Hong Kong's Innovative Techniques in Public Engagement

Simon Y.M. Hui & Anthony Y.K. Ho
Environmental Assessment Division, Environmental Protection Department,
e-mail: ymhui@epd.gov.hk

Abstract

Ever since the EIA Ordinance became effective in 1998, the Hong Kong EPD has always been trying to promote what is termed the Continuous Public Involvement (CPI) policy in which the public is truly informed and involved at all stages of project planning and implementation. With the advances in Information and Communication Technology (ICT), the opportunity is taken to adopt latest technological advances to improve the public engagement process. The areas of particular interest include 3D interactive models with various visualization techniques to help the general public understanding both the project and the expected environmental impacts, and electronic platform allowing easy access to information as well as true interaction between the public, the project proponents and the authority, supported by an electronic Knowledge Management Centre (KMC). The paper outlines the thinking behind Hong Kong's CPI policy, summarizes the latest developments of the Hong Kong system and projects how future EIAs might be carried out with genuine public participation processes, leading to win-win solutions for all.

Key words: Environmental Impact Assessment (EIA); Information & Communication Technology (ICT); public consultation and participation; Continuous Public Involvement (CPI); Collaboration; Conflict Resolution / Problem Solving; Creativity; Content Management; 3D Visualization; Knowledge Management.

Introduction

The origin of Environmental Impact Assessment (EIA) and public involvement in EIA process are considered by many to begin with the issue of the book "Silent Spring" in 1962 by Rachel Carson. It laid down three fundamental EIA study process principles which are still applicable today:

- able to communicate to lay persons on complex issues;
- present or "visualize" true consequences of human decisions; and
- scientifically robust.[1]

The importance of public participation was re-emphasized time after time since then. In 1992, the need for public participation was stated in Principle 10 of the Rio Declaration on Environment and Development.[2]

It has been the goal of the Hong Kong Environmental Protection Department (EPD) to strive for continuous development and improvement in all three areas. Based on the experience gained from various EIA projects, the EPD revitalizes these EIA principles and formulates the following core values as the EIA working directions:

- from "DAD" (decide, announce and defend) to "DDD" (discuss, decide and deliver") approach;
- from treating the public as "objectors" to treating the public as "contributors" and "partners";
- from "debate" to "constructive, meaningful dialogue" (and the Government serves as facilitator);
- from "paper-based EIA" to "web-based plus on-line EIA" to supplement paper-based EIA, and to 3-dimensional (e.g. site meetings, physical models, 3-D visualization) collective learning, dialogue & knowledge development; and
- from "one-off (or ad hoc) involvement" to "continuous and interactive public involvement". [3]

Opening up EIA information in Hong Kong has been ongoing for the last 18 years. Figure 1 summarizes the key mile-stones on EIA data opening. Progress of the development has been reported at the IAIA conferences in 2000[4], 2002[5] as well as 2005[3] (Figure 2 refers).

A major milestone, the Continuous Public Involvement (CPI) policy, was formally launched in 2003.[6] With this new policy, project proponents are encouraged to invite the public to participate in various stages of the environmental planning, EIA and Environmental Monitoring and Audit (EM&A) processes. The new public engagement strategy is shown in Figure 3.

3D EIA Public Engagement Tool – Taking Full Advantage of ICT

For effective implementation of this CPI policy, free information exchange is vital. In the conventional paper reports, the environmental information is presented in the form of text, photos and charts, and the real-life 3-dimensional environmental conditions are compressed into 2-dimensional, non-interactive tables and diagrams. The technical information on the environmental impacts and the proposed mitigation measures may not be so interesting and easy to be understood by the general public.

When applying digital media to convey the environmental information, the hard and dry technical data can be converted into more interesting multi-media sound clips, videos and various types of digital animations. In addition, ICT applications can provide better public services at lower cost, e.g. the cost for duplicating a CD-ROM is minimal when it is compared with the cost for mass printing multi-volume EIA Reports for distribution.

As of March 2008, the requirements on presenting EIA findings in 3D Visualization Models have been stated in 23 EIA Study Briefs, and four of them have been established for public inspection (see Figure 4). These 3D models and the transparent process provided a useful platform for the public to participate in the process and allow difficult issues to be discussed and understood.

Towards the Future – Enhancing the EIA Roles on "Collaboration", "Conflict Resolution / Problem Solving" & "Creativity"

Whilst the above 3D visualization models have already served as useful tools for public engagement and dialogue, the potential usage of the models have not been fully released, and there is still room for improvement when the application of these models are further directed to mass collaboration, conflict resolution / problem solving and creativity.

Collaboration

Collaboration is the combined work of a large number of people on a common task,[7] and collaboration does not require leadership and can even bring better results through decentralization.[8] This can easily be explained by the "Game Theory" developed by John von Neumann and Oskar Morgenstern in 1944. In this theory, there are "zero-sum" and "non-zero-sum" outcomes relate to the net loss or gain across participants. In the case of a zero-sum game, "players" are engaged in an activity which entails that the participant's net outcomes will have an inverse proportion to one another resulting in a zero sum. In other words, "my gain is your loss". Non-zero-sum outcomes on the other hand describe win-win scenarios – "my gain is your gain". In practice, zero-sum and non-zero-sum dynamics are often mixed, and participants must internally cooperate in order to compete across their external boundaries.[9]

Traditional professional activity is unidirectional, entailing the issue of proclamations to the public by people claiming professional expertise on matters of public concern. But EIA professional can also be multidirectional, as professionals not only seek to impart expertise to publics, but take the experiences, activities, and knowledge to a lay public as important factors in the development of professional knowledge and activities.[10] Emphases on public participation does not in any way undermine or replace the need for high degree of professional input. When engaging the public, it is important that sound professional input is provided by EIA professionals to ensure that the public actually appreciates the technical issues involved and that the discussions are meaningful.

Conflict Resolution / Problem Solving

Conflict is a state of discord caused by the actual or perceived opposition of needs, values and interests. For major infrastructure projects, research shows that public involvement is a necessary part of risk management. Very often, project proponents need better advice on how to involve the public earlier in the development cycle, and high quality public involvement is more important than, for example, involving more members of the public.[11] Yet, the role of EIA professionals will become more important, particularly in utilizing various conflict resolution / problem solving techniques in coordinating and collaborating diversified views. When applying these techniques, creativity is an essential element leading to achievements.

Creativity

Creativity is a mental process involving the generation of new ideas or concepts, or new associations between existing ideas or concepts. Today it is undeniable that EIA professionals will need to use various creativity techniques on:

- Moving from Conflict to Collaboration;
- Proactive Listening;
- Clarifying Customer Expectations;
- Resolving Customer Dissatisfaction; and
- Influencing for Win-Win Outcomes.[12]

To further enhance the EIA roles on collaboration, conflict resolution / problem solving and creativity, the exploration and application of new ICT are essential. The following discussion may provide some hints on future development in this area.

Combined 3D Visualization with Project Based "Content Management" Techniques

Today some popular ICT technologies like "Wikipedia" and "web 2.0" are gaining popularity. Wikipedia is a web-based, free-content encyclopedia written collaboratively by volunteers and sponsored by the non-profit Wikimedia Foundation.[13] Web 2.0 is a trend in the use of World Wide Web technology and web design that aims to facilitate creativity, information sharing, and, most notably, collaboration among users.[14] Web 2.0 is not a specific technology; rather, it refers to two major paradigm shifts: "user-generated content" and "thin client computing". User-generated content, comprised of blogs, wikis and social networking sites, let everyone have their say on anything and publish it to the world at large. As Web applications become more sophisticated, people can easily develop elaborate personal Web pages, create a blog, and upload their own opinions, audio and video. In thin client computing, data and applications are stored on Web servers, and a user has access from any computer via a Web browser.[15]

To play a more active collaboration, conflict resolution / problem solving and creativity roles in the EIA process, the project proponents or EIA authorities in the future may set up relevant project based content management system. This web-based content management system may contain project-based 3D visualization models, and can be used for storing, controlling, versioning, and publishing industry-specific documentation, and support the following features:

- identification of all key users and their content management roles;
- ability to assign roles and responsibilities to different content categories or types;
- definition of the content work flow tasks, often coupled with event messaging so that content managers are alerted to changes in content;
- ability to track and manage multiple versions of a single instance of content; and
- ability to publish the content to a repository to support access to the content. Increasingly, the repository is an inherent part of the system, and incorporates enterprise search and retrieval.[16]

With the synergy of project based 3D visualizations and e-Content Management System, the public, the EIA professionals and all concerned parties may have a common platform to exchange their views and knowledge, by means of text, pictures, videos, sketches on the 3D models, or any other digital means at the users' convenience. Eventually, there may be more and more web-based "wiki-EIA" or "EIA @ web 2.0" for different EIAs and infrastructure projects to enhance public engagement.

Today, the establishment and merging of 3D visualization models and e-Content Management System are not onerous. The Hong Kong experience has demonstrated that electronic 3D visualization models are growing popular in the EIA process. For the establishment of e-Content Management System, there are lots of channels available in the market now, and some of them are free-of-charge. For example, the "MediWiki"[17] has offered step by step guidelines to establish such Content Management System.

According to knowledge management (KM) principals, new knowledge begin with the individual, and make personal knowledge available to others.[18] The above new ICT development on EIA applications can facilitate the five main KM activities including systematic problem solving, experimentation with new approaches, learning from their own experience and past history, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organization.[19] This new ICT development can lead to eliminate communication barriers, and seek to better EIA outcomes through knowledge sharing and management.

Conclusion

Experiences tell that public participation is likely to be ineffective when regulatory agencies interpret it to mean only or primarily providing information to the host community, rather than systematically including the public into the decision making process.[20]   EIA, in the information age, will eventually polarize to collaborative, team oriented tasks, by means of sharing information with one another to accomplish common tasks in a small group.   Professionals share information with each other and learn something from each others specialization in order to reach consensus on a common problem.[21]   The use of ICT, such as 3D visualization models together with e-Content Management System could become the next stage of development for EIAs.

The world now moves at a furious pace.   Computers and networks grow faster and more interconnected each day.   The greatest rewards will go to those who move fast.   The first group of people who develop a whole new mind, who master high-concept and high-touch abilities, will do extremely well. The rest – those who move slowly or not at all – may miss out or, worse, suffer.[22]   Based on this phenomenon, ICT assisted public engagement in the EIA process will continue to grow tremendously, in a way that could fundamentally change the mode of operation of existing EIA professionals, and eventually the way how EIAs are carried out.

Bibliography
1:     Rachel Carson (1962), *"Silent Spring"*.
2:     United Nations Environment Programme (1992), *"Rio Declaration on Environment and Development"* states that *"Environmental issues are best handled with the participation of all concerned citizens, at the relevant level.   At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision making processes.   States shall facilitate and encourage public awareness and participation by making information widely available.   Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."*   The document is available in the web site: "http://www.unep.org/Documents/Default.asp?DocumentID=78&ArticleID=1163".
3:     Simon Hui (2005), *"EIA – Towards a New Era through Continuous Public Involvement"*, paper presented at International Association for Impact Assessment (IAIA) Seminar 2005 in Boston, USA.
4:     Simon Hui (2000), *"Environmental Monitoring & Audit: Past, Present, Future"*, paper presented at IAIA Seminar 2000 in Hong Kong.
5:     Simon Hui (2002), *"e-IA Follow up, Internet-based reporting"*, paper presented at IAIA Seminar 2002 in the Hague, Netherlands.
6:     The Circular is deposited in the web site "http://www.devb-wb.gov.hk/UtilManager/tc/C-2003-13-0-1.pdf".
7:     Reference to Mass-Collaboration.net "http://www.mass-collaboration.net/?files|mass-collaboration.htm".
8:     Reference to Wikipedia "http://en.wikipedia.org/wiki/Collaboration".
9:     Reference to Mark Elliott's PhD Dissertation: "http://mark-elliott.net/view/Dissertation/CollaborationDissertation".
10:    Reference to Andrew L. Barlow, (2007), *"Transformative Collaborations: Professionals and Minority Community Power"*, Collaborations for Social Justice, 2007, p.6.
11:    Reference to Howard KUNREUTHER, (2007), *"Proceedings for Dealing with Transboundary Risks in Siting Noxious Facilities"*, Proceedings of the International Conference on Siting of Locally Unwanted Facilities: Challenges and Issues, 2007, p.67-8.
12:    5 points extracted from US Environmental Protection Agency web site "http://www.epa.gov/customerservice/training.htm".
13:    Extract from Wikipedia "http://encyclopedia.thefreedictionary.com/".
14:    Extract from Wikipedia "http://en.wikipedia.org/wiki/Web_2".
15:    Reference to TheFreeDictionary "http://encyclopedia2.thefreedictionary.com/Web+2.0".
16:    Extracted from Wikipedia "http://en.wikipedia.org/wiki/Content_management_system".
17:    MediaWiki web site: "http://www.mediawiki.org/wiki/How_does_MediaWiki_work%3F".
18:    Ikujiro NONAKA, (1987), *"The Knowledge-Creating Company"*, Harvard Business Review on Knowledge Management, 1998, p.21-45.
19:    David A. GARVIN, (1987), *"Building a Learning Organization"*, Harvard Business Review on Knowledge Management, 1998, p.47-80.
20:    Reference to Bruce MITCHELL, (2007), *"LULUs, NIMBYs and Environmental Justice"*, Proceedings of the International Conference on Siting of Locally Unwanted Facilities: Challenges and Issues, 2007, p.21.
21:    Reference to Wikipedia "http://en.wikipedia.org/wiki/Collaborative_learning-work".
22:    Daniel H. Pink (2005), *"A Whole New Mind Moving from the Information Age to the Conceptual Age"*, p.234.

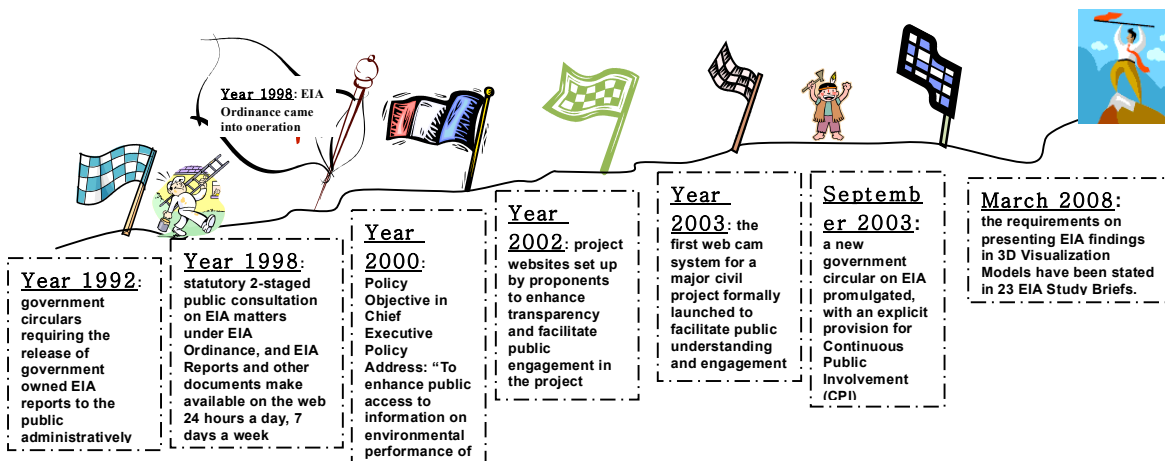*Figure 1: Key Mile Stones on Opening EIA Data in the Hong Kong*

Year 1998: EIA Ordinance came into operation

Year 1992: government circulars requiring the release of government owned EIA reports to the public administratively

Year 1998: statutory 2-staged public consultation on EIA matters under EIA Ordinance, and EIA Reports and other documents make available on the web 24 hours a day, 7 days a week

Year 2000: Policy Objective in Chief Executive Policy Address: "To enhance public access to information on environmental performance of

Year 2002: project websites set up by proponents to enhance transparency and facilitate public engagement in the project

Year 2003: the first web cam system for a major civil project formally launched to facilitate public understanding and engagement

September 2003: a new government circular on EIA promulgated, with an explicit provision for Continuous Public Involvement (CPI)

March 2008: the requirements on presenting EIA findings in 3D Visualization Models have been stated in 23 EIA Study Briefs.

Figure 2: the public consultation requirement in the statutory EIA process
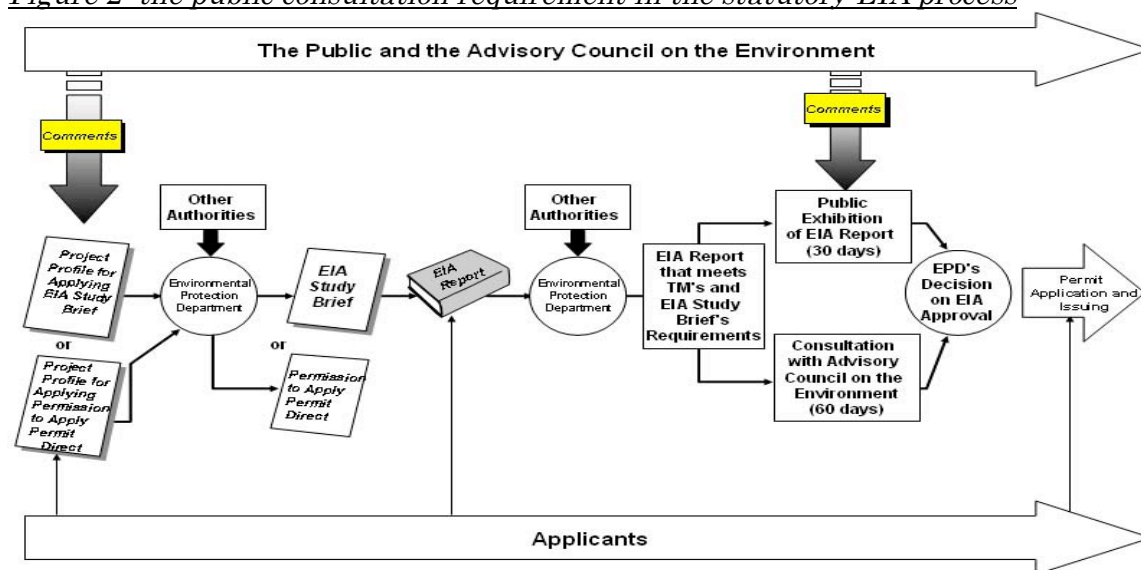

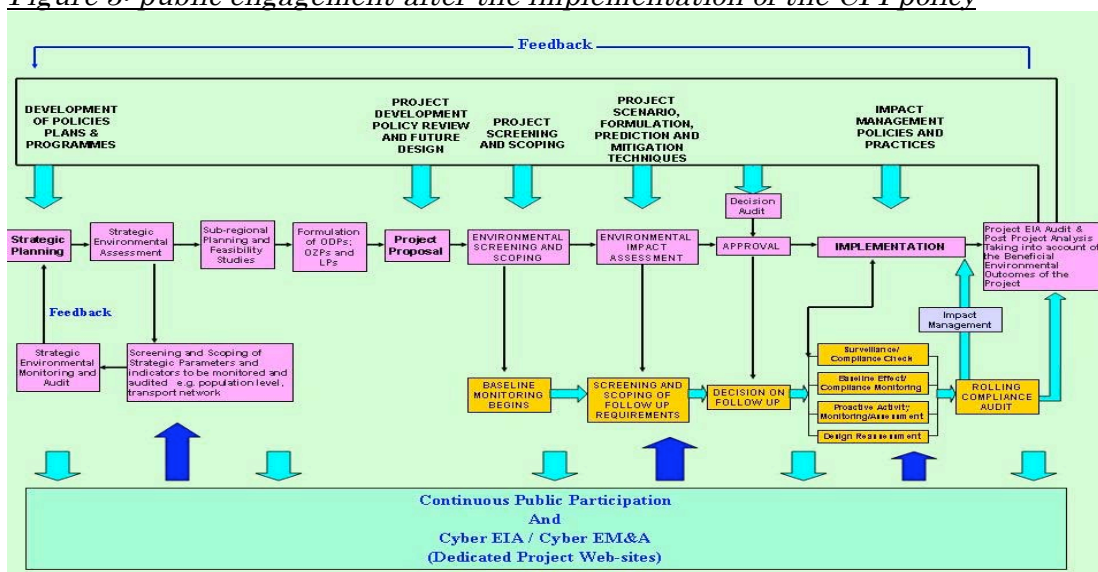*Figure 3: public engagement after the implementation of the CPI policy*

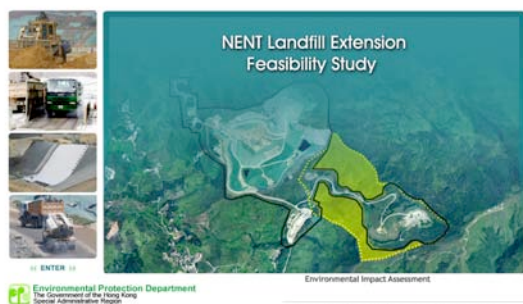*Figure 4: Examples of the 3D electronic models for EIAs established and used for public*

Liquefied Natural Gas (LNG) Receiving Terminal and Associated Facilities, ESB-126/2005
web site: "http://202.128.236.109/pub/lng/lng/default.html"

Northeast New Territories (NENT) Landfill Extension, ESB-114/2004
web site: "http://202.128.236.109/pub/nent/EIA/introduction_header2.htm"

Wan Chai Development Phase II and Central-Wanchai Bypass, ESB-153/2006
web site: "http://202.128.236.109/pub/EIA/index.htm"
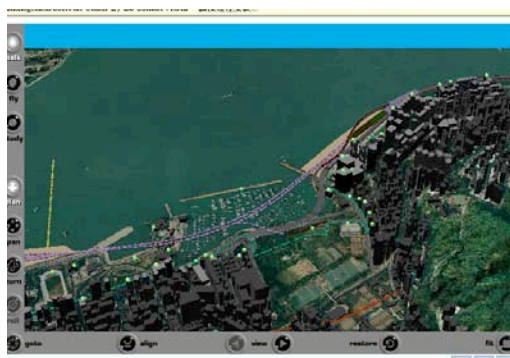
South East New Territories (SENT) Landfill Extension, ESB-119/2004
web site: "http://202.128.236.109/pub/sent2/default.html"