The International Council of Monuments and Sites: A New Digital Technology National Committee

Richard Hughes

Introduction

A new national committee of ICOMOS-UK has been set up addressing the use of ‘Big Data’ and ‘Digital Technologies’ in culture and cultural heritage. We hope this initiative appeals to you and that you will join us in this venture.

The International Council of Monuments and Sites (ICOMOS) was formed fifty years ago, the same year our national committee was set up (ICOMOS-UK) and has played major roles in preserving and celebrating cultural heritage worldwide.

Today we have some 20 national scientific committees, most as noted below are also in the family of corresponding international committees (see Appendix 2). Looking forward to the next 50 years, now is the time for having one more committee, a highly important one that addresses the use of digital technologies in the cultural heritage agenda. The UK has seized the initiative here, and we anticipate other countries will follow our lead.

The International Scientific Committees (ISCs) are the vehicles through which ICOMOS brings together, develops and serves its worldwide membership according to fields of specialized interest. ICOMOS expects the ISCs to be at the heart of scientific inquiry and exchange in their domains and to share knowledge amongst them to foster a multidisciplinary approach to heritage protection and management. This fulfils the original goals of ICOMOS: ‘to collect, study and disseminate information concerning principles, techniques and policies related to heritage protection.’
The New ICOMOS-UK Digital Technology Committee

So far three meetings have been held to push-start the new venture in London, York and Brighton. Membership is now more than 40 strong and healthily growing. We welcome new members and active participation.

The digital technologies of today owe a debt to the development of computers in WWII, where Alan Turing played such an important role in code breaking driven by the application of logic in machine language. Such logic has an interesting role related to cultural heritage and museums. Logic relies on rules and reasoning by sorting; searching; rationalizing; information retrieval; forging connections; memorising; and, storing. Archaeological artefact and material culture research are all about such processes. The same applies now to museums where logic, via computers and robotics, has roles in presenting information: reliably; with clarity; securely; innovatively; and, efficiently geared to management and visitor experience.

This all has to be seen in the context of the annual doubling of computer power or data storage (Moore’s Law). Also, the possible number of idea groupings grows exponentially as new ideas come into the mix (Reed’s Law). Thus what one evidences is the innovative power of urbanism and networked globalism – where cities are: ‘an autocatalytic attractor and amplifier of innovation.’

As an example, Arup (London-based engineering and management consultancy firm) has been involved with the construction of a new superfast computer at the Swiss National Supercomputing Centre. The computer will have a performance of 7.787 petaflops (a petaflop is equal to a quadrillion calculations per second), the ‘Piz Daint’ is the sixth fastest supercomputer in the world. Per second, this performance is equivalent to every person on Earth using a pocket calculator for 100,000 years.

The Washington Post (BBC 6.12.13) notes that almost five billion mobile phone location records are logged by the ‘NSA’ every day. The data is said to help the NSA track individuals, and map who they know, to aid the agency’s anti-terror work. Recently, some projects show how such ‘big data’ can be used for heritage studies – one here in London looked at where people take mobile phone pictures of St Paul’s Cathedral from and thus where are the best views and where there is a need to manage land use planning and visitors. Cloud source data from phones has also been used in the Haiti Earthquake for mapping the distribution of destruction and injury.

The idea for a new ICOMOS national digital technology committee has came about as a result of a ‘foresight’ project undertaken by Arup in 2013, when research on ‘Museums in the Digital Age’ was run with students of the Central St Martins University of the Arts. This addressed what museums would be like in 40 years’ time. Some of the key findings were that we are already changing to a new age:

- Becoming highly dynamic geared to a young audience that is highly digitally literate (matching their skills on smartphones!).
Creating new types of real and virtual museums and with the ability to change and adapt;

forging joint venture around the world which allow for exploring new ideas;

creating different uses of space and new sorts of space (Virtual, Hidden, Remote);

participating in new experiences/exploration of topics that are intellectually ‘stuck in the past’;

widening the audience and creating new ones;

better generating interactions and collaboration with audiences;

allowing for remote access – basically from anywhere to anywhere;

giving access to greater amounts of visual and written materials – extracted from various storage spaces in one or a number of museums/archives;

stimulating digital collections – these being new sorts of future antiques, though with some issues regarding durability;

continuing to improve on ‘wow’ 3D static and dynamic visualisations

making 3D replication of artefacts and even whole buildings easily available to anyone;

supporting the creation of ‘Brand’;

supporting continuing professional development and altered roles for curators;

linking image to real assets so they sort of merge into a single reality;

gearing museum education to the individual; and,

Supporting resource management/infrastructure efficiency (smart buildings - smart landscapes).

Some personal conclusions drawn from the project have been:

- there are exciting things starting to happen using the ability to collect and analyse ‘big data’;
- we are just starting to understand the potential of the new technologies and the world is getting smaller in an age off globalism via digital communications;
- we, the traditional conservation communities, are lagging behind, and progressively so, but we are not bad at taking the best at what the industry can offer;
- we will be forced into some changes, for example, as a response to global climatic changes when managing changing risks and when manipulating ‘big data’;
- we will need to learn new skills – for example, in the immediate the use of BIM with a strong GIS foundation; and,
- ICOMOS needs to capture the new technologies and in so doing gain new members/experts and new audiences.

Predicting some illustrative practical uses of Digital Technologies, related ‘Cultural Heritage Sites’

In addition to the type of visionary aspects noted above, digital media is and will be routinely involved in:

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Progressive linking of educational establishments and museums in real time for teaching and project work. Networking can be by venue type, asset type, information sharing type;

supporting documentation and recovery of stolen assets;

reconstructing ruins, archaeological remains and historic buildings with accurately applied virtual versions of the original technologies and craft skills;

interrogating sites and landscapes before impacts and archaeological excavation;

investigating artefacts as excavated – forensic investigations;

forging links on archaeological sites where assets are fragmentary;

assisting in asset conservation – forensic investigations;

affording better protection and longevity to the physical attributes of the original assets;

3D mapping of building failure as a result of applied dynamic and live forces;

participating in cutting-edge scientific research;

transmitting scientific data and interpretations to visitors in real time;

enhancing networking at personal, local, regional and national scale;

forging linkages between inside and outside of sites and assets – support making boundaries more fuzzy and permeable;

allowing for personal big data storage – in an un-cluttered ‘library/archive;

placing artefacts (images/copies) back to the location of origin;

driving cultural heritage tourism (with travel and agenda);

participating in data risk management with the potential for storage in regional archive centres;

supporting the demystification of topics by new forms of interpretation and availability;

supporting access and interpretation to the disabled;

targeting different recipient groups at the same time;

more comprehensively involving people before, during, after visits;

support wider distribution of visitors at venues (improved ‘Human Performance’) – for example, removing bottlenecks and clustering;

increasing profits so supporting museum sustainability;

linking to other digital media etc. – the Bitcoin industry/society; and,

Supporting people and organisations involved with cultural heritage in war situation (protection, theft and recovery) For example, there have recently been e-learning workshops with Syria-related to the protection of sites and artefacts.

Related to ‘Intangible Heritage.’

Some likely trends will be in:

- Continued improvement of documentation and archiving.
- creating new art forms;
- supporting new and better ways to interpret;
- generating new forms of identity and involvement; and,
- Supporting the design of new cultural venues.
Related to ‘Disasters.’

Digital and remote data is starting to and will be increasingly important to disaster management and recovery:

- real-time management;
- follow on remote mapping and estimating of damage – single assets or group asset/historic landscapes;
- Conducting baseline documentation, as part of preparedness and site/asset management. This may involve field recording and remote sensing of all types;
- collecting and interpreting public data (from Twitter and blog sites, etc.);
- supporting emergency actions;
- monitoring recovery and aid;
- providing logistical support;
- supporting media coverage; and
- Researching into disaster preparedness, training and management and using disasters for new opportunities.

More visionary roles related to ‘Societal Culture.’

Related to a bigger picture, advanced technologies can aim to:

- support in armed conflicts the avoidance of damage to cultural heritage sites
- support safe conflict resolution where culture and cultural heritage assets are at risk – in need of curation and protection;
- disaster management – from preparedness through to recovery;
- supporting culturally sensitive development in the Developing World;
- break down political and cultural boundaries - the interactive ‘virtual’ museum, ruin and artefact can be sent to the visitor;
- introduce electronically generated smells, tastes and sounds in the interactive environments;
- the development of biologically driven computers – with potential to take on human mind characteristics; and
- Replacing the need for control leadership for one of open-access wisdom spreading/sharing.

These are exciting times where we are certain that digital technologies and technologists are going significantly increase our knowledge and how we do things – we are sort of already in our own cultural revolution – perhaps in a new age.

For joining and attending our next meeting in London, in November 2015, please contact Natalie at the ICOMOS-UK office: (NatalieDavis@icomics-uk.org) or correspond with the office at: 70 Cowcross Street, London, EC1M 6EJ.
Appendix 1

Mission Statement

ICOMOS-UK National Committee for Digital, Electronic, Robotic Technologies and their Application to Cultural Heritage

21.07.15

ICOMOS, the International Council of Monuments and Sites, is a global non-governmental organisation associated with UNESCO. Its mission is to promote the conservation, protection, use and enhancement of monuments, historic building complexes and landscapes/sites and intangible cultural heritage. It participates in the development of doctrine, evolution and distribution of ideas and conducts advocacy. ICOMOS is a leading organisation in providing advice and skills in societal development.

National Committees are organisations that are created at the national level in those member countries of UNESCO. A national committee provides a forum where individuals and representatives of institutions and societies concerned with the conservation, protection, research, rehabilitation, enhancement and celebration of culture and heritage can meet to exchange information and views on principles and practices in the field, also participating in research and project implementation.

A national committee represents the interests of its members, nationally and internationally. National committees are charged with delivering their own agenda or those at the request of their own Governments. Each national committee has its own rules of procedure and programme according to agreed objectives with an agenda developed in conjunction with the National Executive Committee and linked to ICOMOS international scientific committees.

National committees are also a channel through which membership takes part in ICOMOS’ international meetings, other activities and missions entrusted to ICOMOS by UNESCO. National committees can exert decisive influences on the programme priorities of ICOMOS and can volunteer to take responsibility, in co-operation with ICOMOS International Secretariat for some part of ICOMOS’ international agenda especially where relevant to their own country.

The ICOMOS-UK National Committee for Digital, Electronic and Robotic Technologies (the ‘Committee’) has been established with the approval of the Executive Committee of ICOMOS-UK to address all aspects of digital technology mediums relevant to the culture and cultural heritage of the United Kingdom and with an international outreach.

Digital Technology is of rapidly growing importance and is constantly evolving – for ICOMOS-UK providing fundamentally important new methods for the celebration, protection, analysis, and management of our heritage and of diverse cultures worldwide. For the Committee, key topics of interest include, but not limited to: World Heritage Sites; Monuments; Ruins; Buried Archaeological Remains; Museums; Historic Buildings; Historic Landscapes; Visitor Centres; Libraries; Asset Documentation,
Visualisations and Analysis; Archives; Intangible Heritage; Living History; Survey / Instrumentation / Monitoring; Conservation Science; Project Management (especially through BIM and GIS methods); 3D Computer Modelling; 3D Asset Printing; Special Events and Gaming; Disaster Preparedness and Management; and, Appropriate Societal Development.

The Committee brings together and forges linkages between all members who have a keen interest or professional involvement in digital technologies relevant to cultural and cultural heritage, tangible and intangible.

Of key importance to the objectives of the Committee is: active participation with all other ICOMOS national scientific committees; connections with international ICOMOS scientific committees; and, with the various Government and non-Government bodies in the UK concerned with committee’s specialist interests and skills.

The Committee is open to membership from all existing members of ICOMOS-UK, and others, these who are then required to join ICOMOS-UK. New membership and participation is specifically encouraged from students and schools, Further Education and Higher Education institutions. Digital technology commercial industries and external specialists are encouraged to support and collaborate with the Committee’s endeavours. The Committee thus gains strength from the breadth of its membership covering all aspects of digital technologies and cultural heritage, representing both the public and private sectors in the different countries and regions of the UK; and, all linked to matching membership and interests overseas.

The Committee is administered by elected representatives of the membership, managed by a chairperson, secretary and special interest representatives, with terms of reference conforming to ICOMOS Statutes of association and governance. ICOMOS-UK Secretariat provides supporting services.

In the first year the Committee has the general remit of:

- general information and research intelligence sharing;
- catching up with the science, technology and arts of the advanced electronic world, as specifically we wish digital technologies to be applied to culture and cultural heritage objectives;
- creating new links with new industries/academia/professional practitioners, who are, and could in the future be highly relevant to the various planned objectives and working agenda of ICOMOS-UK, especially in the next two decades;
- better relating ICOMOS-UK to academic institutions with advanced research capabilities;
- capturing a new membership and heritage audience; and,
- forging new links with the many other ICOMOS-UK national and international scientific committees;
- holding a national conference;
- gaining financial support for general and specific agendas; and,
Increasing the awareness of ICOMOS-UK membership to the objectives and activities of the new National Committee;

A set of long-term core activities are to be progressed through regular committee meetings and inter-connected special interest and research sub-groups and / or individuals within the Committee:

- the production of best practice guides;
- giving advice to practitioners and the general public;
- sharing and exchanging of new technical skills;
- providing international outreach;
- supporting academic institution with presentations, teaching and aiding with internships / placements;
- with dedicated funding, the undertaking of cutting edge pure and applied research projects, supported with in-house placements and external joint ventures; and,
- focused exchange and collaboration with digital commercial companies and with media organisations.
Appendix 2

The International Scientific Committees of ICOMOS

1. ISCARSAH: International Committee on Analysis and Restoration of Structures of Architectural Heritage
2. ICAHM: International Committee on Archaeological Heritage Management
3. ISCCL: International Committee on Cultural Landscapes ICOMOS-IFLA
4. CIIC: International Committee on Cultural Routes
5. ICTC: International Committee on Cultural Tourism
6. ISCEAH: International Committee on Earthen Architectural Heritage
7. ISEC: International committee on Economics of Conservation
8. ISCES: International Committee on Energy and Sustainability
9. IcoFort: International Committee on Fortifications and Military Heritage
10. CIPA: International Committee on Heritage Documentation
11. CIVVIH: International Committee on Historic Towns and Villages
12. ICIP: International Committee on Interpretation and Presentation of Cultural Heritage Sites
13. ICICH: International Committee on Intangible Cultural Heritage
14. ICLAFI: International Committee on Legal, Administrative and Financial Issues
15. International Committee on Mural (Wall) Painting
16. IPHC: International Polar Heritage Committee
17. ICORP: International Committee on Risk Preparedness
18. CAR: International Committee on Rock Art
19. ISCSBH: International Committee on Shared Built Heritage
20. ISCV: International Committee on Stained Glass
21. ISCS: International Committee on Stone
22. Theophilos: International Committee on Theory and Philosophy of Conservation and Restoration
23. CIF: International Committee on Training.

24. ICUCH: International Committee on Underwater Cultural Heritage

25. CIAV: International Committee on Vernacular Architecture

26. IWC: International Committee on Wood

27. ISC20C: International Committee on 20th Century Heritage