and hundreds of local initiatives ran by the twenty sister Ciência Viva centres spread throughout the country but also by countless other science engagement actors like schools, botanical gardens, museums, NGOs…

UK exception

The UK boasts what many consider one of the most vibrant European science centre scenes. Yet English science centres get no operational public funding at all, while their Welsh, Northern Irish and Scottish colleagues receive what many continental counterparts would consider a rather meagre allocation.

To my knowledge the UK is the only European country where science centres have built a strong national network in spite of low governmental financial support.

"I'm regularly asked to make contributions to national strategies and I work closely with Ministers and Government. The UK science centres attract 20 million visits each year and we are the only UK network bringing them together strategically yet we receive no regular public funding for ASDC. All our income is self-generated: we create exciting national science programmes and bid for funding to deliver them with the science centres which generates around 90% of our annual income, with 10% of income from membership fees. Budget balancing becomes an extreme sport and submitting multi-partner funding proposals takes up the time and energy we would love to dedicate to more strategic questions," says Dr Penny Fidler, CEO of ASDC. Interestingly, Ecsite finds itself in a similar situation: without a national government to seek operational funding from, the organization relies on self-generated income and EU-funded projects.

Contrasting membership policies

Except for the three governmental agencies mentioned before, all networks are private non-profit organizations. All of them have a typical governance system with an elected Board, internal regulations etc. and most of them collect membership fees. In terms of membership composition, one finds networks open to science centres only at one end of the spectrum (the young Czech Association of Science Centres and its eight members, its Swedish counterpart or the NSCF) ; organizations also welcoming museums and companies in the middle (like MINTAktiv in

Will networks be able to welcome a new generation of professionals and attract talents from bottom-up hyper-connected movements like the Makers or Hackers?

Germany, the VSC in the Netherlands or ASDC in the UK) ; and associations open to all science engagement bodies and sometimes individuals at the other end of the spectrum the AMCSTI in France, the ANMS in Italy or SPiN in Poland).

One network has no member at all: the Science Centre Netzwerk in Austria. It is without doubt the most grass roots, malleable and intriguing of all movements I encountered on my European tour.

It emerged in 2005 at a time when there was no science centre in the country. Two social scientists specialized in complex systems instigated this structure, advising against an umbrella organization. "We believed that if you want to induce important changes in a complex system like the Austrian society, you have to change attitudes and ways of thinking. We thought that a hub would allow that," explains Barbara Streicher, Executive Manager. "We now gather 140 partners. They don't pay a membership fee. The only condition for joining is to be actively interested in "science centre type activities" – something that we have defined together. There is no hierarchy: a big institution does not weigh more than an individual speaking in their own name. At first we considered putting together a code of conduct for the network but we soon realized that we did not need it: while our partners are collectively very active we take very few decisions as an organization. We help spread ideas, facilitate discussions – and when we work on projects we then agree on ad hoc management structures with involved partners. Basically, our organization echoes the principles of informal learning: you don't have to engage, you are free to interact and it's up to you to get something out of it."

In the category of innovative practices, I must mention the Dutch VSC, whose only full-time staff member Marjelle van Hoorn is ubiquitous on Twitter but almost never to be found in her office. "I travel around a lot, holding "inspiration sessions" and a book club and working when possible at members' offices: that's how I can generate and facilitate the exchange of information and best practice which I consider the most crucial part of my job," Marjelle van Hoorn states.

Network-less countries

A word should be devoted to those 25 countries (out of which 9 EU member states) that don't count a science centres network. They tend to belong to two categories. Firstly, countries whose small size makes a formal network organization less of a necessity, such as Finland: "The Finnish science engagement landscape is perfectly healthy, with six science centres, many festivals, universities pursuing public engagement activities and an active science journalists association. We have a national strategy and a dedicated agency at governmental level. There are few enough of us to allow for rather informal exchanges – and we meet at NSCF and Ecsite events!" explains Mikko Myllykoski from Heureka, the Finnish Science Centre. Secondly, countries with fledgling science engagement landscapes: "Romania had its first science festival in 2013. As we wrote in *Spokes* last year, a science engagement scene is slowly emerging in our country. Right now we're busy supporting particularly active municipalities and universities. The context is not quite ripe yet but we are sure that we'll see the emergence of a national network in the coming years," hope Iris Opris and Miruna Amza, active players on the young Romanian scene.

Looking ahead

When asked about future perspectives, many network representatives promptly brush aside obvious funding challenges and speak of their hopes of collaborative endeavours at national and European level and visions of democratic dialogue and science for and with society. For many, the future of science centres networks – and of the science engagement sector at large – depends on its capacity to remain open to social changes.

Will networks be able to welcome a new generation of professionals and attract talents from bottom-up hyper-connected movements like the Makers or Hackers?

This is what Natalia Sergievskaya from the re-emerging Association of Russian Science and Technology Museums wonders: "A new generation is emerging. Many young people in their twenties are conducting their own initiatives, outside of traditional and state-run frameworks. Will we manage to bring them in?"

Stay tuned

All interviews conducted as part of my European tour will be published on the Ecsite website by the end of 2014 or beginning of 2015.

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Special thanks and special apologies to Brigitte Coutant from Universcience, whose idea to explore the science centre's diplomatic role lead to this endeavour - having drifted rather far away from her original suggestion.

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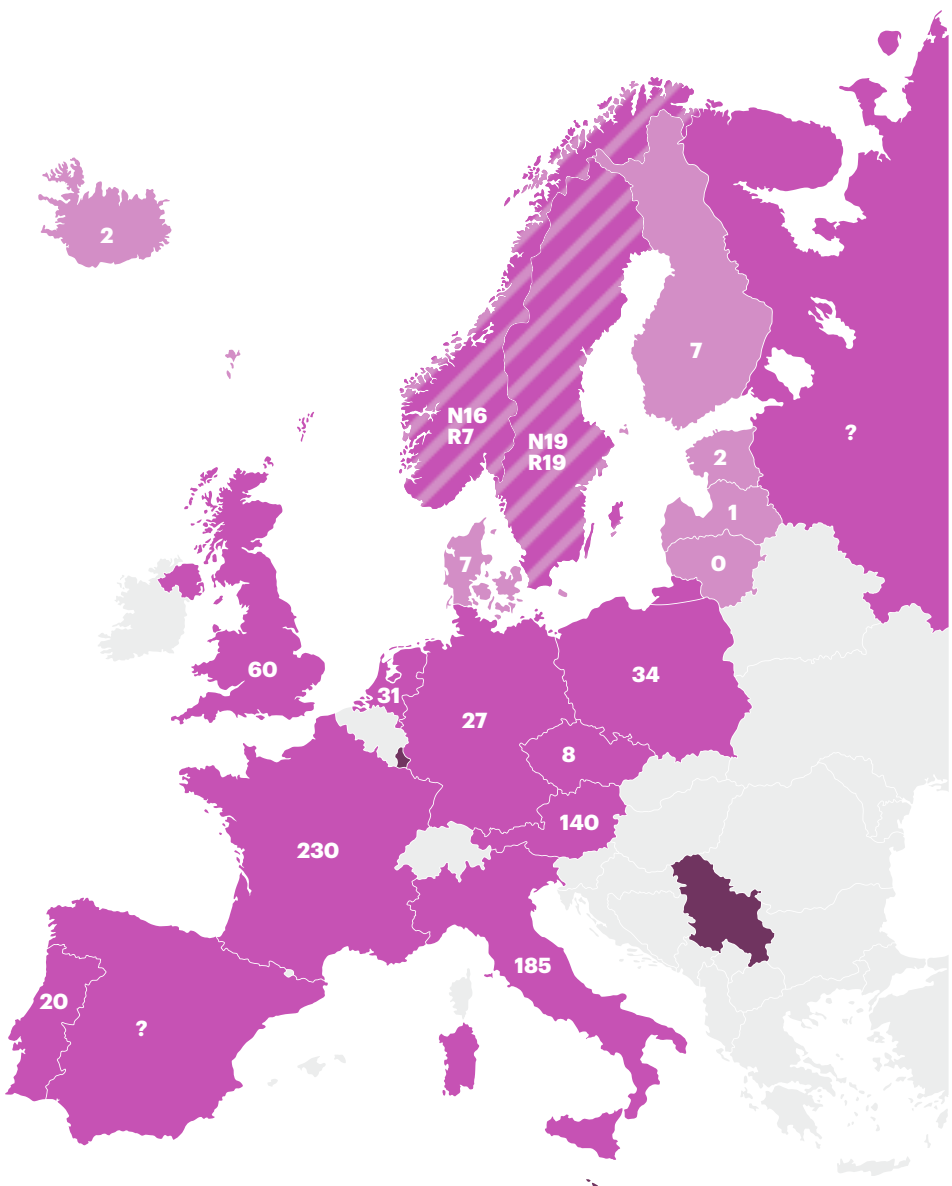
Apologies for any organization I might have overseen - please get in touch!
communications@ecsite.eu

Organization's name	Country	Year of creation	Number of members	Approx. yearly budget	Operational public funding	Staff (full time equivalent)	Contact
Ecsite	Geographical Europe	1991	380	€1.5M	0	9,5	*www.ecsite.eu* *info@ecsite.eu*
Science Centre Netzwerk	Austria	2005	140 partners	€700,000	70%	6.5	*www.science-center-net.at* Barbara Streicher *streicher@science-center-net.at*
Czech Association of Science Centres	Czech Republic	2013	8	€23,000	0	1	*www.hvezdarna.cz/sciencecenter* Aleš Kuták *ales.kutak@techmania.cz*
Nordisk Science Center Forbund	Denmark, Estonia, Finland, Iceland, Latvia, Norway, Sweden (membership open to Lithuania too)	1987	34	€9,000	0	0	*www.nordicscience.net* Pilvi Kolk *Pilvi.Kolk@ahhaa.ee*
Association des Musées et Centres pour le Développement de la Culture Scientifique, Technique et Industrielle (AMCSTI)	France	1982	230	€200,000	60%	4	*www.amcsti.fr/en* Didier Michel *didier.michel@amcsti.fr*
MINTAktiv	Germany	2010	27	€10,000 €	Unknown	0	Achim Englert *englert@phaenomenta.com*
Assoziazione Nazionale Musei Scientifici (ANMS)	Italy	1974	185	Unknown	Unknown	Unknown	*www.anms.it* Fausto Barbagli *presidente@anms.it*
Science and Society Unit at Fonds National de la Recherche	Luxembourg	Mid 2000s	No membership – governmental agency	Unknown	100% (governmental agency)	3.5	*www.science.lu* Jean-Paul Bertemes *jean-paul.bertemes@fnr.lu*
Malta Council for Science and Technology - Science Popularization Unit	Malta	2010	No membership – governmental agency	Unknown	100% (governmental agency)	15	*www.mcst.gov.mt/science-popularisation-unit* Karl Azzopardi *karl.azzopardi@gov.mt*
Norwegian science centre association	Norway	2008	16	€6,000	100%	0	Tove Marienborg *tove.marienborg@nordnorsk.vitensenter.no*
Dutch network of science museums and science centres (VSC)	The Netherlands	1999	31	190,000 €	100%	1	*www.vsc-netwerk.nl* Marjelle van Hoorn *Marjelle@vsc-netwerk.nl*
SPiN	Poland	2013	34	0	0	0	Dorota Wiślicka *dorota.wislicka@kopernik.org.pl*
Ciência Viva	Portugal	1998	20	€10 M (includes other activities)	50%	-	Carlos Catalao *catalao.alves@gmail.com*
Association of Russian Science and Technology Museums	Russian Federation	2014-15	Yet unknown	Yet unknown	Yet unknown	0	Natalia Sergievskaya *nsergievskaya@gmail.com*
Centre for the promotion of science	Serbia	2011	No membership – governmental agency	Unknown	100% (governmental agency)	Unknown	*www.cpn.rs* Aleksandra Drecun *centar@cpn.rs*
Red de Museos de Ciencia + new association in the making	Spain	Red de Museos de Ciencia: 1997 New association: 2014	New association: around 25 at first	Unknown	FECYT foundation supporting both	0	Ignasi López Verdeguer *ilopez@fundaciolacaixa.es*
Svenska Science Centers	Sweden	Around 2002	19	€65,000	35%	0.5	*www.fssc.se* Lena Engelmark *lena@fssc.se*
UK Association for Science and Discovery Centres (ASDC)	United Kingdom	Mid 2000s	Over 60	€ 250-350,000	0	2.6	*www.sciencecentres.org.uk* Penny Fidler +44 117 915 0186

MAP

Networks of science centres and museums and/or science engagement professionals and number of members

National network | Regional network | National public body fulfilling similar mission



AUSTRIA

Inhabitants in millions (2013)	**8.4**
% of GDP spent on R&D (last available figure)	**2.84**
Member of the European Union	•
Number of Ecsite members	**14**
Financial support	***

Name of network(s):
Science Centre Netzwerk
140 partners

ITALY

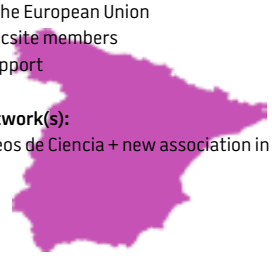
Inhabitants in millions (2013)	**59.7**
% of GDP spent on R&D (last available figure)	**1.27**
Member of the European Union	•
Number of Ecsite members	**31**
Financial support	-

Name of network(s):
Associazione Nazionale Musei Scientifici (ANMS)
185 members

SPAIN

Inhabitants in millions (2013)	**46.7**
% of GDP spent on R&D (last available figure)	**1.30**
Member of the European Union	•
Number of Ecsite members	**20**
Financial support	**

Name of network(s):
Red de Museos de Ciencia + new association in the making



IDENTITY CARDS

Financial support from public authorities to network's operational costs

*	Low (0-25%)
**	Medium (25-50%)
***	High (over 50%)

CZECH REPUBLIC

Inhabitants in millions (2013)	**10.5**
% of GDP spent on R&D (last available figure)	**1.8**
Member of the European Union	•
Number of Ecsite members	**7**
Financial support	*

Name of network(s):
Czech Association of Science Centres
8 members

FRANCE

Inhabitants in millions (2013)	**65.6**
% of GDP spent on R&D (last available figure)	**2.26**
Member of the European Union	•
Number of Ecsite members	**29**
Financial support	***

Name of network(s):
Association des Musées et Centres pour le Développement de la Culture Scientifique, Technique et Industrielle (AMCSTI)
230 members

GERMANY

Inhabitants in millions (2013)	**80.5**
% of GDP spent on R&D (last available figure)	**2.92**
Member of the European Union	•
Number of Ecsite members	**40**
Financial support	*

Name of network(s):
MINTAktiv
27 members

THE NETHERLANDS

Inhabitants in millions (2013)	**16.8**
% of GDP spent on R&D (last available figure)	**2.16**
Member of the European Union	•
Number of Ecsite members	**21**
Financial support	***

Name of network(s):
Dutch network of science museums and science centres (VSC)
31 members

POLAND

Inhabitants in millions (2013)	**38.5**
% of GDP spent on R&D (last available figure)	**0.90**
Member of the European Union	•
Number of Ecsite members	**7**
Financial support	*

Name of network(s):
SPiN
34 members

PORTUGAL

Inhabitants in millions (2013)	**10.5**
% of GDP spent on R&D (last available figure)	**1.50**
Member of the European Union	•
Number of Ecsite members	**17**
Financial support	***

Name of network(s):
Ciência Viva
20 members

RUSSIAN FEDERATION

Inhabitants in millions (2013)	**143.2**
% of GDP spent on R&D (last available figure)	**1.12**
Member of the European Union	-
Number of Ecsite members	**3**
Financial support	-

Name of network(s):
Association of Russian Science and Technology Museums

UNITED KINGDOM

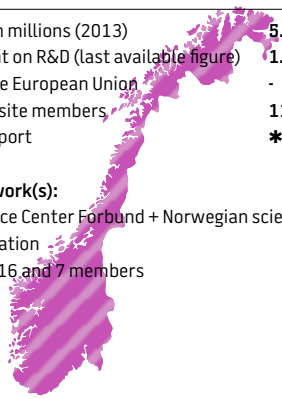
Inhabitants in millions (2013)	**63.9**
% of GDP spent on R&D (last available figure)	**1.72**
Member of the European Union	•
Number of Ecsite members	**30**
Financial support	*

Name of network(s):
UK Association for Science and Discovery Centres (ASDC)
60 members

NORWAY

Inhabitants in millions (2013)	**5.0**
% of GDP spent on R&D (last available figure)	**1.66**
Member of the European Union	-
Number of Ecsite members	**11**
Financial support	***

Name of network(s):
Nordisk Science Center Forbund + Norwegian science centre association
Respectively 16 and 7 members



SWEDEN

Inhabitants in millions (2013)	**9.5**
% of GDP spent on R&D (last available figure)	**3.41**
Member of the European Union	•
Number of Ecsite members	**24**
Financial support	**

Name of network(s):
Nordisk Science Center Forbund + Svenska Science Centers
Respectively 19 and 19 members

DENMARK

Inhabitants in millions (2013)	**5.6**
% of GDP spent on R&D (last available figure)	**2.99**
Member of the European Union	•
Number of Ecsite members	**8**
Financial support	*

Name of network(s):
Nordisk Science Center Forbund
7 members

ESTONIA

Inhabitants in millions (2013)	**1.3**
% of GDP spent on R&D (last available figure)	**1.18**
Member of the European Union	•
Number of Ecsite members	**2**
Financial support	*

Name of network(s):
Nordisk Science Center Forbund
2 members

FINLAND

Inhabitants in millions (2013)	**5.4**
% of GDP spent on R&D (last available figure)	**3.55**
Member of the European Union	•
Number of Ecsite members	**6**
Financial support	*

Name of network(s):
Nordisk Science Center Forbund
7 members

ICELAND

Inhabitants in millions (2013)	**0.3**
% of GDP spent on R&D (last available figure)	**2.40**
Member of the European Union	-
Number of Ecsite members	**1**
Financial support	-

Name of network(s):
Nordisk Science Center Forbund
2 members

LATVIA

Inhabitants in millions (2013)	**2.0**
% of GDP spent on R&D (last available figure)	**0.66**
Member of the European Union	•
Number of Ecsite members	**3**
Financial support	-

Name of network(s):
Nordisk Science Center Forbund
1 members

LITHUANIA

Inhabitants in millions (2013)	**3.0**
% of GDP spent on R&D (last available figure)	**0.90**
Member of the European Union	•
Number of Ecsite members	-
Financial support	-

Name of network(s):
Nordisk Science Center Forbund
No member yet

LUXEMBOURG

Inhabitants in millions (2013)	**0.537**
% of GDP spent on R&D (last available figure)	**1.51**
Member of the European Union	•
Number of Ecsite members	**1**
Financial support	***

Name of network(s):
Science and Society Unit at Fonds National de la Recherche

MALTA

Inhabitants in millions (2013)	**0.4**
% of GDP spent on R&D (last available figure)	**0.84**
Member of the European Union	•
Number of Ecsite members	**1**
Financial support	***

Name of network(s):
Malta Council for Science and Technology - Science Popularization Unit

SERBIA

Inhabitants in millions (2013)	**7.2**
% of GDP spent on R&D (last available figure)	**0.96**
Member of the European Union	-
Number of Ecsite members	**2**
Financial support	***

Name of network(s):
Centre for the promotion of science

Exchange of ideas an best practice lies at the heart of most networks' activities. Here: book club session organised by the Dutch network of science museums and science centres (VSC).

LOOKOUTS

TESTED: SCIENCE CENTRES AS ART AND SCIENCE INNOVATION INCUBATORS

INTRODUCTION BY
MARIA ZOLOTONOSA
ECSITE PROJECT MANAGER

INTERVIEWS BY
JULIE BECKER
ECSITE COMMUNICATIONS MANAGER

Are science centres good places to generate innovation? Five science centres (among other partners) have been on a journey experimenting with art and science incubation as part of the three-year-long KiiCS project. KiiCS is a European Commission funded project aiming to develop and test art and science incubation activities, to identify the best formats that stimulate the collaboration between artists, creative professionals and scientists, and to develop innovative ideas.

Installation at the Kapelica Gallery (Ljubljana, Slovenia) developed as part of the project. Philip Ross: "Juniors' Returns", 2006.

The economy is increasingly innovation-led and creativity has become a key competitiveness indicator. Businesses in general and ICT in particular rely more and more on creative content to make their products and services more attractive. Research is required to be more effective, accountable and result-oriented. Its outcomes should be better communicated and exploited to make science closer to society and improve quality of life.

Science and the arts can help answer such a quest for innovative approaches. They both rely on creative processes based on experiments, trials and failures; both make use of imagination and critical thinking; both are provocative and risk-taking; both use an explorative approach to research and creation.

As part of KiiCS, nine partners in different countries organised incubation activities for adults and young adults. These all differed in formats and methodologies. However some of the common topics were: Cities of the Future, Life Sciences, Makers and Hackers.

KiiCS resulted in a European Award, where each country chose a nominee from the most innovative ideas. The Award took place on 26 September in Amsterdam, where the winner was announced. The winner of the Adults Award, coming from the UK, developed an 'Lab Easy' concept, offering participants DIY alternatives to standard lab protocols through a series of open labs. The winner of the Young Adult Award, coming from Slovenia, came up with the idea of a hand-held apparatus able to tell whether a person is in love or not.

Ecsite caught up with four KiiCS partners to reflect on their experiences and find out whether science centres are indeed the right place to generate art & science innovation.

Inspired?
Grab the toolkit sent with your favourite magazine and start building your own incubator!
www.kiics.eu

LAURA LECCI
PROJECT MANAGER
EBN - European Business and Innovation Centre Network (Brussels, Belgium)

EBN is a network of BICs (business and innovation centres) – your usual partners are entrepreneurs, policy makers, business intermediates. Why did you embark on an adventure with science centres and artists?

The idea picked our curiosity. We rang a few of our members to assess their interest in collaborating with new partners in the cultural field, thinking that this was perhaps a little outside of their ordinary scope. Their response surprised us: many of them considered it part of their local development mission to work with the creative sector. Not many had tried yet – but most were ready to give it a go.

And so what happened when you put researchers, artists, science centres and business innovation professionals around the same table?

First we all needed to understand what we could each bring to the process. There were initial misunderstandings about what BICs do: they help potential entrepreneurs with strategic advice, physical or virtual hosting, connections – but they aren't businesses waiting to seize commercial opportunities. I had become so familiar with BICs that this seemed obvious to me, whereas some science centres and artists were expecting to meet business partners, not business intermediaries. I remember delivering a presentation at one of the first project meetings and getting blank faces and raised eyebrows – lesson learnt!

We also had to develop a common language.

BICs, artists and science centres were respectively naming what would come out of the process: 'product', 'artwork' and 'output'. They had to learn to know and trust each other.

In the end the most successful partnerships were the most open-minded ones.

How would you say entrepreneurs view science centres?

I think that BICs consider science centres to be quite - I dare to say - complementary to what they're doing themselves. One could say that science centres represent a first phase in the innovation process: they equip curious minds with tools, make them aware of new technologies. Some of these ideas germinate in innovators' heads – they then need an innovation centre to help develop these further. The product of their innovation can later be shown in the science centre and the cycle continues… The Technology Hub at Città della Scienza in Naples (Italy) is a good example of this loop.

What are the project's legacies for you?

It inspired EBN: our Innovation Centres now work much more frequently with the cultural and creative sector. A few of the project ideas are currently being looked at by BICs studying the feasibility of developing them further.
On a personal level, this project has been an inspirational human adventure: it was amazing to see so many people with so many different views sit together, invent a common language, get creative – and get to trust, respect and even like each other!

For me the project's greatest added value was the enthusiasm that came out of it.

WIKTOR GAJEWSKI
COMMUNICATION DEPARTMENT
Copernicus science centre (Warsaw, Poland)
Deputy Head, Exhibitions and Science

With this project you entered unknown territories. What were the main challenges?

It was rather difficult to find local partners willing to embark on this project: at the start, we were looking for companies, local authorities, cultural organizations without knowing the local scene very well. And of course we had very little idea of what type of support, products, services or technologies we would be needing later on in the process.
Another challenge was to provide the right amount of support to participants. We were perhaps too pro-active in generating and sustaining interest and energy. At some point we realized that quite a few participants hadn't taken ownership of their project: they were expecting Copernicus to move things forward for them for longer than the project framework and budget allowed us to do.

Intel mentored some of the teams – how was it to involve a 'giant' in a local project?

Our partnership with Intel worked because the Director of their venture capital branch in Poland liked the idea. I think that he did it because he thought it was fun. So it wasn't like working with a giant, but more with a highly enthusiastic individual.

Polish studies show that the cultural and information sectors aren't perceived by many as important contributors to the economy. Surely showing the ideas that came out of the project can help change this?

I think that the project process itself was more effective in changing attitudes than any of the prototypes that came out of it.

I consider it a success to have built a climate of trust among participants, to have seen them share ideas and work together, to have equipped them with new skills. A crucial learning point for all (including myself) was to accept that to innovate, you need to fail. A lot. In my opinion it's not a problem that none of the prototypes created in the project have been developed further – so far.

What are the project's legacies for Copernicus?

Interestingly, we were invited to join the project shortly after Copernicus opened to the public. We have grown with it in the past 2.5 years.
In a very short time we have shifted from a fairly top-down model to experimenting with participatory approaches.
I jokingly call KiiCS a "hipster project": it's not mainstream yet but its ideas and methods could be spreading fast. Of course the whole organization has not been turned upside down, but the project has certainly brought new options. We'll be training educators in the design thinking methodology soon.
It was very refreshing to tackle big ideas such as urban health. I think that Copernicus found a new voice through this project: I was quite surprised to see how relatively easy it was to get stakeholders together and become an agent of change in the city. We are now seen as actors on the innovation and art-science scenes. For instance we've been asked to co-host a sustainability design jam.

Now that you've been through this process, do you think that science centres are good places to foster innovation?

Innovative processes are at the heart of our ethos: visitors engaging with our 'traditional' interactive exhibits are encouraged to go through a trial and error process – you learn to try, fail and try again.

Science centres are excellent places to generate ideas and host the pre-incubation stage: they have the credibility to tackle societal issues, the platform to make artists, scientists and the 'general public' meet, the know-how to equip participants with skills, the communication channels to disseminate ideas…

What would your recommendation be for science centres and museums embarking on a similar process?

Invest money in getting the right facilitators and mentors. Anyone can have good ideas – it takes skills to turn them into innovations.

Coaches are absolutely crucial.
Manage participants' expectations from the start: clearly state how far you will go in supporting them, and at which point they need to take ownership, seize their idea and make it happen on their own.
And… be open to failure yourself: you too are going through an innovation process with your project.

LUDOVIC MAGGIONI
HEAD OF EXHIBITIONS
La Casemate Science Centre
(Grenoble, France)

How did you make it happen? I guess you can't just sit people around a table and tell them to innovate.

We have been using a particular approach for some time now. We start by using a public event to ask visitors what they know about a topic, think about a question etc. In the case of KiiCS, we asked people to draw representations of future urban environment on maps of Grenoble. We collected this data and used it to create a mind map of the topic at hand. We passed it along to artists and scientists as a starting point for their work. We then ran a series of workshops to develop and iterate ideas.
One of the beautiful things that happen when people start working in incubators is that they pick each other's curiosity – and join forces. In a FabLab session there is always someone who knows someone you should really be talking to because they're doing something amazing that could help you further. It's a big risk when you start: you don't really know where this will lead! It's important to allow for this organic creativity to happen.

You chose fashion as a topic for the programme you ran with young people – and got a high percentage of female participants. Was it a successful way of attracting girls to science?

I wasn't very keen on the topic to start with: we knew next to nothing about fashion! We got in touch with a fashion school to recruit participants and got a high proportion of girls. And then a viral effect took over: these girls invited their friends along to the prototype presentation event and suddenly the crowds at our FabLab were much more feminine! So yes, we have successfully attracted girls to science by using a topic close to their 'stereotypical'

interests – and got them hooked.

It's easier to spark interest with fashion than nanotechnologies – but you can still talk about nanotechnologies when working on fashion!

What are the project's legacies for La Casemate?

Prototypes will be shown in various events in the coming months. Two are still being worked on: artists have taken ownership of one and a company is running tests on another.
At La casemate we learnt new ways of putting science on show. In our 'traditional' model, we would typically present exhibitions in our public spaces, and run workshops in separate spaces. These days we use projects in a much more integrated approach and present many more "things in the making" to the public. We are not presenting a finished product like an exhibition, but allowing people to meet, get involved in a process or witness science and technology live... We keep one thing in mind: when we invite audiences there needs to be something tangible to show.

Importantly, with this project on our track record we can now act as credible innovation leaders.

We can go to companies or local authorities and appear a little less mad than when we were asking them to take a faith leap and get on board without any certainty that the whole process would work.

Now that you've been through this process, do you think that science centres are good places to foster innovation?

We are not a research institute. In a way, we are looking at science and technology from the outside. This gives us a lot of freedom.

We are not bound to one field, product, technology or even method. Contrary to many research bodies, we have a direct access to the public: we can get inspiration and feedback from our visitors on a daily basis. There is a place for strange ideas in science centres. For unpredicted processes, for changing one's mind, for failure too.

LUCA SIMEONE
PROJECT MANAGER - INTERNATIONAL PARTNERSHIPS AND PROJECTS
Fondazione IDIS - Città della Scienza (Naples, Italy)

Città della Scienza hosts a permanent business incubator. It's rather uncommon for a science centre...

Città della Scienza is more than "just" a science centre. It was created 25 years ago with the mission to reduce the gap between science and citizens and a strong emphasis on urban and economic regeneration - we are located in a post-industrial area of Western Naples. Città now combines a congress centre, a science centre - and since 2001 a Technology Hub including a business incubator.

How has the incubator developed in the past 10 years?

We have adapted our model to the changing demands and needs of companies. We started by supporting medium-sized companies – one of them now provides online banking security services in several European countries.

With the financial crisis, we saw a growing need from individuals or very small companies for office space. So we used the opportunity of the KiiCS project to initiate a second service: a co-working space.

It's much more than an office: innovators also get a tutor, and more importantly they meet each other. Several projects have emerged from professional encounters that happened in that space. Companies or individuals have to pay a fee: it's important for us that the incubator should be a self-sustaining service.
We are also opening up a new venue for companies that have been through their incubation time – we are now covering the whole cycle: pre-incubation / incubation / post-incubation.

How did you build ties with the existing business community?

It has been a gradual process. Ironically, the fire that destroyed a large part of our premises two years ago boosted our relationship with companies, particularly large ones who got involved in the solidarity fund we then created (see *Spokes* issue 0). We have managed to sustain these relationships: the same companies have been working with us to set up the FabLab we ran as part of the KiiCS project. We now have a robust consortium of private players as well as national and local authorities.

What are the legacies of the KiiCs project for Città della Scienza?

Out of the six projects developed through KiiCS, four are still running. An already existing company was able to develop a new application. A bike sharing project is now being tested on the ground. A FabLab was set up at Città and has now attracted new funding from the Italian Ministry of Research.

An augmented reality company is now hosted in the co-working space. Città commissioned them to work on one of our upcoming exhibitions – a nice way for the business incubator to feed back into the science centre.

The KiiCS project also allowed us to test our co-working space. It strengthened existing ties between the business incubator and the science centre activities of Città and introduced new people into our business community.

What would your advice be to a science centre or museum planning to host a permanent innovation incubator?

Get the most out of the brilliant minds and facilities you will have at hand! Use your innovators as a new technology monitoring group and make sure that they also work for your science centre.

Several of the incubator's projects have helped develop exhibits for our exhibitions.

Nanotechnologies: Study reveals European citizens' interest

Nanotechnology is a very broad and controversial topic. It seems a trendy concept - however in a study carried out by European project NanOpinion, 20% of respondents said they had no previous knowledge of nanotechnologies.

In total the NanOpinion analysis draws on 2.5 years of work, 8,330 questionnaires, data from 10 participatory workshops and more than 40 street events. The analysis confirms that people want to know more about nanotechnologies. Few feel well-informed, although many have a positive attitude towards nano. Their interest is in applications in specific areas – such as food – rather than nanotechnology per se, and in social, ethical and health issues. They expect full testing and regulation of new products and tend to be in favour of more information in the labelling of products that use nanotechnologies. Mass media still have a role to play in increasing awareness of nanotechnologies, but there are limitations on what they alone can achieve. For example, people judge science magazines the most trustworthy medium, but relatively few actually read them. Isle Marschalek at the Centre for Social Innovation (Austria) used the results to describe an average European citizen's knowledge of and attitude towards nanotechnologies.

BY

MARIA ZOLOTONOSA

ECSITE, BRUSSELS, BELGIUM

AN AVERAGE EUROPEAN PERSON:

- DOES NOT KNOW MUCH ABOUT NANOTECHNOLOGY
- DOES NOT FEEL SUFFICIENTLY INFORMED
- HAS A POSITIVE ATTITUDE TOWARDS NANOTECHNOLOGY
- DOES NOT (YET) HAVE AN ASSURED OPINION
- DOES NOT FEEL COMPETENT TO DISCUSS NANOTECHNOLOGY
- IS INTERESTED IN ETHICAL LEGAL SOCIAL ASPECTS (RATHER THAN IN SCIENCE)
- IS INTERESTED IN NEW PROPERTIES OF NANOTECHNOLOGY PRODUCTS
- EXPECTS TRUSTWORTHY REGULATION AND TESTING SYSTEMS
- WISHES FOR MEDIUM LEVEL MEDIA TO PROVIDE REGULAR TOPICAL INFORMATION
- HAS TRUST IN SCIENCE.

The NanOpinion study is unique in that it created a space for dialogue between the scientific world and the 'hard-to-reach-public', using both conventional and mundane public spaces to engage citizens and collect data. A specific strategy was put in place to encourage people to fill in the questionnaire. The first thing passers-by saw was a huge orange mushroom-like structure that attracted their attention and triggered curiosity. Then they would usually meet experienced facilitators who performed demonstrations and experiments, showed nanotechnology products, introduced the project and engaged them in discussions. Once participants were engaged, they were asked to fill in a questionnaire. This worked very well and resulted in a large number of respondents. Among others, the NanOpinion monitoring station was seen at a Jazz Festival in Perugia, a Fashion Show in Pilsen, a Food Festival in Aarhus and shopping malls in various countries.

In the spirit of Responsible Research and Innovation, the NanOpinion project showed that it is possible to engage 'hard-to-reach' audiences with a hot yet seemingly challenging scientific topic, to help them build their own opinions and provoke genuine reflection on the issues at hand. The combination of interest, positive attitude and low prior knowledge revealed by the NanOpinion study should encourage science engagement organisations to facilitate public discussions on nanotechnologies.

Interested in organising activities on nanotechnology? A large pool of information and more than 150 resources can be found in the NanOpinion multimedia repository:
http://nanopinion.eu/en/about-nano/multimedia-repository

NANOPINION


MakeLight


The sounds of Space


Luffffft / AAAAAIR


Risque, osez l'expo !

HAPPENINGS

MakeLight
Bloomfield Science Museum Jerusalem (Israel)
→ 17-24 December 2014
In honour of the 2015 UNESCO International Year of Light and Light-Based technologies, this year's Hanukkah theme at the Bloomfield Science Museum is "Light Tech". Eight unusual creations and inventions on the theme of the various ways to produce light made by eight amateur inventors and technologists will be on display, in the spirit of the international Makers' movement. These interactive, original and surprising works are the winning entries in a recent "Light and Darkness" contest. *www.mada.org.il*

The sounds of Space
Audioversum, Innsbruck (Austria)
→ Until December 2014
The temporary exhibition "Sounds Of Space" grants its visitors a spectacular insight into the world of space research and technology. Thanks to the modern exhibits developed in cooperation with the Austrian Space Forum (ÖWF), guests are introduced to the highlights of space research, where experiencing take-off in a space-capsule with tons of fuel thundering below is surely the biggest highlight of all.
www.audioversum.at

Naturalezas Ilustradas / Nature illustrated
Museo Nacional de Ciencias Naturales, Madrid (Spain)
→ Until 11 January 2015
More than 200 years after their arrival in Madrid, highlights from the collection of 9,000 natural history specimens, samples and drawings put together by the Dutch doctor and illustrator Le Francq van Berkhey (1729-1812) for the Royal Cabinet of Natural History are on public display for the first time at the Museo Nacional de Ciencias Naturales. More than 100 zoological illustrations (many of which by van Berkhey himself) are displayed alongside specimens and instruments from the 16th, 17th and 18th century. Among other rare and wonderful pieces, the exhibition comprises an African lion, shown next to a lion engraving prepared by Bohemian etcher Hollar for Albrecht Dürer.
www.mncn.csic.es

Luffffft / AAAAAIR – light as a feather and heavy as a ton
phæno, Wolfsburg (Germany)
→ Until 8 February 2015
Through its exhibition focusing on the physical properties of air, phæno in Wolfsburg (Germany) aims to convey that air is much more than just empty nothingness! This highly interactive family exhibition shows what a mighty and mysterious phenomenon air really is. Over 25 stations invite visitors to interact and take part: to feel the cold of the wind on their own bodies, be lifted up by a vacuum cleaner, ride against the wind, heat up air using muscle power, feel the braking effect of air paddles… In the large air tube maze, balls and coloured cloths move with the circulating air, and visitors are invited to influence the course they take using cleverly positioned switch points and junctures. Air is also experienced in a poetic way through four large works of kinetic art. *www.phaeno.de*
Picture: © Lars Landmann

Maan alle / Going underground
Heureka, Vantaa (Finland)
→ Until 20 September 2015
Big machines, dark tunnels, treasure hunt… "Going underground" is an exhibition for the whole family. It takes visitors into the exciting world of cave systems, geology, mines and underground construction. In the exhibition, visitors get to control a small excavator, practice their skills with a rock drilling simulator and pan for real gold! "Going underground" was planned with several collaborating companies and scientists from the field. *www.heureka.fi*

Risque, osez l'expo ! / To risk or not to risk
Cité des Sciences, Paris (France)
→ 18 November 2014 - 16 August 2015
Through 25 interactive exhibits, visitors reflect on their behaviour and discover how society organizes itself in the face of risk. They learn about daring as a factor of personal growth and innovation in our society. The exhibition comprises three sections. "What is risk?": risk is related to uncertainty. There are three different realms of risk, but one mathematical formula to calculate it! "Individual daring": visitors participate in a series of games and tests about their assessment of risk according to their own values, cultural background and interests. "Shared risks": taking a risk individually always has consequences for others. Here visitors learn to distinguish between "precaution" and "prevention" and discover the notion of "attrition". Finally, a questionnaire reveals their "risk-taking" profile.
This exhibition is co-produced with Heureka (Vantaa, Finland) and Ciência Viva (Lisbon, Portugal), with the support of the MAIF.
www.cite-sciences.fr
Picture: © EPPDCSI

ENTSCHEIDEN / DECIDE!

BGCI, Ecsite and EAZA join forces

Member of European Parliament Michał Boni

ENTSCHEIDEN / DECIDE!
Universum® Bremen (Germany)
→ Until 10 May 2015
The new exhibition "DECIDE!" takes visitors to the supermarket of bountiful choices. In a world of job-hoppers, uncommitted lovers and non-voters, in a world where everything seems possible, but nothing can be taken for granted, those who make the right decisions in the supermarket of choices are the lucky ones. But this is easier said than done. Shall we listen to our brain or to our guts? "DECIDE!" examines the process of decision-making and analyses the interaction of personal freedom and social responsibility, accident and fate.
www.universum-bremen.de
Picture: © Universum Bremen

Willkommen im Anthropozän / Welcome to the Anthropocene
Deutsches Museum, Munich (Germany)
→ 5 December 2014 – 31 January 2016
Coined by the atmospheric chemist and Nobel Prize laureate Paul J. Crutzen, the term "Anthropocene" describes the idea of a new geological era starting around 1800 and following the Holocene which is shaped by the deep interventions into nature by humans as biological and geological agents. Beyond the geological interpretation, the Anthropocene denotes a new framework of thinking and action, which builds a bridge between the natural sciences and the humanities and which interlinks the history of our planet and humankind with the present and the future. In the tradition of the Deutsches Museum, the exhibition will show both historical artefacts and current objects of scientific and industrial laboratories and integrate the audience by means of interactive demonstrations and direct participation through digital media.
www.deutsches-museum.de

LIFE OF ECSITE

SCIENCE CENTRES AND MUSEUMS JOIN FORCES WITH ZOOS, AQUARIA AND BOTANICAL GARDENS

On 10 September Ecsite signed a memorandum of understanding with the European Association of Zoos and Aquaria (EAZA) and Botanic Gardens Conservation International (BCGI). We are joining forces to engage audiences with biodiversity conservation. Together, the zoos, aquaria, botanic gardens, science centres and museums (etc.) members of our three organizations receive more than 240 million visitors a year. They are uniquely placed to deliver a large public engagement campaign in Europe, raising awareness about local biodiversity. We are hoping to launch it in September 2015.

NEWS FROM BRUSSELS – WE'VE PUT SCIENCE AND SOCIETY ON THE RADAR

After several weeks of rumours and negotiations, European Commission Elect President Jean-Claude Juncker presented the composition of his team on 10 September. All Commissioner-designates still needed to attend public hearings at the European Parliament before a plenary approval vote on the Commission on 22 October. On 30 September it was the turn of Science and Innovation Commissioner-Designate Carlos Moedas from Portugal. Ecsite's lobbying efforts paid: science and society got a mention in this highly visible hearing, thanks to Polish MEP Michał Boni who asked a question on the "Science for and with society" objective of the Horizon 2020 programme. In his question, Boni insisted that "involvement of our societies is the background for real innovation" and reminded that "European citizens, through their representatives, have clearly expressed their demand for a much stronger two-way involvement of citizens in the research and innovation process and of the research actors in society." Catching up with us after the hearing, Boni declared: "We need a two-way process of cooperation, not only top-down information".
www.ecsite.eu/news_and_events

Tibor Navracsics, former Hungarian Deputy Prime Minister and Foreign Minister, was nominated for the Education, Culture, Youth and Citizenship portfolio. He belongs to Viktor Obán's national conservative party Fidesz and has been summoned to a second hearing in Parliament as we wrap up. It is still unknown whether the threatened position of Chief Scientific Advisor will be maintained, as many science-related organizations argued for.
Picture: © Wikipedia Commons - Veni Markovski

ECSITE DIRECTORS FORUM ON THE HORIZON

The 2014 Ecsite Directors Forum will be hosted by the AHHAA Science Centre in Tartu (Estonia), 12-14 November. It is a low key, intimate annual event that brings together about 50 Directors and Senior Managers from Ecsite's Full member organizations. Sessions include both keynotes from high-ranking speakers and strategic discussions on the future of Ecsite. Not to forget social events and networking opportunities. "Downloading the future" is this year's theme - a fitting topic for Estonia, nicknamed "E-stonia" for being a pioneer of digital excellence. The keynote speakers are Toomas Hendrik Ilves, President of Estonia ; Jaan Tallinn, Founder of Skype ; Piret Mürk-Dubout, Vice-President of Commercial Development at TeliaSonera Group ; and Teo Härén, Co-author of "The Idea Book".


Mikko Myllykoski


Camille Pisani


Gema Revuelta

SESSION PROPOSALS FEAST FOR 2015 ECSITE ANNUAL CONFERENCE

Session proposals are raining in as we wrap up this issue – around 200 are expected by the closing date on 14 October. The "Food for curious minds" theme seems to have inspired science engagement professionals: we are witnessing a frenzy of food metaphors on the online Forum. The Annual Conference Programme Committee will be reviewing all proposals and providing feedback by mid-November.

The conference will be taking place in Trento (Italy) on 11-13 June 2015.
Online registration opens on 25 February 2015.
www.ecsite.eu/annual_conference

MIKKO MYLLYKOSKI TAKES OVER FROM CAMILLE PISANI AS CHAIR OF THE ANNUAL CONFERENCE PROGRAMME COMMITTEE (ACPC)

Camille Pisani from the Royal Belgian Institute of Natural Sciences (Brussels, Belgium) left her position as Chair of the ACPC after three fruitful years. Warmest thanks to her for her dedication and successful efforts in keeping the conference at the forefront of science engagement professional events. Mikko Myllykoski from Heureka (Vantaa, Finland) was chosen by the Ecsite Board last spring and took over from Camille in October for a three year mandate. "All in all, the conference should be more participatory. I would like to invite fresh ideas on how to create more dialogue in the programme, both officially and informally," he declared.

GEMA REVUELTA JOINS SPOKES EDITORIAL COMMITTEE

Gema Revuelta, Associate Professor of Science Communication and Deputy Director of the Science Communication Observatory at Universitat Pompeu Fabra (Barcelona, Spain), joined the *Spokes* Editorial Committee this summer after the resignation of Oliver Retout and Mikko Myllykoski whom we thank for the time and energy they dedicated to the magazine. Gema was approached by Editorial Committee Chair Maarten Okkersen in an effort to bridge the gap between academia and practice. Gema's research interests cover science communication and scientific journalism, health and medical communication, communication of risk and food safety, impact assessment of science communication activities… She also has been taking part in several Ecsite-led European projects. She agreed to direct a book and article review section – coming up in the next issue.

THE SCENE

MOVEMENTS

Louise Emerson has left her position as Head of Business and Commercial Strategy at the Natural History Museum (NHM, London, UK) mid-September to become the **CEO of Cheltenham Festivals**. She represented the NHM on the Ecsite Board for a little less than two years. Her new employer Cheltenham Festivals (an Associate Ecsite Member) runs four festivals a year: music, literature, jazz and science. "There are few opportunities to lead an organisation which engages people with the arts and science in such an inspiring way. I am looking forward to building on the success and extending the profile of Cheltenham Festivals in my role as CEO," Emerson declared.

Justin Dillon, Head of the Science and Technology Education Group at King's College London, will be taking up the post of **Professor and Head of the Graduate School of Education at the University of Bristol** from 1 December. He has been at King's for more than 25 years and his group is well known for their work in science learning in out-of-school contexts. "Although leaving King's will be hard, I'm looking forward to working with new colleagues and in a new city which is home to one of the world's leading science centres, At-Bristol," said Dillon.

Google gives NEMO $1M


"Maxi Ooh" at MUSE


Ostrava's new science centre


Future science centre in Malta

Exhibits Development Group (EDG, USA), developer and distributer of traveling exhibitions, has named **Franck Cordes** Senior Vice President of Exhibition Sales and Development. Cordes brings more than 20 years of experience with museum management and arts organizations. He has been leading EDG's Exhibition Sales and Development division as of beginning of September. EDG's growth expands into retail and corporate partnerships initiating the hire of two other members of staff, **Kevin Quinn** and **Jean Ryan**. Founder & CEO Amy Noble Seitz called 2015 "a pivotal year for EDG and its future".

GOOGLE GIVES NEMO $1M

On 22 September the Internet giant announced a substantial $1M donation to the largest Dutch science centre, NEMO (Amsterdam). This donation is intended to support NEMO's approach focused on the development of 21st century skills such as creativity, problem solving and ICT literacy. Science Center NEMO will use the money to carry out an after school coding program for children of primary school age from 2015 to 2019. The programme is linked to NEMO's new Math Exhibition "World of Shapes". "We are extremely happy," NEMO declared on their Facebook page, displaying a picture of grinning representatives holding a giant replica cheque on the opening night of "World of Shapes". Secretary of State Sander Dekker declared: "We badly need people with technical skills, now and for the future. It's important that children get exposed to technology from an early age on and see how interesting it can be. Who can achieve this better than NEMO? This collaboration with Google in an interesting perspective for society and businesses and more importantly it offers children the best chances."
On the picture, from left to right: Beatrice Boots (Dutch National STEM Platform), Michiel Buchel (NEMO Director), James van Tiel (Director of Google in the Netherlands), and Sander Dekker (Secretary of State).

SCIENCE CENTRE OPENS IN OSTRAVA

On 26 September, the new Svět Techniky Science and Technology Centre opened in Ostrava (Czech Republic). Located in the Lower Area of Vitkovice, an old steel plant, Svět Techniky is part of the regional efforts to revive the area. With an overall budget of €23.8M the project was implemented with EU and Czech funds and caters to a catchment area of 1 million people in the Czech Republic, Poland and Slovakia. The Centre houses four permanent exhibitions spread on 14,000sqm: a children's zone and the three Worlds of "Civilization", "Science" and "Nature".

Archimedes Exhibitions (Germany) was responsible for the design and installation of both the "World of Science" and the biggest exhibition, "World of Nature". The latter includes a garden area of 2,000sqm, contrasting with the industrial background reflected in the science centre's glass façade. Svět Techniky has the ambition of changing the image of science, building on the rich industrial history of Ostrava.

FUTURE SCIENCE CENTRE IN MALTA TO COMPRISE COLORSPACE THEATER

In 2015, the Malta Council for Science and Technology will open the doors to the National Interactive Science Center, a complex that will occupy several of the most imposing and magnificent buildings overlooking the entrance to the Grand Harbour in Malta. The site comprises four buildings and an outdoor space, each of which will be pivotal to displaying exhibits and presenting live science. One of the buildings will be a stunning 10.7m diameter planetarium, where a complete Colorspace 4K theater system will be built and installed. The project is part-financed by the European Union, European Regional Development Fund (ERDF) - Co-financing rate: 85% EU Fund ; 15% National Funds, "Investing in your future".

NEWCASTLE'S LIFE SCIENCE CENTRE RECEIVES CHEQUE FOR NEW SCIENCE LAB EXPERIENCE

Life Science Centre (Newcastle, UK) has secured flagship funding of £425,000 (€540,000) over two years from Biffa Award to develop a new "one of a kind" science laboratory experience. Biffa Award is a multi-million pound fund that helps to build communities and transform lives through awarding grants to community and environmental projects across the UK. Planned to open in March 2015, "You, the Scientist" will see the creation of a laboratory area within the science centre where families, school groups and adults can explore how real science is done in modern-day research labs, meet working scientists and assist in research projects taking place in the region's universities and research facilities. Linda Conlon, chief executive of Life, said: "In today's technology-fuelled society, science centres have evolved to be places where visitors come to 'do' science rather than find out about it. With "You, the Scientist", we're taking this a step further to make Life a place to go to 'be' a scientist."

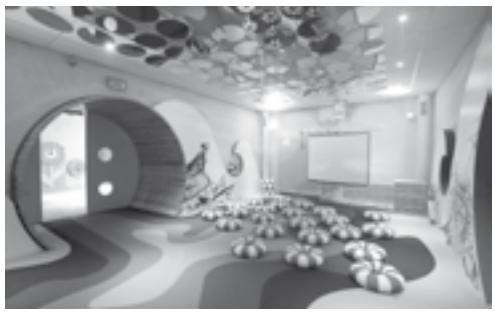
Life also announced a £650,000 (€826,000) Capital Award from the Wellcome Trust towards a future exhibition about the brain.

DISCOVERY CENTER CONTINIUM TAKES ON A NEW CHALLENGE

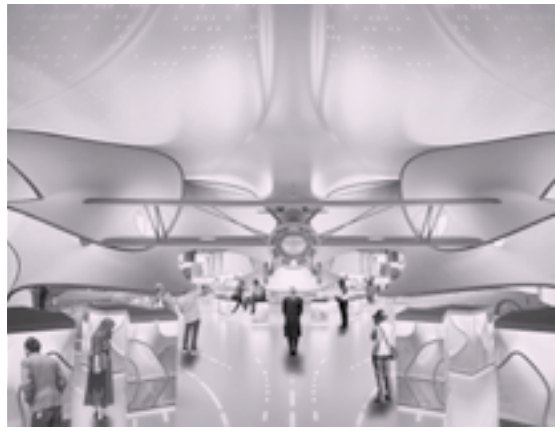
On 1 September Discovery Center Continium (The Netherlands) started building two new public institutes on the Museumplein location, next to Continium. This project reflects Continium's growing relevance, shown in rising visitor numbers and increased self-generated revenues. The Design Museum and an Earth Theater will open mid-October 2015.

The Design Museum will be the first museum in the Netherlands with "Design" as a central theme, in the broadest sense of the word. The museum will deal with topics such as "How do we shape our environment?", " How do design

Life Science Centre gets award



Fairy tale space at Hewelianum Centre



Future math gallery at the Science Museum

processes evolve?", "How does design affect our lives?" and will also be showing works of great designers.

The Earth Theater is a unique proposition, a world novelty, inspired by astronauts who describe their most unique experience from space such as: "when I looked down on earth from the first time after launch, everything fell into perspective". In the theatre visitors will stand on a glass ring and will look down on a 16m diameter and 8m deep projection screen.

MUSE CELEBRATES FIRST BIRTHDAY WITH HALF A MILLION GREETINGS

More than half million people visited MUSE, the new Italian Science Museum designed by Renzo Piano in Trento, since its opening. This result exceeds all expectations and makes MUSE one of the ten most visited museums in Italy. Attracting visitors from all over Italy and abroad, MUSE has quickly become an important destination for educational tours, welcoming 120,000 students in a year. It hosted over 300 public events for different target groups, a number of congresses, meetings and also private events. And of course MUSE will be hosting the 26th Ecsite Annual Conference in June 2015.

Last July saw the opening of "Maxi Ooh", a unique design interactive gallery for 0-5 year old babies. Three big sensorial spheres invite "babults" (baby & adult couples) to play and experience the space with light, sound and their own bodies.

Picture: © Simone Cargnoni

FAIRY TALE SPACE AT THE HEWELIANUM CENTRE

A colourful space for children opened last May in Gdansk's Hewelianum Centre (Poland). In "The Laboratory of Mr Kleks" young visitors aged 3-9 learn about common bird species, discover different locations on the globe or recognise animal shapes in colourful splashes. Even walking on the moon is possible as young astronauts are taken into space. Inspiration for this fairy tale exhibition came from the stories of Jan Brzechwa, a famous Polish writer and poet. One of his most famous characters is Mr Kleks, a magician who runs a children's academy. The new exhibition space is divided into four lands. In "Bajdocja" visitors enter a big ball of threads or hike on an alphabet wall. The "Land of Sleepy Mirrors", filled with mysterious looking glasses, encourages children to absorb knowledge about the surrounding world. "The Kitchen of Mr Kleks" invites young explorers to experiment and "Abecja" takes them into a magical underwater world. The Hewelianum Centre, located in a renovated fortress at the heart of Gdansk, has been open for six years.

SCIENCE MUSEUM OPENS "INFORMATION AGE" AND HIRES ZAHA HADID TO DESIGN NEW MATH GALLERY

In October, the Science Museum (London, UK) opened a new permanent gallery, "Information Age". The development team has taken a user-centric approach, not only in the stories and objects selected for display, but in the way the gallery has been designed and developed – consciously avoiding the pitfall of overly technical histories deemed to marginalise a majority of visitors who are engaged by human stories and social history. Participation with a diverse range of audiences has been at the heart of the process, providing new avenues for research, fresh perspectives on collections and original ways to interpret the information networks of which we are all part.

The Museum also recently chose Zaha Hadid Architects to design a pioneering new mathematics gallery, set to open in 2016. The £7.5M (€9.5M) gallery has been made possible by a £5M (€6.4M) gift from long-standing supporters of science David and Claudia Harding, the largest individual donation ever made to the museum. The permanent gallery will bring mathematics to life for all visitors, telling stories that place mathematics at the heart of our lives and exploring how mathematicians, their tools and ideas have helped to shape the world from the turn of the 17th century to the present. Zaha Hadid's pioneering practice has embodied this idea by anchoring engineering and mathematical thinking throughout their gallery designs.

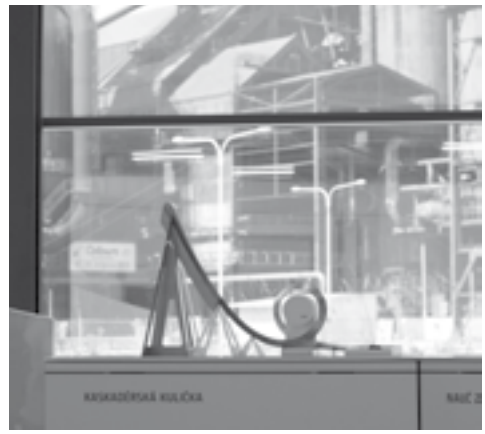
Picture: © Zaha Hadid Architects

RIO TINTO INNOVATION CENTRAL EXHIBITION ABOUT TO OPEN ITS DOORS AT SCITECH

Rio Tinto Innovation Central will be opening in November at Scitech (West Perth, Australia). This permanent exhibition showcases the innovative process. Visitors will discover how innovation is a truly creative skill by interacting with a range of intriguing exhibits that focus on thinking, trying, making and refining.

"Science of sharing" at the Exploratorium

Cool X



A new world in Ostrava

EXPLORATORIUM LOOKS INTO SOCIAL INTERACTIONS WITH "SCIENCE OF SHARING"

On 31 October San Francisco's Exploratorium will open "Science of Sharing", a dynamic new permanent exhibition based on the idea that social interactions are open to enquiry and experimentation, just as physical and perceptual phenomena. "Science of Sharing" will integrate exhibits with social experiments and experiences to prompt investigation of cooperation, competition, and collaborative problem-solving, as well as encourage reflection on the interplay between science, society and culture. The 15-exhibit show is funded by a $2.3M (€1.8M) multi-year grant from the National Science Foundation and will be a permanent fixture of the museum's newly redesigned West Gallery, a space dedicated to exploring the art and science of human thought and behaviour.

Picture: © Exploratorium

"COOL X" INTRODUCES CHILDREN AND YOUNG ADULTS TO THE WORLD OF MICROELECTRONICS

Since last March Europe's largest microelectronics cluster offers a new highlight for children, young adults and adults with a passion for technology. "Cool X. Energy in a Digital World" is a joint project of the hosting museum Technische Sammlungen Dresden (Germany) and "Cool Silicon", Leading-Edge Cluster for Energy Efficient Information and Communications Technology. The exhibition invites visitors to step into the fascinating world of microelectronics. Hands-on exhibits and interactive elements introduce key aspects of chip production and energy efficiency.

COMMENT

A NEW WORLD

A new world was born in Ostrava, in the Czech Republic. For those who know the Moravian-Silesian region, the huge blast furnaces of Vitkovic still stand as a testimony of innovation. The whole area was once one of the largest iron and steel mills in the Austro-Hungarian Empire. Almost overnight, the tiny agricultural village of Vitkovic was catapulted into the heart of the Industrial Revolution, right at the middle of the European continent – such was, then, the power of technology.

Today, alongside these monumental objects of eloquent cultural value, a new science centre emerges as the testimony of its capacity to reshape, renew, and improve the quality of life of the residents of an entire region. The new Svět Techniky Science and Technology Centre ("World of Technology") is the fulfilment of an old dream, one that has been maturing for almost a decade, and is now open to the delights of its visitors. The whole site holds the key to a past-present-future continuum. The new science centre documents and preserves the original coal-coke-iron process, whilst projecting it into a new world of discovery and, at the same time, providing a platform for social, cultural and economic development – such is, nowadays, the power of museums and science centres.

The launching of the World of Technology, in Ostrava, is a clear evidence of the growth of the science centre movement in Europe as it is portrayed in this issue of *Spokes* – a movement that expands the long-established educational mission of science centres to a wider role as key driving force for the development and prosperity of their regions. I urge, therefore, all *Spokes* readers to visit this new world and witness the vitality of our field.

Rosalia Vargas
President of Ecsite, and Ciência Viva - Pavilion of Knowledge,
Lisbon, Portugal

Picture: © Ciência Viva

FOOD for CURIOUS MINDS

ECSITE ANNUAL CONFERENCE 2015 • TRENTO • MUSE 11-13 JUNE

Why attend?

- Share ideas and catch up with the latest trends at the largest science engagement event in Europe
- Acquire new tools and skills from workshops and training sessions
- Find project and business partners, explore new avenues for funding and income generation
- Pay a visit to our host MUSE, the brand new science museum designed by Renzo Piano
- Enjoy the Trento region, its UNESCO heritage landscapes, rich cultural and gastronomic heritage, affordable accommodation and proximity to Venice and the EXPO 2015 in Milan.

Online registration opens 25 February 2015.

IN YOUR NEXT SPOKES NEXT ISSUE

Among others:
question the idea of education for sustainable development, explore the new booming scene of Eastern European science engagement and discover a new books and articles review section.

Want to see your news in *Spokes*? Send the contact details of the person(s) in charge of communications, press or international relations to Ecsite Communications Manager Julie Becker.
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A big thanks to all Ecsite members who responded
to our call for pictures for the new Ecsite website and brochure.
Here: participants to a science festival organised by L'Ideatorio in Lugano
(Switzerland).