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Dividing Wall Collapsed?
JAD2 Survey and ACT Archaeology Attempt to Close the Gap between Archaeology and ICT

Abstract: It is sometimes pointed out that there is a gap between archaeology and Information Communication Technology (ICT). The Digital Data Survey for Japanese Archaeology (JAD2) would be able to close the gap by providing up-to-date statistics about the present state of the use and needs of ICT in Japanese archaeology. Although the survey offers some interesting facts, the response rate was disappointing. In order to resolve the problem, ACT Archaeology was established to submit a proposal for the re-run of the survey to some leading organisations. As archaeological computing is not an established academic discipline in Japan, this is also regarded as an international propaganda campaign for the recognition of the subject. The challenge of these activities is to demolish the gap and to establish an interdisciplinary international community.

The Dawn of the Wall: Recognizing the Critical Gap

There have been problems concerning interdisciplinary dissonance in archaeological computing, which can be called "the wall" between technology and archaeology. The problems are partly driven by the conservative tradition of heritage information dissemination, by the lack of communication among experts, and by the result of rapid technological development. In fact the CAA conference may be treated as the "glue" between cultural heritage and technology. Similarly, the RecorDIM (Recording, Documentation and Information Management) initiative partnership was established in order to identify the nature of the gap between information users (conservation experts) and providers (heritage recorders), to develop strategies to close the gap, and to recommend a framework for action (RecorDIM 2002). Among all technologies, the domain gaps are currently dominated by ICT (Information Communication Technology). However the definition of the domains and experts by RecorDIM is not always clear and they often overlap. Therefore, the gaps are caused not by such a clear division of professions, but rather by the lack of collaborative opportunities, communication and understanding among them.

Archaeologists and Picks: a Simple Way of Destroying the Wall

One of the solutions to close the gap between archaeology and ICT is to provide statistics about the present state of the use of ICT in archaeology. It seems that many cultural experts and technology developers have vague ideas of the interdisciplinary subject, however they are often subjective and the objective evidence is not widely available. Although several surveys have been undertaken on the use of ICT in cultural heritage in Japan (JDAA 2001; JDAA 2003; JDAA 2004; JDAA 2005; Fujitani 2005), UK/ Ireland (Condron et al. 1999), Canada (MPWGSC 2001; Wendy 2000) and Europe (Niccolucci / Geser / Varricchio 2006), some of them are out-of-date and their goals are different. The digital phenomenon is mostly unknown in Japanese archaeology. Thus, the authors decided to undertake a Digital Data survey for Japanese Archaeology (JAD2 Survey) in order to shed the light upon the reality of the gap. This approach is particularly useful for archaeologists without ICT knowledge and technical developers without archaeological knowledge. There are also other motivations for the JAD2 Survey. For instance, the need for international standards has grown over the last decades because of the increase of international data exchange, particularly, on the internet. The survey will be a starting point to create such standards based on the latest trend. Moreover, there have been an enormous number of excavations conducted as a result of construction and urban expansion (Tateno 2005), which have, without doubt, created a vast amount of archaeological data. The management of archaeological data requires a good understanding of the present practice of ICT and archaeology. The authors, therefore, would like to address the critical points of ICT in

Japanese field archaeology by means of an intensive survey.

The Border Line: Awareness of Ignorance

Due to the size and complexity of the JAD2 Survey, it is outside our scope to present all of the results. Rather we prefer to show a fragment of the results in order to give the overall flavour of the survey. Detailed results are all available on the trilingual website (http://chiron-training.org/go_sugimoto/ digital_survey/index_eng.html), as well as in the interim reports and papers in Japanese and English (Sugimoto 2007a; Sugimoto 2007b; Sugimoto 2008; Sugimoto / Igarashi in press). Although the survey covers a wide spectrum of ICT aspects in archaeology, particular attention was paid to the gap between archaeology and ICT in this paper.

To what extent do Japanese archaeological organisations work with ICT? The question can be partially answered by the presence of ICT specialists in MBC (*Maizo Bunkazai* Centres), which deal with most rescue excavations in Japan. Although half of MBCs (46%) have information officers, no one is employed solely for that post. All fulfill other posts simultaneously, therefore there are no "professionals" in a real sense. It is possible to assume that there is no budget (nor the need, possibly) for an expert. Whether or not this is reflected in the previous result, there seems to be a great need for IT specialists in Japanese archaeology *(Fig. 1)*. Interestingly, Japanese archaeologists think that both organisation and individual specialists are required for IT management. The outcome probably exemplifies the increase of the use of complicated information systems.

It is significant for us to know the types and quantity of archaeological data created through salvage excavations in relation to the degree of digitisation *(Fig. 2)*. The statistics allow ICT specialists to understand the nature and structure of archaeological data in the framework of MBC's workflow. This paper only highlights the result of the individual questionnaire, however the survey also investigated a similar question from an organisational point of view.

It seems that the cost of archaeological information has not been properly explored in academic research, however the JAD2 Survey attempted to learn its value in a very simple manner. 70% of the respondents provide information free of charge, whereas 30% give a combination of both: free-of-charge and fee-based. While free access to information is popular, the degree of public access should be evaluated in future research.

The survey also examined the two different views on ICT skills and knowledge. *Fig. 3.1* is the result from the questionnaires for individuals, displaying the skills and knowledge required, while *Fig. 3.2* presents the skills and knowledge expected for an information officer. The difference is echoed by the
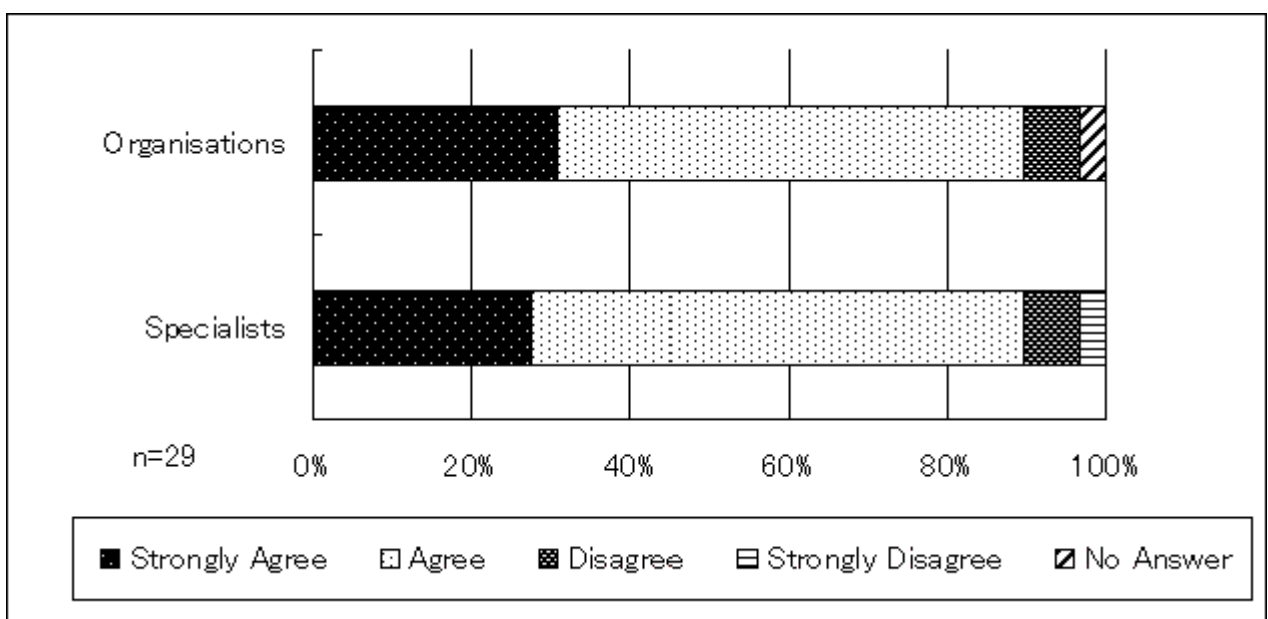

Fig. 1. Needs for organisations and specialists for IT management (from the questionnaire for individuals).
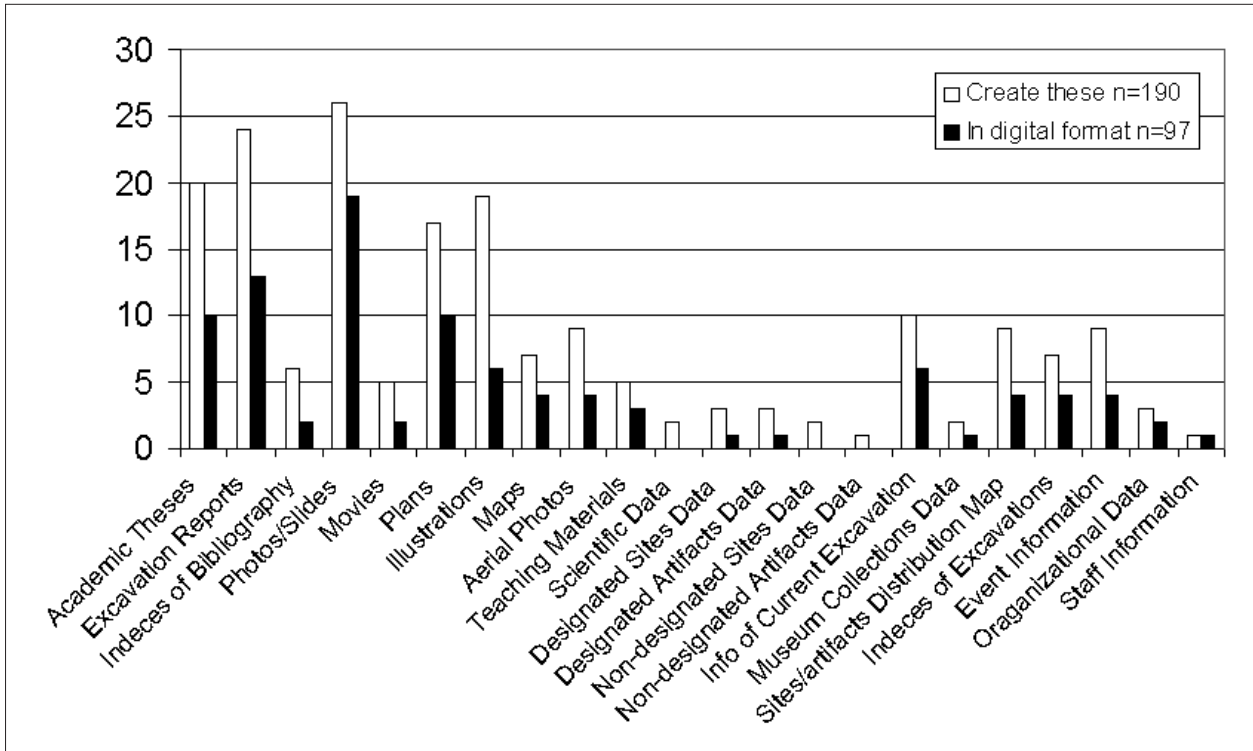
Fig. 2. Types of archaeological data created in digital and non-digital format (from the questionnaire for individuals).

voices from the practical day-to-day routines and the voices of organisational demands.

Websites are the face of organisations. The way of maintaining them in ever-changing cyberspace is a representation of responsibility to the public. Whilst our web-based survey revealed what contents are available (Sugimoto 2007a), *Fig. 4* would explain the gap between the reality and the goal of websites.

The understanding of the gap between archaeologists and ICT would be symbolised by the Yes/No questions on the knowledge of some technical terms *(Fig. 5)*. More than half of archaeologists have heard of terms such as GIS, GPS, and digital archives. In contrast, very few are acquainted with metadata, thesaurus, XML (extensible Markup Language), and CIDOC–CRM (The International Committee for Documentation of the Internation-
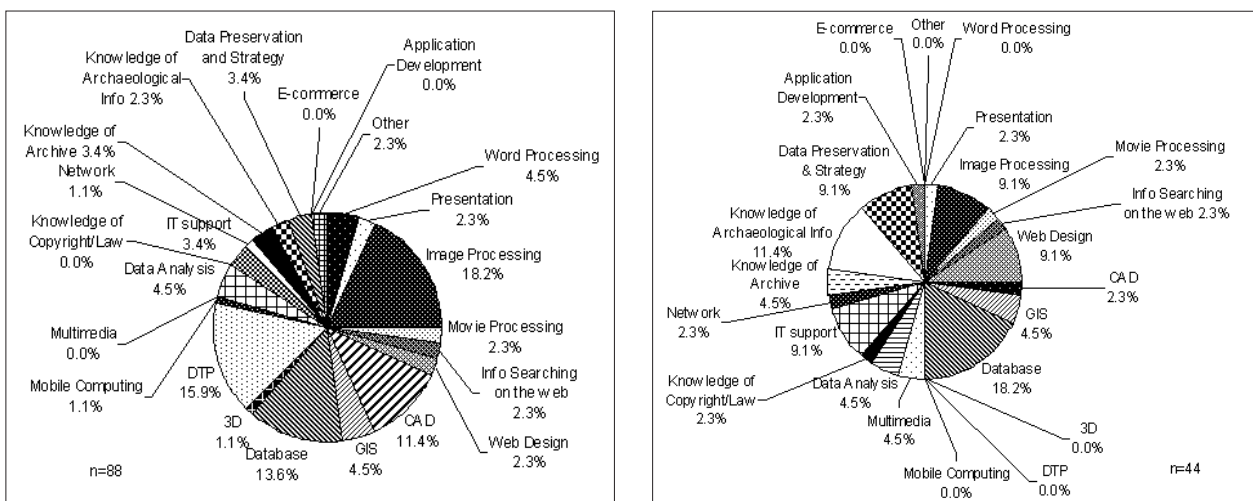

Fig. 3. 1. Skills and knowledge required for archaeologists (from the questionnaire for individuals). 2. Skills and knowledge required for IT officer (from the questionnaire for organisations).
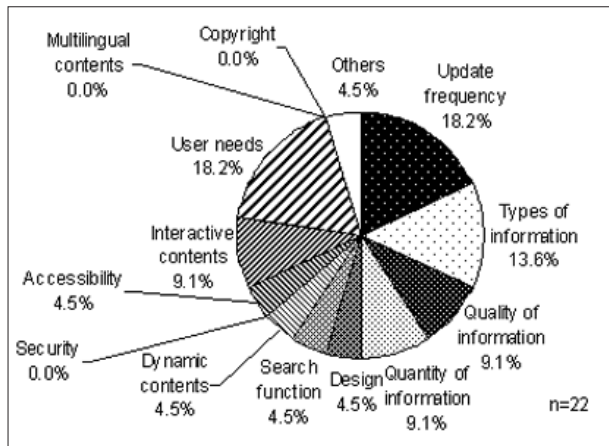
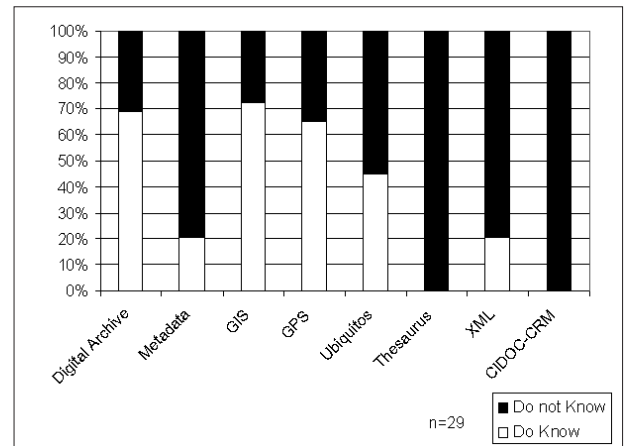Fig. 4. The elements needed for the improvement of website (from the questionnaire for organisations).

Fig. 5. Archaeologists' knowledge about ICT terms (from the questionnaire for individuals).

al Council of Museums – Conceptual Reference Model).

Archaeological Democratisation: International Politics vs Archaeological Computing

The survey may help to open the wall dividing archaeology and ICT, but it posed some questions as well. It was not possible to obtain the overall statistics of Japanese archaeology due to the bad response rate. In addition, the "passiveness" of this type of survey was recognized. In most surveys the end products are usually recommendations for future strategies. However this approach is passive because there are very few actions after the completion of the survey which could improve the situation. Taking into account these negative and passive sides of the survey, we have decided to do more.

ACT Archaeology was established in order to make the survey successful in a more active way. It is a petition-based grass-root group which proposes the re-run of the JAD2 Survey. It is assumed that Japanese archaeology is relatively centralised under local authorities. In particular, rescue excavations are executed in the planning application process by MBCs which traditionally belong to the educational departments of local governments. For this reason, it should be possible to conduct a survey of a well-known leading organization through MBCs cooperation. We are, thus, planning to submit a proposal to some leading archaeological organisations and societies including the central government. This proposal is supported by an international petition.

Since the JAD2 Survey provides excellent material for the development of the academic discipline of archaeological computing, the petition becomes an international propaganda campaign. The difficult situation in the field of archaeological computing is universal. There is often a lack of understanding, funding, education, skilled specialists, and organisations. Therefore, the petition could raise awareness of the subject at a much wider level. In the Japanese context, "pressure from abroad" may contain a powerful message too.

The ACT Community website was also created in order to improve communication among those who are interested in the activities of ACT Archaeology. On this website, one can share personal information and ideas with others. Although it is optional in the petition, the website offers the possibility of creating a loosely connected network of people across the world. Possible uses are to look for projects, applications, research collaborators, and institutions in the domain. However, the use is solely up to the members. Virtual independence and democracy are a test for interdisciplinary professionals.

Twenty seven signatures supporting the petition have been collected so far. The participants have different professional backgrounds such as researchers, archaeologists, architects, and conservators. They are from various countries including Japan, Italy, UK, Greece, Spain, Malaysia, Taiwan, USA and Mexico. The diversity of the members of ACT Archaeology symbolises the dynamic international activities and interests in the field of ICT and cultural heritage. In addition, the JAD2 Survey and ACT Archaeology were introduced in a national-level newspaper of which 3.8 million copies are distributed throughout

Japan daily. The help of a mass media has made the entire project more popular and productive. It is noted that the mass media played a quintessential role for the fall of the Berlin wall in 1989.

The End of the War

Unlike the Berlin wall, it is unlikely that the wall standing between archaeology and ICT will be suddenly demolished, but we believe that our activity is one of the first attempts to do so, at least in Japan. It was a challenging experience because this interdisciplinary subject is still new in Japan, and our project successfully had some impact by providing basic information about the present state. However this is not the end of the wall. As Zorich (2003) stated, ICT projects in cultural heritage are apt to be funded only for a short period of time. The real recognition of the subject and continuous financial support for scientific research are essential for sustainable development. As we have shown, international cooperation maybe a keyword for the solution. After all, we believe that, as written in the Berlin wall, "Irgendwann fällt jede Mauer (Eventually every wall falls)".

Acknowledgements

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