

Cultural Heritage, Identity, and Information Technology

Angkor Wat and the use of Three Dimensional Digital Imaging Technology

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During the fiscal year 2002, our project entitled “Towards Area-Based Global Studies” which is a project having its base in the Graduate Division of Foreign Studies of Sophia university, was selected by the Ministry of Education, Culture, Science and Technology for its 21st Century Center of Excellence Program. This event has served to generate within us an enormous vitality and a spirit of global competitiveness, urging us to develop within such an enclave centers of superlative standard.

Now, as a noteworthy outcome of two years of research and educational endeavors on our part, we have succeeded in bringing into being this international symposium on the subject “Cultural Heritage, Identity, and Information Technology”, at an overseas COE base located in the city of Siem Reap in Cambodia. In this context therefore I would like to say a few words by way both of greeting and explanation.

We COE research members are happy to welcome the sixteen research workers and specialists in diverse fields from Europe, the united States and Asia, and on the basis of the results we have achieved so far in the sphere of cultural heritage research, we would grade the 21st century as an age of three dimensional (3D) digital imaging technology. I am of the opinion that we are closely approaching a stage where our current views regarding the cultures and civilizations of old are likely to undergo some major transformations, through the deployment and application of this 3D digital imaging technology.

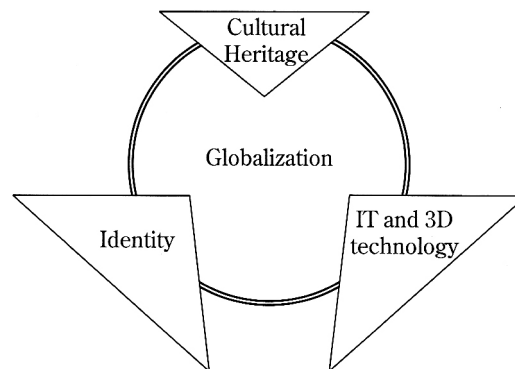
The Sophia University Angkor International Mission has been engaged in surveying, research, and restoration activities at the Angkor monuments for more than twenty years. The bas-reliefs and images located in the galleries of Angkor Wat are two dimensional. If however these could be reproduced in depth by the use of such 3D digital imaging technology, they would acquire a sense of presence, and we would be able to study the values and standards of beauty of those ancient Cambodian people. We are hence holding this international symposium at Angkor 'Wat in order to probe the limitless possibilities of this 3D digital imaging technology, with reference to cultural heritage.

Furthermore, when viewed from the perspective of the local society of Angkor Wat this cultural heritage could also become a cultural resource, and so aside from the basic tasks of preservation and restoration, they could be looked upon as rooting the identity of the people, and as a source of capital for the development of tourism, education, academic research, and the advancement of the local society.

Two days are to be spent on-site in discussion at the Angkor monuments, and one day will be devoted to on-site experimentation and on-site verification, using this 3D

digital imaging technology at the monuments. This being done we will proceed to see how this 3D digital imaging technology could be utilized for the preservation, restoration and investigative research at Angkor Wat and elsewhere, and whether it warrants promotion. It is indeed too early to grasp the reality of the situation, but I think we need to discuss the effect this application of 3D digital imaging technology will have upon the lives of the local people, namely the manner in which it is likely to transform their way of life and awareness.

I earnestly hope you to will favor us with your attendance,



Objectives

Session 1: Questions proposed by the COE overseas base

This symposium is to be held at the Sophia University COE Overseas Research Base Sophia Asia Center for Research and Human Development (hereafter: the Center) in Siem Reap, Cambodia, where the great world heritage temple complex of Angkor Wat is situated. The local residents are referred to as “Angkor people”, and they lay claim to the glory of the Angkor dynasty which was responsible for the building of Angkor Wat, as symbolizing their identity.

The globalization of information technology is being further advanced these days, but one needs to see what is happening as a consequence to the local culture and daily lives of the people. Japan, Asia, Europe and America are moving away from tradition, and there seems a lack of interest in reading, with a consequent progressive loss of identity. On the other hand however, it is true that various international intercultural exchanges are being expedited across the national borders.

Under the effects of this kind of globalization and information technology (IT), the tendency for the widening of the departure from tradition, the lack of interest in books and loss of identity, are starting to reach a crisis point. In this international symposium, I would like to explore the effectiveness and limitations of IT from the vantage point of cultural heritage and identity, and discuss them on a local basis.

The next generation of IT, namely that with three dimensional digital imaging display technology in particular, is expected to play a major role in developing the

preservation and research of monuments. In other words, specialists attending from Europe, America, Japan and Cambodia will discuss the protection and research of cultural heritage from the practical application of IT, its results at Angkor Wat, and the direction of change of the identity built upon Angkor Wat, and send out a message from Cambodia as to how IT and 3D digital imaging technology could usher in a new 21st century culture.

Session 2: Proposals from the deterioration of cultural heritage and identity

Contrary to the advance of globalization, attachment to inherent national, racial and religious histories and cultures are being strengthened, and ideas indicating that national identity and cultural diversity need to be accredited are rising to the fore. Resistance to the great wave of globalization, protection of the natural environment and inherent cultures and traditions, and the natural uniqueness and intrinsic culture of the local region have become highly valued, as things to be embodied in ideas with reference to world heritage. These preserve the natural human values that money cannot buy, and this is where the cultural attraction based on local characteristics is formed.

At the start of the 90s, world heritage and global values were considered as belonging to the whole of humanity, and some of these are now at a crisis point owing to destruction by war, natural disasters, environmental pollution, and plundering, triggering a rise in public opinion with reference to cultural heritage. The barbaric act of the Taliban against the great Buddhist statues of Bamiyan can perhaps be viewed as symbolizing this situation.

On the other hand, we use the latest IT to implement preservation, restoration and investigative research, and there is besides the IT of our daily lives, namely the Internet and mobile telephones. From the viewpoint of such effects, I would like the participants to present issues and discuss changes taking place with regard to identity, through the application of the most up-to-date technology. I would like to ask in what manner our lives, cultures, and identity are altering due to the proliferation of this technology, both in its advanced and ordinary forms.

At the same time, information orientation has all of a sudden acquired more meaningful forms. In Japan for instance, there exists the idea that money is a measure of happiness. How is it in Cambodia?

Session 3: Proposals from an understanding of the Cambodian people's identity

The Cambodian people are proud of the fact that their identity having its roots in Angkor Wat is founded on their local society. Using that identity as their spiritual nourishment, they are promoting on their own the tasks of excavation and restoration, as well as research related to their nation. Activities like these serve to establish the cultural sovereignty of the people.

At the Center, the Cambodian conservators, scientists and masons who direct the excavation activities on their own, have been in training for fourteen years. In 2002

about 440 thousand tourists visited Cambodia and the district of Siem Reap in particular, a fact which indicates the appearance of a tourist bubble. The Center is turning into a base for fixed point observations of the degree of penetration of such globalization waves in all fields, and the changes they evoke in the region. It makes ample use of information technology to send out and receive signals concerning problems of cultural heritage and identity, while setting forth examples of the practical application of 3D technology. In the year 2001, 274 discarded Buddhist statues were excavated and the deep historical background of the Angkor civilization was reconfirmed. I wonder how the Cambodians involved in that excavation work felt about it.

Session 4: Proposals from the field of information technology that serve identity image construction

Three dimensional (3D) digital imaging technology is likely to play a leading role from now on, in capturing the cultural heritage of the Cambodian people. In order to explore the capabilities of 3D digital imaging technology, I will take up the questions regarding the type of new standards that can be devised for the preservation, restoration and investigative research of this cultural heritage from now on, and how the local community and identity will be transformed.

In addition, information technology such as the geographical information system (GIS) and global positioning system (GPS), need to be developed in a form more closely associated with the district. GIS can be used for making a 3D database of digitally archived tangible and intangible cultural heritages, to aid in the research of the scientific content. In other words, there exist a leading edge IT and living level IT and we will promote the study from both sides.

In this symposium, not only are there the strongly technical aspects of research reporting in accordance with the long-established information-science and technology systems, but scholars and specialists of cultural heritage in various Asian countries are debating as a principal issue the creation of "philosophies for the protection of the cultural heritages" inherent to each region. In this situation, to what extent will the reality of identity be deepened and transformed by the application of information technology? Signs of change are beginning to appear in the concept of identity, due to such sudden penetration by IT.

Session 5: Questions proposed from the three themes of cultural heritage, identity, and Information Technology

First: Instead of a simple confrontation between the inherently local and global, because of the globalized nature of information the image of a cultural heritage that is based on the local community, that is to say the local Angkor image and the identity image, will be specifically sounded out, and in this way the historical individuality of that locality will be dearly perceived. We need to see to the extent to which information technology can serve this purpose.

Second: To accumulate on the one hand multiple case studies of other regions of Southeast Asia and depict the living world of those regions, and on the other to use IT to codify conservation, restoration, and investigative research with globalization in the background, are matters related to specifically understanding the influence and action IT imposes on the local community.

Third: There are identities that are based on the characteristic local image. However, we need to reconsider the matter with cultural heritage as the core and verify what becomes of the local culture with the support of such new image data that has been analyzed three dimensionally, and with a "flesh and blood identity" based on this newly codified data. Locally based racial individuality and cultural diversity are matters to be studied from the global vantage point, while applying IT.

Date/Time: March 12, 2004 (Fri.) 7:30 to 11:00 a.m. and 3:00 to 5:30 p.m.

March 13, 2004 (Sat.) 7:30 to 11:00 a.m. and 3:00 to 5:30 p.m.

Venue: Sophia Asia Center for Research and Human Development, (Siem Reap, Cambodia)

Inspection date/time: March 14, 2004 (Sun.) 7:30 to 11:00 a.m. and 2:30 to 5:30 p.m.

Inspection sites: Angkor Wat, Angkor Thom, Banteay Kdei

Program: Summary explanation:

"Why are Cultural Heritage and Information Technology a problem now?"

Yoshiaki Ishizawa (The 21st Century COE Program Director, Sophia university)

(I) Current Status and Development of Information Technology in Cambodia

Moderator: Dr. Kotaro Horisaka (Dean, Sophia university)

1) "Current status and development of Information Technology in Cambodia"

H. E. Dr. Sorasak Pan (Under Secretary of State, Royal Government of Cambodia, Cambodia)

2) "Three dimensional digital Image surveying of 274 discarded Buddhist statues"

Takeo Maeda (Research Fellow, Institute of Asian Cultures, Sophia university)

3) "Establishment and Application of the database to the next generation catalogue: The 274 statues excavated from Banteay Kdei"

Masako Marui (Assistant, COE, Sophia University)

4) "Synthesis of spatial data in Banteay Kdei by using GIS system"

Dr. Tetsuro Hishida (Associate Professor, Kyoto Prefectural University)

5) "Survey of the Banteay Kdei central axis by light wave measurement"

Dr. Hisao Arai (Research Fellow, Institute of Asian Cultures, Sophia University)

6) Comment:

Dr. Thongsasayavongkhamdy (Director General, Ministry of Information and Culture, Laos)

(II) Cultural Heritage, Identity and Local Culture

Moderator: Masayuki Akahori (Associate Professor, Sophia University)

1) "What is Angkor Wat to the Cambodian people?"

H. E. Mr. Soeung Kong (vice President, APSARA Authority, Cambodia)

- 2) "Cambodian people's Concept of God and the Spiritual World of the Angkor monuments"
Dr. Ang Choulean (Director General, Department of Culture and Research, APSARA Authority, Cambodia)
- 3) "A Project of Systematic Inventory of Angkor intangible Heritage"
Social Research Team + GIS Unit (Department of Culture and Research, APSARA Authority, Cambodia)
- 4) "From 2D to 4D maps in Angkor"
Dr. Christophe Pottier (Research Fellow, Ecole Française d'Extrême-Orient, France)
- 5) "Explication of messages left in trust at the time of construction of the Angkor Wat western causeway"
Dr. Masao Katagiri (Professor, Nihon University)
- 6) "Archaeological excavation in Vietnam and the identity image of the Vietnamese people"
Yuko Hirano (Doctoral Student, Sophia University)
- 7) Comment:
H. E. Dr. Vira Rojpojchanarat (Deputy Director General, Ministry of Culture, Thailand)

(III) Three Dimensional Technology and Problems of
Cultural Heritage Management

Moderator: Dr. Masatoshi Kisaichi (Professor, Sophia University)

- 1) "What one can expect of three dimensional technology from Archaeology and Architecture"
Dr. Kunikazu ueno (Professor, Nara Women's university)
- 2) "IT used in Archaeological surveys"
Yasuharu Miyamoto (Researcher, Osaka City Cultural Properties Association)
- 3) "Application of Information Management Systems in studying Cultural Heritage"
Dr. Alonzo C. Addison (Diredor, Center for Design visualization, University of California, USA.)
- 4) "Three dimensional shape measurement as an IT tool at the Angkor monuments"
Yukitsugu Tabata (Doctoral Student, Sophia University)
- 5) "Investigation and application of IT to ancient Cambodian road networks"
Dr. Bruno Bruguier (Research Fellow, Ecole Française d'Extrême-Orient, France)
- 6) "The Role and Impact of Information Technology in Cultural Heritage Management and Tourism"
Dr. François Le Blanc (Head, Field projects, The Getty Conservation Institute, USA.)
- 7) Comment:
Dr. U Nyunt Han (Director General of Archaeology, Ministry of Culture, Myanmar)

(IV) Application of IT Tools and Global Networks

Moderator: Dr. Linda Grove (Professor, Sophia University)

- 1) "The Application of Traditional to Advanced Recording Techniques in studying Cultural Heritage"
Dr. Bill Blake (Measured Manager, English Heritage, UK)

2) "The Contribution of New Technologies in the process of Conservation of Cultural Heritage"

Dr. Robin Letellier (Vice President, CIPA, ICOMO, France)

3) "Trends in capacity building of young professionals studying cultural heritage and potentials in the use of new technologies"

Dr. Mario Santana (Specialist, UNESCO World Heritage Center, France)

4) "Examples from modernized Philippine heritage and its conservation"

Dr. R. Javellana, S.J. (Associate Professor, Ateneo de Manila University, Philippine)

5) "Conservation of Cultural Heritage: The value of mapping and development of Information System"

Dr. K. Van Balen (Professor, Katholieke University Leuven, Belgium)

6) Comment:

Dr. Choi Byungha (Specialist, Ministry of Culture, Korea)

(V) General Discussion

Moderator: Dr. Linda Grove and Dr. Mario Santana

(VI) Site Inspections and Three Dimensional Technology Discussion
(General Attendance)

March 14, 2004 7:30 to 11:00 a.m. Angkor Wat

2:30 to 5:30 p.m, Angkor Thom and Banteay Kdei etc.